

User Manual DAKSeco / DAKSmed /DAKSindico

Product:	DAKSeco DAKSmed DAKSindico
Hardware Platform:	DAKS-110 DAKS-200
Software Version:	DAKSeco V3.10 DAKSmed V1.50 DAKSindico V1.30
Status:	June 8th, 2026

The information in this document is designed to offer a general overview and to describe the overall performance features of this product, the details of which may differ in their final form in the actual application, or become subject to modification as a result of the further development to which our products are constantly subjected. The trademarks used in this document are property of tetronik GmbH and its legal owners.

Copyright © 2026 by

tetronik GmbH
65232 Taunusstein
Germany
www.tetronik.com

Table of Contents

0 Overview of the chapters in this document 0-1

1 Conventions and Operating Instructions 1-1

1.1 Information on the product designation 1-1

1.2 Details on Trainings 1-2
1.2.1 DAKSmed / DAKSindico 1-2
1.2.2 DAKSeco 1-2

1.3 Specialist skills, training and knowledge of the intended DAKSmed user 1-2
1.3.1 Service/medical technician of the in-house medical device service provider 1-2
1.3.2 Operator of the DMC application, smartphone, DAKS Communicator, M3 Plus 1-3
1.3.3 User of the Browser Operator/ Browser Administrator 1-3

1.4 Reference manuals 1-3

1.5 Notations and Symbols 1-4

1.6 Information on the servicing and maintenance of DAKSmed 1-4

1.7 Reporting of Accidents 1-4

1.8 General warning and safety information 1-5
1.8.1 General information 1-5
1.8.2 DAKSmed-specific information 1-5

1.9 Data Protection and Data Security 1-6

2 DAKS Product Overview 2-1

2.1 Typical Fields of Application of DAKSeco 2-2

2.2 DAKSmed Fields of Application 2-2

2.3 Typical Fields of Application of DAKSindico 2-3

2.4 The hardware and interfaces of DAKS-200 (mDAKS) 2-3

2.5 The hardware and interfaces of DAKS-110 2-5

2.6 Icons and Lettering 2-6

2.7 Performance Features 2-8
2.7.1 Quick overview of processes and how they are activated 2-8
2.7.2 Monitor medical devices and medical alarm conditions (only DAKSmed) 2-8
2.7.3 Broadcasts 2-9
2.7.4 Emergency Conferences – Phone-Meeting-Points 2-10
2.7.5 Daily control calls (DAKSeco only) 2-10
2.7.6 Process Logging and System Status Messages 2-11
2.7.7 Option ESPA-X Transparent Mode 2-11
2.7.8 Service Functions 2-12

2.8 Browser-based administration and Report analysis 2-13
2.8.1 Data/Server 2-13
2.8.2 Basic configuration 2-13
2.8.3 Time Segments 2-13
2.8.4 Display/audio information 2-13
2.8.5 Alarm profiles 2-14
2.8.6 Base Stations and Access Points 2-15
2.8.7 Contact inputs 2-15
2.8.8 Contact outputs 2-15

2.8.9 Beds (only DAKSmed) . . . 2-15
2.8.10 Communication devices/targets . . . 2-16
2.8.11 Subscribers . . . 2-16
2.8.12 MCO-views (only DAKSmed) . . . 2-16
2.8.13 Broadcasts . . . 2-17
2.8.14 Conferences (only DAKSeco) . . . 2-18
2.8.15 Reports . . . 2-18

3 DAKS Application and Functionality Details . . . 3-1

3.1 Voice announcements and display texts . . . 3-3
3.1.1 Record voice announcements over the phone . . . 3-4
3.1.2 Have Voice Announcements Played Back over the Phone . . . 3-4

3.2 Launch Broadcasts . . . 3-5
3.2.1 ... over the phone without announcement selection . . . 3-5
3.2.2 ... over the phone with announcement selection . . . 3-7
3.2.3 ... via Contact Input . . . 3-9
3.2.4 ... via AVIOTEC Camera . . . 3-9
3.2.5 ... via SNMP Trap . . . 3-11
3.2.6 ... via Host Interface . . . 3-11
3.2.7 ... via GMD-Medaillon (DECT) . . . 3-11
3.2.8 ... via OAP Alarms (WiFi) . . . 3-12
3.2.9 ... via OM-AXI alarms (DECT) . . . 3-12
3.2.10 ... via DAKS-Satellite . . . 3-12
3.2.11 ... via Mail-to-Phone . . . 3-12
3.2.12 ... via DAKS-Mobile-Client (DMC) . . . 3-12
3.2.13 ... via DAKS Communicator . . . 3-13
3.2.14 ... via M3 Plus . . . 3-13
3.2.15 ... via 'Medical alarm conditions' . . . 3-13
3.2.16 ... via 'General alarm conditions' . . . 3-13
3.2.17 ... via 'System alarm conditions' . . . 3-13

3.3 Workflow of Broadcasts . . . 3-15
3.3.1 Prepare Broadcasts in advance and buffer requirements . . . 3-15
3.3.2 Start Broadcasts . . . 3-16
3.3.3 The processing of Broadcast targets . . . 3-17
3.3.4 Behavior of Broadcasts with automatic entry into a Conference . . . 3-18
3.3.5 Dial-up of Broadcast targets and user dialogs . . . 3-19
3.3.5.1 User dialogs for Broadcast targets while they are being called . . . 3-19
3.3.5.2 User dialogs for Broadcast targets upon call acceptance . . . 3-23
3.3.5.3 Confirmation options for WL3 devices via OAP . . . 3-27
3.3.5.4 Confirmation options for MiVoice devices via OM-AXI . . . 3-27
3.3.6 The reached criteria . . . 3-28
3.3.7 The final Broadcast results and follow-up Broadcast calls . . . 3-29
3.3.8 Results e-mail for a Broadcast . . . 3-29

3.4 Conferences . . . 3-30
3.4.1 General information . . . 3-30
3.4.2 Behavior of Conferences . . . 3-31
3.4.3 Start a conference over the phone via the Start ID . . . 3-32
3.4.4 Enter early in a Conference over the phone via the Entry ID . . . 3-33
3.4.5 Dial into an active Conference over the phone via the Entry ID . . . 3-34

3.5 VoIP-Switch . . . 3-35

3.6 Locate and position GMD Medallions . . . 3-36

3.7 Positioning of WL3 and i62 devices . . . 3-36

3.8 The ESPA-X interface . . . 3-36

3.9 ESPA 4.4.4 interface . . . 3-37
3.9.1 Comments on the ESPA 4.4.4 specification . . . 3-37
3.9.1.1 Regarding Pos. 2.4 of the ESPA4.4.4 specification: 'Transmission Control Prefixes' . . . 3-37
3.9.1.2 Regarding Pos. 3.1 of the ESPA4.4.4 specification: 'Polling' . . . 3-37
3.9.1.3 Regarding Pos. 4.2 and Pos. 4.3 of the ESPA4.4.4 specification . . . 3-37
3.9.1.4 Pos. 5 of the ESPA 4.4.4 specification: 'Hardware specification' . . . 3-37
3.9.2 General information . . . 3-37
3.9.3 Monitoring of the Connection . . . 3-39
3.9.4 Automatic callback to the initiator (patient) . . . 3-39
3.9.5 Activate DAKS calls . . . 3-40
3.9.5.1 General information, Header . . . 3-40
3.9.5.2 Record type 'Call Address', data identifier '1' . . . 3-40
3.9.5.3 Record type 'Display message', data identifier '2' . . . 3-40
3.9.5.4 Record type 'Beep-Coding', data-identifier '3' . . . 3-41
3.9.5.5 Record types 'Call Type', data identifier '4' . . . 3-41
3.9.6 Evaluation of ESPA call types . . . 3-42
3.9.6.1 Record type 'Number of transmissions', data identifier '5' . . . 3-43
3.9.6.2 Record type 'Priority', data identifier '6' . . . 3-43
3.9.6.3 Record type 'Nurse call interface' . . . 3-43
3.9.6.4 Record type 'Call ID' . . . 3-43
3.9.7 Cancel broadcasts in DAKS . . . 3-44
3.9.7.1 Reset call . . . 3-44
3.9.7.2 Reset all calls . . . 3-44
3.9.8 Status request . . . 3-45
3.9.8.1 Status request without Call ID . . . 3-45
3.9.8.2 Status request with Call ID . . . 3-45
3.9.9 Status messages from DAKS . . . 3-45
3.9.9.1 Configure status messages in DAKS . . . 3-47

3.10 OAP interface . . . 3-48

3.11 OM-AXI interface . . . 3-48

3.12 TAP protocol . . . 3-49
3.12.1 Functionality . . . 3-49
3.12.2 Details on the TAP protocol . . . 3-49
3.12.3 Details on the call activation dataset . . . 3-52
3.12.4 Details on the Cancel dataset . . . 3-52

3.13 Reports . . . 3-53
3.13.1 Example of a report printout via VCON for a Broadcast . . . 3-53
3.13.2 Example of a report printout via VCON for a Meet-Me Conference . . . 3-54
3.13.3 Example of a report printout via VCON for a Broadcast with automatic entry into a Conference 3-55

3.14 SNMP implementation . . . 3-56

3.15 List of errors, system messages and malfunction messages . . . 3-57

4 Put DAKS into operation . . . 4-1

4.1 Put DAKS into operation . . . 4-2

4.2 Prepare DAKS and VCON before you put the system into operation . . . 4-5

4.3 Configure and test the Web interface . . . 4-7

4.4 Select the PBX connection and host interface . . . 4-7

4.5 Configure and test the system clock . . . 4-8

4.6 Connect DAKS-Satellite to DAKS and test the application . . . 4-10

4.7 Connect Mail-to-Phone to DAKS and test the application . . . 4-12

4.8 Connect and test the Digital I/Os of DAKS . . . 4-13

4.9 Connect and test the digital outputs and the relay output 4-16
4.10 Configure and test the printer 4-17
4.11 Configure and test the SYSLOG server 4-18
4.12 Configure and test the Medical Alarm Integrator (MAI) 4-19
4.13 Configure the DAKS database 4-20
4.14 Configure and test the PBX connection 4-23
4.14.1 Configure and test the SIP(-Q) digital trunks 4-23
4.14.2 Configure and test the ISDN digital trunks 4-25
4.15 Connect and test host system(s) 4-27
4.15.1 Connect and test host systems via the COM port 4-27
4.15.2 Connect and test a host system via the ESPA-X interface 4-31
4.16 Configure and test the WSG or IMS server 4-32
4.17 Configure and test the OM-AXI server 4-33
4.18 Configure and test the DMC service 4-34
4.19 Configure and test DAKScommunicator 4-35
4.20 Configure and test VoIP devices registered at DAKS 4-36
4.21 Configure and test hallway/corridor displays 4-37
4.22 Test the DAKS application 4-39
4.23 Save the DAKS configuration 4-40

5 DAKS Data Backup, Problem Solving and Hardware Replacement 5-1

5.1 DAKS data backup 5-2
5.2 Problem solving 5-3
5.2.1 DAKS fault diagnosis, repair measures and recommissioning 5-3
5.2.2 List of error, system and fault messages 5-5
5.2.3 Restoring DAKS 5-8
5.2.3.1 Restore the DAKS functionalities using a software update 5-8
5.2.3.2 Restore the DAKS functionalities using a bootstrap file 5-8
5.2.3.3 Restore the DAKS functionalities from a complete backup 5-10
5.3 DAKS hardware replacement 5-11
5.3.1 Hardware exchange without memory card replacement 5-11
5.3.2 Hardware exchange with memory card replacement 5-11
5.3.3 Replace the memory card 5-12
5.3.4 Replace ISDN modules of DAKS-200 (mDAKS) 5-12

6 Configuration of the Service PC'S USB Port 6-1

6.1 System requirements 6-2
6.2 Install the USB drivers 6-2
6.2.1 Install the USB drivers for DAKS 6-2
6.2.2 Install the USB drivers for DAKSmed (mDAKS) 6-6
6.3 Connect the hardware to the Service PC for the first time 6-9
6.4 Configure the USB interface of the Service PC 6-11
6.5 Basic configuration of DAKS via the USB port 6-14
6.5.1 Use the VCON terminal function for the basic configuration of DAKS 6-14
6.5.2 Use a terminal emulation program for the basic configuration of DAKS 6-15

7 The Startup Functions and Configuration of DAKS 7-1

7.1 Initial startup functions using the USB terminal access 7-2

7.2 Activate the DAKS repair system 7-4

7.3 Configuration via VCON and LAN interface 7-6

7.4 IP parameters 7-7

7.5 Parameters of the serial interfaces (COM ports) 7-9

7.6 Parameters of the ESPA-X interface 7-13

7.7 Parameters of the DMC interface 7-15

7.8 Parameters of the MASI interface 7-16

7.9 Parameters of the OAP interface 7-17

7.10 Parameters of the OM-AXI interface 7-17

7.11 Parameters of the SMTP interface 7-18

7.12 Parameters of the Digital I/O 7-19
7.12.1 Switching states of the contact inputs 7-19
7.12.2 Parameters of the Gateway of the I/Os (IOG Module) of DAKS-200 7-20
7.12.3 Parameters of the Digital I/Os of DAKS-200 7-22
7.12.4 Parameters of DAKS-Satellite contacts for DAKS-200 7-24

7.13 Parameter of DAKS' SNMP Service 7-25

7.14 Configuration of the VoIP trunk connections and the direct VoIP connection 7-36
7.14.1 Parameter basic settings 7-37
7.14.2 General trunk parameters 7-38
7.14.3 SIP-Peer trunk settings (not required for direct VoIP connection) 7-41
7.14.4 SIP trunk parameters (not required for pure SIP-Q trunks) 7-44
7.14.5 SIP-Q trunk parameters (only for SIP-Q trunks, where needed with OpenScape Branch) 7-48
7.14.6 MLPP trunk parameters (not required for pure SIP-Q trunks) 7-51
7.14.7 Registrar trunk parameters (only for direct VoIP connection) 7-52
7.14.8 Internal softswitch parameters (only for direct VoIP connection) 7-55

7.15 Parameters of the ISDN trunk 7-56

7.16 Parameters of the SYSLOG Service 7-61

7.17 Parameters of the Printer Service 7-62

7.18 Parameter of SSL 7-63

7.19 Provisioning Host and Provisioning Service 7-65
7.19.1 Introduction 7-65
7.19.2 Provisioning Host – DAKS Communicator 7-65
7.19.3 Parameter Provisioning Service 7-78

7.20 Parameters of the corridor displays 7-79

7.21 Parameters of the Web interface 7-84

7.22 Application parameters 7-85

7.23 DCF, NTP and system clock parameters 7-87

8 Browser-Based DAKS Administration 8-1

8.1 General information 8-3

8.2 Login to DAKS 8-4

8.3 The browser-based user interface 8-6

8.4 General buttons 8-8
8.5 Data/Server 8-9
8.6 Basic configuration 8-15
8.6.1 General details 8-16
8.6.2 Telephony 8-20
8.6.3 System Display/Audio info 8-22
8.6.4 Dialthru codes 8-26
8.6.5 Routing 8-28
8.6.6 The Login data 8-29
8.6.7 Add and edit the access data 8-30
8.7 Time Segments 8-32
8.7.1 Add and edit Time Segments 8-33
8.7.2 Add and edit Holidays 8-35
8.8 Display/audio information 8-37
8.8.1 Add and edit Display/Audio info 8-38
8.8.2 Upload announcements (wave files) for the first time 8-40
8.9 Alarm profiles 8-42
8.9.1 Medical alarm profiles (only DAKSmed) 8-43
8.9.2 General alarm profiles 8-48
8.9.3 System alarm profiles 8-51
8.10 Access Points 8-54
8.10.1 Add and edit Access Points 8-54
8.11 Base Stations 8-55
8.11.1 Add and edit Base Stations 8-56
8.12 Beds 8-57
8.12.1 Add and edit Beds 8-58
8.13 Inputs 8-60
8.13.1 The contact inputs 8-60
8.13.2 Edit a Contact input 8-62
8.13.3 AVIOTEC Camera 8-64
8.13.4 SNMP trap receiver 8-67
8.14 Contact outputs 8-70
8.14.1 Edit a Contact output 8-71
8.14.2 Edit Relay Output 8-73
8.15 Terminals 8-74
8.15.1 Add and edit Communication devices 8-75
8.16 Subscribers 8-77
8.16.1 Add and edit Subscribers 8-78
8.17 MCO-views 8-83
8.17.1 Add and edit MCO-views 8-84
8.18 Broadcasts 8-90
8.18.1 Group-specific settings 8-91
8.18.1.1 General details 8-91
8.18.1.2 Edit the Launch over the phone 8-96
8.18.1.3 Conference mode 8-97
8.18.1.4 Results e-mail 8-97
8.18.2 Add and edit new Broadcast members 8-99
8.18.2.1 Edit Broadcast members 8-99
8.18.3 Create and edit new Skillgroups 8-102
8.18.3.1 Edit Skillgroups 8-103
8.19 Conferences 8-105

8.19.1 Parameters of a Conference 8-106
8.19.2 Add and edit Conferences 8-106

8.20 Reports 8-108
8.20.1 The sections of Report 8-109
8.20.1.1 Example of a Broadcast Report 8-111
8.20.1.2 Example of a Conference Report 8-112
8.20.1.3 Example of a Broadcast-Conference Report 8-113
8.20.2 Printout reports as hardcopy 8-114
8.20.3 Save reports 8-115
8.20.4 Delete reports 8-116

9 DAKSmed Medical Care Organizer (MCO) 9-1

9.1 General details 9-2

9.2 Login to DAKS 9-3

9.3 The MCO user interface 9-4

9.4 The area: Beds 9-6
9.4.1 User window to display beds 9-6
9.4.2 Move beds to 'defined places' 9-10
9.4.3 Activate/deactivate "alarm pause" for beds 9-12

9.5 The area: Subscribers 9-14
9.5.1 Assign nurses to patient beds 9-15
9.5.2 Delete all/individual assignments and log in/log off nurses 9-16

9.6 The area: Status bar 9-17

10 The Service and Configuration Tool VCON 10-1

10.1 Introduction 10-3
10.1.1 General information 10-3
10.1.2 Access authorization 10-4
10.1.3 Change password 10-5
10.1.4 Logging 10-5

10.2 Start VCON 10-6
10.2.1 Configure and edit a VCON connection 10-6
10.2.2 Connect with DAKS 10-9

10.3 Main view 10-11
10.3.1 The menu bar, toolbar and keyboard shortcuts 10-12
10.3.2 About VCON 10-16
10.3.3 Status bar 10-16

10.4 Data backup functions 10-18
10.4.1 Upload installation files, license files or a backup 10-18
10.4.2 Create a complete DAKS backup 10-21
10.4.3 Save the DAKS configuration 10-22
10.4.4 Upload a previously saved DAKS-configuration 10-23

10.5 VCON settings 10-25
10.5.1 The tab 'Terminal' 10-25
10.5.2 The tab: 'Paths' 10-26

10.6 List of Processes 10-26
10.6.1 General information 10-26
10.6.2 Output in the DAKS Process list 10-27
10.6.3 Properties and settings 10-28
10.6.4 Export a DAKS configuration 10-30

10.7 Monitoring 10-31
10.7.1 Manual monitoring 10-31
10.7.2 Active monitoring 10-32
10.7.3 Configure startup monitoring 10-33

10.8 The Terminal window 10-34
10.8.1 General information 10-34
10.8.2 Logging 10-34
10.8.3 Search for a word or text in the Terminal window 10-36
10.8.4 Save 10-39

10.9 The System logging window 10-40
10.9.1 General information 10-40
10.9.2 Browse the System logging window for a word 10-42

10.10 Filter system messages 10-46
10.10.1 General information 10-46
10.10.2 Use the word search 10-47
10.10.3 Apply Global filters 10-48
10.10.4 Filter list 10-50
10.10.5 Edit filter settings 10-51
10.10.6 Edit the argument of a filter 10-52

10.11 The Ethernet Tracer 10-53

10.12 Install VCON 10-54

10.13 Uninstall VCON 10-58

11 Coupling to PBX Systems and Softswitches 11-1

12 Administration of certificates via VCON and TLS/mTLS 12-1

12.1 General information 12-1
12.1.1 Signaling data (SIP/SIP-Q) 12-1
12.1.2 Voice data (RTP and RTCP data streams) 12-1

12.2 Administration of certificates via VCON 12-2
12.2.1 Import, configure and administrate certificates 12-2
12.2.1.1 "Trusted certificates" 12-2
12.2.1.2 "Self-signed certificate" 12-3
12.2.1.3 "Certificate signing request" 12-4
12.2.1.4 "Save currently used own certificate" 12-5
12.2.2 Administrate certificates in VCON 12-5

12.3 Mutual Transport Layer Security (MTLS) 12-5

13 IP Port List of the DAKS Services (Firewall-Scenario) 13-1

14 License Terms 14-1

15 Decommission the DAKS Server 15-1

15.1 What to observe when decommissioning the DAKS Sever 15-1

15.2 Information on the disposal of the DAKS server 15-1

0 Overview of the chapters in this document

This manual includes the following chapters with indication of the user groups for which they are written (A = Administrators, O = Operators and T = Technicians):

Chapter	Description
Chapter 2, "DAKS Product Overview" (A, O, T)	This chapter gives you a general overview of the areas of application, the features, the configuration and the evaluation of the protocols.
Chapter 3, "DAKS Application and Functionality Details" (A, O, T)	This chapter covers in detail the different functions of DAKS.
Chapter 4, "Put DAKS into operation" (T)	This chapter shows you how to commission and startup DAKS, step by step.
Chapter 5, "DAKS Data Backup, Problem Solving and Hardware Replacement" (T)	This chapter covers the data backup, the procedure in case of a technical problem or the restart after e.g. an unplanned reboot and the replacement of DAKS hardware.
Chapter 6, "Configuration of the Service PC'S USB Port" (T)	This chapter shows you how to configure the Service PC to carry out the basic configuration of DAKS via USB.
Chapter 7, "The Startup Functions and Configuration of DAKS" (T)	This chapter covers the startup functions and configuration of DAKS. This includes the IP parameters, the repair system, the functions of the individual interfaces, hardware ports and services, and the configuration of the digital I/Os.
Chapter 8, "Browser-Based DAKS Administration" (A)	This chapter covers the browser-based administration of DAKS.
Chapter 9, "DAKSmed Medical Care Organizer (MCO)" (O)	This chapter covers the Medical Care Organizer (MCO) of DAKS, abbreviated hereinafter with MCO.
Chapter 10, "The Service and Configuration Tool VCON" (T)	This chapter shows you how to use the service tool VCON for the configuration of DAKS as well as for the service functions.
Chapter 11, "Coupling to PBX Systems and Softswitches" (T)	This chapter covers in brief the coupling of DAKS to the PBX network or convergent voice/data networks, as well as the trunk connections. It also refers to the configuration instructions for the respective interface(s).
Chapter 12, "Administration of certificates via VCON and TLS/mTLS" (T)	This chapter covers the general application of the Transport Layer Security (TLS) and the management of the certificates through the service tool VCON.
Chapter 13, "IP Port List of the DAKS Services (Firewall-Scenario)" (T)	This chapter covers the port list for the DAKS components.
Chapter 14, "License Terms" (T)	This chapter contains the DAKS license terms.
Chapter 15, "Decommission the DAKS Server" (T)	This chapter covers the steps that need to be taken when decommissioning the DAKS server.

Table 0-1 Overview of chapters

1 Conventions and Operating Instructions



Note:
This User Manual addresses everyone who carries out the initial installation, startup and configuration of DAKSeco, DAKSmed or DAKSindico.
It describes the functions and features of:

- DAKSeco V3.1x with the hardware platforms:
  - DAKS-110
- DAKSmed V1.5x with the hardware platform:
  - DAKS-200 (= mDAKS) and
- DAKSindico V1.3x with the hardware platform:
  - DAKS-200 (= mDAKS)

Note that only performance features that are properly licensed are represented in the interface.

Overview

This chapter covers the notations and symbols that are used in this document. It also offers step-by-step instructions and provides information on data protection and data security.

Contents

This chapter consists of the following sub-sections:

1.1 Information on the product designation
1.2 Details on Trainings
1.2.1 DAKSmed / DAKSindico
1.2.2 DAKSeco
1.3 Specialist skills, training and knowledge of the intended DAKSmed user
1.4 Reference manuals
1.5 Notations and Symbols
1.6 Information on the servicing and maintenance of DAKSmed
1.7 Reporting of Accidents
1.8 General warning and safety information
1.8.1 General information
1.8.2 DAKSmed-specific information
1.9 Data Protection and Data Security

1.1 Information on the product designation

- The general product name is **DAKSeco V3.1x**, **DAKSmed V1.5x** and **DAKSindico V1.3x**, respectively.
- The product designation when DAKSeco is marketed as Unify product reads **OScAReco** (OScAR = **O**pen **Sc**ape **A**larm **R**esponse).
- In most of the text below, the product is called DAKS for simplicity.
  The differentiation between the hardware platforms as well as between DAKSeco, DAKSmed and DAKSindico is only explicitly pointed out when such distinction is needed to distinguish between the different functionalities.

1.2 Details on Trainings

tetronik GmbH offers various trainings for DAKSeco and DAKSmed that are listed below.

1.2.1 DAKSmed / DAKSindico

For medical device consultants, tetronik offers sales and marketing training courses (length: approx. 1 full day) at the tetronik inhouse training center at Taunusstein.

For the 1st level service and support, i.e. for on-location services rendered by the medical device service provider, tetronik offers:

- 2-day basic training courses, held at tetronik's inhouse training center.
  – For the dates of the training course see the tetronik homepage.
- 2-day basic training courses, held at the customer location within the context of the installation of the system.
- 1-day refresher courses, held at tetronik's own inhouse training center.
  – For the dates of the training course see the tetronik homepage.
- 1-day refresher courses, held at customer location within the context of the system annual review of the setup and effectiveness.
- Basic training courses and refresher courses for the 2nd level support, held at tetronik's own inhouse training center in consultation with the service partner.

1.2.2 DAKSeco

For sales and marketing and for engineering experts, tetronik offers sales and marketing training courses (length: approx. 1 full day) at the tetronik inhouse training center at Taunusstein.

For the 1st level service and support, i.e. for the on-location services, tetronik offers:

- 2-day basic training courses, held at tetronik's inhouse training center.
  – For the dates of the training course see the tetronik homepage.
- 1-day refresher courses, held at tetronik's own inhouse training center.
  – For the dates of the training course see the tetronik homepage.

We also offer E-Learning programs and webinars.

1.3 Specialist skills, training and knowledge of the intended DAKSmed user

1.3.1 Service/medical technician of the in-house medical device service provider

– Training and skills: It is assumed that the service and/or medical device technicians are trained in the areas network technology and electrical engineering, such as but not limited to integrating devices into existing networks, configuring devices via consoles and installing software. After the service and medical device technicians have completed the training course, it is also assumed that they can carry out the configuration of DAKSmed with the help of the user manuals and the information on the device itself.
– Language skills: As the user interface of DMC, the browser admin, the browser operator, the user manuals and the VCON user interfaces are in German and English, and as the VCON parameter outputs are in English only, it is precondition that all users have satisfactory knowledge of German and English - reading and comprehending - and of the modern Hindu–Arabic numeral system.
– Experience: Experience with similar products is not precondition in order to be able to use DAKSmed, as there is both a compulsory DAKSmed training (1-2 days) and a compulsory annual update/delta training courses for DAKSmed.

1.3.2 Operator of the DMC application, smartphone, DAKS Communicator, M3 Plus

- Training and skills: It is assumed that the smartphone/DMC users have a general knowledge how to use smartphones based on one of the three commonly employed operating systems (Android, iOS, WindowsPhone), such as how to start an app, how to use a touchscreen, the display of the battery status, and the display output when the smartphone has no network/coverage etc.
- Language skills: As the user interface of DMC, the browser admin, the browser operator and the user manuals are in German and English, it is precondition that all users have satisfactory knowledge of German and English - reading and comprehending - and of the modern Hindu–Arabic numeral system.
- Experience: Experience with similar products is not precondition in order to be able to use DAKSmed, as there is an instruction, either by a tetronik DAKSmed specialist or by a service or medical device technician.

1.3.3 User of the Browser Operator/ Browser Administrator

- Training and skills: It is assumed that the user of the browser-based interfaces has sufficient computer knowledge on the basis of Microsoft Windows applications, such as how to start a program, how to used the mouse (e.g. drag-and-drop) and how to use the keyboard.
- Language skills: As the user interface of DMC, the browser admin, the browser operator and the user manuals are in German and English, it is precondition that all users have satisfactory knowledge of German and English - reading and comprehending - and of the modern Hindu–Arabic numeral system.
- Experience: Experience with similar products is not precondition in order to be able to use DAKSmed, as there is an instruction, either by a tetronik DAKSmed specialist or by a service or medical device technician.

1.4 Reference manuals

The below-listed tetronik documents offer information that is of additional help when working with DAKS:

- DAKS-110 Hardware Service Manual
- mDAKS Hardware Service Manual
- DAKS-Satellite Service Manual
- DAKS Mobile Client (DMC) User Manual
- DAKS-Mobile-Client (DMC) Service Manual
- Infinity-to-DAKS-Gateway-Service IDGS User Manual
- B.Braun-to-DAKS-Gateway Service BDGS Benutzerhandbuch

1.5 Notations and Symbols

Conventions

The following definitions are used in this document:

`Text`	All texts from files that are described in this document, and all entries that are added to these files, appear in the monospace font `Courier`.
The password **123456**...	Details and instructions in the continuous text that are of particular importance or must be heeded are output in bold print. In the same way, buttons and menus also appear in bold print.
The file `global.cfg`	Files and directories are output in the monospace font `Courier`.
<*Placeholder*>	Entries and outputs, both of which may vary depending on the individual situation in which they appear, are placed in angle brackets and are in *italics*.
[*beginning of value range..end of value range; default*] or [*X*]	All default values and all value range details from data fields are placed in squared brackets and are in *italics*. The additional *[x]* after an entry option for a database field indicates that this entry option is also the default value.

Table 1-1 Conventions

Symbols

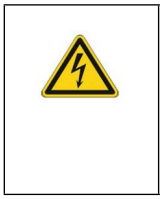
The following symbols are used in this document:



Note:
The "!" is used to indicate additional helpful information.



Caution!
The exclamation mark is used to indicate important information which the reader should treat with particular diligence.



Warning!
The warning sign is used to alert you to a hazardous or high risk situation.
It means that you are currently exposed to a risk situation that may cause a physical injury.
Before you start working with any apparatus, always be aware of the risks that may arise in connection with the device's electric currents and follow the standard practices to avoid accidents.

1.6 Information on the servicing and maintenance of DAKSmed

A tetronik specialist verifies, within the framework of an annual inspection, the setup and efficiency of the system on location.

1.7 Reporting of Accidents

Be careful to report all accidents immediately, also near accidents and any potential safety hazard.

Report every electrical shock, no matter how small.

Never allow the storage of easily inflammable substances in the proximity or even in the same room with the communications system.

Make sure the work area is always well lit.

Remember that an untidy work area can be a source of accidents.

1.8 General warning and safety information

1.8.1 General information



Warning!
All hardware operations at DAKS must be according to the instructions in the manuals, or after consulting with the technical support of tetronik GmbH!



Warning!
DAKS may not be used to monitor patients while any of these processes are being performed:

- upgrades
- updates of the software
- import of licenses
- editing and changes of VCON parameters that necessitate a system reboot



Warning!
DAKS must be installed in a control cabinet!



Warning!
DAKS is intended and qualified for continuous operation!

1.8.2 DAKSmed-specific information



Caution!
DAKSmed V1.5x is only compatible with the MASI protocol in the Version 1.11.



Note:
The DAKSmed server must not be cleaned.



Warning!
The biggest risk in dealing with DAKSmed is that the failure of a part of the distributed alarm system is not noticed and that DAKSmed is used as a primary alarm system contrary to its intended purpose.



Warning!
In the control cabinet, build in DAKSmed only with other devices that have passed an electromagnetic compliance test (EMC)!



Warning!
There are no known contraindications for DAKSmed.



Warning!
DAKSmed conforms to the Protection Class I.
To prevent the risk of electric shock, only connect this device to an earthed power supply (earthed mains supply).

1.9 Data Protection and Data Security

In order to comply with the legal provisions that apply when providing services - be it service tasks performed at your customers' site or by way of teleservice - we strongly urge you to follow the below-listed rules. This will not only help you protect the interests and concerns of customers and clients, but also avoid unwanted implications for yourself.

Please help ensure complete data protection and data security by being aware of these issues as you work:

- Always make sure that only authorized persons have access to your client and customer data.
- Assign passwords whenever you can. Do not grant unauthorized persons access to your passwords, for example by writing them down.
- Always make sure that no unauthorized persons can process, save, edit, transmit, block, delete or utilize customer data in any way.
- Always make sure that no unauthorized persons have access to data storage media, for example to backup disks or printouts of log files or reports. This applies both to service work provided directly at the customer and to the storage and transport of data carriers.
- Always make sure that every data storage medium that is no longer needed is properly and fully destroyed. Also be careful not to leave behind any papers that could become openly accessible to others.



Note:
We urge all readers to work together closely with the contact persons of your clients.
This not only helps to build trust but will also help you reduce your own workload.



Note:

Network Security and Firewall Concept of OScAR / DAKS is designed to be used in security protected data center environments with proper state of the art IT-Security measures in place.

As network and IT-Security related threats are growing worldwide we wanted to highlight a specific OScAR / DAKS feature, too.

In addition to numerous safety and security features, OScAR / DAKS incorporates a special watchdog capability to ensure deterministic behavior of the system even in case of unlikely and unforeseeable events. Therefore, the watchdog process internally observes several criteria, whereof specifically external network traffic load (e.g. a DoS attack) is an important criterion.

As a security measure the watchdog will in case of an external network overload detection finally initiate a reboot, to mitigate threats and to behave deterministic. In addition, the feature triggers the deactivation of the build-in last error message relay contact for an alerting.

The outcome of scenarios like that may cause services being temporarily unavailable on the network layer, which would be the case anyway if such attacks happen inside an internal network.

This type of last line of defense against unwanted behavior is a works-as-designed feature and is important for the overall deterministic reliability and purpose of usage.

We did observe that kind of behavior in combination with DoS-Attacks and OpenScape Alarm Response Professional and Eco (OScAR-Pro / OscAR-Eco) Versions 5 and 4 on hardware system DAKS-200 only, but never with DAKS-300 platform so far.

2 DAKS Product Overview

Overview

This chapter gives you a general overview of the areas of application, the features, the configuration and the evaluation of the protocols.

Contents

This chapter consists of the following sub-sections:

2.1 Typical Fields of Application of DAKSeco
2.2 DAKSmed Fields of Application
2.3 Typical Fields of Application of DAKSindico
2.4 The hardware and interfaces of DAKS-200 (mDAKS)
2.6 Icons and Lettering
2.7 Performance Features
- 2.7.1 Quick overview of processes and how they are activated
- 2.7.2 Monitor medical devices and medical alarm conditions (only DAKSmed)
- 2.7.3 Broadcasts
- 2.7.4 Emergency Conferences – Phone-Meeting-Points
- 2.7.5 Daily control calls (DAKSeco only)
- 2.7.7 Option ESPA-X Transparent Mode
- 2.7.8 Service Functions

2.8 Browser-based administration and Report analysis
- 2.8.1 Data/Server
- 2.8.2 Basic configuration
- 2.8.3 Time Segments
- 2.8.4 Display/audio information
- 2.8.5 Alarm profiles
- 2.8.6 Base Stations and Access Points
- 2.8.7 Contact inputs
- 2.8.8 Contact outputs
- 2.8.9 Beds (only DAKSmed)
- 2.8.10 Communication devices/targets
- 2.8.11 Subscribers
- 2.8.12 MCO-views (only DAKSmed)
- 2.8.13 Broadcasts
- 2.8.14 Conferences (only DAKSeco)
- 2.8.15 Reports

2.1 Typical Fields of Application of DAKSeco

DAKS-Eco is the ideal solution for a wide variety of applications, for example in hospitals and retirement homes, in the industrial sector, in the public administration and in many other areas.

Typical DAKSeco scenarios include:

- Transmit nurse calls to mobile caregivers, with or without automatic callback to the bedside of calling patients in comb. with a call system
- Forward error or malfunction messages from production areas to mobile service technicians in combination with industrial controllers
- Emergency and distress calls in assaults, fires or other dangerous situations, with automatic emergency conferencing
- Silent fire alarms and error messages in combination with fire alarm systems
- Transmission of technical alarms (e.g. temperature or level too high/too low, doors open/unlocked – also time-dependent) in combination with alarm or hazard detection systems, or directly via contact inputs
- Manual activation of predefined alarm groups via customized operator consoles
- 24/7 provision of a conference dial-in node (= Chat-Room), for example for emergency conferences
- Service calls with spontaneous definition of how many responders are needed
- Receive and forward deliberate or automatic alarms (e.g. no-movement alarms), raised over the phone, from emergency medallions or via special emergency handsets, e.g. Unify OpenStage M3, Unify OpenStage WL3 or Ascom i62 communication devices



Note:
In the following text, the emergency handsets are abbreviated M3 or M3 communication device, WL3 or WL3 communication device, and i62 or i62 communication device.

2.2 DAKSmed Fields of Application

Typical DAKSmed scenarios include:

- DAKSmed 200 is a Medical Device of the Risk Class 1.
- DAKSmed is used in combination with patients who need to be monitored by medical electrical equipment.
- As an independent device embedded within a distributed alarm system, DAKSmed generates not only local alarm signals but also alarm signals away from the patient.As an independent device embedded within a distributed alarm system, DAKSmed generates not only local alarm signals but also alarm signals away from the patient.
- From the patient's medical devices and via a tetronik-certified **M**edical **A**larm **I**ntegrator (MAI), DAKSmed receives standardized status information as well as technical and physiological alarm conditions into which it integrates other alarm conditions, e.g. alarm conditions received from (nurse) call systems or building technology systems.
- DAKSmed evaluates and processes these alarm conditions and alerts or notifies users via mobile or stationary communications devices.
- Usually, DAKSmed is used by trained nurses, caregivers, doctors, physicians and service technicians.

  The system may only be put into operation, configured and serviced by service technicians that are properly trained on DAKSmed.
- The distributed alarm system on the basis of DAKSmed may not constitute the sole alarm system and is not suitable to replace the alarm systems of the medical electrical equipment or medical electrical systems on the input-side.

2.3 Typical Fields of Application of DAKSindico

Typical DAKS-Indico scenarios include:

- DAKS-Indico is used in combination with patients who need to be monitored by medical electrical equipment.
- DAKS-Indico receives standardized status information from the patient's medical devices through the tetronik-certified **M**edical **A**larm **I**ntegrator (MAI), as well as technical and physiological alarm conditions.
- DAKS-Indico evaluates and processes this information and notifies the users on corridor displays.
- In regular operation, DAKS-Indico is used by instructed nurses, caregivers, doctors, physicians and service technicians.

  The system may only be put into operation, configured and serviced by service technicians that are properly trained on DAKS-Indico.

2.4 The hardware and interfaces of DAKS-200 (mDAKS)

DAKS-200 (mDAKS) comes in a 19-inch casing/1HU for rack installation and has the following features:

- 2 computer cores: 1st computer core with a µClinux™ operating system, 2nd computer core with a Linux™ operating system
- Pluggable CompactFlash card for program, data, licenses, protocols and announcements
- Either 1 or 2 LAN connections (2 x10/100BASE-T, 2 IP addresses, VoIP separately) for:
  - VoIP
  - VCON service access
  - Administration/visualization/operation via browser
  - Peripheral interfacing via ESPA-X, Syslog, NTP, SNMPv3, SMTP, OAP-V4, OM-AXI
  - DAKS-Satellite connection via ESPA-X
  - Mail-to-Phone connection via ESPA-X
  - Printer protocol (Raw/Port 9001, alternatively the link-up can also be through USB)
  - DMC coupling and MASI interface
- Power supply either from 24/48 VDC or 115/230 VAC (optionally also redundant)
- 2 serial asynchronous interfaces RS232/RS422/RS485 (electrically isolated):
  - for host coupling via ESPA 4.4.4/TAP or
  - to link-up Schauf hallway/corridor displays (via RS485 interface adapter)
- USB service interface for all startup functions
- 1 special relay output,
- Option to connect a remote DCF-77 receiver
- Up to 8 I/O modules, optionally configurable in either way you prefer:
  - either with 4 digital inputs **with** short circuit and line break detection and 2 outputs
  - or 8 digital inputs **without** short circuit and line break detection and 2 outputs
- Connectivity via up to 30 channels to a PBX system or to a soft switch, or to VoIP telephones that are registered directly at DAKS, either:
  - via ISDN through four ISDN-S_0 digital trunks or through one S_{2M}/E1 or T1 digital trunk, or
  - via VoIP through the two LAN interfaces (2 x10/100BASE-T)
- Support of the signaling protocols QSIG, CorNet-NQ, NI2, DSS1, SIP, SIP-Q
- Support of the voice codecs G.711 a-law and µ-law

The below picture shows DAKS-200 with its periphery components

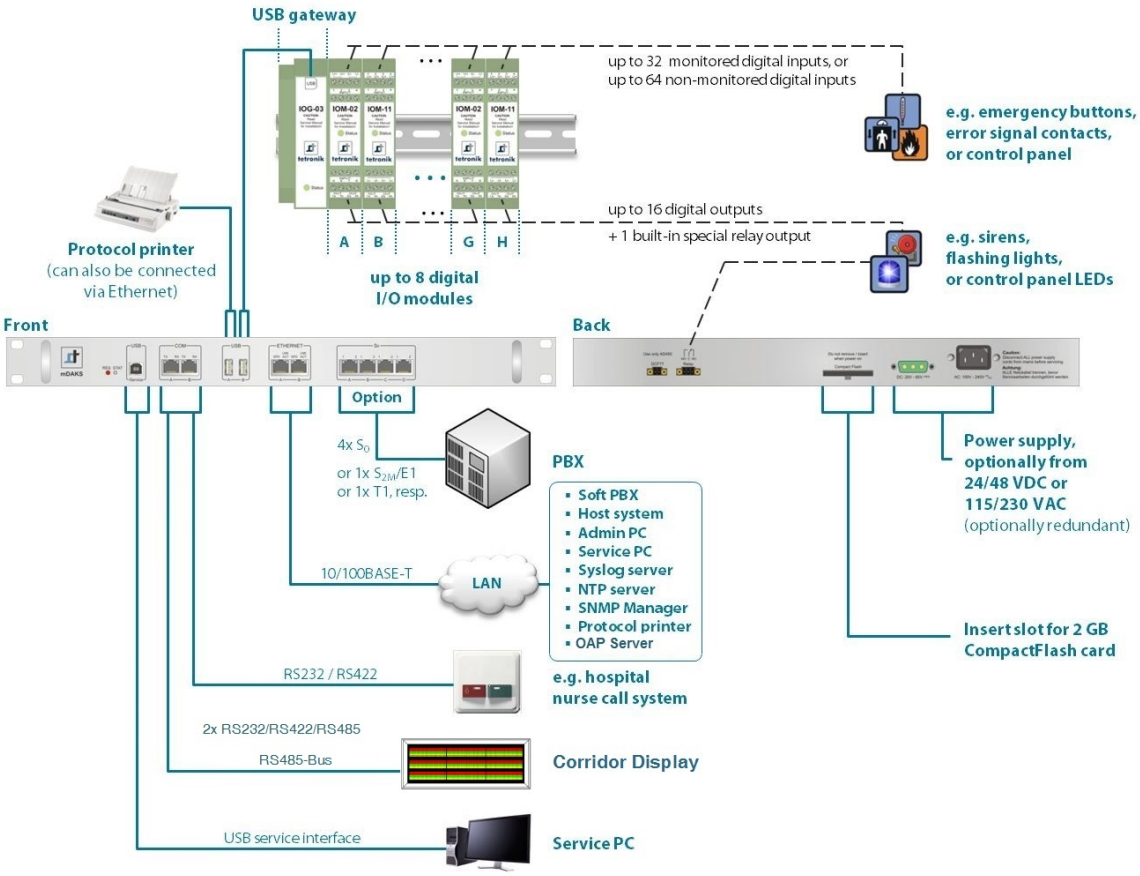


Image 2-1 DAKS-200 incl. peripheral components

Note:
For more information on the configuration of the hardware, the hardware operations, the underlying technical properties, the product components and the wiring plans of DAKS-200 (mDAKS):
➤ see "mDAKS Hardware Service Manual"

2.5 The hardware and interfaces of DAKS-110

DAKS-110 comes as a small tabletop unit in a convenient box size (165mm x 105mm x 44mm), and has the following features:

- Processor system with an AKM-A53 core and FPGA for functional monitoring
- Pluggable 4 GB microSD card for the program, data, licenses, protocols and announcements
- LAN interface (10/100/1000-Base-T) for VoIP, service console (VCON), administration and peripheral inter-connectivity
- Feeding either via data switch with support of power-over-ethernet (<12,95 Watts, PoE, Class 3), or via the PoE-Injector looped-in the LAN connection, from 100…240VAC
- Serial asynchronous interface RS232/RS422 (electrically isolated)
- USB-C service interface for all start-up functions
- 8 + 1 floating contact outputs for system and process reports
- 16 fed contact inputs with short circuit and line break detectionDAKS-110 (mDAKS) comes in a 19-inch casing/1HU for rack installation and has the following features:

The below picture shows DAKS-110 with its periphery components

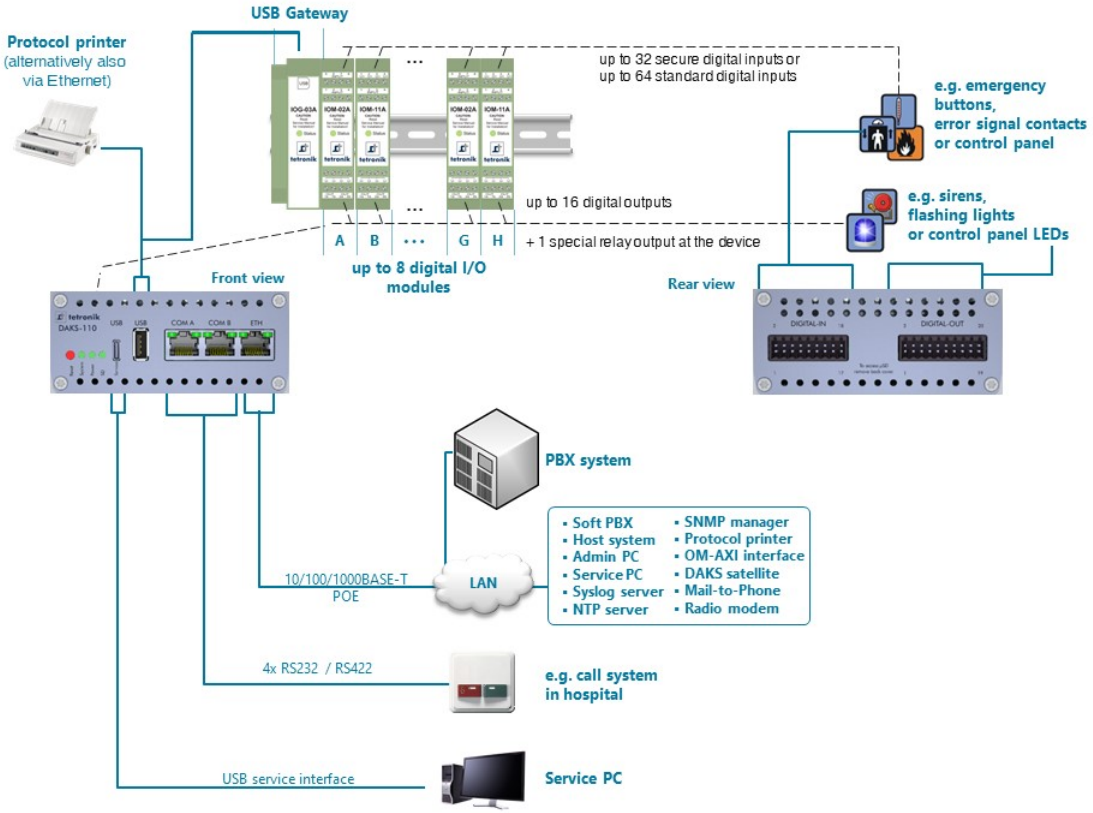


Image 2-2 DAKS-110 incl. peripheral components

Note:
For more information on the configuration of the hardware, the hardware operations, the underlying technical properties, the product components and the wiring plans of DAKS-110:
➤ see "DAKS-110 Hardware Service Manual"

2.6 Icons and Lettering

The following icons and lettering can be found on the DAKS server, cables etc.:

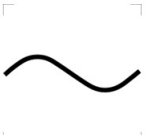
Icons / Lettering	Description
	Name and contact details of the manufacturer
 2004-06	The year and month when the product was manufactured
	Obligatory inspection of the accompanying documents (ISO7010-M002)
	Connection to the mains supply: alternating current (IEC 60417 - 5032) AC: Rated voltage, e.g. 100 V - 240 V Rated supply frequency: z.B. 50/60 Hz Measurement of the electrical power consumption in ampere: e.g. 0.25 A - 0.13 A
	Connection to the mains supply: direct current (IEC 60417-5031) DC: Rated voltage, e.g. 20 V - 60 V Measurement of the electrical power consumption in ampere: e.g. 0.9 A - 0.3 A
	Crossed out rubbish bin The icon with a crossed-out refuse container on the device means that the device is an electric or electronic product that may not be treated as household waste. ➤ see Section 15.2 "Information on the disposal of the DAKS server"
	CE Marking With the application of this marking, the manufacturer of the product indicates that pursuant to the Regulation (EC) No 765/2008: "...the product is in compliance with the applicable requirements set out in Community harmonization legislation providing for its affixing." (Includes RoHS 2 Conformity)

Table 2-1 DAKS icons and lettering

Icons / Lettering	Description
	UL marking (UL = Underwriters Laboratories) The recognized component mark UL LISTED issued by Underwriters Laboratories is proof that a representative product sample has been evaluated by UL to the Canadian and U.S. safety requirements and that UL found it in compliance with both Canadian and U.S. requirements.
	FCC (Federal Communications Commission) The FCC mark is proof that the Federal Communications Commission (FCC) has tested and evaluated the product with its own and other standards.
	C-Tick mark (obsolete, since 03.2016 see RCM) Current marking see RCM. The C-Tick mark is proof that the product is in compliance with the Australian EMV standards.
	GS mark (GS = German: "Geprüfte Sicherheit", means: tested safety) The GS mark is proof that the product meets the requirements stipulated in § 21 of the German Equipment and Product Safety Act (Germany).
	Test seals of the VDE (VDE = Association for Electrical, Electronic & Information Technologies)
	ENEC (European Norms Electrical Certification) The ENEC symbol is proof that the product is in conformity with the European safety standards.
	CSA approval mark (CSA = Canadian Standards Association) The CSA approval mark is proof that the product is in conformity with the pertinent safety standards and electromagnetic compatibility tests of North America.
	RCM mark (RCM = Regulatory Compliance Mark) Registration mark for the Australian and the New Zealand market. The RCM mark is proof that the product is in compliance with regulatory measures (ACMA, RSM and Australian Communications).
	EAC CU marking (EAC = Eurasian Conformity Mark) Certification of the Customs Union with Russia, Belarus and Kazakhstan. An authorized certification body is part of the conformity procedure.

Table 2-1 DAKS icons and lettering

2.7 Performance Features

2.7.1 Quick overview of processes and how they are activated

Standard broadcasts as well as broadcasts that automatically switch emergency conferences are activated:

- Over the phone or emergency handset (e.g. Unify OpenStage M3, Unify OpenStage WL3) through DDI, or with user guidance (German/English included in the delivery)
  - optionally with activation code, incl. the option to record ad hoc announcements and/or specification how many broadcast targets need to be reached
- Via ESPA-X data interface (option):
  - Activation of broadcasts or targeted calls to individual broadcast targets (any) with variable info texts
  - Support of callback calls to telephones, e.g. to a patient room (does not apply to TAP)
- Via serial data interface using ESPA 4.4.4 or TAP (option):
  - Activation of broadcasts with variable info texts
  - Support of callback calls to telephones, e.g. to a patient room (does not apply to TAP)
- Via contact input (option):
  - activation of broadcasts with individual voice announcements and text messages for normal activation, short circuit detection or line break detection
  - various activation modes (edge, state and toggle controlled)
  - customized alarm delays and activation periods
- per e-mail using Mail-to-Phone (option, only DAKS-200)
- from DAKS-Satellite with contact inputs and serial interface via ESPA-X coupling (option, only DAKS-200)

Activate and attend Phone-Meeting-Points over the phone, using dial-in numbers.

DAKS offers 20 process resources for 20 communications processes, all of which can be active in parallel at the same time (Broadcasts/Conferences), with control of the process priority spanning all broadcasts.

Of these process resources, a specific number can be set aside and reserved for high-priority processes, e.g. for the fire alarm.

2.7.2 Monitor medical devices and medical alarm conditions (only DAKSmed)

- Support of 40 beds with ME equipment
- Support of up to 128 medical devices (4 included in the Basic Package) with up to 4 medical devices per patent bed



Note:
One infusion pumps rack counts as one medical device.

- Support of patient monitors, infusion pumps, ventilation devices, dialysis devices
- Receipt of the information on the status of the bed and the bedside medical devices, and on the status of the alarm from up to two MAIs via MASI interfaces
- Multiple station capability:
  - Medical alarm conditions can lead to different alertings depending on the station or the alarm profile to which the pertinent bed belongs. DAKSmed supports up to 5 medical alarm profile (or care area) with individual evaluation of the alarm condition and individual alarm group activation.
  - Alarms from mobile communication devices (DMC or DAKS Communicator) can lead to different alerting processes, depending on the station where the employee is working or the alarm profile to which the employee is assigned.
- Browser-Based Administration (Single User)

  - Browser-based graphic visualization and operation (Multi User):
    - Visualization of the status of the patient beds with active ME equipment
    - Visualization of the technical and physiological alarm conditions from the bedside and other alarm conditions
    - Visualization of the alarm status of the communication devices used by the staff that is currently on duty
    - Assignment of nurses to beds as primary or secondary nurses
  - Launch of broadcasts, i.e. alerting of the right groups of persons (nurses, doctors, service technicians)
    - specific to the priority and class of the alarm
    - with prioritized calling of primary and secondary nurses
    - In keeping with the DAKSmed broadcast intelligence
    - With or without cancellation when the alarm condition was "silenced" or "latched", or when the alarm no longer exists (no longer pending)
    - with configurable repeat/iteration and escalation strategy, should the alarm condition be pending for too long

2.7.3 Broadcasts

DAKS supports up to 1,000 individual broadcasts.

For every broadcast, you can define up to 50 broadcast targets in 3 different levels of addressing priority. Here DAKS supports different types of destinations:

- Telephones (internal/external phones) that are called through the telephony channels
- E-mail recipients (option)
- Cordless phones (Unify OpenStage WL3 or Ascom i62) that are notified/alerted via OAP protocol with text messages
- Cordless phones (MiVoice communication devices) that are notified/alerted via Mitel OM-AXI protocol with text messages
- DAKS-Mobile-Clients (DMCs)
- DAKS Communicators
- directly registered telephone incl. phone number
- Intercom stations (e.g. in the elevator)

DAKS processes all broadcast targets that share the same addressing priority in parallel. DAKS calls all of these telephones at the same time, provided sufficient resources are available. DAKS processes the broadcast targets with different addressing priorities sequentially or in parallel.

Within a level of priority, the addressing sequence is random. Depending on the configuration, DAKS calls/dies not call supernumerary broadcast targets. In other words, the emphasis is either on the highest processing speed or on the least possible disruption of staff and employees. If it detects a lack of resources, DAKS applies priority control spanning all broadcasts.

Where needed, broadcasts that are activated over the phone can also be protected with a classified activation code.

Also, broadcasts can also be configured to have high priority from the start, e.g. for fire alarms. To have a maximum channel capacity, high priority broadcasts interrupt all non-high priority processes. Depending on their configuration, reached broadcast targets get only audio info and/or text messages, or are switched together in an audio conference.

For every broadcast you can make various customized settings, e.g.:

- Name/descriptor, identifier, activation code (if necc, option), and output of group-specific information
- Individual target parameters:
  - Addressing priority and type of destination (see above)
  - If needed a time range, e.g. calling only during the daytime (option) and if necessary with a security code (option)

  - Reached criteria (e.g. manual confirmation required) and number of call attempts
  - Alarm functions during dial-up (if supported by PBX), e.g. speakerphone control, alarm call signaling, forced release, intrusion, or camp-on
- Conference mode (yes/no) with output which conference was started and, if needed, special optional settings for the right to speak and for the playback of announcements, e.g. for a fire alarm conference
- various broadcast options, e.g. High priority (yes/no), Security code required (yes/no), Call supernumerary broadcast targets (yes/no), Quickest possible dialing (yes/no), audio signaling and/or status info to the initiator (yes/no)
- if needed with follow-up broadcast(s) upon positive/negative final results, e.g. with the option to activate a follow-up broadcast (also a re-start of the same broadcast) whenever not enough broadcast targets were reached (not possible in combination with the conference mode and when the broadcast was activated by a medical alarm condition)
- If needed with a fixed number of broadcast targets to reach, as well as authorization to define this number ad hoc over the phone
- Contact output to actuate
- Dispatch of results emails incl. dispatch conditions (yes/no) and e-mail address to specify (option)

2.7.4 Emergency Conferences – Phone-Meeting-Points

DAKS supports 10 different conferences.

A conference can be either activated by a broadcast as an emergency conference, or be available as a so-called phone-meeting-point or meet-me conference, i.e. open to subscribers that dial in by themselves.

➤ see Section 2.7.3 "Broadcasts"



Caution!
An individual conference cannot be activated several times at once.
The same applies to broadcasts that use the same conference.

The restriction of the maximum number of parallel conferences is:

- on the one hand due to the total number of process resources that are available, i.e. to activate a broadcast with automatic switching of an emergency conference or of a phone-meeting-point, at least one process resource must still be available,
  ➤ see Section 2.7.1 "Quick overview of processes and how they are activated"
- or on the other hand due to the license and the server's number of channels, i.e. one conference possible for every 5 telephony channels.

For every conference you can among other things customize:

- Name/descriptor, start ID and entry ID
- Announcements: start, entry and dial-up
- Various max. durations and wait times
- Max. number of subscribers allowed to dial into the conference

2.7.5 Daily control calls (DAKSeco only)

Certain call stations (e.g. in elevators) must be checked daily for correct function. DAKS implements this function, analyzes the correct callback (which should only take place if the call station self-test is successful) and activates a broadcast call in case of an error.

2.7.6 Process Logging and System Status Messages



Note:
The time is usually indicated NTP-synchronous, in combination with a DCF receiver also DCF-77-synchronous (the latter only for DAKS-200), otherwise via the internal real-time clock (RTC).

All activated processes, i.e. standard broadcasts, broadcasts with a follow-up conference start, and Phone-Meeting-Points are logged repeatedly, including the date and time from start to end, the overall results, the individual broadcast and conference results, and the conference activities:

- on an external hard drive with one HTML file for each process.
- in an internal database of the server, for quick and targeted administrator access:
  - Max. 10,000 process log files can be saved internally in the server, after which the oldest process log files are automatically overwritten.
  - You can have the server-internal storage of process data carried out either always or only when the process log files cannot be stored on an external hard drive for technical reasons.
  - You can export reports files that have been saved in the server-internal database anytime, also partially, as separate HTML files.
- as Syslog outputs together with the system status reports on an external Syslog server.
- at the logging printer (with buffering if printer is temporarily unavailable).
- via e-mail with the results that is sent to the person in charge.

Changes of the system status (e.g. interfaces gone active/inactive) are logged with the date and time at the logging printer, via an external Syslog server, and via the virtual service console VCON, and can also be signaled through the digital outputs.

In addition, DAKS also supports system status messages via SNMP traps; including SNMPv3 with confirmed traps, authentication of the datasets that where sent, and payload encryption in the dataset.

2.7.7 Option ESPA-X Transparent Mode

The special ESPA-X transparent mode offers host systems, e.g. logistics systems in hotels or hospitals, the possibility to call telephones (usually mobile devices), or to be called from these phones to communicate with their users through freely editable text dialogs, e.g. with service staff and technicians.

This is of particular interest in combination with DECT telephones at OpenStage 4000 cordless, or the WLAN-based communication devices Ascom i62 or OpenStage WL3 in combination with OAP.

2.7.8 Service Functions

VCON (= Virtual Console) is a powerful service tool and available for service technicians to carry out the various service functions. It comes with German and English user interfaces, with the entry and output of texts always in the English language.

The initial startup of DAKS as well as the first specification of the security policy is carried out via the USB service interface.

Here you can configure:

- own IP address, network mask and gateway
- IP address whitelist for access to DAKS via browser and VCON. For particularly high system security requirements, the access can be fully blocked again after the configuration.

VCON thereupon offers a variety of additional functions via LAN to service staff members:

- Editing of the service data:
  - configuration of the PBX interface(s)
  - configuration of the NTP servers, WSG server, Syslog server, LAN printer and SNMP Manager
  - configuration of the digital I/O,
  - configuration of the ESPA or ESPA-X interface
  - configuration of the MASI interface
  - configuration of the Web server
  - configuration of the DMC access
- Save and restore the service data and the entire CompactFlash card, incl. all programs, licenses, service and user details, and all reports
- Activate/deactivate, edit and delete VCON reports
- set the date and time
- activate various traces
- Certificate management (SSL)
- Downloads of software and management of licenses

2.8 Browser-based administration and Report analysis

For the administration and analysis of Broadcast reports, the system offers a user-friendly and intuitive browser interface in German, English, Dutch, French and Turkish.

Depending on the level of authorization (3 different tiers), the user data and reports can be retrieved and printed out as hardcopy, also edited and saved, or additionally imported (user data) and deleted (reports).

The user interface of the browser is divided into separate areas and is described in further detail below.

2.8.1 Data/Server

This area is reserved for the time functions, the database details, the general database functions, and the logging parameters that are available.

2.8.2 Basic configuration

DAKS supports various system parameters for an optimal adjustment to the customer and deployment-specific requirements.

2.8.3 Time Segments

This area is used to define time ranges, e.g. to call certain numbers only during regular working hours or for specific contact controls, for example to assess open doors only at night. In addition, you can enter holidays as regular exceptions to the normal operation.

2.8.4 Display/audio information

The information for the user guidance and the output of helpful information, e.g. the name of the contact, the group-specific details, are administrated centrally.

This includes both any text message for output as well as the voice announcement that shall be played. This area can be used to upload WAV files and to play back already saved audio information.



Note:
In addition, announcements can be recorded over the telephone.

DAKS supports up to 1,000 (for DAKS-100: max. 200) different display/audio infos, 200 of which are already included ex-works in the Basic Package.

The max. length of each individual announcement is 15 seconds.

2.8.5 Alarm profiles

This area is reserved to configure and add new alarm profiles. Alarm profiles include Medical alarm profiles, General alarm profiles and System alarm profiles.

- **Medical alarm profiles (only DAKSmed):**
  - Overview of all configured Medical alarm profiles
  - After you select an entry you can edit the settings in these areas:
    - 'General details':
      - Description
      - Alarm processing pause
    - 'Initiator information':
      - Corridor display output
      - Corridor display - number of characters
      - Output at communication device
      - Communication devices - max. number of characters
    - 'Med. alarm conditions':

      - one entry for each alarm priority, separately for physiological and technical alarm conditions (in total 6 default entries and 100 individual entries)

      - after you select a medical alarm condition you can edit the specific behaviour:
        - Source, type, category
        - Priority
        - Description
        - Broadcast to activate
        - End of the broadcast when silenced
        - End of the broadcast when latched
        - End of the broadcast when alarm condition ceases to be present
        - Timeout for relaunch of the same broadcast after the broadcast end
        - Escalation broadcast to activate
        - Timeout for escalation as soon as the alarm condition is active
        - Call the nurses assigned to this bed
        - Broadcast activation for simultaneous alarm conditions sharing the same priority level
- **General alarm profiles:**
  - After you select an entry you can edit the settings in these areas:
    - General information:
      - Name of the alarm profile
    - Alarms:
      - Name (list of firmly preconfigured alarms per alarm profile)
      - Broadcast
      - Display/Audio info
- **System alarm profiles:**
  - DAKS supports the following System alarm conditions:
    - No access to monitored SIP telephone
    - No access to monitored DAKS-Mobile-Client (DMC)
    - DMC Emergency Call
    - 1.. 2nd MASI interface failed
    - 1.. 5th ESPA-X interface failed
    - 1.. 2nd Serial interface failed
    - DAKS Communicator 'short press' emergency call
    - DAKS Communicator 'long press' emergency call
    - DAKS Communicator sensor/timeout alarm

  - At least 1x short circuit/line break
  - Yellow Alert
  - Red Alert
  - Partial power supply failure
  - No access to monitored DAKS Communicator
  - Not all corridor displays functioning or configuration problem
- After you select an entry you can edit the following parameters:
  - Broadcast
  - the display/audio info that is transmitted to an alerted subscriber when a broadcast is launched

2.8.6 Base Stations and Access Points

You can use this area for the positioning function to configure the base stations or access points, including:

- Name of the base station or access point
- Display/audio info rendered as positioning results for this base station or access point
- MAC address of the access point or identifier of the base station.

2.8.7 Contact inputs

This area is used for the administration of the 16 contact inputs of DAKS-100 or the up to 64 contact inputs of DAKS-200. You can use this area to define how each individual input operates, i.e. how it is activated, the broadcast it launches, the information it outputs, and how a short circuit or line break is signaled when detected by the system.

2.8.8 Contact outputs

Use this area to define the functions that are assigned to every individual contact output:

- either as part of a broadcast process, or
- as status output for a specific state of the system, e.g. "Red Alarm" or "At least 1 short circuit/ line break detected".

2.8.9 Beds (only DAKSmed)

This area is used to configure the patient beds. When you select a specific bed, you can view its details and make the following settings:

- Description
- Abbreviation
- Room
- Medical alarm profile
- Primary nurse
- Secondary nurse
- MCO bed position type
- Bed can be moved manually
- MASI-Care-Unit
- MASI bed reference
- MASI room reference
- Connection of ME equipment
- corridor display group

2.8.10 Communication devices/targets

This area is reserved to edit and add new communication devices/targets. When you select a specific communication device you can edit the following parameters:

- Phone number
- Connection type
- Description
- Subscriber reference (cannot be edited, is assigned automatically)

2.8.11 Subscribers

This area is reserved to edit and add new subscribers. When you select a specific subscriber you can edit the settings in the following areas:

- General information:
  - General alarm profile
  - Name or place, first name, brief description
  - User name, password, PIN
  - E-mail address
  - DMC user
  - Nurse abbreviation (max. 3 characters, e.g. for initials)
  - Monitoring of the accessibility (yes/no)
  - Supervisor (yes/no) with the following rights:
    - Assign other nurses to beds
    - Manage subscribers
    - change groups (not add, not delete)
    - save reports
  - Upload/Reset image
- Comm. devices (= targets)
  - List of assigned communication devices/targets. After you select an entry you can edit the following parameters:
    - Phone number
    - Connection type
    - Description
    - Subscriber reference (cannot be edited, is assigned automatically)

2.8.12 MCO-views (only DAKSmed)

This area is reserved to edit and add new MCO-views. When you select a specific MCO-view you can edit its parameters in the following areas:

- Settings:
  - Description
  - Color scheme
  - Number of displayable bed positions
  - Number of beds per row
  - Timeout for nurse assignment
  - Show name of patient, if information is available (yes/no)
  - Show patient's ID, if information is available (yes/no)
  - Upload/Remove background image
  - Medical devices to output:
    - Patient monitor
    - Infusion pump
    - Ventilation device
    - Dialysis device

- Bed positions:
  - Link of a position (column, line) in the view with an defined bed
- Subscribers:
  - List of the subscribers: When you make a selection you can view and/or edit the following parameters:
    - Name (cannot be edited)
    - Shown (yes/no)
    - Can be assigned in MCO-view (yes/no)
    - Authorized to assign other nurses (yes/no)
- Comm. devices:
  - List of administrated communication devices
  - Link of a communication device with a specific view

2.8.13 Broadcasts

This area is used to list the configured broadcasts in an overview. When you select a broadcast, you can view its details and make the following settings:

- ID (= Identifier)
- High priority (yes/no)
- Name
- Show initiator info (yes/no)
- Display/Audio info (yes/no)
- Security code required (yes/no)
- Number of broadcast targets to reach (yes/no)
- If needed, follow-up broadcast (yes/no), i.e. option to activate a follow-up broadcast or restart the same broadcast when not enough broadcast targets were reached (not possible in combination with the conference mode, see below, or when activated by a medical alarm condition)
- Call supernumerary broadcast targets (in one priority level), (yDAKSecoes/no)
- Quickest possible dialing (yes/no)
- Contact output, that shall be activated
- Activation code (for launch over the phone)
- With entry of number of broadcast to reach, that can be entered ad hoc over the phone (yes/no)
- No audio goes to initiator (yes/no), i.e. the audio signaling to the initiator is switched off, also when there is a follow-up conference, e.g. an emergency or panic conference
- Status info to initiator over the phone (yes/no)
- With recording of an ad hoc announcement (yes/no)
- Conference mode (yes/no). This setting switches together all reached subscribers in an audio conference.

  When conference mode is activated, the following specifications can also be made:
  - the conference that will be started
  - if welcome announcements for high priority targets shall be suppressed *)
  - or only grant the right to speak to targets with the highest priority *)

  *) required e.g. to switch a fire brigade conference (option)
- Dispatch of results emails, incl. dispatch conditions (yes/no) and e-mail address to specify (option, only DAKS-200)
- Up to 25 broadcast members with individual broadcast-related data
  - Addressing priority
  - Alarm functions during dial-up, e.g. speakerphone control, call signal, forced release, intrusion, or camp-on, provided they are supported by TC network
  - Dial attempts

  - Reached criterion
  - Security Code
- Time range, e.g. calling only during the daytime and not at night (option)

2.8.14 Conferences (only DAKSeco)

The different conferences, all of which are activated either by all subscribers calling into a phone-meeting-point or by a broadcast, are configured here and are assigned:

- Description
- Start ID and an entry ID
- Start, entry and dial-up announcement
- Max. wait time until start (for entry into a conference prior to its activation) and for call
- Max. conference length and the max. inactive time
- Max. number of subscribers allowed to dial into the conference
- Conversion of keypad or SIP-DTMF signaling to in-band DTMF (yes/no)

2.8.15 Reports

Use this area for a chronological list of all saved reports, to open individual reports and to printout reports with their pertinent details.

Users with the appropriate rights can also export the reports in blocks and delete them internally at the same time.

3 DAKS Application and Functionality Details

Overview

This chapter covers in detail the different functions of DAKS.

Contents

This chapter consists of the following sub-sections:

3.1 Voice announcements and display texts
- 3.1.1 Record voice announcements over the phone
- 3.1.2 Have Voice Announcements Played Back over the Phone

3.2 Launch Broadcasts
- 3.2.1 ... over the phone without announcement selection
- 3.2.2 ... over the phone with announcement selection
- 3.2.3 ... via Contact Input
- 3.2.4 ... via AVIOTEC Camera
- 3.2.5 ... via SNMP Trap
- 3.2.6 ... via Host Interface
- 3.2.7 ... via GMD-Medaillon (DECT)
- 3.2.8 ... via OAP Alarms (WiFi)
- 3.2.9 ... via OM-AXI alarms (DECT)
- 3.2.10 ... via DAKS-Satellite
- 3.2.11 ... via Mail-to-Phone
- 3.2.12 ... via DAKS-Mobile-Client (DMC)
- 3.2.13 ... via DAKS Communicator
- 3.2.14 ... via M3 Plus
- 3.2.15 ... via 'Medical alarm conditions'
- 3.2.16 ... via 'General alarm conditions'
- 3.2.17 ... via 'System alarm conditions'

3.3 Workflow of Broadcasts
- 3.3.1 Prepare Broadcasts in advance and buffer requirements
- 3.3.2 Start Broadcasts
- 3.3.3 The processing of Broadcast targets
- 3.3.4 Behavior of Broadcasts with automatic entry into a Conference
- 3.3.5 Dial-up of Broadcast targets and user dialogs
  - 3.3.5.1 User dialogs for Broadcast targets while they are being called
  - 3.3.5.2 User dialogs for Broadcast targets upon call acceptance
  - 3.3.5.3 Confirmation options for WL3 devices via OAP
  - 3.3.5.4 Confirmation options for MiVoice devices via OM-AXI
- 3.3.6 The reached criteria
- 3.3.7 The final Broadcast results and follow-up Broadcast calls
- 3.3.8 Results e-mail for a Broadcast

3.4 Conferences
- 3.4.1 General information
- 3.4.2 Behavior of Conferences
- 3.4.3 Start a conference over the phone via the Start ID
- 3.4.4 Enter early in a Conference over the phone via the Entry ID
- 3.4.5 Dial into an active Conference over the phone via the Entry ID

3.5 VoIP-Switch

3.6 Locate and position GMD Medallions

3.7 Positioning of WL3 and i62 devices

3.8 The ESPA-X interface

3.9 ESPA 4.4.4 interface
- 3.9.1 Comments on the ESPA 4.4.4 specification

3.9.1.1 Regarding Pos. 2.4 of the ESPA4.4.4 specification: 'Transmission Control Prefixes'
3.9.1.2 Regarding Pos. 3.1 of the ESPA4.4.4 specification: 'Polling'
3.9.1.3 Regarding Pos. 4.2 and Pos. 4.3 of the ESPA4.4.4 specification
3.9.1.4 Pos. 5 of the ESPA 4.4.4 specification: 'Hardware specification'
3.9.2 General information
3.9.3 Monitoring of the Connection
3.9.4 Automatic callback to the initiator (patient)
3.9.5 Activate DAKS calls
3.9.5.1 General information, Header
3.9.5.2 Record type 'Call Address', data identifier '1'
3.9.5.3 Record type 'Display message', data identifier '2'
3.9.5.4 Record type 'Beep-Coding', data-identifier '3'
3.9.5.5 Record types 'Call Type', data identifier '4'
3.9.6 Evaluation of ESPA call types
3.9.6.1 Record type 'Number of transmissions', data identifier '5'
3.9.6.2 Record type 'Priority', data identifier '6'
3.9.6.3 Record type 'Nurse call interface'
3.9.6.4 Record type 'Call ID'
3.9.7 Cancel broadcasts in DAKS
3.9.7.1 Reset call
3.9.7.2 Reset all calls
3.9.8 Status request
3.9.8.1 Status request without Call ID
3.9.8.2 Status request with Call ID
3.9.9 Status messages from DAKS
3.9.9.1 Configure status messages in DAKS
3.10 OAP interface
3.11 OM-AXI interface
3.12 TAP protocol
3.12.1 Functionality
3.12.2 Details on the TAP protocol
3.12.3 Details on the call activation dataset
3.12.4 Details on the Cancel dataset
3.13 Reports
3.13.1 Example of a report printout via VCON for a Broadcast
3.13.2 Example of a report printout via VCON for a Meet-Me Conference
3.13.3 Example of a report printout via VCON for a Broadcast with automatic entry into a Conference
3.14 SNMP implementation
3.15 List of errors, system messages and malfunction messages

3.1 Voice announcements and display texts

In DAKS, voice announcements and display text messages are administrated together. In dialogs between subscribers and DAKS, the users therefore receives voice announcements as well as display text messages.

In contrast to display text messages, DAKS cannot play back voice messages directly from the database for a subscriber to hear. Instead, the system must first transfer the announcement to a special voice memory, the capacity of which is defined. In total, the voice memory has a capacity of 15 minutes. Any single announcement can be up to 15 seconds long.

In connection with the voice messages, DAKS offers the option to define, system-wide, for broadcasts/alarms upon their launch that the called subscribers (targets) must as a rule listen 1x to the entire voice message, or alternatively that it shall be enough if the called subscriber, when taking the alarm call, listens to the announcement for a specific minimum length of time. This only applies to subscribers who are NOT required to confirm at the end of the voice message by pressing a certain key.

The system distinguishes between the below announcement types, all of which are treated differently and assigned a different section of the voice memory:

- **System announcements (max. length 5 min)**

  System announcements are used across all processes. They include e.g. prompts requesting a confirmation or the entry of a Broadcast ID, a Conference Start ID and a Conference Entry ID.

  System announcements are automatically uploaded to the voice memory when DAKS is started and can thus be used whenever needed.

  With the browser-based administration, voice announcements can also be edited during the ongoing operation. When an announcement is edited while it is currently being used in a call, i.e. while the system is playing it to a subscriber, DAKS saves the new announcement version in the background. If another dialog needs the same announcement, the system automatically uses the new version that has just been edited.

  DAKS automatically purges the old announcement from its memory as soon as that announcement is no longer needed or applied, i.e. as soon as all dialogs have ended in which the old version of the announcement was still being played.

  ➤ see Section 8.6.3 "System Display/Audio info"

- **Process announcements (max. length 10 min)**

  Process announcements are either individual announcements or composed announcements and that are only uploaded to the voice memory at the process start. This makes sure that changes added to these announcements in the database never interfere with any currently ongoing process.

3.1.1 Record voice announcements over the phone

Proceed as follows:

Step by step	
	Enter the DAKS call number + the dialthru code for 'Record announcement'@'Basic settings'->'Dialthru codes', e.g.: "800 **9**".
ANNOUNCEMENT ID ?	Output of the system info 'Entry of Display/Audio info ID'@ 'Basic settings' ->'System Display/Audio Info.
	Enter the wanted announcement ID. When a valid entry is made the system plays a long tone to signal the start of the recording.
Rec. #=Cancel	Output of the system info 'Prompt to record ad hoc message@ 'Basic settings'->'System Display/Audio info'.
	The system plays a three-tone sequence.
	Record the announcement and end the recording by pressing the pound # key.
Announcement display text	Output of the display text for the selected display/audio info.
	The voice message is repeated once. After that, DAKS releases the connection.

3.1.2 Have Voice Announcements Played Back over the Phone

Proceed as follows:

Step by step	
	Enter the DAKS call number + the dialthru code for 'Play announcement'@'Basic settings'->'Dialthru codes', e.g.: "800 **0**".
ANNOUNCEMENT ID ?	Output of the system info 'Entry of Display/Audio info ID'@ 'Basic settings' ->'System Display/Audio Info
	Enter the wanted announcement ID.
Announcement display text	Output of the display text for the selected display/audio info.
	The voice message is repeated once. After that, DAKS releases the connection.

3.2 Launch Broadcasts

Note:

If the parameter 'No audio goes to initiator' is enabled in the broadcast, the person who initiates the broadcast over the phone only gets display outputs for the telephone dialogs described below, and no audio playback.

3.2.1 ... over the phone without announcement selection

This function makes it possible to start and activate a broadcast over the phone.

It also offers the option to set aside channels for the dial-in process (= 'Channels reserved for dial-in'@'Basic settings'->'Telephony'). DAKS will **NOT** use these channels to call other subscribers, not even during an alarm.

The broadcast continues also if the broadcast initiator ends his/her connection to DAKS.

When a subscriber (Initiator) starts the same broadcast from the same telephone while it is still active and ongoing, DAKS signals back that the broadcast has already and successfully been started.

The already active broadcast continues uninterrupted.

Proceed as follows:

Step by step	
	Enter the DAKS call number + dialthru code for 'Start broadcast without announcement selection'@'Basic settings'->'Dialthru codes', e.g. "800 **1**".
Broadcast ID?	Output of the system info 'Entry of Broadcast ID'@'Basic settings'-> 'System Display/Audio info'
	Enter the ID of the wanted broadcast. When a valid Broadcast ID is entered the system plays a three-tone sequence.

When the broadcast requires an "Activation code":

Activ. code?	Output of the system info 'Prompt to enter the activation code'@ 'Basic settings'->System Display/Audio info'
	Enter the activation code. When a valid activation code is entered the system plays a three-tone sequence.

If the parameter 'With entry of number of broadcast targets to reach' is enabled in the broadcast:

No. targets?	Output of the system info 'Prompt to enter the total number of broadcast targets to reach'@'Basic settings'->System Display/Audio info'
	Enter the number of broadcast targets to reach. When a valid number is entered the system plays a three-tone sequence.

If the parameter 'With recording of an ad hoc announcement' is enabled in the broadcast:

Rec. #=Cancel	Output of the system info 'Prompt to record ad hoc message@ 'Basic settings'->'System Display/Audio info'
	After the three-tone sequence, record your ad hoc announcement and end the recording by pressing the pound # key.

If the announcement 'Prompt to start the broadcast' is assigned in the 'Basic settings'-> 'System Display/Audio info':

*=Broadcast start	Output of the system info 'Broadcast launched'@'Basic settings'-> 'System Display/Audio info'.
	If needed, you can press the star * key to end the playback early and start the broadcast.



Note:
If no announcement is assigned under 'Prompt to start the broadcast'@'Basic settings'->'Display/Audio info', you need to press the star key * after entering the pound key # in order to launch the broadcast. When the star key is not pressed after the tone, DAKS hangs up.

When the broadcast was successfully started:

If 'Status info to initiator over the phone'@'Broadcasts'->'Group-specific settings' is **not** enabled:

BDC LAUNCHED	Output of the system info 'Broadcast launched'@'Basic settings'->'System Display/Audio info'. The voice message is repeated 3x. After that, DAKS releases the connection.

If 'Status info to initiator over the phone'@'Broadcasts'->'Group-specific settings' is enabled:

Ok/Sent: 3 / 7	Voice message 'Broadcast launched'@'Basic settings'-> 'System Display/Audio info'. The voice message is repeated 3x. Display output 'Status info to initiator over the phone'@'Basic settings'->'System Display/Audio info', indicating the number of targets that have been reached / the total number of targets. After the end of the broadcast the system plays a three-tone sequence. The output continues for another 60 seconds. After that, DAKS releases the connection.

If the broadcast was not started:

Functn. not poss.	Output of the system info 'Function not possible'@'Basic settings'-> 'System Display/Audio info'. The voice message is repeated 3x. After that, DAKS releases the connection.

- For more information on the configuration of the dialthru codes to start broadcasts over the phone:
  ➤ see Section 8.6.3 "System Display/Audio info"
- For more information on the sequence of broadcasts:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.2 ... over the phone with announcement selection

This function makes it possible to start a broadcast over the telephone, with the option for the broadcast initiator to select the display/audio info that the system will show or play to the subscribers during the broadcast.

It also offers the option to set aside channels for the dial-in process (= 'Channels reserved for dial-in'@'Basic settings'->'Telephony'). DAKS will **NOT** use these channels to call other subscribers, not even during an alarm.

The broadcast continues also if the broadcast initiator ends the connection to DAKS.

When a subscriber starts the same broadcast from the same telephone and with the same announcement while that broadcast is still active and ongoing, DAKS signals back that the broadcast was started successfully. The already active broadcast continues uninterrupted.

Proceed as follows:

Step by step	
	Enter the DAKS call number + the dialthru code for 'Start broadcast with announcement selection'@'Basic settings'->'Telephony', e.g. "800 **2**".
Broadcast ID?	Output of the system info 'Entry of Broadcast ID'@ 'Basic settings'->'System Display/Audio info'
	Enter the ID of the wanted broadcast. When a valid entry is made the system plays a three-tone sequence.

If 'Activation code'@'Broadcasts'->'Group-specific settings' is required:

Activ. code?	Output of the system info 'Prompt to enter the activation code'@ 'Basic settings'->System Display/Audio info'
	Enter the activation code. When a valid entry is made the system plays a three-tone sequence.

If the parameter 'With entry of number of broadcast targets to reach'@'Broadcasts'-> 'Group-specific settings' is enabled:

No. targets?	Output of the system info 'Prompt to enter the total number of broadcast targets to reach'@'Basic settings'->System Display/Audio info'
	Enter the number of broadcast targets to reach. When a valid entry is made the system plays a three-tone sequence.

Announcement ID?	Output of the system info 'Entry of Display/Audio info ID'@ 'Basic settings' ->'System Display/Audio Info. Enter the ID of the display/audio info you want to use. After a valid entry has been made the system plays a three-tone sequence.

If the announcement 'Prompt to start the broadcast' is assigned in the 'Basic settings'-> 'System Display/Audio info':

*=Broadcast start	Output of the system info 'Prompt to start the broadcast'@ 'Basic settings'->'System Display/Audio info'. You can press the star * key to end the playback and start the broadcast.

When the broadcast was successfully started:

If 'Status info to initiator over the phone'@'Broadcasts'->'Group-specific settings' is **not** enabled:

BDC LAUNCHED	Output of the system info 'Broadcast launched'@ 'Basic settings'->'System Display/Audio info'. The voice message is repeated 3x. After that, DAKS releases the connection.

If 'Status info to initiator over the phone'@'Broadcasts'->'Group-specific settings' is enabled:

Ok/Sent: 3 / 7	**Voice message** 'Broadcast launched'@'Basic settings'-> 'System Display/Audio info'. The voice message is repeated 3x. **Display output** 'Broadcast info'@'Display/Audio info'. In addition, output of: number of targets reached / total number of targets. After the end of the broadcast the system plays a three-tone sequence. The output is in keeping with the 'Max. display duration after announcement (in seconds)'@'Basic settings'->'General details'. After that, DAKS releases the connection.

If the broadcast was not started:

Functn. not poss.	Output of the system info 'Function not possible'@ 'Basic settings'->'System Display/Audio info'. The voice message is repeated 3x. After that, DAKS releases the connection.

- For more information on the configuration of the dialthru codes to start broadcasts over the phone:
  ➤ see Section 8.6.3 "System Display/Audio info"
- For more information on the sequence of broadcasts:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.3 ... via Contact Input

Contact indicators, e.g. level recognition/temperature controllers and simple operator console keys, are connected to the digital inputs of DAKS.

When these contact inputs are activated, but also when a short circuit or line break is detected, DAKS starts broadcast processes (if administrated).

On the application level, DAKS supports 3 different types of contact inputs for normal operation:

- Simple standard contacts
- Enhanced standard contacts (if needed with alarm-stop function and adjustable alarm delays before and in between alarm activations)
- Control Panel keys with start/stop toggle function

When a short circuit or line break is detected, DAKS starts a broadcast without any time delay. This broadcast is not stopped, not even if the short circuit or line break is no longer pending or in queue-up.

When booted, DAKS verifies if any contacts have already been activated and, if so, treats them as if they were activated at the time of the system start. Similarly, DAKS deals with short circuits or line breaks and, if applicable, sets off the corresponding broadcast processes right after the system start.

- For more information on the configuration of the digital inputs:
  ➤ see Section 7.12 "Parameters of the Digital I/O"
- For more information on the sequence of broadcasts:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.4 ... via AVIOTEC Camera

DAKS polls the states of the AVIOTEC cameras and starts status-dependent, pre-configured broadcast calls.

- More details about the configuration of the AVIOTEC camera can be found here:
  ➤ see Section 8.13.3 "AVIOTEC Camera"
- For more information on the sequence of broadcasts:
  ➤ see Section 3.3 "Workflow of Broadcasts"

The below table lists the functions of the different contact types:

Digital input / Function	Control Panel contact (toggle function, not at AVIOTEC)	Simple Standard Contact	Enhanced Standard Contact
Delayed start of the alarm process, with adjustable time during which the input must be constantly active without interruption ('Min. length of activation'@'Contact input')	no	no	yes/no
Alarm process stop when the input becomes inactive ('End broadcast upon deactivation'@'Contact inputs')	no	no	yes/no
Evaluation of the input activation for active alarm processes	yes, invokes process stop	no	no
Save the request to start an alarm process (and delayed start), if unable to start the process (broadcast queue full)	no	yes	yes
Inter-broadcast settling time between the end of an alarm process end and the next earliest re-start, with the length of time configurable ('Inter-broadcast settling time'@'Contact inputs')	no	no	yes/no
Re-activation of the alarm process if input is active, at the end of the inter-broadcast settling time ('New broadcast start at end of Inter-broadcast settling time'@'Contact inputs')	n/a	n/a	• When contact is active (1) (2) • When contact is already active and activated again during the settling time (1)(3) • Never (system only considers later activations) (4)

Table 3-1 Overview of the functions of the different contact types

(1) If a delayed alarm process start is administrated, the corresponding timer will only start at the end of the inter-broadcast settling time.

(2) Typical configuration for long settling times, when the error does not need to re-occur during the inter-broadcast settling time for the broadcast to be restarted, but only to be still pending or still be in queue-up at the end of this time period.

(3) Typical configuration for long settling times when the error does not need re-occur during the inter-broadcast settling time for the broadcast to be restarted.

(4) Typical configuration for short settling times. Prevents the immediate re-alarming after the end of the broadcast.

3.2.5 ... via SNMP Trap

Emergency call stations (e.g. microphone defect, loudspeaker defect, etc.) can launch pre-configured broadcast calls via SNMP traps in DAKS.

- More details about the configuration of the AVIOTEC camera can be found here:
  ➤ see Section 8.13.3 "AVIOTEC Camera"
- For more information on the sequence of broadcasts:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.6 ... via Host Interface

With ESPA 4.4.4, TAP or ESPA-X, host systems can launch preconfigured broadcasts in DAKS.

- For more information on ESPA 4.4.4:
  ➤ see Section 3.9 "ESPA 4.4.4 interface"
- For more information on ESPA-X:
  ➤ see Section 3.8 "The ESPA-X interface"
- For more information on TAP:
  ➤ see Section 3.12 "TAP protocol"
- For more information on the broadcast sequence:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.7 ... via GMD-Medaillon (DECT)

With dialthru codes, GMD Medallions can launch preconfigured broadcasts in DAKS.

For more information on the configuration of a dialthru code for GMD medallions:

➤ see Section 8.6 "Basic configuration"

In broadcasts that are started from a GMD Medallion the subscribers will, among other things, receive the following display/audio info:

- Name of the medallion
- Positioning results
  ➤ see Section 3.5 "VoIP-Switch"

For more information on the configuration of GMD medallions:

➤ see Section 8.14.2 "Edit Relay Output"
➤ see Section 8.16 "Subscribers"
➤ see Section 8.9.2 "General alarm profiles"

For more information on the broadcast sequence:

➤ see Section 3.3 "Workflow of Broadcasts"



Note:
Remember that broadcasts can only be started from GMD Medallions when the medallions are properly administrated in DAKS.

3.2.8 ... via OAP Alarms (WiFi)

With OAP, WL3 and i62 devices can launch preconfigured broadcasts in DAKS.

In broadcasts that are started from a WL3 or i62 device the subscribers will, among other things, receive the following display/audio info:

- The name of the WL3 or i62 communication device
- If applicable, the positioning results
  ➤ see Section 3.7 "Positioning of WL3 and i62 devices"

For more information on the configuration of OAP alarms:

➤ see Section 8.14.2 "Edit Relay Output"
➤ see Section 8.16 "Subscribers"
➤ see Section 8.9.2 "General alarm profiles"

For more information on the broadcast sequence:

➤ see Section 3.3 "Workflow of Broadcasts"

3.2.9 ... via OM-AXI alarms (DECT)

With OM-AXI, MiVoice communication devices can launch preconfigured broadcasts in DAKS.

- For more information on the configuration of OM-AXI alarms:
  ➤ see Section 8.14.2 "Edit Relay Output"
  ➤ see Section 8.16 "Subscribers"
  ➤ see Section 8.9.2 "General alarm profiles"
- For more information on the broadcast sequence:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.10 ... via DAKS-Satellite

With ESPA-X, DAKS-Satellite can launch preconfigured broadcasts in DAKS. Depending on the configuration of DAKS-Satellite, either the broadcast ID or the contact ID are communicated.

- For more information on DAKS-Satellite:
  ➤ see "DAKS-Satellite Service Manual"
- For more information on ESPA-X:
  ➤ see Section 3.8 "The ESPA-X interface"
- For more information on the broadcast sequence:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.11 ... via Mail-to-Phone

With ESPA-X, Mail-to-Phone can preconfigured broadcasts in DAKS.

- For more information on Mail-to-Phone:
  ➤ see "Mail-to-Phone Service Manual"
- For more information on ESPA-X:
  ➤ see Section 3.8 "The ESPA-X interface"
- For more information on the broadcast sequence:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.12 ... via DAKS-Mobile-Client (DMC)

Smartphones equipped with DMC can launch preconfigured broadcasts in DAKS.

- For more information on the configuration of DMC alarms
  ➤ see Section 8.9.2 "General alarm profiles"
- For more information on the broadcast sequence:

➤ see Section 3.3 "Workflow of Broadcasts"

3.2.13 ... via DAKS Communicator

DAKS Communicator can trigger preconfigured broadcasts in DAKS.

- Further details on setting up "DAKS Communicator" alarms can be found here:
  - ➤ see Section 8.14.2 "Edit Relay Output"
  - ➤ see Section 8.16 "Subscribers"
  - ➤ siehe Section 8.9.2 "General alarm profiles"
- For more information on the broadcast sequence:
  - ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.14 ... via M3 Plus

"M3 Plus" terminals can trigger preconfigured broadcasts in DAKS.

- Further details on setting up the "M3 Plus" alarms can be found here:
  - ➤ see Section 8.14.2 "Edit Relay Output"
  - ➤ see Section 8.16 "Subscribers"
  - ➤ see Section 8.8.2 "Upload announcements (wave files) for the first time"
- For more information on the broadcast sequence:
  - ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.15 ... via 'Medical alarm conditions'

Medical devices can launch preconfigured broadcasts in DAKS.

- For more information on the configuration of medical alarm conditions:
  - ➤ see Section 8.9 "Alarm profiles - Overview"
- For more information on the broadcast sequence:
  - ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.16 ... via 'General alarm conditions'

The following general alarm conditions can launch preconfigured broadcasts in DAKS:

- Emergency Call
- Silent emergency call
- Sensor alarm
- Timeout Alarm
- Connection loss
- GMD Emergency Call

- For more information on the configuration of general alarm conditions:
  - ➤ see Section 8.9.2 "General alarm profiles"
- For more information on the broadcast sequence:
  - ➤ see Section 3.3 "Workflow of Broadcasts"

3.2.17 ... via 'System alarm conditions'

The following 'System alarm conditions' can launch preconfigured broadcasts in DAKS:

- MASI interface failed
- MASI interface MESystem Alarm
- ESPA-X interface failed
- Serial interface failed
- Network access disrupted
- Unsaved reports in the internal memory

  - Corridor display problem
  - Yellow Alert
  - Red Alert
  - Partial power supply failure
  - Elevator intercom problem

- For more information on the configuration of System alarm conditions:
  ➤ see Section 8.9.3 "System alarm profiles"
- For more information on the broadcast sequence:
  ➤ see Section 3.3 "Workflow of Broadcasts"

3.3 Workflow of Broadcasts

3.3.1 Prepare Broadcasts in advance and buffer requirements

Whenever one of the aforementioned initiators launches a broadcast, DAKS checks for a free slot in the list of active broadcasts.

➤ Section 3.2 "Launch Broadcasts"

If found, DAKS launches the broadcast immediately and adds it to the list of active broadcasts.

If the list of active broadcasts is already full, the system's response depends upon the Initiator:

- **Host systems, such as ESPA 4.4.4, ESPA-X, TAP, Mail-to-Phone or DAKS-Satellite (ESPA 4.4.4)**
  DAKS saves the broadcast request in an internal queue that can hold up to 50 slots. If the queue is full, DAKS answers to the host system, Mail-to-Phone or DAKS-Satellite (for of broadcast ID communication) with the ESPA 4.4.4 status 'Queue full', or with the ESPA-X status 'Conflict' (RSP-Code = 409).
  In this way, DAKS signals to the host system that the broadcast cannot be processed. The host system is in charge of the special treatment.
- **IDGS (only for DAKSmed)**
  As a rule, DAKSmed adds every alarm conditions to its internal queue. Only those alarm conditions of the bed that momentarily have the highest alarm priority launch broadcast processes.
  As a rule, every broadcast process that has never before been activated is given the precedence to any same-priority broadcast process that has at least been started once before in the past.
  All active broadcast processes are processed in keeping with both the process-spanning addressing priority and the call processing strategy and taking in consideration the wait times for the the communications channels that are available.

  This pictures illustrates the way in which broadcast processes are processed, up to an escalation:

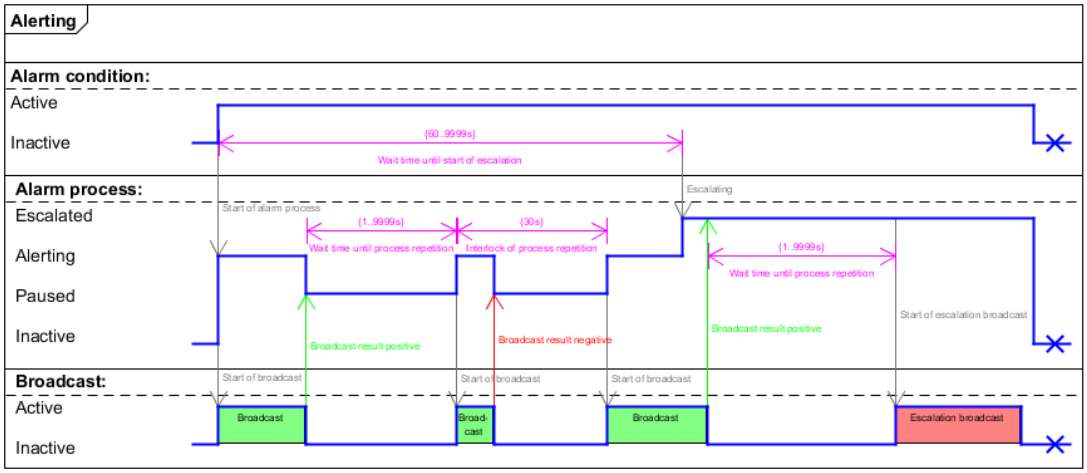


Image 3-1 Processing of broadcast processes up to escalation

- **Telephone**
  DAKS responds to the subscriber (Initiator) who triggered the broadcast by sending the System Display/Audio info:
  'Function not possible'.
- **DMC, medallion, contact input, WL3 communication device, DAKS-Satellite (Contact Input), MiVoice device**
  None of these initiators can process any error message or initiate any special treatment.

Because of this, DAKS always includes the launch of a broadcast via DMC, medallion, contact input, WL3 communication device, DAKS-Satellite (only if the contact input number is transmitted) and MiVoice communication device in its internal queue.

However, for each DMC and medallion and for every contact input no more than one broadcast can be included or be active in the queue at any given moment.

Whenever a slot opens up in the queue, the requested broadcasts are activated in the order in which these requests were received.



Note:
Under no circumstances can a broadcast be started if, after the broadcast has been prepared, there is no valid announcement available for transmission to the subscribers that shall be alerted.

3.3.2 Start Broadcasts

When a broadcast is launched, DAKS first copies its parameters to the process memory. This also includes the list of the broadcast targets and their individual configurations.

➤ see Section 8.16 "Subscribers"

Also at this time, DAKS will compile the display text messages and transfer the voice messages into the announcement memory.

In this way, all broadcast configurations can be edited in the database at any time (broadcast, voice announcements etc.), without running the risk of altering the behavior of a broadcast while it is active and ongoing.

Excluded from this are the system announcements. When a system announcement is changed during an already ongoing process, DAKS replaces the old announcement in the background.

Here, the already ongoing processes are never interrupted or altered on the fly. Only when DAKS plays the announcement the next time will the system automatically play the new announcement.

When DAKS starts a broadcast, a contact output is actuated for as long as the broadcast process is running (if administrated).



Note:
A broadcast cannot be started if the Display/Audio info that shall be transmitted does not contain a valid voice message.

The reason why a broadcast cannot be started may be that no voice message was assigned to its Display/Audio info, or because a host system transmitted Display/Audio info IDs that are not administrated.

3.3.3 The processing of Broadcast targets

When a channel is vacant and available for the dial-up process, DAKS will browse all active broadcasts with their individual targets and select a target by applying the following (exclusion) criteria or, if several broadcast targets are available, DAKS will select the most appropriate one by applying the following criteria:

- The broadcast target is not already being called (by one of the broadcast processes that are currently active and running).
- The broadcast target may not currently be in a dialing pause.
- If a time segment is configured for a broadcast target, the start of the broadcast must have been within an active time period.
- When the flag 'Quickest possible dialing'@'Broadcasts'->'Group-specific settings' is enabled in the broadcast, DAKS processes all priority levels at the same time, i.e. in parallel.

  Otherwise DAKS processes the dialing commands priority level by priority level.

  For example, in a hospital situation this makes it possible to place calls in parallel, and to quickly reach one of 3 nurses (with higher priority level) first and quickly.

  Only when no nurse could be reached will the system call the head nurse (with lowest priority level).
- Depending on the parameter 'Call supernumerary broadcast targets (in one priority level)'@'Broadcasts'->'Group-specific settings', the following applies:
  - If this feature is **not** enabled, the total number of broadcast targets that must be reached may not be exceeded when DAKS calls this broadcast target.
- If this feature is enabled, the total number of broadcast targets that must be reached may be exceeded when DAKS calls this broadcast target.
- If broadcast targets (from different broadcast processes) with different priorities can be called, the target with the highest priority is given the precedence.

  In this process, the following order applies:
  - Registered broadcast subscribers with the configured addressing priority: high
  - secondary nurse who is not currently busy tending to an alarm condition
  - primary nurse who is currently busy tending to an alarm condition
  - secondary nurse who is currently busy tending to an alarm condition
  - Registered broadcast subscribers with the configured addressing priority: medium
  - Registered broadcast subscribers with the configured addressing priority: low
- If the priority is the same, the system gives the precedence to the broadcast targets that have been called the least.
- If the priority is the same and the same number of dial attempts have already been made, the system will call randomly.

DAKS calls a broadcast target repeatedly until the maximum number of dial attempts is completed ('Dial attempts'@'Broadcasts'->'Broadcast members').

If the below conditions apply, broadcast targets enter into a dialing pause:

- The broadcast target to call was busy:

  In this case, DAKS will not try to call again until the configured wait time has expired (= 'Interval if busy (in seconds)'@'Basic settings'->'General details').
- The broadcast target to call has failed to take the call before the configured ringing time elapsed (= 'Max. ringing time (in seconds)'@'Basic settings'->'General details'):

  In this case, DAKS will not try to call again until the configured wait time has expired (= 'Interval if no answer (in seconds)'@'Basic settings'->'General details').

3.3.4 Behavior of Broadcasts with automatic entry into a Conference

When a broadcasts with automatic entry into a conference is launched, DAKS verifies if the maximum number of conferences that may be active in parallel, i.e. at the same time, has already been reached (for DAKS-100: max. 2; for DAKS-200: depends on the number of channels, max. 6).

At this moment, DAKS also checks if the broadcast is already active.

If the broadcast with automatic entry into a conference is not already active and another conference process is momentarily available for activation:

- the broadcast starts the conference process.
- the broadcast starts the active dialing of the subscribers.
- the broadcast hands over the subscriber (Initiator) who launched it over the phone to the conference process (only if available).

DAKS plays the start announcement and outputs the name of the conference.

For details on the sequence that follows hereafter:

➤ see Section 3.3.4 "Behavior of Broadcasts with automatic entry into a Conference"

If the broadcast with automatic entry into a conference is not yet active and no additional conference instance is momentarily available for activation:

- the broadcast is placed in the queue if it was activated via data interface or contact.
- all subscribers (Initiators) who try to launch this broadcast over their phone get a busy tone.

If a broadcast with automatic entry into a conference is already active and started again over the phone, the activating subscriber (initiator) gets a busy tone.

Broadcast subscribers who are switched into a conference can still read and scroll the broadcast information on their display.

During the conference, display texts can also be scrolled but they are not scrolled automatically.

3.3.5 Dial-up of Broadcast targets and user dialogs

3.3.5.1 User dialogs for Broadcast targets while they are being called

Broadcast targets receive, while they are being called and depending on the initiator who launches the broadcast, the following calling number and calling name:

Initiator	Calling Number	Calling Name
Telephone with or without announcement selection	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The calling number of the initiator, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The calling name of the initiator, – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
Contact input or AVIOTEC Camera	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: No output, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: 'Display/Audio info'@'Contact inputs', – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
SNMP Trap	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: No output, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: 'Name'@'SNMP Trap', – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
GMD Medallion	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The calling number of the GMD medallion, – otherwise: 'Calling number'@'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: 'Display/Audio info'@'Alarm profiles'->'General'->'GMD Emergency Call', – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
WL3 or i62 via OAP	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The calling number of the initiator (from the OAP dataset) – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: 'Display/Audio info'@'Alarm profiles'->'General'->'Emergency Call', – otherwise: 'Calling name' @'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.

Table 3-2 Dialogs/display texts to broadcast targets while being called

Initiator	Calling Number	Calling Name
MiVoice device via OM-AXI	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The calling number of the initiator (from the OM-AXI dataset) – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'.	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: 'Display/Audio info'@'Alarm profiles' ->'General' ->'Emergency Call', – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
ESPA 4.4.4	– if 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The beginning of the ESPA info segment 'Display', provided the segment begins with a digit + a space, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: no output	– if 'Show initiator info' @'Broadcasts'->'Group-specific settings' is enabled: The rest of the ESPA info segment 'Display', provided the segment is provided, – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
MAI (e.g. IDGS)	– 'Calling number'@'Basic settings' ->'Telephony' if administrated; in all other cases: no output	– if 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The following payload, composed of database content and MASI protocol elements: – In keeping with the alarm profile settings 'Output at communication device' and 'Communication devices - max. number of characters' – if provided, "MsgLong"; otherwise: "MsgOriginal" (MASI) – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'.
TAP	– 'Calling number'@'Basic settings' ->'Telephony' if administrated; in all other cases: no output	– If 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: The payload of the TAP protocol, – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' -> 'Group-specific settings'.

Table 3-2 Dialogs/display texts to broadcast targets while being called

Initiator	Calling Number	Calling Name
ESPA-X Group call	– if 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: As transmitted by ESPA-X – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'	– if 'Show initiator info'@ 'Broadcasts'->'Group-specific settings' is enabled: As transmitted by ESPA-X – otherwise: 'Calling name' @'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'
ESPA-X call to single subscriber	– as transmitted by ESPA-X, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: no output	– as transmitted by ESPA-X, – otherwise: 'Calling name'@ 'Basic settings'->'Telephony' if administrated; in all other cases: no output
DMC	– if 'Show initiator info'@'Broadcasts'->'Group-specific settings' is enabled: The calling number of DMC, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'->'Group-specific settings'	– If 'Show initiator info'@'Broadcasts'->'Group-specific settings' is enabled: 'Display/Audio info'@ 'Alarm profiles'->'General'->'Emergency Call', – otherwise: 'Calling name' @'Basic settings'->'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'

Table 3-2 Dialogs/display texts to broadcast targets while being called

Initiator	Calling Number	Calling Name
DAKS Communicators	– if 'Show initiator info'@'Broadcasts'->'Group-specific settings' is enabled: The calling number of DAKS Communicator, – otherwise: 'Calling number'@ 'Basic settings'->'Telephony' if administrated; in all other cases: 'ID'@'Broadcasts'-> 'Group-specific settings'	– If 'Show initiator info'@'Broadcasts'->'Group-specific settings' is enabled: – **Start with a short press of the Alarm button (Emergency Call):** 'Display/Audio info' in 'Emergency call'@'Alarm profile'->'General', – **Start with a long press of the Alarm button (Silent Call):** 'Display/Audio info' in 'Silent emergency call'@'Alarm profiles'->'General', – **Start through sensor alarm:** 'Display/Audio info' in 'Sensor alarm'@'Alarm profiles' ->'General', – **Start through connection loss:** 'Display/Audio info' in 'Connection loss'@'Alarm profiles' ->'General', – **Start through timeout alarm:** 'Display/Audio info' in 'Timeout Alarm'@'Alarm profiles' -> 'General', – **Start through GMD emergency call:** 'Display/Audio info' in 'GMD Emergency Call'@'Alarm profiles'->'General', – otherwise: 'Calling name'@'Basic settings'-> 'Telephony' if administrated; in all other cases: 'Name'@'Broadcasts' ->'Group-specific settings'

Table 3-2 Dialogs/display texts to broadcast targets while being called

The announcements and display texts that the system plays and outputs to the subscribers during the call and after the call has been taken depend on the Initiator of the broadcast, but also on the way in which the broadcast is configured, plus, where applicable, on the positioning results and on the request for confirmation if a request was made.

➤ see Table 3-3 on page 23

Bear in mind that the individual Display/Audio info must be administrated and the voice announcements must be properly assigned.

The display texts are linked and separated by a space. A line break is inserted before a request for confirmation.

3.3.5.2 User dialogs for Broadcast targets upon call acceptance

For and depending on the different initiators, the following voice announcements and display texts are used when a target takes the call:ö* This information only appears when 'Show initiator in-

Initiator	Display text	Announcement
Phone w/o announcemt. selection	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + the number of the initiator (only display text message) + the name of the initiator (only display text message) + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
Phone with announcemt. selectn.	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + the number of the initiator (only display text message) + the name of the initiator (only display text message) + the display/audio info selected over the phone + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
Contact input or AVIOTEC Camera	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + Display/Audio info'@'Contact inputs' + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
SNMP Trap	– ‘'Display/Audio info'@'Broadcasts'->'Group-specific settings': If 'Send event text instead of display info' is set' + 'Event text'@'SNMP Trap' and announcement of 'Display/Audio info'@' SNMP Trap Otherwise: + 'Display/Audio info'@'SNMP Trap' + where applicable 'Confirmation request'@'Basic settings' >'System Display/Audio Info'.	
GMD Medallion	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + 'Display/Audio info'@'Alarm profiles'->'General'->'GMD emergency call' + the display/audio info of the positioning results ➤ see Section 3.5 "VoIP-Switch" + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
WL3 via OAP	– ‘'Display/Audio info'@'Broadcasts'->'Group-specific settings': + 'Display/Audio info'@'Alarm profiles'->'General'->'Emergency call' + Display/Audio info for the positioning results: 'Positioning results WLAN'@'System Display/Audio info'@'Access Point' + 'Display/Audio info' of the access point whose signal is received the strongest ➤ see Section 3.7 "Positioning of WL3 and i62 devices" – If the positioning fails, the system instead sends the display/audio info 'Not locatable for technical reasons'@'Basic settings'->'System Display/Audio info'. + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	

Table 3-3 User dialogs for broadcast targets upon call acceptance

Initiator	Display text	Announcement
MiVoice cordless phone via OM-AXI	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + the number of the initiator (only display text message) + the name of the initiator (only display text message) + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
MAI (e.g. IDGS)	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * – In keeping with the alarm profile settings: 'Output at communication device' and 'Communication devices - max. number of characters' – if provided: "MsgLong" – otherwise: "MsgOriginal" (MASI) + where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	
ESPA 4.4.4/ TAP	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + ESPA 4.4.4/TAP text, if transmitted (only display text) + where applicable the 'Confirmation request'@'Basic settings'-> 'System Display/Audio info'	
ESPA-X Group call	ESPA-X text, if transmitted, otherwise: 'Display/Audio info'@'Broadcasts'-> 'Group-specific settings': * + where applicable the display text 'Confirmation request'@ 'Basic settings'-> 'System Display/Audio info'	ESPA-X Display-/Audio Info, if transmitted, otherwise: 'Display/Audio info'@'Broadcasts'-> 'Group-specific settings': * + where applicable the voice message 'Confirmation request'@ 'Basic settings'-> 'System Display/Audio info'
ESPA-X call to single subscriber	ESPA-X text + where applicable the ESPA-X text w. request	ESPA-X Display/Audio info + where applicable, the prompt from 'ESPA-X-Display/Audio info'
DMC	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + 'Display/Audio info'@'Alarm profiles'->'General'->'Name/Place'@'Subscribers'->'Phone number'@'Comm. devices' + where applicable the 'Confirmation request'@'Basic settings'-> 'System Display/Audio info'	

Table 3-3 User dialogs for broadcast targets upon call acceptance

Initiator	Display text	Announcement
DAKS Communicators	– 'Display/Audio info'@'Broadcasts'->'Group-specific settings': * + **start with short press of the Alarm button:** 'Display/Audio info' for 'Emergency call'@'Alarm profiles'->'General' + **or start with long press of the Alarm button:** 'Display/Audio info' for 'Silent emergency call'@'Alarm profiles'->'General' + **or start through sensor alarm:** 'Display/Audio info' for 'Sensor alarm'@'General alarm profiles'-> 'General', + **or start through timeout alarm:** 'Display/Audio info' for 'Timeout Alarm'@'Alarm profiles'->'General', + **or start through connection loss:** 'Display/Audio info' for 'Connection loss'@'General alarm profiles'-> 'General', + **or start through GMD emergency call:** 'Display/Audio info' for 'GMD emergency call'@'Alarm profiles'->'General' + 'Name/Place'@'Subscribers' – where applicable the 'Confirmation request'@'Basic settings'->System Display/Audio info'	

Table 3-3 User dialogs for broadcast targets upon call acceptance

fo'@'Broadcasts'->'Group-specific settings' is **not** activated.

➤ see Section 8.18.1 "Group-specific settings"

Output of display texts

Display texts are scrolled in 2-line increments, for CorNet-NQ/SIP-Q connections and devices at OpenScape 4000 in the server mode (usually OpenStage, Gigaset)

The user can:

- Either use the star '*' or pound '#' key to scroll the text up or down, line by line.
- Display texts are scrolled in 1-line increments for SIP or QSIG
  The user can:
  – Either use the star '*' or pound '#' key to scroll the text up or down, line by line,
  – or DAKS scrolls the text automatically line by line in the selected interval (only if option 'Autom. scrolling (display)'@'Basic settings'->'Telephony' is enabled), and starts again at the op when it reaches the end of the text.

Display texts are shown in multiline format for OAP, OM-AXI and Spectralink



Note:
For OAP and OM-AXI devices, the subscriber can use the navigation keys of the communication device to scroll up and down.

If, in a voice communication (call), the dialog ends because the user has confirmed or because the system has played the voice message for 3 times, DAKS will maximally wait another 30 seconds.

If the subscriber fails to hang up during this time, DAKS automatically releases the call.

The system automatically resets the 30-second timeout when the subscriber scrolls the text or confirms by pressing a key.

For data connections (call destinations with the connection type OAP/OM-AXI), the subscriber can confirm a text message for as long as the maximum ringing time has not expired.

For OM-AX, the text message in the display is deleted when the ringing time has expired. In contrast, for OAP the text message continues to be shown on the display even after this time expires, yet without any softkeys for confirmation.

- The text message:
  - is saved for the WL3 communication devices in the messages folder.
  - is saved for MiVoice communication devices in keeping with the reached criterion, i.e. either in the Inbox folder (listen/read only) or in the Task folder (confirm pos./neg.).

Playback of broadcast voice messages (announcements)

DAKS plays the broadcast announcement incl. the prompt (request message) maximally 3x in a row.

If a confirmation is demanded, DAKS inserts a pause of 8 seconds after playing the prompt.

After that time, the system again plays back the broadcast announcement, including the prompt. During the entire dialog the user can send a confirmation by pressing '0‘ or '1'.



Note:
Bear in mind that for calls to single subscribers that are started via ESPA-X, the keys to confirm positive and negative can deviate from the default ('0', '1').

3.3.5.3 Confirmation options for WL3 devices via OAP

WL3 communication devices can be called in the pager mode via OAP. Depending on the broadcast status different softkeys are offered for use.

Reached criterion, options	Soft keys
Listen/reading is enough	'OK'
Confirm pos./neg	'Pos'/ 'Neg'
Confirm pos./neg. with callback call	'Call'*/ 'Pos'/ 'Neg'
Play announcement and enter into conference	'Conf'**
Confirm pos./neg. and enter into conference	'Conf'/ 'Neg'

* The softkey 'Call' is used to configure a call connection (call) to DAKS, which in return connects the WL3 communication device to the patient's telephone.

* The softkey 'Conf' is used to configure a call connection (call) to DAKS, which in return switches the WL3 communication device into the conference.

3.3.5.4 Confirmation options for MiVoice devices via OM-AXI

MiVoice communication devices can be called in the pager mode via OM-AXI. Depending on the broadcast status different softkeys are offered for use.

Reached criterion, options	Soft keys
Listen/reading is enough	'Read'
Confirm pos./neg	'Accept' / 'Reject'



Note:
By pressing the occupancy button key a connection is established to DAKS.
If a callback call can be made, the key 5 can now be pressed to configure a phone call connection to the patient's telephone.

3.3.6 The reached criteria

The reached criterion defines the moment from the system considers which a subscriber as successfully reached. Contrary to what might be expected, the crucial and decisive factor here is not if the subscriber simply takes the call.

Whether or not a subscriber is considered 'Not reached' does not imperatively result from the end of an individual dialog. If necessary, other dial attempts must first be undergone.

However, the system will always consider a subscriber as 'Not reached' when all dial attempts have been completed and these conditions are met: the subscriber failed to take the call, his addressing priority is set to "inactive" ('Addressing priority'@'Broadcasts'->'Broadcast member'), or the subscriber confirmed negative, see below.

The state of a subscriber at the end of a user dialog depends on the individual settings and on the behavior of the subscriber himself:

If the 'Reached criterion'@'Broadcasts'->'Broadcast members' = 'Listen/reading is enough':

– 'Reached'	The voice announcement has been played to the subscriber for a sufficient length of time. A subscriber presses the softkey 'Ok' at a WL3 communication device, or 'Accept' at a MiVoice communication device.
– 'Undefined'	The subscriber hangs up, before the voice announcement has been played long enough. No softkey is pressed at a WL3 or MiVoice communication device.
– 'Not reached'	The subscriber state was 'Undefined' 2x in a row

If the 'Reached criterion'@'Broadcasts'->'Broadcast members' = 'Pos./neg. confirmation':

– 'Reached'	The subscriber confirmed by pressing key '1'. A subscriber presses the softkey 'Pos' at a WL3 communication device, or 'Accept' at a MiVoice communication device.
– 'Undefined'	The subscriber went on hook (hangs up) before sending a confirmation. No softkey is pressed at a WL3 or MiVoice communication device.
– 'Not reached'	The subscriber confirmed by pressing the key '0' or his/her state was 'Undefined' 2x in a row. The subscriber presses the softkey 'Neg' at a WL3 communication device, or 'Reject' at a MiVoice communication device. The subscriber state was 'Undefined' 2x in a row.



Note:
If a subscriber remains in the state 'Undefined' at the end of a user dialog, DAKS will immediately call him/her again.

3.3.7 The final Broadcast results and follow-up Broadcast calls

The final result of a broadcast originates from the number of broadcast targets that have been 'Reached' or 'Not reached':

- **A broadcast is 'Successful':**
  As soon as the configured number of broadcast targets that need to be reached have completed the user dialog with the status 'Reached' during the broadcast process (= 'Number of broadcast targets to reach'@'Broadcasts'->'Group-specific settings').
  In this case, the entire broadcast is ended and subscribers called in excess receive a cancellation message.
  If needed, a follow-up broadcast can be launched (= 'Follow-up broadcast if results positive'@'Broadcasts'->'Group-specific settings').
- **A broadcast is 'Failed':**
  As soon as the system has made all dial attempts for the broadcast targets, but the required number targets were **not** 'Reached' (= 'Number of broadcast targets to reach'@'Broadcasts'->'Group-specific settings').
  If needed, a follow-up broadcast can be launched (= 'Follow-up broadcast if results negative'@'Broadcasts'->'Group-specific settings').

3.3.8 Results e-mail for a Broadcast

On condition a results e-mail address has been properly configured in the broadcast, the matching report is sent after the broadcast end and in keeping with the defined sending condition.

The following sending conditions are available:

- **always**
  The results e-mail is sent always, i.e. without exception.
- **only pos. final results**
  The results e-mail is only sent when the broadcast results are positive.
- **only neg. final results**
  The results e-mail is only sent when the broadcast results are negative.

3.4 Conferences

3.4.1 General information

Up to 10 different conferences can be configured in DAKS. They can be part of a broadcast or started over the phone as a Meet-Me conference.

Irrespective of the way in which it was started, i.e. regardless of whether the conference was started automatically by a broadcast or by a subscriber over the phone, further subscribers can dial into the conference by themselves at any time as long as sufficient slots (channels) are vacant.

For conferences that are activated by a broadcast, DAKS automatically switches together all broadcast targets that are reached after playback of the voice announcements and, where applicable, after receipt of the required confirmations.



Note:
The conferences of DAKS do not actively call subscribers but provide a conference node for:

- the subscribers who dial in by on their own.
- the subscriber (Initiator) who launches the broadcast.
- the broadcast targets who are called by the system in broadcasts.

DAKS differentiates between 2 types of conferees:

- conference masters and
- conferees.

Subscribers become conference masters:

- by entering into a conference as the initiator who launched the broadcast.
- by being called in a broadcast and switched into the conference by the system.
- by starting the conference with the conference Start ID.

Subscribers becomes conferees:

- by entering into an already ongoing conference with the conference Entry ID or with the conference Start ID



Note:
You can only enter into ongoing conferences with the conference Start ID when **no** conference Entry ID is configured.

3.4.2 Behavior of Conferences

Conferences are activated:

- by dialing in with the Entry ID.
- by dialing in with the Start ID.
- via a broadcast with automatic entry into a conference launched through a data interface, contact or over the phone.

A subscriber who uses the Entry ID to enter into a conference while it is still inactive moves that conference into a queue where it waits for activation (start) by a conference master.

A conference instance is only thru-connected when at least one conference master and one additional subscriber (any) have entered into the conference (= conference state: "Conversation active").

A conference is terminated when no more conference master is in the conference (= conference state is: "Ended").

Upon the conference state "Conversation active", any subscriber-individual conference wait announcements that may currently be being played are terminated and the subscribers are switched into the conference. The system plays a 3-tone melody into the conference.

During the conference state "Conversation active", the system plays a long tone into the conference for every conference member who exits the conference.

During the conference states "Conversation active" or "Pause", all conferees who are currently in consultation hold are automatically switched to mute.

During the conference state "Conversation active", the system plays a 3-tone melody sequence for every new conferee entering into the conference.

A conference is moved to the state "Pause" when there is only one conference master remaining in the conference and all other conferees have already left.

This state is time-restricted and can also be skipped altogether (set the "Max. inactive time" = 0 seconds).

The maximum time during the conference states "Conversation active" and "Pause" is limited by the maximum length of the conference (= "Max. conference length").

The maximum length of time of the conference state "Pause" is limited by the conference's inactive time for the last remaining conference master who is still in the conference (= "Max. inactive time").

During the conference state "Ended", DAKS plays the conference end announcement to all conferees who are still in the conference, before disconnecting them.

Once all conferees are disconnected, the system switches the actual conference instance to "Inactive".

The broadcast process ends as soon as the system obtains the conference-end information from the conference instance (state: "Inactive").

If needed, the system ends the broadcast process even if did not yet call all broadcast subscribers.

3.4.3 Start a conference over the phone via the Start ID

Step by step	
	Enter the DAKS call number + the dialthru code for '**Start** Conference', e.g. "766 **5**". ➤ see 'Dialthru codes'@'Basic settings'
Start ID ?	Output of the system info 'Entry of Conference Start ID'@ 'Basic settings'->'System Display/Audio info', as prompt to enter the Conference Start ID to start the wanted conference.
	Enter the Start ID of the conference you want to start. ➤ see 'Start ID'@'Conferences', e.g. **1010**
Weekly Planning	Output of the conference's start announcement and of the conference name, here: 'Weekly Planning'.
Please wait...	Output of the system info 'Waiting for conferencing' @ 'Basic settings'->'System Display/Audio info'. This info is output when no other subscribers have yet entered into the conference. Wait until another subscriber has successfully entered into the conference and you are both connected.
Weekly Planning	Output of the name of the conference 'Name'@'Conferences', here: "Weekly Planning". This output appears when at least one more subscriber has successfully dialled into the conference and you are both connected.
Conf. End	Output of the system info 'End of conference'@'Basic settings'-> 'System Display/Audio info'. All conferees get this information when the conference ends.

3.4.4 Enter early in a Conference over the phone via the Entry ID

Step by step	
	Enter the DAKS call number + the dialthru code for '**Enter** into conference', e.g. "766 **6**". ➤ see 'Dialthru codes'@'Basic settings' **Note:** If the dialthru code for 'Enter into conference' is not configured,you can enter into an already started and ongoing conference with the dialthru code 'Start conference'. In this way you can realize a "Chat Room".
Entry ID?	Output of the system info 'Entry of Conference Entry ID'@ 'Basic settings'->'System Display/Audio info', as prompt to enter the Entry ID in order to enter into the wanted conference.
	Enter the Entry ID of the conference you want to join. ➤ see 'Entry ID'@'Conferences', e.g. **1010**
Weekly Planning	Output of the conference's entry announcement and of the conference name, here: 'Weekly Planning'.
Please wait...	Output of the system info 'Conference not started'@'Basic settings'-> 'System Display/Audio info'. The conference has not yet been started. Wait until the conference is started.
Weekly Planning	Output of the name of the conference 'Name'@'Conferences', here: "Weekly Planning". This output appears as soon as the conference has been started and you are connected with at least one more member in the conference.
Conf. End	Output of the system info 'End of conference'@'Basic settings'-> 'System Display/Audio info'. This output is shown to all conferees when the conference is ended.

3.4.5 Dial into an active Conference over the phone via the Entry ID

Step by step	
	Enter the DAKS call number + the dialthru code for '**Enter** into conference', e.g. "766 **6**". ➤ see 'Dialthru codes'@'Basic settings'
Entry ID?	Output of the system info 'Entry of Conference Entry ID'@ 'Basic settings'->'System Display/Audio info', as prompt to enter the Entry ID in order to enter into the wanted conference.
	Enter the Entry ID of the conference you want to join. ➤ see 'Entry ID'@'Conferences', e.g. **1010**
Weekly Planning	Output of the conference's entry announcement and of the conference name, here: 'Weekly Planning'.
Conf. End	Output of the system info 'End of conference'@'Basic settings'-> 'System Display/Audio info'. DAKS plays this info to all conferees when it ends the conference.

3.5 VoIP-Switch

The VoIP switch enables calls between directly connected terminals and from directly connected terminals to terminals at the PBX and vice versa with a uniform numbering plan without directional codes.

Hidden numbering is used between the PBX system components.

The following special features are supported:

- Interruption of ongoing telephone calls by dialing functions of DAKS processes (if calls with emergency disconnect are activated).
- Cross-technology forwarding of DTMF characters (keypad - DTMF according to RFC - DTMF as realization of a VoIP switch on application level (trunk spanning) with switching function from directly connected terminal device to directly connected terminal device and to/from direction trunk.
- The switching supports overlap sending. The interdigit time is fixed at 5 s.

The following rules apply for switching:

- When an incoming call is received, the DAKS VoIP switch first searches for a suitable DAKS postdialling function.
- Only if a DAKS postdialing function is no longer possible, the DAKS VoIP Switch will search for a suitable subscriber number.
- If a subscriber number was found, this will result in the current terminal device number.
- If no subscriber number was found and no more hits (no longer number) are available, the DAKS VoIP switch searches for a suitable terminal device number.
- If an terminal device phone number was found:
  - it will be dialed if the terminal device is registered directly with DAKS, and
  - the system will otherwise search for a corresponding routing entry in the routing table.
- If a terminal device number is found, the system immediately searches for a corresponding routing entry in the routing table.
- A connection via a telephony trunk will only be established if the number of digits is sufficient or if the number is complete. The "x" characters in the routing table serve this purpose.



Note:
Post-dialling codes, subscriber numbers and routing entries must be unique and left-aligned. For example, if the post-dialling code **10** is assigned, the **10**0 or **10**00 cannot be assigned.

3.6 Locate and position GMD Medallions

DAKS also offers the option to identify the location and thus position GMD Medallions, e.g. in an emergency situation. For this purpose the GMD-Medallions send information via DECT on the base station that is received the strongest. The positioning results are then forwarded to the alerted subscriber in form of a display text message or voice message.

The Positioning results consist of:

- 'Positioning results DECT'@'Basic settings'->'System Display/Audio info' + 'Display/Audio info' of the base station whose signal is received the strongest.
- If the positioning fails, the system instead sends the display/audio info 'Not locatable for technical reasons'@'Basic settings'->'System Display/Audio info'.

➤ see Section 8.6.3 "System Display/Audio info"

➤ see Section 8.11 "Base Stations"



Note:
Remember that broadcasts can only be started from GMD Medallions when the medallions are properly administrated in DAKS.

3.7 Positioning of WL3 and i62 devices

DAKS also makes it possible to identify the location and thus position WL3 and i62 communication devices in an emergency situation. For this purpose, the WL3 and i62 communication devices use WiFi to signal the access point they are receiving the strongest.

The positioning results are then forwarded to the alerted subscriber in form of a display text message or voice message.

The Positioning results consist of:

- 'Positioning results WLAN'@'Basic settings'->'System Display/Audio info' + 'Display/Audio info' of the access points whose signal is received the strongest.
- If the positioning fails, the system instead sends the display/audio info: 'Not locatable for technical reasons'@'Basic settings'->'System Display/Audio info'.

➤ see Section 8.6.3 "System Display/Audio info"

➤ see Section 8.7 "Time Segments"

3.8 The ESPA-X interface

The ESPA-X interface of DAKS supports calls to individual subscribers (single calls) and calls to entire subscriber groups (group calls), with variable display texts and announcements and with the possibility to control the behavior of both of these types of calls, e.g. signaling of emergency calls.

For details on the functionality of the ESPA-X interface see the following documents:

➤ ESPA-X Protocol Description, Version 1.00

➤ ESPA-X Version 1.00 in combination with DAKS_ESPA-X, Version 1.13, Interpretation of DAKS V1.1x



Note:
These documents are not part of the scope of delivery of DAKS and are normally only available to the cooperation partners.

3.9 ESPA 4.4.4 interface

The ESPA 4.4.4 specification of DAKS is based on the document: ESPA4.4.4, serial data interface for paging equipment, November 1984.

3.9.1 Comments on the ESPA 4.4.4 specification

3.9.1.1 Regarding Pos. 2.4 of the ESPA4.4.4 specification: 'Transmission Control Prefixes'

When polling or selecting DAKS, the device address of DAKS must be sent before <*ENQ*>.

DAKS supports the following <*NAK*> responses:

- '1' <*NAK*> transmission error
- '2' <*NAK*> busy, queue full
- '3' <*NAK*> invalid message

If DAKS answers a message with <*NAK*> the received messages is automatically discarded.

If a message by DAKS is answered with <*NAK*> or '1' <*NAK*>, the system will repeat the message 2 more times (max. 3 attempts in total), and then send a detailed error report.

After this, it produces a detailed error report.

If a message from DAKS is answered with '2' <*NAK*>, with '3' <*NAK*>, in a different way, or not at all, the system will not repeat the message.

The system immediately produces a detailed error report.

3.9.1.2 Regarding Pos. 3.1 of the ESPA4.4.4 specification: 'Polling'

The DAKS device address can be set to a number from '0' to '9'.

DAKS is not the 'Control Station'.

3.9.1.3 Regarding Pos. 4.2 and Pos. 4.3 of the ESPA4.4.4 specification

The supported Headers and Records are covered below.

3.9.1.4 Pos. 5 of the ESPA 4.4.4 specification: 'Hardware specification'

When applying ESPA 4.4.4 the operation should be in keeping with the protocol, i.e. with 7 data bits, even parity and 2 stop bits. The default baud rate is 1200 baud.

3.9.2 General information

The host system, e.g. a (nurse) call system in a hospital, communicates with DAKS via ESPA 4.4.4 The character set that is used is ISO 8859-1. For MSB=0, this character is equivalent to the character set US-ASCII.

DAKS enables broadcasts:

- with output of a variable text
- with evaluation of the record type 'Priority'
- with callback calls to the calling patient's telephone
- with call cancellation by the host station, incl. synchronization at restart
- with expanded reports or status-information

DAKS signals the following status changes to the host system:

- call in processing
- callback initiated
- call ended with/without success (detailed)
- call ended after call to patient, if needed with call processing information (save/cancel call)

The last status message that is sent in the direction of ESPA 4.4.4 (final broadcast results, error message) is saved in DAKS until this message is retrieved by the host system (targeted retrieval or polling), but no longer than 2 minutes.

For callback calls, e.g. to a calling patient, DAKS exclusively supports microphone units that act like a telephone and that are connected to the PBX system, i.e. no special telephone couplers with e.g. DTMF suffix dialing.

For this functionality, the ESPA specification has, among other things, been expanded to also include the record type 'Call ID' plus additional data within the record types which were already defined in keeping with the ESPA specification.

You need to administrate broadcasts in DAKS.

These broadcasts can contain just one or several subscribers.

➤ see Section 8.16 "Subscribers"

The broadcast are addressed on the basis of their individual IDs that are sent within the 'Call Address' of the ESPA 4.4.4 dataset.

➤ see Section 3.9.5 "Activate DAKS calls"

DAKS behavior during broadcasts via serial interface:

- Via the serial interface, DAKS accepts the commands that launch broadcasts.
- DAKS writes the broadcast requests into an internal queue.
- DAKS caries out the respective broadcasts.
- DAKS reports back the status and/or results via the serial interface.



Note:
If the external system requires an instant feedback, for example because it is otherwise unable to activate a new broadcast, DAKS can send back a positive result immediately after receipt of the broadcast request.

➤ see Section 7.5 "Parameters of the serial interfaces (COM ports)"

In this case, there are no automatic reports concerning the progress or the final results of the broadcast.

The system can process a maximum of 10 broadcast requests in the queue.

Up to 10 broadcasts can be active and processed in parallel.

Broadcast requests are removed from the queue:

- immediately following a status message with the final results.
  ➤ see Section 3.9.9 "Status messages from DAKS"
- 2 minutes after the Broadcast end
- 2 minutes after the broadcast is canceled (e.g. by the operator or a high-priority activity)
- 2 minutes after failure to start the broadcast that was to be launched, e.g. if the phone connection(s) to the PBX was/were lost
- when DAKS considers the external system (the call system) as no longer active.
  This is always the case when DAKS is neither polled for a certain period of time (time is configurable: 1 .. 10 minutes), nor receives a valid dataset.

3.9.3 Monitoring of the Connection

The ESPA 4.4.4 protocol itself does not contain heartbeats.

If no messages are received from the controller for a period of time and exceeding the configured time (configurable: 1 .. 10 minutes), DAKS assumes that the ESPA 4.4.4 interface is no longer active.

In this case, DAKS will send a message via VCON or SYSLOG and the printer and, where applicable, activate a contact output.

➤ see Section 8.13.3 "AVIOTEC Camera"

Also, the system completes all processes that are already active and still ongoing.

The system does not answer any subsequent status requests from ESPA 4.4.4 regarding these processes.

3.9.4 Automatic callback to the initiator (patient)

Callback calls are initiated with '5', by pressing the softkey 'Call' for WL3 communication devices, or by pressing the 'Call button' for MiVoice communication devices.

Callback calls are only possible with the below group-specific settings in DAKS:

- The 'Number of broadcast targets to reach' is set to: '1'.
- It may not be a broadcast with automatic entry into a conference.
- The 'reached criterion' for the reached broadcast target is: 'Pos./neg. confirmation'.

If the callback call connection fails because the callback destination is busy, could not be reached, failed to accept the call, had no authorization to be called again, or because DAKS had no more channels available:

- the target is played 5 short tones,
- DAKS then again plays the broadcast announcement + the prompt, and
- the target can again choose between confirm positive, confirm negative and callback call.

Once a callback call connection is established, the called user (nurse) has, if applicable, several signaling options, e.g. to select:

- 'Delete call'
- 'Save call'

For this purpose, you can configure DAKS so that DAKS evaluates both special signalings during a callback call (none, only '#', only '1', '1' and '#') and which of the signalings automatically end the call.

The system releases also the connection to the called patient when the nurse ends the callback call by going on hook or by pressing the corresponding key (key is configurable, see below).

If the call is released through the ESPA 4.4.4 interface, or because the patient hangs up, the system retains the connection to the nurse for another 8 seconds.

After that, DAKS will release the call. If needed, the nurse can still signal with the pound key "#" or "1" during this time.

When the system calls multiple subscribers at the same time (in parallel), parallel calls are released as soon as the telephone interface connects, i.e. when the call is through-connected.

3.9.5 Activate DAKS calls

3.9.5.1 General information, Header

Calls are activated via the header 'Call to pager' ('1').

The below-described data identifiers or record types can be sent in any order.

If a call activation with identical record type data is sent again while it is already being processed in the DAKS queue, the system will accept the dataset with *<ACK>* but not process it any further.

3.9.5.2 Record type 'Call Address', data identifier '1'

The call address must be sent; otherwise DAKS responds with '3' *<NAK>*.

The call address must be numeric and consist of 1 to 4 digits, otherwise DAKS responds with '3' *<NAK>*.

The call address must match the group identifier of the broadcast as administrated in DAKS; otherwise DAKS will respond to the dataset with *<ACK>*, but not move it to the queue of the calls to be processed.

3.9.5.3 Record type 'Display message', data identifier '2'

The display message may have 0....160 characters (in the ESPA protocol normally limited to 128).

Display messages that exceed this length are answered by DAKS with '3' *<NAK>*.

The display info shown to a called subscriber and whether or not he/she can initiate a callback call with the redial function or with a one-key-function depends on the the following factors:

- the structure of the 'Display Message'
- specific parameters of DAKS (group-specific and telephony)
- the ESPA Record type 'Call Type'
  ➤ see Section 3.9.5.5 "Record types 'Call Type', data identifier '4'" = Callback enabled
- the nurse's communication device

In order to callback patients with redial:

- the device (telephone) must support this function,
- the 'Display message' must begin with the calling number of the patient + `<Space>` and
- within the broadcast, the parameter 'Show initiator info' must be enabled. *)

*) *Background*:
Only when the 'Display message' begins with up to 6 numbers + `<Space>` *does the system discard the numeric sequence on the 'Calling Number' and the space, and transmits the remainder (following after the space) as the 'Calling Name'.*

To make callback calls to a telephone using the one-key-function through DAKS:

- these types of callback calls must be enabled by ESPA
  ➤ see Section 3.9.5.5 "Record types 'Call Type', data identifier '4'"
- the display message must also begin with the patient's calling number + `<Space>` and
- DAKS must be the configured to the effect that:
  – the broadcast ends as soon as one subscriber has been reached and
  – in the active connection, the reached subscriber may confirm in form of a positive or negative confirmation.

3.9.5.4 Record type 'Beep-Coding', data-identifier '3'

'Beep coding':

- does not need to be sent.
- is answered with '3' <*NAK*> if sent without any data or with data that is invalid.
- may be sent with data '0'...'9', and is evaluated as follows:
  - '0'...'5', '8' or '9':
    - no effect
  - '6':
    - Emergency call signaling if the broadcast parameters require emergency call signaling for the subscriber; otherwise the alarm is signaled using the external call signaling
  - '7':
    - generally emergency call signaling

3.9.5.5 Record types 'Call Type', data identifier '4'

The 'Call type':

- does not need to be sent,
- if not sent signifies 'Standard call' (see below),
- is answered with '3' <*NAK*> if sent without any data or with data that is invalid.

3.9.6 Evaluation of ESPA call types

The evaluation of the ESPA 'Call Type' is as follows:

Data	Significance acc. to ESPA	Effect
'0'	Reserved	Like 'Standard call'
'3'	Standard call	No callback is possible
'1'	Reset (cancel) call	Delete the call ➤ see Section 3.9.7.1 "Reset call"
'11'	Reset all calls	Delete all calls from queue (for system restart) ➤ see Section 3.9.7.2 "Reset all calls"
'2'	Speech call	Depending on whether a callback call is possible: - if not possible ("no"): same effect as '3' - if possible ("yes"): same effect as '21'
'21'	DAKS-specific	Callback over the phone is possible Prerequisites: - callback functionality is enabled in DAKS - callback number is shown in the 'Display message' ➤ see Section 3.9.5.3 "Record type 'Display message', data identifier '2'"
'22'	DAKS-specific	Callback to the (nurse) call system is possible Prerequisites: - callback functionality is enabled in DAKS - 'Nurse call-Interface' is identified
'23'	DAKS-specific	Callback over the phone to the (nurse) call system is possible Prerequisites: - for callback over the phone - see data '21' - for callback over the (nurse) call system - see data '22'
'4'	Page	Same as 'Standard call', but with the following specialty: The call is not saved in ESPA and can therefore not be polled. No status information is returned to the host system.

Table 3-4 Record type 'Call Type'

3.9.6.1 Record type 'Number of transmissions', data identifier '5'

'Number of transmissions':

- does not need to be sent.
- may be sent with the data '0'...'9'.
- is answered with '3' <*NAK*> if sent without any data or with data that is invalid.
- is currently not evaluated.

3.9.6.2 Record type 'Priority', data identifier '6'

'Priority':

- does not need to be sent.
- may be sent with the data '0'...'3'.
- is answered with '3' <*NAK*> if sent without any data or with data that is invalid.

3.9.6.3 Record type 'Nurse call interface'

Callback calls to the call system are not supported by DAKS.

The data identifier to specify the 'Nurse call interface' reads 'E' ($45).

As data to the nurse call interface, the following can be transmitted:

- Connection type, 3 ASCII characters
  (must match the connection type as administrated in DAKS)
- where applicable, separators; either: comma, colon or <`Space`>
  (only if followed by the callback number)
- where applicable, the callback number that is evaluated by the call system
  (up to 10x: characters 0...9, * or #)

If the record type 'Nurse Call Interface' is sent with valid data, it will be ignored by DAKS.

If the record type 'Nursecall-Interface' is sent with invalid data, the system answers with '3' <*NAK*>.

3.9.6.4 Record type 'Call ID'

'Call ID':

- makes it easy to identify a call in dialogs between DAKS and the call system,
- makes it possible to allocate commands to several calls at the same time (e.g. 'Delete'),
- is indispensable for the transfer of certain status information,
- designates an 'Event',
- does not need to be unique in and of itself, i.e. several calls may share the same Call ID,
- must be unique together with the 'Call Address'.

If the call system again sends a call request with the same 'Call ID' and the same 'Call Address' while a call with the same call ID and call address is already being processed in the DAKS queue (either queuing or already started), the system will accept the dataset with <*ACK*>, but will not process it any further.

The Call ID has the data identifier 'I' ($49).

The data of the Call ID (the event number) has 4-digits, is numeric and ASCII encoded ('0000' through '9999').

3.9.7 Cancel broadcasts in DAKS

3.9.7.1 Reset call

This command is used to delete one or several broadcasts, i.e.:

- these broadcasts are either not launched at all if they are already queuing in the internal queue of DAKS, or
- these broadcasts are terminated if they are currently active, with a corresponding message sent to the subscribers with whom DAKS is presently connected.

With this command, both all broadcasts are immediately removed from the queue.

After that, status requests are no longer possible, see below.

If a callback call is already active and ongoing, the parties can still end it normally, i.e. the system does not interrupt the callback call.

Again, in this case no status reports are sent any longer, either.

The function Reset Call is particularly useful when a patient call is canceled irrespective and independent of the alarm that was raised over the phone (e. g. directly in the patient room), but a call request was already addressed to DAKS.

If the 'Call ID' is used and all calls with a certain 'Call ID' are to be deleted, the cancel command must consist of:

- Header = Call to Pager ('1')
- Record-Type 'Call Type' ('4') = Reset (cancel) call ('1')
- Record type 'Call ID' ('I') = Event number

If the 'Call ID' is used and all calls to which a specific Call ID was assigned are to be deleted, the cancel command must consist of:

- Header = Call to Pager ('1')
- Record-Type 'Call Type' ('4') = Reset (cancel) call ('1')
- Record type 'Call ID' ('I') = Event number
- Record type 'Call Address' = Group identifier

If no 'Call ID' is used and a single subscriber call or a single group call is to be deleted, the cancel command must consist of:

- Header = Call to Pager ('1')
- Record-Type 'Call Type' ('4') = Reset (cancel) call ('1')

Other record types and their entries:

- Make sure they fully match the ones of an already existing call so that DAKS can allocate them internally to that call.
- The order in which other record types are sent can be random (any).

3.9.7.2 Reset all calls

Use the global cancel command to synchronize the Host system and DAKS, e.g. after a restart of the host system.

The system continues to process all active calls and activates all calls that are in the queue but have not yet started. However, no feedback messages are sent for these calls to the host system, i.e. no status information.

Irrespective of whether a 'Call ID' is used or not, this global cancel command consists of:

- Header = Call to Pager ('1')
- Record type 'Call Type' ('4') = Reset all calls ('11')

3.9.8 Status request

3.9.8.1 Status request without Call ID

If no 'Call ID' is used, you can only retrieve the status of one single call.

The command consists of:

- Header = Status-Request ('3')
- Record types and their entries:
  - Make sure they are identical to those of an existing call so that DAKS can allocate them internally to the relevant call.
  - The order in which they are sent can be random (any).

3.9.8.2 Status request with Call ID

If a 'Call ID' is used, the external system can:

- either query the status of a specific call,
- or request DAKS to send one or more status messages for calls whose statuses have changed.

In order to query a specific call, the following command must be sent:

- Header = Status request ('3')
- Record type 'Call ID' ('I') = Event number
- Record type 'Call Address' = Group identifier

To request DAKS to send up to 5 status info details for calls whose statuses have changed (function can be deactivated):

- either a command must be sent that only consists of the Header = Status request ('3') (= global 'Status request'),
- or by the call system polling DAKS, without the call system sending a command requesting status information first.

3.9.9 Status messages from DAKS

Status messages are carried out:

- either specifically for a single call, after the appropriate 'Status request',
- or for up to 5 calls whose statuses have changed at the same time, either through a pertinent 'Status request' or through a simple polling of DAKS.

Status message after Status request without Call ID

As answer to a status request that does not include the 'Call ID' of a specific call, DAKS sends the following status message:

- Header = Status message ('2')
- The following record types and their data (in the below order):
  - Call Address ('1') *(Only if*
  - Display message ('2') *furnished*
  - Beep-Coding ('3') *with the*
  - Priority ('6') *previous*
  - Call Status ('7') *Status Request)*

Status message after Status request with Call ID

As answer to a status request with the 'Call ID' of a specific call, DAKS sends the following status message:

- Header = Status message ('2')
- The following record types and their data (in the below order):
  - Call ID ('I')
  - Call Address ('1')
  - Call Status ('7')

As answer to a global 'Status request', or when DAKS is polled without a preceding 'Status-request', DAKS answers with up to 5 'Status messages'.

Every status message can consist of:

- the result of a specific call, similar to a status request with 'Call ID' (see above),
- or an information on an active callback call (see below).

Finally, DAKS sends *<EOT>*. DAKS only sends a message on an active callback call when at least the state 'Alerting' ("ringing") is attained.

An information on an active callback call contains:

- Header = Status message ('2')
- The following record types and their data in this order:
  - Call ID ('I')
  - Call Address ('1')

DAKS supports the following defaults for the 'Call status':

- '2' (in queue):
  - The call has either not started or is momentarily active. No final results are yet available.
- '3' (paged) *) Call ended, final results positive:
  - a broadcast with no specification of the exact number of broadcast targets to reach has ended
  - for a broadcast with a specification of the exact number of broadcast targets that must be reach, sufficient targets were reached
- '5' (Call terminated) *) Call ended, final results negative:
  - for a broadcast with a specification of the exact number of broadcast targets that must be reach, not enough targets were reached
- '8' (Fault indications):
  - unable to find the wanted dataset in the DAKS queue, e.g. because already deleted
  - The broadcast was canceled *) *1)
  - Unable to start broadcast *) *1)

Also, you can select further (deactivatable) detailed status values for broadcasts that end as soon as one subscriber is successfully reached:

• '9N' (negative) *)	The call was ended, the results were negative, either no subscriber was reached or no subscriber confirmed positive
• '9P' (positive) *)	The call was ended, the results were positive, the subscriber was reached, there was no callback call
• '9K' (key) *)	The call was ended, the results were positive, the subscriber has at least confirmed by pressing a key, there was no callback call
• '9S' (speech) *)	The call was ended, there was a callback call, no special signaling was made during the call
• '91' (speech + 1) *)	The call was ended, there was a callback call, during the active call the alerted subscriber pressed the key '1' *2)
• '9#' (speech + #) *)	The call was ended, there was a callback call, during the active call the alerted subscriber pressed the key '#' *2)

*) These call status values have the effect that the dataset (i.e. the call request) is immediately deleted from the queue.

*1)For these two results, DAKS sends: 'Call terminated'.

*2) The evaluation of the keystrokes '1' and '#' is individually adjustable (see below). A signaling can still be made after the patient or the (nurse) call system released the line (timeout = 8 seconds). If '1' and '#' were pressed and both are evaluated, the system answers back '91'.

3.9.9.1 Configure status messages in DAKS

The following status messages can be configured in DAKS:

➤ see Section 7.5 "Parameters of the serial interfaces (COM ports)"

Parameter, Display output	Possible values	Significance
Extended Status	yes/no	**yes** defines that DAKS sends, where applicable, status values of group 9 as status information. **no** defines that DAKS sends the call status '3' also after the call connection. For external systems that do not support the status values '9', '91', '9#'.
Keypad echo	yes/no	**yes** defines that all keypad information (from the nurse) is converted into DTMF and sent to the telephone interface of the call system. **no** defines that the received keypad information (from the nurse) is not sent to the telephone interface of the (nurse) call system.
'1' Evaluation	yes/no	**yes** defines that the keystroke '1' (pressed by a nurse) during an active callback call to a patient is interpreted. **no** defines that the keystroke '1' (pressed by a nurse) during an active callback call to a patient is not interpreted.
'1' Disconnects	yes/no	**yes** defines that the callback call is automatically released when the key '1' is pressed. Only effective when you also enable '1' Evaluation. **no** defines that the callback call continues and is not released, not even after pressing '1'.
'#' Evaluation	yes/no	**yes** defines that the keystroke '#' (pressed by a nurse) during an active callback call to a patient is interpreted. **no** defines that the keystroke '#' (pressed by a nurse) during an active callback call to a patient is ignored.
'#' Disconnects	yes/no	**yes** defines that the callback call is automatically released when the key '#' is pressed. Only effective when you also enable '#' Evaluation. **no** defines that the callback call continues, even when the key '#' is pressed.

Table 3-5 Configurable status messages

3.10 OAP interface

The OAP data interface supports the following functions:

- Text messaging:
  - with three different call signals
  - with output of alarm text messages
  - with up to 3 softkeys (positive confirmation, negative confirmation and call establishment)
  - with call setup to the ESPA 4.4.4/TAP/ESPA-X initiator, or to enter into a conference
- Triggering of alarms:
  - initiated from up to 50 different communication devices
  - with device-individual activation of a broadcast
  - with device-individual alarm text message
  - with positioning details (limited to 50 access points)
- Transparent mode
- If the data connection to the WSG or IMS server fails or breaks down: fallback to alerting over the telephone

3.11 OM-AXI interface

The OM-AXI data interface supports the following functions:

- Text messaging:
  - with five different call signals, all of which can be configured individually via VCON
  - with output of alarm text messages in different colors
  - with up to 3 softkeys (Read, Accept/Reject, Call Setup)
  - with call setup to the ESPA 4.4.4, TAP or ESPA-X initiator, or to enter into a conference
- Triggering of alarms:
  - initiated from up to 50 different communication devices
  - with device-individual activation of a broadcast and irrespective of the alarm type, e.g. Red Alarm Button, Man-Down
  - with device-individual alarm text message
- If the data connection to the OM-AXI server fails or breaks down:
  - Fallback to
- If the OM-AXI base station fails (configurable):
  - Monitoring of the OM-AXI base station and automatic alarm activation upon failure of the OM-AXI base station (configurable)

3.12 TAP protocol

3.12.1 Functionality

The implementation of the TAP protocol is based on the following protocol specification:

"TELOCATOR ALPHANUMERIC PROTOCOL (TAP) Version 1.8, February 4th, 1997".

DAKS supports the following features via the TAP protocol:

- activation of DAKS broadcast groups with one or several subscribers,
- evaluation of "Call Types" with "Call Type"-specify priority
  – only administrated "Call Types" can activate broadcast groups
- transmission of the data from a host system (e.g. from a nurse call system) to the called subscribers, and
- termination of currently ongoing broadcasts via cancel dataset.



Note:
This software version does not support callback calls to the patient rooms.

3.12.2 Details on the TAP protocol

Activation and deactivation of the interface

Data is only accepted when both handshake connections are active.

For details on the timing or timeouts see the specification of the TAP protocol.

➤ Section 3.12.2 "Details on the TAP protocol"

It is only after a 'logon# that the datasets are analyzed and processed.

There is no cyclical heartbeat.

The interface becomes inactive as soon as one of the two handshake connections becomes inactive.

The interface is activated through the following "Login" procedure:

Host system	DAKS
<CR> repeating	
	ID= <CR> <LF> *)
<ESC> **PG1** <CR>	
	<ACK> <CR> <ESC> **[p** <CR>

Table 3-6 TAP protocol - Activate interface

*) If the two handshake connections become active after a restart, DAKS will send, repeatingly every two seconds (time is unlimited for as long as the handshake connections remain active): ID= <CR> <LF>, in order to invoke a "Login" from the call system.
(Important if the handshake connections are short-circuited on both sides.)

General dataset details if the interface is active

In keeping with the TAP specification, the data that is sent from the host system are structured as follows:

- <STX> `<Payload>` <ETX> <CHKSUM> <CR>

The maximum payload volume is 250 bytes.

The checksum consists of 3 bytes.

DAKS responds as follows to received datasets:

Received data	DAKS reply
Dataset with correct checksum (irrespective of whether this checksum can be processed further or not)	<CR> <ACK> <CR>
Dataset with wrong checksum	<CR> <ACK> <CR>
data fails to add up (dataset too long or aborted)	no reply

Table 3-7 TAP protocol - Data received and reply from DAKS

Description of the "Call activation dataset" and DAKS display outputs

Every "Call activation dataset" must contain this payload between <STX> and <ETX> to be processed by the system:

- <Group ID> <CR> <Initiator info> <Space> <call type> <CR>

The components must be in this syntax:

Component	Syntax
<Group ID>	Up to 4 digits = Relevant broadcast group that shall be activated Within the host system, this translates e.g. to "Pocket Pager extensions"
<Initiator info>	The number of characters is only restricted by the overall length of the dataset and by the properties of the telephone display of the telephones that receives the call – <Initiator info> may contain empty lines – <Initiator info> may consist of two parts, e.g. of the room number plus (optional) the bed number, separated by a specific character. Example (from a Rauland nurse call system): **201:1** means: Room no. 201, Bed no. 1 (by default bed numbers have no more than one digit)
<Call Type>	Call Type, e.g.: **`Normal, Bed, Fire, Bath, Emergency, Code Blue, RN, LPN`**

Table 3-8 TAP protocol - Components and syntax

Example datasets for a call activation, incl. framing:

- <STX> **`1002`** <CR> **`201:1 Code Blue`** <CR> <ETX> <CHKSUM> <CR>
- <STX> **`1002`** <CR> **`201:1 STAT`** <CR> <ETX> <CHKSUM> <CR>

For easier readability, DASK can add two texts to <Initiator Info>, e.g.:

- **201:1** can be output as "Room 201 Bed 1".

For easier readability, DAKS supports the following three VCON parameters:

➤ see Section 7.5 "Parameters of the serial interfaces (COM ports)"

Parameters	Description
<Fixed text 1>	Up to 8 characters (The display output that is always shown first.)
<Separator>	Separator (It divides the <Initiator info> into two segments.) This separator is not shown on the display.
<Fixed text 2>	Up to 8 characters (The display output that is shown before the second part of the <Initiator info>.)

Table 3-9 TAP protocol - Enhanced display output DAKS

Description of the "Cancel dataset"

Every "Cancel dataset" must contain the following payload between <STX> and <ETX> to be processed by the system:

- <Group ID> <CR> <Initiator info> <Space> <Cancel-Identifier> [<call type>] <CR>

The components must be in this syntax:

Component	Syntax
<Group ID>	up to 4 digits = relevant broadcast group that shall be activated Within the host system, this translates e.g. to "Pocket Pager extensions"
<Initiator info>	Number of characters that is only restricted by the overall length of the dataset and by the properties of the telephone display of the called phone – <Initiator info> may contain empty lines – <Initiator info> may consist of two parts, e.g. of the room number and (optional) the bed number, separated by a specific character. Example (from a Rauland nurse call system): **201:1** signifies: Room no. 201, Bed no. 1 (by default bed numbers have no more than one digit)
<Cancel-Identifier>	Identifier of the Cancel dataset, either `Cancel` or `Cancelled`
<Call Type>	Call Type, e.g.: **`Normal, Bed, Fire, Bath, Emergency, Code Blue, RN, LPN`**

Table 3-10 TAP protocol - Cancel dataset

Example datasets of a Cancel dataset, incl. framing:

- <STX> **1002** <CR> **201:1** `Cancelled` **Code Blue** <CR> <ETX> <CHKSUM> <CR>
- <STX> **1002** <CR> **201:1** `Cancel` <CR> <ETX> <CHKSUM> <CR>

3.12.3 Details on the call activation dataset

In DAKS, broadcast must be administrated, with each broadcast consisting of one or several members. The relevant broadcast is addressed or selected by way of its identifier of up to 4 digits.

DAKS broadcast are activated with the "Call activation datasets":

- when the received <Group ID> of a call activation data matches the broadcast ID as administrated in DAKS.
- when the received "Call Type" is included in the list of "Call Types" as administrated in VCON.

The "Call Types" list can contain up to 20 entries with "Call Type" and the following "Call Priority":

- Emergency
- High
- Low

The "Call Type"-specific "Call Priority" defines the sequence in which broadcast processes that are currently buffered in the queue are activated.
In addition:

- if the "Call Priority" is set to "Emergency", DAKS activates both the feature "Forced release" and the feature "Alarm call rhythm".
- if the "Call Priority" is set to "High", DAKS activates the feature "Intrusion" (provided an intrusion announcement is available), otherwise the feature "Call Waiting" if no special line-busy behavior is administrated for the broadcast ('If line busy').

Therefore, no more than one broadcast needs to be configured if it is always the same subscribers that need to be reached in normal calls, in calls that have a higher priority or in emergency calls, because the differentiation applied by DAKS when calling the subscribers can be configured to depend on the "Call Type".

If the exact call activation with the same data is sent again while the DAKS process it still active, the dataset is answered with <*ACK*> but not processed any further or discarded.

The <Initiator Info> and the <Call Type> are shown as text message on the telephone's display.

If the <Initiator Info> carries up to 6 digits and not followed by ":<bed no>", the <Initiator Info> is sent to the communication device as "Calling Number". This enables you to make easy-to-initiate manual callback calls.

3.12.4 Details on the Cancel dataset

Cancel datasets can be used to cancel DAKS calls, i.e.:

- the calls are either not started at all if they are momentarily still in DAKS' internal queue.
- if they are momentarily active, DAKS cancels the calls and sends corresponding message to all subscribers who are currently connected with DAKS.

This feature is particularly useful when a call is canceled irrespective and independent of the alarm that was raised over the phone (e. g. directly in the patient room), but a call request was already addressed to DAKS.

If **no <Call Type>** with a <Cancel Identifier> is sent (typical for Responder 4000), DAKS cancels all broadcast processes whose <Group ID> and <Initiator Info> match.

If **a <Call Type>** with a <Cancel Identifier> is sent (typical for Responder IV), DAKS cancels all broadcast processes whose <Group ID>, <Initiator Info> and <Call Type> match.

3.13 Reports

DAKS logs the processes of broadcasts, of broadcasts with automatic entry into a conference and of Meet-Me conferences on its internal memory card and/or on an external hard drive.

All of these reports can be retrieved through the browser interface and saved, printed out as hard-copy, or deleted when no longer needed.

➤ see Section 8.20.3 "Save reports"

In addition, DAKS outputs these reports via printer through VCON (only if administrated).

➤ see Section 4.10 "Configure and test the printer"

Please find below 3 examples of DAKS reports via VCON.

3.13.1 Example of a report printout via VCON for a Broadcast

```
**********************************************************************
----------------------------------------------------------------------
DAKS Broadcast Report
----------------------------------------------------------------------
Consecutive number:        756
Activated broadcast group: Fire alarm
Initiated via:             Phone
Initiator:                 484
For these technical details:
Send results e-mail to:
Total broadcast targets:   5
Overall result:            Positive
Positive results:          5
Negative results:          0
E-mails sent:
Not processed:             0

----------------------------------------------------------------------
Events
----------------------------------------------------------------------
14.06.18 10:35  Started
14.06.18 10:35  Active
14.06.18 10:38  Ended

----------------------------------------------------------------------
 Individual Broadcast Results (Positive)
----------------------------------------------------------------------
14.06.18 10:38 5428 (Reached)

----------------------------------------------------------------------
 Individual Broadcast Results (Negative)
----------------------------------------------------------------------
14.06.18 10:35 5430 (Not reached)
14.06.18 10:37 5429 (Not reached)

----------------------------------------------------------------------
 Individual Broadcast Results (Not processed)
----------------------------------------------------------------------
14.06.18 10:35 5440 (Subscriber inactive)
14.06.18 10:38 5433 (Broadcast terminated)

**********************************************************************
```

Image 3-2 Report printout via VCON for a broadcast

3.13.2 Example of a report printout via VCON for a Meet-Me Conference

```
**********************************************************************
 ---------------------------------------------------------------------
 DAKS Conference Report
 ---------------------------------------------------------------------
 Consecutive number:         15
 Activated conference:       Weekly Planning (1010)
 Initiated via:              Phone
 Initiator:                  MRS. Smith
 ---------------------------------------------------------------------
 Events
 ---------------------------------------------------------------------
 20.03.18 12:03  Started
 20.03.18 12:04  Conversation active
 20.03.18 12:04  Ended
 ---------------------------------------------------------------------
 Individual Conference Results
 ---------------------------------------------------------------------
 20.03.18 12:04   1:6490 Hr. Meyer (Start ID Entry)
 20.03.18 12:04   2:6011 Hr. Müller(Start ID Entry)
 20.03.18 12:04   1:6490 Hr. Meyer (Start ID Exit)
 20.03.18 12:04   2:6011 Hr. Müller(Start ID Exit)

**********************************************************************
```

Image 3-3 Report printout via VCON for a Met-Me Conference

3.13.3 Example of a report printout via VCON for a Broadcast with automatic entry into a Conference

```
*****************************************************************
 ---------------------------------------------------------------
 DAKS Broadcast Report
 ---------------------------------------------------------------
 Consecutive number:        18
 Type                        B/C
 Activated broadcast group:  Broadcast (9999)
 Activated conference:       ConfGroup
 Initiated via:              Phone
 Initiator:                  Mr. Noll
 Information:                "1490 Mr. Noll"
 Total broadcast targets:    2
 Overall result:             Positive
 Positive results:           2
 Negative results:           0
 Not processed:              0
---------------------------------------------------------------
 Events
---------------------------------------------------------------
 20.06.18 12:48  Started
 20.06.18 12:48  Active
 20.06.18 12:48  Conversation active
 20.06.18 12:49  Ended
---------------------------------------------------------------
 Individual Broadcast Results (Positive)
---------------------------------------------------------------
 20.06.18 12:48  9204 (Positive confirmation)
 20.06.18 12:48  6011 (Positive confirmation)
---------------------------------------------------------------
 Individual Broadcast Results (Negative)
---------------------------------------------------------------
---------------------------------------------------------------
 Individual Broadcast Results (Not processed)
---------------------------------------------------------------
---------------------------------------------------------------
 Individual Conference Results
---------------------------------------------------------------
 20.06.18 12:48   1:1490 Mr. Noll (Initiator Entry)
 20.06.18 12:48   2:9204 Mr. Meier(Broadcast Target Entry)
 20.06.18 12:48   3:6011 Mr. Müller(Broadcast Target Entry)
 20.06.18 12:48   3:6011 Mr. Müller(Broadcast Target Exit)
 20.06.18 12:49   2:9204 Mr. Meier(Broadcast Target Exit)
 20.06.18 12:49   1:1490 Mr. Noll (Initiator Exit)

*****************************************************************
```

Image 3-4 Report printout of a broadcast with automatic entry into a conference

3.14 SNMP implementation

The SNMP service of DAKS realizes an SNMP agent that can be queried by SNMP managers. The SNMP implementation of DAKS supports the protocol versions SNMPv1, SNMPv2c and SNMPv3.

It applies exclusively MIB-2 branches in accordance with RFC1213

"Management Information Base for Network Management of TCP/IP-Based Internets: MIB-2" or its successor RFC 3418 "Management Information Base (MIB) for the Simple Network Management Protocol".

The required SNMP system information (e.g. the name and location of the device) is administrated in the SNMP manager, from where it is communicated to DAKS. The SNMP functionality operates e.g. in combination with the HiPath Fault Manager.

Specific incidents, especially the buildup or breakdown of connections, but also the reboot of the system and false community strings create so-called SMNP traps, i.e. independent autonomous messages that can be output. In addition, it is possible to query the present status of all DAKS interfaces.

Whenever a connection is build up or cut, but also whenever a function becomes active/inactive, taps can be generated (configurable) to signal:

- Aapplication DAKS active (up and running)
- First network connection active (again)
- Second network connection active (again); (applies only to DAKS-200)
- First ESPA -X interface active/inactive
- Second ESPA-X interface active/inactive (applies only to DAKS-200)
- Third ESPA-X interface active/inactive (applies only to DAKS-200)
- Fourth ESPA-X interface active/inactive (applies only to DAKS-200)
- Fifth ESPA-X interface active/inactive (applies only to DAKS-200)
- First ESPA4.4.4 interface /TAP interface active/inactive
- Second ESPA4.4.4 interface /TAP interface active/inactive
- Third ESPA4.4.4 interface /TAP interface active/inactive (applies only to DAKS-100)
- Printer online
- Printer spooler almost full/sufficiently clear again
- Printer spooler overrun
- System printer utilized: network printer active/inactive
- System printer utilized: USB printer active/inactive (applies only to DAKS-200)
- SIP trunk #1 active/inactive
- DCF synchronization available/not available (applies only to DAKS-200)
- NTP synchronization available/not available
- NTP Server 1 synchronized yes/no
- NTP server 2 synchronized yes/no
- ISDN line A active/inactive
- ISDN line B active/inactive
- ISDN line C active/inactive (applies only to DAKS-200)
- ISDN line D active/inactive (applies only to DAKS-200)
- AC power supply active/inactive (applies only to DAKS-200)
- DC power supply active/inactive (applies only to DAKS-200)
- USB contact I/Os active/inactive (applies only to DAKS-200)
- Contact input A1..4/H1..4 short circuit detected/not detected (applies only to DAKS-200)
- Contact input A1..4/H1..4 line break detected/not detected (applies only to DAKS-200)
- OAP interface active/inactive
- OM-AXI interface active/inactive

- Corridor display problem
- First display active/inactive
- Second display active/inactive
- Third display active/inactive
- Fourth display active/inactive
- Fifth display active/inactive
- Sixth display active/inactive
- Seventh display active/inactive
- Eighth display active/inactive
- Ninth display active/inactive
- Tenth display active/inactive

In addition, traps are sent automatically when the following events occur:

- Upon a reboot
- Upon any incorrect community string

The SNMP parameters of DAKS are configured through the service tool VCON and include:

- The list of all trap receivers (max. 5)
- The list of all systems that are authorized to access the SNMP service of DAKS (max. 5 or no control)
- The Trap Community String
- The Public Community Strings (max. 5 different ones)
- The Private Community Strings (max. 5 different ones)
- Where applicable, an alternative IP address of DAKS (for NAT)
- The SNMP listen port
- The traps that are sent when certain connections are established or lost, or in response to other selected incidents, see above.

3.15 List of errors, system messages and malfunction messages

This table covers the errors as well as the system and malfunction messages from DAKS, the possible reasons that caused them and how to remedy the them:

Error, system and malfunction messages	Possible reasons	Measures to remedy the situation
DAKS Administrator-Tool		
Failure to create file	Hardware or software error	Call technical support
Dialthru codes must be unambiguously left-aligned	Administrative maloperation	➤ see User Manual Section 8.18.1.1 "General details"
Error during upload of database	e.g. database contains non-licensed data, wrong file format, or error in file system	Check file, try again and if needed, call technical support
Note that when you upload a database file, all ongoing processes, i.e. all processes that are currently active in DAKS, will be canceled and the server will reboot.	Standard warning before uploading a database.	No need for action

Table 3-11 List of error, system and malfunction messages

Error, system and malfunction messages	Possible reasons	Measures to remedy the situation
References still remaining...	Administrative maloperation. For example, you cannot delete a subscriber while he/she is still registered in a broadcast.	The subscriber you want to delete must first be deleted from the broadcasts. Once this is the case, the subscriber can be deleted entirely.
The selected ID = *xxx* is not unambiguously left-aligned and may therefore not be used.	Administrative maloperation	➤ see User Manual Section 8.18 "Broadcasts"
Access to database failed Error message: <*Error message from database*>	Software error/ Corrupted database / Hardware error	Call technical support
Unable to upload the database! Database invalid.	e.g. database contains non-licensed data, wrong file format, or error in file system	Check file, try again and if needed, call technical support
Unable to upload the wave file! Wave file must have the following format: Audio format: PCM or a-law Sample size (A-Law): 8 bit Sample size (PCM): 8 or 16 bit Channels: 1 (mono) Sample rate: 8 kHz Maximum length: 15 seconds	Invalid wave file	Import wave file with valid format
DAKSmed Medical Care Organizer		
<*Name of subscriber*> may not be assigned.	Subscriber is not a nurse and can therefore not be assigned	If you want assign this subscriber as a nurse, go to the Administrator-Tool and enable the parameter 'Nurse'@'Subscribers'.
You are not authorized to assign other subscribers.	The class of service is not available	Go to the Administrator-Tool, and activate the parameter 'Supervisor' for the corresponding subscriber.
You are not authorized to carry out this action	The class of service is not available	Go to the Administrator-Tool, and activate the corresponding parameter to enable the subscriber.
DAKSmed VCON messages		
Alarm ... has no msg	Wrong administration. The broadcast that shall be launched has no valid voice message	Correct the administration by assigning a properly recorded voice announcement.
SCE root process can‘t be terminated	Internal hardware or software problem	Call technical support
can‘t to open/create...	Internal hardware or software problem	Call technical support

Table 3-11 List of error, system and malfunction messages

Error, system and malfunction messages	Possible reasons	Measures to remedy the situation
Could not remove temporary upload/download file	Internal hardware or software problem	Call technical support
Login from user ... is already logged in	Attempt to log in using details of already logged in user	Organizational prevention to make sure that several users can not use the same user details.
Login from user ... Too many sessions	License problem	Call technical support
Operator login from user ... is unauthorized	User is not authorized to login	Call technical support
Assertion...	Internal hardware or software problem	Take device out of service. Call technical support
Could not use SNMP for ETH: ...	Internal hardware or software problem	Call technical support
Error initializing VCON connection data. Data is set to default.	Internal hardware or software problem	Call technical support
VCON stream timed out...	Network problem	Call technical support
License ... has invalid ...	Not sufficient licenses available	Call technical support
... device ... device not active	Internal hardware or software problem	Call technical support
Device ... watchdog failed	Internal hardware or software problem	Call technical support
Draeger gateway not configured	Administrative problem	Call technical support
Link to Draeger gateway ... lost	Network problem	Call technical support
Could not connect to Draeger gateway	Network problem	Call technical support
Error getting bed list from ...	Administrative problem	Call technical support
Communication lost...	Network problem	Call technical support
Communication reestablished...	Network problem solved	Call technical support
Patient ... : no longer in list...	Normal operating message: Patient has been discharged	No need for action
Bed ...: could not connect...	Normal operating mode	No need for action
Bed ...: no longer available...	Normal operating mode	No need for action
... medical alarm start...	Normal operating message	No need for action
... technical alarm start...	Normal operating message	No need for action
... medical alarm end...	Normal operating message	No need for action
... technical alarm end...	Normal operating message	No need for action
... medical alarm changed	Normal operating message	No need for action
...technical alarm changed...	Normal operating message	No need for action
Bed ...: could not get high alarm...	Normal operating mode	No need for action

Table 3-11 List of error, system and malfunction messages

Error, system and malfunction messages	Possible reasons	Measures to remedy the situation
Bed ...: could not get high vent alarm...	Normal operating mode	No need for action
...: parser error: ...	Internal hardware or software problem	Call technical support
Load monitor: ..., error...	Internal hardware or software problem	Call technical support
Load ventilator: ..., error...	Internal hardware or software problem	Call technical support
Could not start...	Internal hardware or software problem	Call technical support
Watchdog triggers WvAPI restart...	Communication problem between IDGS and WvAPI	Call technical support
Beds not unique: no name/ID in '"FMT_BED"	Software error	Call technical support
BUG bed list: multiple exact matches:...	Internal hardware or software problem	Call technical support
BUG: unhandled error ...	Internal hardware or software problem	Call technical support
...: WvAPI call ... timed out after ...	Network problems	Call technical support
Timeout ...	Network problems	Call technical support
external bed list did not match!	Internal hardware or software problem	Call technical support
... Invalid invoke ID= ...	Internal hardware or software problem	Call technical support
... Process dialog message failed. ... not found.	Internal hardware or software problem	Call technical support
Error sending data to client. Interface error: ...	Internal hardware or software problem	Call technical support
Parse error: Unexpected character ...	Internal hardware or software problem	Call technical support
Buffering data failed. Buffer too small.	Internal hardware or software problem	Call technical support
Invalid message received	Internal hardware or software problem	Call technical support
ALIVE timeout. Connection to ... server closed.	Network problem	Call technical support
...: Error sending message: ...	Internal hardware or software problem	Call technical support
INVALID DATA STATE!	Internal hardware or software problem	Call technical support
Duplicate ...	Software problem	Call technical support
Required parameter ... failed on request =...	Internal hardware or software problem	Call technical support
Parameter ... is invalid. Request =... will not be processed	Internal hardware or software problem	Call technical support

Table 3-11 List of error, system and malfunction messages

Error, system and malfunction messages	Possible reasons	Measures to remedy the situation
Counter too ...	Internal hardware or software problem	Call technical support
Connection not found for request=...	Internal hardware or software problem	Call technical support
Number of maximum connections exceeded. Connection request denied!	License problem	Call technical support
exception in ...	Internal hardware or software problem	Take device out of service. Call technical support
Invalid configuration...	Configuration problem	Call technical support
ERROR... opening socket...	Internal hardware or software problem	Call technical support
ERROR... connecting to	Network problem	Call technical support
Timeout connecting to ...	Network problem	Call technical support
Application not listening for ...	Configuration problem	Call technical support
...: No MASI server adapter for incoming ...	Software error	Call technical support
... cannot send printer data to connection. Not administrated	Printer configuration problem	Call technical support
Printer queue full. Some lines will be purged	Printer data connection error	Call technical support
ERROR: Poll timeout on session ...	Configuration or network problem	Call technical support
ERROR: Session timeout on session	Configuration or network problem	Call technical support
ERROR: ...	Internal hardware or software problem	Call technical support
Alarm is already attached for service ...	Software problem	Call technical support
Device ... is already registered	Configuration problem	Call technical support
Fatal error updating device ...	Internal hardware or software problem	Call technical support
Notifying not started. Alarm with higher/equal priority is already running.	Normal operating mode	No need for action
Alarm priority increased.	Normal operating mode	No need for action
Alarm not found in ...	Internal hardware or software problem	Call technical support
Device not found in ...	Internal hardware or software problem	Call technical support
Login from user ... not possible. Error: Too many login attempts.	A user has tried too often to login with wrong user login data. For safety reasons, the login dialog is blocked for one minute.	No need for action

Table 3-11 List of error, system and malfunction messages

4 Put DAKS into operation

Overview

This chapter shows you how to put DAKS into operation.

Contents

This chapter consists of the following sections:

4.1 Put DAKS into operation
4.2 Prepare DAKS and VCON before you put the system into operation
4.3 Configure and test the Web interface
4.4 Select the PBX connection and host interface
4.5 Configure and test the system clock
4.6 Connect DAKS-Satellite to DAKS and test the application
4.7 Connect Mail-to-Phone to DAKS and test the application
4.8 Connect and test the Digital I/Os of DAKS
4.9 Connect and test the digital outputs and the relay output
4.10 Configure and test the printer
4.11 Configure and test the SYSLOG server
4.12 Configure and test the Medical Alarm Integrator (MAI)
4.13 Configure the DAKS database
4.14 Configure and test the PBX connection
- 4.14.1 Configure and test the SIP(-Q) digital trunks
- 4.14.2 Configure and test the ISDN digital trunks

4.15 Connect and test host system(s)
- 4.15.1 Connect and test host systems via the COM port
- 4.15.2 Connect and test a host system via the ESPA-X interface

4.16 Configure and test the WSG or IMS server
4.17 Configure and test the OM-AXI server
4.19 Configure and test DAKScommunicator
4.20 Configure and test VoIP devices registered at DAKS
4.21 Configure and test hallway/corridor displays
4.22 Test the DAKS application
4.23 Save the DAKS configuration

4.1 Put DAKS into operation

This chapter shows you how to commission and startup DAKS, step by step.

Optional steps may be omitted where applicable.



Note:
To put DAKS into operation via VCON, you need to have the authorization 'service' to make all the settings that are needed.
This authorization is preconfigured ex works as default.
➤ see Section 10.1.2 "Access authorization"



Caution!
Before you put DAKS into operation, you need the latest software with the matching documentation package as well as the latest connection instructions.
These are available through the 2nd Level Support.



Caution!
To use DAKSmed, you must provide for a bandwidth of at least 2 Mbit/s in the network/data network.

How to put DAKS into operation, step by step

No.	Task
1.	Configure DAKS and VCON: ➤ see Section 4.2 "Prepare DAKS and VCON before you put the system into operation" **Required**
2.	Configure and test the Web interface: ➤ see Section 4.3 "Configure and test the Web interface" **Required**
3.	Select the PBX trunk interface and, if applicable, also the interface of the host system: ➤ see Section 4.4 "Select the PBX connection and host interface" **Optional**
4.	Configure the PBX connection in keeping with the setup in Step 3: ➤ see Section 4.14 "Configure and test the PBX connection" ➤ see Section 4.14.1 "Configure and test the SIP(-Q) digital trunks" ➤ see Section 4.14.2 "Configure and test the ISDN digital trunks" **Optional**
5.	Configure the DAKS Communicator: ➤ see Section 4.19 "Configure and test DAKScommunicator" **Optional**
6.	If necessary, connect and test a DAKS mobile client: ➤ see “DMC User Manual” ➤ see Section 4.17 "Configure and test the OM-AXI server" **Optional**
7.	Configure the VoIP communication devices that are registered directly at DAKS: ➤ see Section 4.20 "Configure and test VoIP devices registered at DAKS" **Optional**
8.	Configure "M3 Plus" devices: ➤ see M3 Plus setup instructions **Optional**
9.	Configure the hallway/corridor displays: ➤ see Section 4.21 "Configure and test hallway/corridor displays" **Optional**
10.	Configure and test the system clock: ➤ see Section 4.5 "Configure and test the system clock" **Required**
11.	If needed, configure and test of the digital inputs: ➤ see Section 4.6 "Connect DAKS-Satellite to DAKS and test the application" ➤ see Section 4.8 "Connect and test the Digital I/Os of DAKS" **Optional**
12.	If needed, configure and test the digital outputs and the relay output: ➤ see Section 4.9 "Connect and test the digital outputs and the relay output" **Optional**
13.	If needed, configure and test the printer: ➤ see Section 4.10 "Configure and test the printer" **Optional**

Table 4-1 DAKS commissioning

No.	Task
14.	If needed, configure and test a SYSLOG server: ➤ see Section 4.11 "Configure and test the SYSLOG server" **Optional**
15.	Carry out the administration of the application DAKS: ➤ see Section 4.13 "Configure the DAKS database" **Required**
16.	If needed, connect and test DAKS-Satellite: ➤ see Section 4.6 "Connect DAKS-Satellite to DAKS and test the application" **Optional**
17.	If needed, connect and test Mail-to-Phone: ➤ see Section 4.7 "Connect Mail-to-Phone to DAKS and test the application" **Optional**
18.	If needed, connect and test a host system: ➤ see Section 4.15 "Connect and test host system(s)" ➤ see Section 4.15.1 "Connect and test host systems via the COM port" ➤ see Section 4.15.2 "Connect and test a host system via the ESPA-X interface" **Optional**
19.	If needed, connect and test WSG or IMS: ➤ see Section 4.16 "Configure and test the WSG or IMS server" **Optional**
20.	If needed, connect and test the OM-AXI server: ➤ see Section 4.22 "Test the DAKS application" **Optional**
21.	If needed, connect and test the MASI interface to the Infinity gateway: ➤ see Section 4.12 "Configure and test the Medical Alarm Integrator (MAI)" **Optional**
22.	Run a backup of the configuration of DAKS: ➤ see Section 4.23 "Save the DAKS configuration" **Required**

Table 4-1 DAKS commissioning

4.2 Prepare DAKS and VCON before you put the system into operation

How to prepare DAKS and VCON for the system startup, step by step:

No.	Task	
1.	Connect **DAKS-110** to the electric power supply using a patch cable cord (K-CAT6-0300): • either to a PoE switch, • or to the PoE injector ➤ see "DAKS-110 Hardware Service Manual"	For **mDAKS**, the power supply can be via AC, DC, or AC and DC. When using both types of power supply, mDAKS draws the power from the AC power supply unit. If either of the two power supplies should fail, the system will detect the breakdown and mDAKS can issue a warning (e.g. via SNMP). ➤ see "mDAKS Hardware Service Manual"
	**Note:** Ex works, the DAKS has the IP address 192.168.20.100 and listens at the port 2180.	
2.	Connect your service PC to the same LAN segment as the DAKS.	
3.	If VCON is not yet installed on your service PC, please install VCON now. ➤ see Section 10.12 "Install VCON" Start the VCON service tool console and set up a connection. ➤ see Section 10.2 "Start VCON" ➤ see Section 10.2.1 "Configure and edit a VCON connection" ➤ see Section 10.2.2 "Connect with DAKS"	
4.	If VCON is unable to connect with DAKSvia LAN: • connect DAKS with VCON via USB, or through another terminal emulation program. ➤ see Section 6.3 "Connect the hardware to the Service PC for the first time" If the VCON version is not compatible with DAKS: • install the latest VCON version. ➤ see Section 10.12 "Install VCON"	
5.	Open the Process window "DAKS Application". ➤ see Section 10.8 "The Terminal window"	

6.	Make sure that DAKS has the latest software version or upload the latest version.
	In the Process window "DAKS Application" enter the command **ver** and press <enter>.
	The current version of DAKS will now be output in the Process window in the following format:
	`<Version>.<Revision1><Revision2><Patch Level>`
	Compare this version against the software version of DAKS on your PC.
	Please contact the 2nd Level Support for the latest version of DAKS.
	The file name reads:
	`DAKS <Version>.<Revision1><Revision2><Patch Level>.vtf`
	If the software version in DAKS is older than the software on your PC, download the newest software version now.
	➤ see Section 10.4.1 "Upload installation files, license files or a backup"	

Table 4-2 Preparatory steps for DAKS and VCON

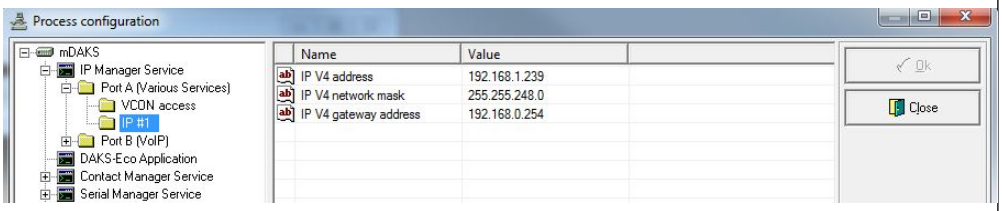
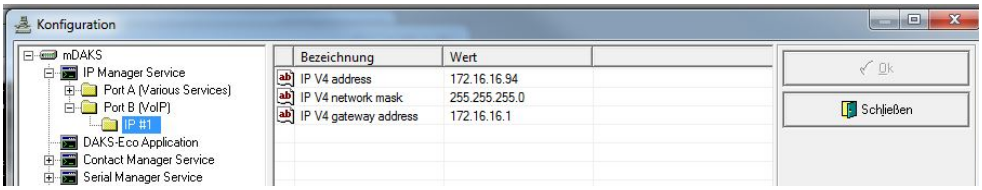
No.	Task
7.	Open the user window with the properties and settings of the process 'IP Manager Service', e.g. by making a double click on the process 'IP Manager Service' in the process list. Switch to 'Various Services (Port A)' / 'IP #1' and adjust the IP parameters via VCON. (For µDAKS this is the only LAN interface (ETH). For DAKS-110 this is the LAN interface 'A'. Except for 'VoIP', all other services are generally routed via this interface. 'VoIP' is routed either via the LAN port 'A' or the LAN port 'B'. • IP address — IP V4 address • Network mask — IP V4 network mask • Gateway — IP V4 gateway address  For the VoIP connection DAKS-200 requires separate network parameters. Switch to 'VoIP' / 'IP #1' and adjust the IP parameters via VCON: • IP address — IP V4 address • Network mask — IP V4 network mask • Gateway — IP V4 gateway address  **Note:** Your network provider will provide you with the IP parameters (IP address, network mask, gateway).

Table 4-2 Preparatory steps for DAKS and VCON

4.3 Configure and test the Web interface

How to configure and test the Web interface of DAKS, step by step:

No.	Task
1.	Start VCON and set up the LAN connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
2.	Open the configuration of the process "Server/Web Interface". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Configure the Web interface and check if all settings are correct. ➤ see Section 7.22 "Application parameters"
Test the Web interface	
4.	Open a Web browser and enter the URL (e.g. http://192.168.20.100) for the administration or visual output of DAKS. For the administration: ➤ see Section 8.1 "General information" ➤ see Section 8.2 "Login to DAKS" For the visualization: ➤ see Section 9.1 "General details" ➤ see Section 9.2 "Login to DAKS"
5.	The Web interface is now configured and tested, and is ready for operation.

Table 4-3 Configure and test Web interface

4.4 Select the PBX connection and host interface

How to select the PBX connection, step by step:

No.	Task
1.	Start VCON and set up the LAN connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
2.	Open the configuration for the process "DAKS Application". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Now select the PBX connection and assign to the interfaces (serial or ESPA-X) the data interface licenses in order to connect them to the host systems. For the PBX connection, DAKS offers either ISDN or VoIP and for host interfaces either ESPA 4.4.4/TAP or ESPA-X. ➤ see Section 7.22 "Application parameters"

Table 4-4 Select the PBX connection and, where applicable, the host interface

4.5 Configure and test the system clock

How to configure and test the DCF-Service, the NTP-Service and the system clock, step by step:

No.	Task
1.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
2.	Open the configuration of the process "Server/Time". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Select the time zone and configure the automatic switching from summer daylight saving time to winter standard time. ➤ see Section 7.23 "DCF, NTP and system clock parameters"
4.	If needed, connect the DCF clock or configure one or two NTP servers for the synchronization. ➤ see Section 7.23 "DCF, NTP and system clock parameters" ➤ continue with Step 8 or synchronize the system clock with the clock of your PC. ➤ continue with Step 5
5.	Open a web browser. ➤ see Section 8.1 "General information"
6.	Log in to DAKS with the authorization 'Edit&upload/save' an. ➤ see Section 8.1 "General information"
7.	Synchronize the system clock. ➤ see Section 8.5 "Data/Server"
Test the NTP-Service and the system clock	
8.	Open the Services window of the process "Services/Time". ➤ see Section 10.8 "The Terminal window"

Table 4-5 Configure and test NTP service and system clock

No.	Task

9.	Check the status of the connections to the DCF receiver or the registered NTP server(s), (optional).
	Enter the command `status` and press <enter>.
	This will output the status of the selected source (see examples below).
	
	If DAKS is synchronized with the DCF receiver, the output that appears may look like this (example):
	`2012-05-09 09:20:48.6080 [00000001]: <-- current time. Clock is DCF-receiver`
	`Timezone: CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:00 DST`
	`enabled: yes`
	
	`clock DCF:`
	`time: 2012/5/9 07:20:48 UTC`
	
	If the DAKS is synchronized with the NTP server (`Clock is NTP`), the output that appears may look like this (example):
	`2012-05-09 09:20:48.6080 [00000001]: <-- current time. Clock is NTP: 192.168.0.1`
	`Timezone: CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:00 DST`
	`enabled: yes`
	
	`clock RTC:`
	`time: 2012/5/9 07:20:48 UTC (offset 0 s)`
	
	`clock 192.168.0.1:`
	`time: 2012/5/9 07:20:48 UTC (offset 0 s)`
	`stratum: 2`
	`server's last update: 2012/5/9 07:12:35 UTC`
	`our last connection to server: 12 s ago`
	
	`clock 192.168.0.81:`
	`time: 2012/5/9 07:20:45 UTC (offset -3 s)`
	`stratum: 4`
	`server's last update: 2012/5/9 07:12:36 UTC`
	`our last connection to server: 12 s ago`
	
	If DAKS uses the internal clock (`Clock is RTC`), the output that appears may look like this (example):
	`2012-05-09 09:32:50.8800 [00000001]: <-- current time. Clock is RTC`
	`Timezone: CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:00 DST`
	`enabled: yes`
	
	`clock RTC:`
	`time: 2012/5/9 07:32:51 UTC (offset 1 s)`
	`Timezone: CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:00 DST`
	`enabled: yes`
	
	`clock RTC:`
	`time: 2012/5/9 07:32:51 UTC (offset 1 s)`

Table 4-5 Configure and test NTP service and system clock

No.	Task
	The date and time has the following format: <YYYY-MM-DD hh:mm:ss:ms> <-- current time • YYYY Year • MM Month • DD Day • hh Hour • mm Minute • ss Second • ms millisecond **The following output appears when the time is synchronized manually via the Web interface:** `2013-08-14 14:59:49.0042 System time and RTC set`

	The following status appears when to response is received from the NTP server(s):
	
	`no response from '192.168.0.2' for 233 s`
	`no response from '192.168.0.82' for 233 s`
	
	DAKS has not been synchronized by the two NTP servers since the time indicated (in seconds).

10.	The NTP service is configured or the system clock is set. The clock can now be used by DAKS.

Table 4-5 Configure and test NTP service and system clock

4.6 Connect DAKS-Satellite to DAKS and test the application

How to connect and test DAKS-Satellite, step by step:

No.	Task
1.	Put DAKS-Satellite into operation. ➤ see "µDAKS Hardware Service Manual"
2.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Start VCON. ➤ see Section 10.2 "Start VCON".
4.	Open the configuration for the process "Server/ESPA-X Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
5.	Carry out the configuration of the ESPA-X interface. ➤ see Section 7.6 "Parameters of the ESPA-X interface"

Table 4-6 Connect DAKS-Satellite to DAKS and test application

No.	Task
Test the ESPA-X interface	
6.	Open the Terminal window of the process "Services/ESPA-X Server". ➤ see Section 10.8 "The Terminal window"

7.	Verify if DAKS-Satellite is properly connected.
	Enter the command `status` and press <enter>.
	This will trigger the output of one of these exemplary terminal outputs.
	
	If the connection is properly established and the ESPA-X Client is logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client: name= 'ESPA-X Client-1'; software= '1.00a'; user= 'client1'`
	
	If the connection is properly established but the ESPA-X Client is not logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client not logged in`
	
	Check the user name and password of the ESPA-X connection ('user name','user password'@'Server/ESPA-X Manager/ESPA-X Server/session 1') at the Client.
	
	If no connection is properly established and the ESPA-X Client is not logged in:
	
	`Presently no active connections`
	
	Check the IP address and the port of DAKS ('IP port'@'Server/ESPA-X Manager/ESPA-X Server').
	➤ see Section 7.4 "IP parameters"

8.	DAKS-Satellite is now connected via ESPA-X and tested.
9.	Launch a broadcast process in DAKS through DAKS-Satellite: • via the data interface 'ESPA 4.4.4 or TAP'. • via contact activation, with communication of the ID of the broadcast or the contact number. Verify the proper functioning of the broadcast process.
10.	DAKS-Satellite is now tested and ready for operation.

Table 4-6 Connect DAKS-Satellite to DAKS and test application

4.7 Connect Mail-to-Phone to DAKS and test the application

How to connect and test Mail-to-Phone, step by step:

No.	Task
1.	Put Mail-to-Phone into operation. ➤ see "Mail-to-Phone Service Manual"
2.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Start VCON. ➤ see Section 10.2 "Start VCON"
4.	Open the configuration for the process "Server/ESPA-X Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
5.	Carry out the configuration of the ESPA-X interface. ➤ see Section 7.6 "Parameters of the ESPA-X interface"
Test the ESPA-X interface	
6.	Open the Terminal window of the process "Services/ESPA-X Server". ➤ see Section 10.8 "The Terminal window"

7.	Verify if Mail-to-Phone is properly connected.
	Enter the command `status` and press <enter>.
	This will trigger the output of one of these exemplary terminal outputs.
	
	If the connection is properly established and the ESPA-X Client is logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client: name= 'ESPA-X Client-1'; software= '1.00a'; user= 'client1'`
	
	If the connection is properly established but the ESPA-X Client is not logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client not logged in`
	
	Check the user name and password of the ESPA-X connection ('user name','user password'@'Server/ESPA-X Manager/ESPA-X Server/session 1') at the Client.
	
	If no connection is properly established and the ESPA-X Client is not logged in:
	
	`Presently no active connections`
	
	Check the IP address and the port of DAKS ('IP port'@'Server/ESPA-X Manager/ESPA-X Server').
	➤ Section 7.4 "IP parameters"

8.	Mail-to-Phone is now connected via ESPA-X and tested.
9.	Use Mail-to-Phone to launch a broadcast process and make sure it functions properly.
10.	Mail-to-Phone is now tested and ready for operation.

Table 4-7 Connect and test Mail-to-Phone

4.8 Connect and test the Digital I/Os of DAKS

How to connect and test the digital inputs of DAKS, step by step:

No.	Task
1.	Plug in the various digital I/O modules (*Gateway, Standard, Secure*) of DAKS. When connecting the digital inputs of DAKS with IOM-11, specify if you want the connection to include a line break and short circuit detection. Be aware of the different wiring of the digital inputs of DAKS. ➤ see "DAKS-110 Hardware Service Manual"
2.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Open the configuration of the process "Server/Contact Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Carry out the configuration of the digital inputs. For the configuration of the digital inputs, please make the following settings and bear in mind that they must correspond to the external wiring: • Phase angle • Short circuit and line break detection (only IOM-11) ➤ see Section 7.12 "Parameters of the Digital I/O"
Test the digital inputs	
5.	Open the Terminal window of the process 'Contacts IOG-03'. ➤ see Section 10.8 "The Terminal window"

Table 4-8 Connect and test the digital inputs of DAKS

No.	Task

6.	Activate the monitoring of the digital inputs.
	Enter the command `mon 10` and press <enter>.
	The following output will appear:
	
	`INFO: 0x00000001 <--`
	`ERROR: 0x00000002 <--`
	`IOG communication: 0x00000004`
	`IOG com. (without status): 0x00000008`
	`In/Out contacts: 0x00000010 <--`
	
	`cur. mask: 0x00000013`
	
	Note:
	The monitoring 'INFO' and 'ERROR' **cannot** be deactivated.
	➤ see Section 10.7 "Monitoring"
	
	When a change is made to a digital input, it is shown in the following format:
	
	`input <contact id>: <old status> -> <new status>`
	
	• `<contact id>` digital input ID A1..H8
	• `<old, new status>` *Only for switching with short circuit or line break detection!*
	= `<2V`
	= `2..6V`
	= `6..10V`
	= `>10V`
	This output refers to the physical switching of the contact input and the potentials that are actually applied.
	➤ see "mDAKS Hardware Service Manual"
	For more information on the switching states that, from the application's perspective, result from the input potentials in combination with the individual configurations of the contact inputs.
	➤ see Section 7.12.1 "Switching states of the contact inputs"

7.	Carry out steps 7a., 7b. or 7c for all connected contact inputs.
7a.	Test the contact input for switching without short circuit- and line break detection. Close and open the contact input you want to test. **In the Terminal window, the details for contact input B1 will e.g. read:** • Close contact `input B1: >10V -> <2V` • Open contact `input B2: <2V -> >10V`

Table 4-8 Connect and test the digital inputs of DAKS

No.	Task
7b.	Test the contact input with wiring for short circuit and line break detection. Close and open the contact input you want to test. **In the Terminal window, the details for contact input C5 will e.g. read:** • Close contact `input C5: 6..10V -> 2..6V` • Open contact `input C5: 2..6V -> 6..10V` Short circuit the input you want to test. **In the Terminal window, the details for contact input D1 will e.g. read:** • Input previously closed `input D1: 2..6V -> <2V` • Input previously open `input D1: 6..10V -> <2V` • Previous line break `input D1: >10V -> <2V` Simulate a line break for the digital input you want to test. **In the Terminal window, the details for contact input A1 will e.g. read:** • Input previously closed `input A1: 2..6V -> >10V` • Input previously open `input A1: 6..10V -> >10V` • Previous short circuit `input A1: <2V -> >10V`
8.	Finally, enter `mon 0` and press <enter> to deactivate all monitoring again. The digital inputs are now connected, tested and ready for operation.

Table 4-8 Connect and test the digital inputs of DAKS

4.9 Connect and test the digital outputs and the relay output

How to connect and test the digital outputs and the relay output, step by step:

No.	Task
1.	Connect the digital outputs and/or the relay output of mDAKS. ➤ see "mDAKS Hardware Service Manual"
2.	Start VCON and set up the LAN connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Open the configuration of the process "Server/Contact Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Carry out the configuration of the digital outputs. When configuring the digital outputs do not forget to bear in mind the phase angle for the external wiring. ➤ see Section 7.12 "Parameters of the Digital I/O"
Test the digital outputs	
5.	Open the Terminal window of the process 'Hardware/Contacts' (for mDAKS: "IOG-03/Contacts"). ➤ see Section 10.8 "The Terminal window"

	Activate and deactivate the digital outputs.
	Use the command `out <contact id> <1, 0>` and press <enter> to activate or deactivate the digital outputs (always mind the phase angle):
	The following output will now appear:
	`force output #<contact id>: <1, 0>`
	• `<contact id>` digital output ID 1..8 (for DAKS-100) or 1..16 (for DAKS-200, with: 1=>A1, 2=>A2, 3=>B1 aso.)
	• `<1 ,0>` = `0` digital output to deactivate or deactivated = `1` digital output to activate or activated, e.g. activate contact output 8:
	`out 8 1`
	`force output #8: 1`
	Caution!
	Please bear in mind that output contacts will only be reset or modified by the application after the next change (change of a status, start of a broadcast etc.).
	If needed, reboot DAKS now.

6.	The digital outputs are now connected, tested and ready for operation.

Table 4-9 Connect and test digital outputs and relay output

4.10 Configure and test the printer

How to configure and test the printer, step by step:

No.	Task
1.	Put the printer into operation. ➤ see "µDAKS Hardware Service Manual" ➤ see "mDAKS Hardware Service Manual"
2.	Start VCON and set up the LAN connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Open the configuration of the process "Server/Printer". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Carry out the configuration of the printer. Configure the printer's IP address and IP port, and define the prioritized USB path (the latter applies only to mDAKS). ➤ see Section 7.17 "Parameters of the Printer Service"
Test the printer	
5.	Open the Terminal window of the process "Services/Printer". ➤ see Section 10.8 "The Terminal window"
6.	Now test the printout. Enter the command `testmsg` and press <enter>. Verify if the printer properly prints out the following line: <YYYY.MM.DD hh.mm.ss> `Message generated with the command 'testmsg'` The date and time of the printout: • yyyy = year • mm = month • dd = day • hh = hour • mm = minute • ss = second
7.	The printer and printer service have now been put into operation, tested and are ready for use.

Table 4-10 Configure and test printer

4.11 Configure and test the SYSLOG server

How to configure and test a SYSLOG server, step by step:

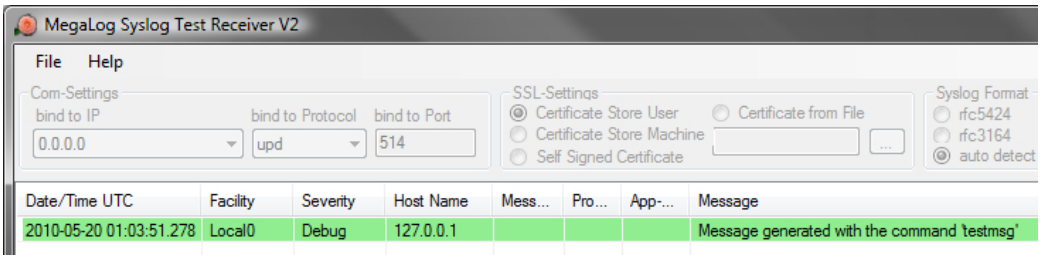
No.	Task
1.	Carry out the configuration of the external SYSLOG server. The SYSLOG server is an external component the configuration of which is not covered in this document.
2.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Open the configuration of the process "Server/Syslog". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Configure the internal SYSLOG Service. ➤ see Section 7.16 "Parameters of the SYSLOG Service".
Test the SYSLOG server	
5.	Open the Terminal window of the process "Services/Syslog". ➤ see Section 10.8 "The Terminal window"
6.	Test the output to the SYSLOG server. Enter the command `testmsg` and press <enter>. Verify if the SYSLOG server has received the following message with the facility 'Local0' and the security level 'Debug': `Message generated with the command 'testmsg'` The below example illustrates the output in the tool 'MegaLog Syslog'. 
7.	The SYSLOG service is now tested and ready for operation.

Table 4-11 Configuration and test SYSLOG server

4.12 Configure and test the Medical Alarm Integrator (MAI)

How to configure and test a Medical Alarm Integrator (MAI), step by step:

No.	Task
1.	Configure the DMC Medical Alarm Integrator (MAI). The Medical Alarm Integrator (MAI) is an external component, the configuration of which is not covered in this document.
2.	Start VCON and set up a connection to DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
3.	Open the configuration of the process "Server/MASI". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Configure the MASI interface. ➤ see Section 7.8 "Parameters of the MASI interface"
Test the MAIs	
5.	Open the Terminal window of the process "Services/MASI Server". ➤ see Section 10.8 "The Terminal window"

6.	Make sure the connection between the Medical Alarm Integrator and the DAKS server is properly established.
	When the connection is properly established and the Medical Alarm Integrator is logged in, the following output will appear in the Terminal window (example):
	`2016-04-19 16:12:33.7171 [00000001]: S1: 'server' accepted 192.168.80.76:55947`
	`2016-04-19 16:12:33: S1: '192.168.80.76' logging in as 'masi' (IDGS 1.10)`
	When the connection is properly established and the Medical Alarm Integrator is not logged in, the following output will appear in the Terminal window (example):
	`2016-04-19 16:22:15: S1: 'Infinity Gateway' accepted 192.168.80.76:55980`
	`2016-04-19 16:22:15: S1: '192.168.80.76': Logging in as 'masi' failed: INVALID_CREDENTIALS; User 'masi' not found or password invalid.`
	Verify the user name and password of the MASI connection ('IP port'@'Server/MASI Service'/'IDGS 1.10').
	➤ see Section 7.8 "Parameters of the MASI interface"
	If no connection is established and the Medical Alarm Integrator is not logged in:
	`Presently no active connection`
	Check the port of the MASI interface (('IP port'@'Server/MASI Service).
	➤ see Section 7.8 "Parameters of the MASI interface"

7.	The MAI is now connected, tested and ready for operation.

Table 4-12 Configure and test Medical Alarm Integrator (MAI)

4.13 Configure the DAKS database

Note:
For easy administration we recommend you use the language-dependent default database that is automatically included ex-works on the CD.
Ex works, this database already contains the system display/audio info and the most important Basic settings.
Ex-works, the German default database is pre-installed in DAKS.

How to configure the DAKS database, step by step:

No.	Task
1.	Open a web browser. ➤ see Section 8.1 "General information"
2.	Log in to DAKS with the authorization 'Edit&upload/save' an. ➤ see Section 8.2 "Login to DAKS"
3.	If needed, upload the default database included in the delivery (en/de/nl/fr) to DAKS. File name: `<CD-ROM-drive>:\Database>`. ➤ see Section 8.5 "Data/Server"
4.	Enable the Telephony parameters. The telephony parameters include the representation of DAKS in the PBX system (calling name/number, connected name/number) and the channel management. In DAKS, enter the 'DAKS tie trunk code' for callback calls (return calls) from WL3 or i62 communication devices. ➤ see Section 8.6.2 "Telephony"
5.	Enter the individual dialthru codes to activate broadcasts and conferences. ➤ see Section 8.6.4 "Dialthru codes"
6.	Configure the display/audio info. You will need this information when you proceed to configure broadcasts. ➤ see Section 8.8.1 "Add and edit Display/Audio info"
7.	Configure the System Display/Audio info. The System Display/Audio info comprise general information or messages that are used by DAKS across all processes. ➤ see Section 8.6.3 "System Display/Audio info"
8.	Configure the contact outputs. Next, define which functions shall be assigned to the individual contact outputs. ➤ see Section 8.14.1 "Edit a Contact output"
9.	In the Basic settings (tab: General), configure the broadcast parameters. These parameters apply to all broadcasts and regard the maximum call length as well as the wait times in case the systems gets a busy signal, or is unable to reach a subscriber. ➤ see Section 8.6 "Basic configuration"
10.	Configure all communication devices: • that you want to assign to subscribers. • that shall activate emergency calls (e.g. GMD medallions). ➤ see Section 8.15.1 "Add and edit Communication devices"

Table 4-13 Configure DAKS database

No.	Task
11.	Configure all subscribers: • who you want to be e alerted in broadcasts. • who are nurses and who you want to assign to patient beds. • with whose login details a DAKS-Mobile-Client can connected with DAKS, and be alerted and monitored. ➤ see Section 8.16.1 "Add and edit Subscribers"
12.	Configure broadcasts. Broadcasts consist of group-specific settings and broadcast members. The group-specific settings include e.g. the ID and the Display/Audio info, as well as the behavior of the broadcast (reached criterion, number of broadcast targets to reach etc.). For the broadcast members you need to configure broadcast-related data, e.g. special options that are applied when this subscriber is called or the way the system responds when subscriber lines are busy. ➤ see Section 8.18 "Broadcasts"
13.	Configure the beds and enter e.g. the MASI reference and the position details that are used for the visual output on the user interface. ➤ see Section 8.12 "Beds"
14.	Configure the alarm profiles: • 'Medical alarm profiles' (only DAKSmed): – physiological alarm conditions – technical alarm conditions • 'General alarm profiles' • 'System alarm profiles' ➤ see Section 8.9 "Alarm profiles"
15.	Configure the conferences. Assign a Start ID to the conference and also assign an Entry ID if you want it to be possible to enter the conference over the phone. Also configure the time behaviour of the conference and assign individual announcements to the conference. ➤ see Section 8.18.3 "Create and edit new Skillgroups"
16.	Configure the positioning parameters (optional, only in combination with GMD medallions, WL3 or i62 communication devices, DAKScommunicator or DMC devices). Depending on the devices and terminals you are using, enter: • for GMD Medallions the DECT radio technology • for WL3 or i62 communication devices, DAKScommunicator, DMC devices or the WiFi radio technology, ➤ see Section 8.6 "Basic configuration"
17.	If you are using the DECT radio technology, configure the Base Stations and the GMD Medallions (optional). ➤ see Section 8.11 "Base Stations" The Medallions are identified on the basis of their distinct phone number, but they are also assigned a text and voice message (Display/Audio info), both of which are communicated in the broadcast. ➤ see Section 8.9.2 "General alarm profiles"

Table 4-13 Configure DAKS database

No.	Task
18.	If you are using the WiFi radio technology, configure the Access Points and the WL3 communication devices (optional). ➤ see Section 8.10 "Access Points" The WL3 communication devices are identified on the basis of their distinct phone number, but they are also assigned a text and voice message (Display/audio info), both of which are communicated in the broadcast. ➤ see Section 8.8 "Display/audio information"
19.	If you are using OM-AXI, configure the MiVoice communication devices (optional). The MiVoice communication devices are identified on the basis of their distinct phone number, but they are also assigned a text and voice message (Display/audio info), both of which are communicated in the broadcast. ➤ see Section 8.9.2 "General alarm profiles"
20.	Configure the contact inputs (optional). Digital inputs can be configured as one of the following contact types: • **Digital inputs for simple standard contacts:** Simple standard contacts require no further parameterization. When they are activated, a broadcast is automatically started. Their deactivation does not lead to the cancellation of the broadcast. • **Digital inputs for enhanced standard contacts:** The enhanced standard contacts offer various parameterization options, such as: Start delay, end process at deactivation, inter-broadcast settling time, and evaluation of the activation during the inter-broadcast settling time. • **Digital inputs for operator console contacts with toggle function:** Operator console contacts are used when a broadcast shall be started via a button, and the same button shall also be used to end the broadcast again. ➤ see Section 8.13 "Inputs"

Table 4-13 Configure DAKS database

4.14 Configure and test the PBX connection

4.14.1 Configure and test the SIP(-Q) digital trunks

How to configure and test the SIP(-Q) digital trunk, step by step:

No.	Task
Configure a SIP(-Q) digital trunk	
1.	Configure the PBX system or the soft switch, or provide the service technician in charge of the PBX's configuration with the matching setup instructions (separate documents), for example: • HiPath 3000 V8-V9-VoIP-SIPQ-xx • OpenScape Business-V1-V2-SIP-Q-xx • OpenScape 4000 V6-V7-VoIP-SIPQ-xx • OpenScape Voice V5-V8-VoIP-SIPQ-xx
2.	Start VCON. ➤ see Section 10.2 "Start VCON"
3.	Open the configuration of the process "Server/VoIP Hardware/SIP trunk # 1". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Carry out the configuration of the SIP(-Q) digital trunk in keeping with the pertinent setup instructions. ➤ For setup instructions see Step 1.
Test a SIP(-Q) digital trunk	
5.	Open the Terminal window of the process "Server/VoIP Hardware". ➤ see Section 10.8 "The Terminal window"

6.	Check if the SIP trunk is properly activated and connected.
	Enter the command `trunk` and press <enter>.
	The following output will appear:
	
	`SIP-Trunks:`
	`----------`
	`trunk #1: 192.168.69.210:5060 ->507 <- 4 channels`
	`  Enabled: yes, peer active: yes`
	`  peer:one, watchdog active: 192.168.69.6:5060`
	`  peer #1: 192.168.69.6:5060 prio=1 ok`
	
	Please bear in mind:
	• the peer IP address and the IP port, e.g. 192.168.69.210:5060
	• the number of assigned channels as enabled or configured (e.g. 4 channels)
	• the number of the digital trunk (e.g. 507)

7.	The trunk is now activated and the peer is connected (Enabled: yes, Peer active: yes).

Table 4-14 Configure and test SIP(-Q) digital trunks

No.	Task

8.	Start a test call.
	Configure the dialthru code to start a broadcast over the phone.
	➤ see Section 8.6.3 "System Display/Audio info"
	Use a telephone to dial the digital trunk number of DAKS, and enter the dialthru code you just configured.
	When DAKS accepts the call, enter the command `view` and press <enter>.
	The following output will appear:
	`watchdog call for trunk #1 prio 1 '192.168.69.6:5060'`
	`peer state is ok.`
	`next check in 0ms`
	`call: callid '073528832ee6b734', trunk #1`
	`state: P10 timer: 0ms`
	`outgoing: no cs P10 us 0 cdnu '1' conu '442' ...`
	Please bear in mind:
	• The call must be in the call state 10 (state: P10).
	• The cdnu (called number) must match the dialthru code (e.g. '1').
	• The conu (connected number) must match the number of the telephone that is currently used to route you to DAKS (e.g. '442').

9.	The SIP(-Q-) digital trunk is connected, tested and ready for operation.

Table 4-14 Configure and test SIP(-Q) digital trunks

4.14.2 Configure and test the ISDN digital trunks

How to configure and test the ISDN digital trunks, step by step:

No.	Task
1.	Connect the ISDN PBX system to the ISDN interface(s) of DAKS. Be aware of the pin assignment of the ISDN interface(s) and the corresponding wiring plan(s). ➤ see "mDAKS Hardware Service Manual"
2.	Configure the PBX system or the soft switch, or provide the service technician in charge of the PBX's configuration with the corresponding setup instructions (separate documents), for example: • HiPath 3000 V6-V9-QSIG-xx • OpenScape Business-V1-V2-CorNet-NQ-xx • OpenScape 4000 V1-V7-CORNETNQ-xx
3.	Start VCON. ➤ see Section 10.2 "Start VCON"
4.	Open the configuration of the process "Server/ISDN Hardware". ➤ see Section 10.6.2 "Output in the DAKS Process list"
5.	Carry out the configuration of the ISDN interfaces in keeping with the corresponding setup instructions. ➤ For setup instructions see Step 2.
Test the ISDN digital trunks	
6.	Open the Terminal window of the process 'ISDN Hardware'. ➤ see Section 10.8 "The Terminal window"

7.	Check if the ISDN trunk(s) is/are properly activated and connected.
	Enter the commands `l3status 1` and `l3status n` for the interfaces ISDN 1...n, and press <enter>.
	The following output will e.g. appear:
	
	`***** Layer-3 status:`
	`====================`
	`trunk name` | `ISDN #1`
	`name of buend` | `ISDN Trunk 1`
	`---------- + ----------`
	`Layer-1 status` | **`ok`**
	`Layer-2 status` | **`established`**
	`Layer-3 status` | **`running`**
	`---------- + ----------`
	`...`
	
	Please pay particular attention to the following details (marked in bold print):
	• Status Layer 1 = **ok**
	• Status Layer 2 = **established**
	• Status Layer 3 = **running**

Table 4-15 Configure and test the ISDN connections

No.	Task

8.	Start the test calls on all ISDN trunks.
	If more than one ISDN trunk: plug-in separately.
	Configure the dialthru code to start a broadcast over the phone.
	➤ see Section 8.6.3 "System Display/Audio info"
	Use a telephone to dial the digital trunk number of DAKS, and enter the dialthru code you just configured.
	Once DAKS takes the call, enter the command `bch 1..n` for the interfaces ISDN 1..., ISDN n, and press <enter>.
	The following output will appear:
	
	`***** Used B channels with ISDN-Call-Reference, Host- and Sip-Reference:`
	`==========`
	`| ISDN #1`
	`| ISDN Trunk 1`
	`| log. phy.`
	`idx | BCh. BCh.I/O ISDN Host SIP`
	`-----+----------`
	`1 | 2 2 i $10 $0000800B -----`
	
	Repeat this step for all ISDN digital trunks and bear in mind the following detail:
	• The test call is active and successful when first line of he table is filled with entries.

9.	The ISDN digital trunks are now connected, tested and ready for operation.

Table 4-15 Configure and test the ISDN connections

4.15 Connect and test host system(s)

4.15.1 Connect and test host systems via the COM port

Using two serial interfaces, DAKS-200 (mDAKS) offers callback functionality.

➤ see Section 7.22 "Application parameters"



Caution!
For the serial interfaces to become active, go to VCON "DAKS Application" and assign the interfaces to data interface licences first.
Data interface licenses in VCON: "Data interfaces".
➤ see Section 7.22 "Application parameters"

How to connect and test a host system via the COM port, step by step:

No.	Task
1.	Connect the host system to the serial port (COM port). Be aware of the PIN assignment and bear in mind the wiring plan of the COM interface(s) for RS232/RS422. ➤ see "mDAKS Hardware Service Manual"
2.	Start VCON. ➤ see Section 10.2 "Start VCON"
3.	Open the configuration of the process "Server/Serial Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Carry out the configuration of the serial interface. You need the following details to configure the serial interfaces: • Interface (RS232, RS422) with baud rate, parity, data bits, stop bits • for ESPA4.4.4, the addresses of DAKS and of the host system ➤ see Section 7.5 "Parameters of the serial interfaces (COM ports)" ➤ see Section 7.6 "Parameters of the ESPA-X interface"
Test a serial connection between the host system and DAKS.	
5.	Open the Terminal window of the process 'Serial Hardware'. ➤ see Section 10.8 "The Terminal window"

Table 4-16 Connect a host system via the COM port, with testing

No.	Task

6.	Activate the monitoring to follow the data traffic on the serial interface.
	To do so, enter the command '`mon 8 2`' followed by <enter> to activate the trace '`Rx-Tx data (tester view)`' on COM B.
	(`1=COM A, 2=COM B or 3=COM C`)
	
	The following text will appear:
	
	`info: 0x00000001 <--`
	`error: 0x00000002 <--`
	`xml: 0x00000004`
	`Rx-Tx data (tester view): 0x00000008 <--`
	`Rx-Tx data (service view): 0x00000010`
	`Rx-Tx data (Rel.6 view): 0x00000020`
	`Rx-Tx data (new) : 0x00000040`
	`payload data : 0x00000080`
	`Rx-Tx HOST - short info : 0x00000100`
	`Rx-Tx HOST - Hex data : 0x00000200`
	`LineDisc States: 0x00000400`
	`debug: 0x80000000`
	`cur. mask: 0x0000000b`
	
	`Monitoring active on ports: 2(COM_B)`
	
	Note:
	The monitoring 'INFO' and 'ERROR' **cannot** be deactivated.
	➤ see Section 10.7 "Monitoring"

Table 4-16 Connect a host system via the COM port, with testing

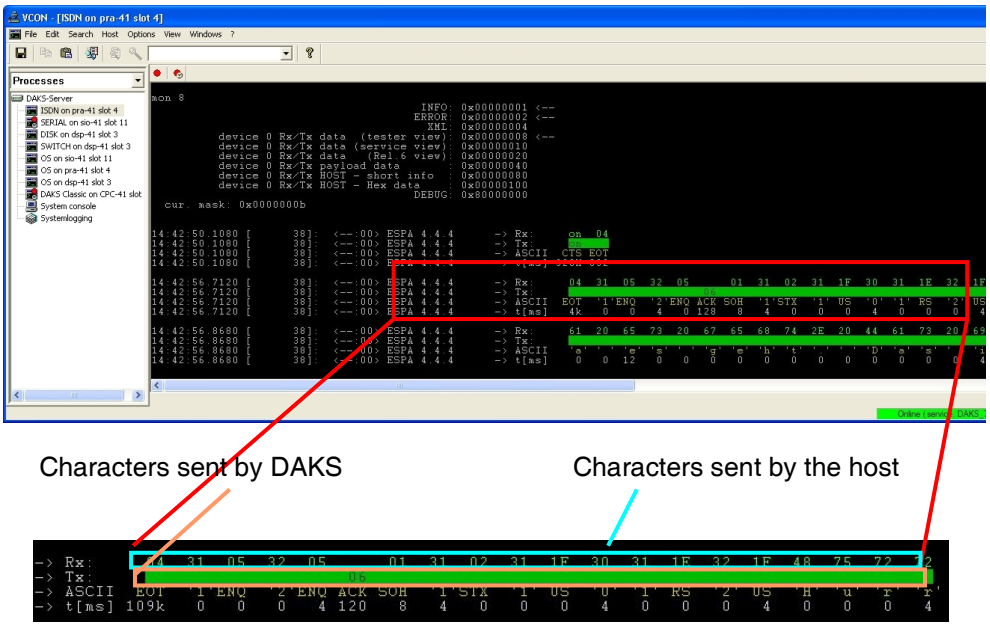
No.	Task
7a.	**Launch a broadcast via the Host System's ESPA 4.4.4 protocol.** The Terminal window will show the characters that are received and sent by DAKS (20 characters per line). This picture gives you an example of the communication between DAKS and a host system: • the host selects DAKS using the string: `'1' ENQ '2' ENQ` • DAKS answers with `ACK` • The host sends data: `SOH '1' STX '1' US '0' '1' ...`  If no display outputs are made, or if the host or DAKS fail to send characters altogether, be careful to check the connectors of the COM port and the configuration of the serial interface. ➤ see Step 4 The configuration of the interface is complete and successful when a bi-directional communication commences and DAKS answers with `ACK`. More information on the communication details and a complete interpretation of the ESPA 4.4.4 datasets can be found here: ➤ see Section 3.9 "ESPA 4.4.4 interface" Finally, enter `mon 0` and press <enter> to deactivate all monitoring again.

Table 4-16 Connect a host system via the COM port, with testing

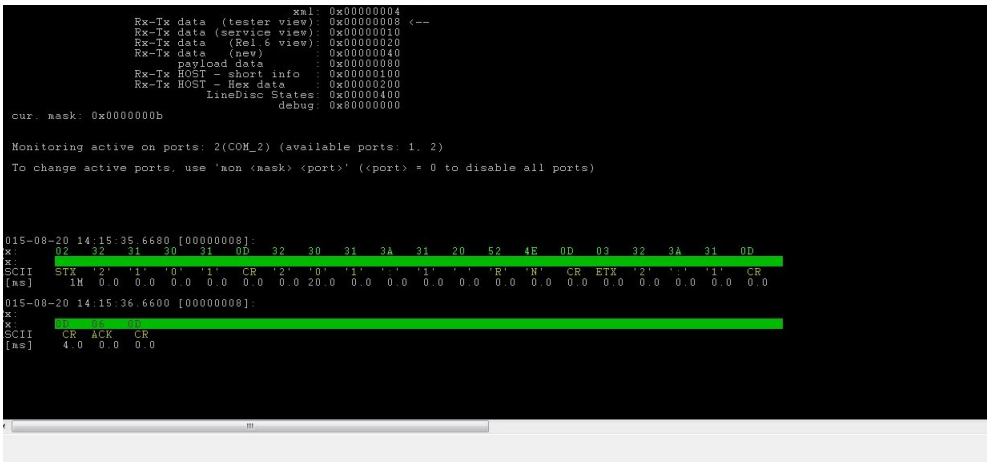
No.	Task
7b.	**Launch a broadcast via the Host System's TAP protocol.** The Terminal window will show the characters that are received and sent by DAKS (20 characters per line). This picture gives you an example of the communication between DAKS and a host system:  Characters sent by the host  If no display outputs are made, or if the host or DAKS fail to send characters altogether, be careful to check the connectors of the COM port and the configuration of the serial interface. ➤ see Step 4 More information on the communication details and a complete interpretation of the TAP datasets can be found here: ➤ see Section 3.11 "OM-AXI interface" Finally, enter `mon 0` and press <enter> to deactivate all monitoring again.
8.	The host system is now connected via COM port, tested and ready for operation.

Table 4-16 Connect a host system via the COM port, with testing

4.15.2 Connect and test a host system via the ESPA-X interface

Caution!
In order to become active, the ESPA-X interface must first be assigned to data interface licenses in VCON under "DAKS Application (in VCON the so-called: "Data interfaces")!
➤ see Section 7.22 "Application parameters"

Connect and test a host system via the ESPA-X interface, step by step:

No.	Task
1.	Carry out the configuration of the ESPA-X-Client. The ESPA-X Client is an external component whose configuration is not covered in this document.
2.	Start VCON. ➤ see Section 10.2 "Start VCON"
3.	Open the configuration for the process "Server/ESPA-X Manager". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Configure the ESPA-X interface. ➤ see Section 7.6 "Parameters of the ESPA-X interface"
Test the ESPA-X interface	
5.	Open the Terminal window of the process "Services/ESPA-X Server". ➤ see Section 10.8 "The Terminal window"

6.	Check if an ESPA-X-Client is properly connected.
	Enter the command `status` and press <enter>.
	This will trigger the output of one of these exemplary terminal outputs.
	
	If the connection is properly established and the ESPA-X Client is logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client: name= 'ESPA-X Client-1'; software= '1.00a'; user= 'client1'`
	
	If the connection is properly established but the ESPA-X Client is not logged in:
	
	`Presently active connections:`
	`  Session: id= '20100521105820127.0.0.1001509'; TCP/IP= '192.168.20.110:1509'`
	`  Client not logged in`
	
	Check the user name and password of the ESPA-X connection ('user name','user password'@'Server/ESPA-X Manager/ESPA-X Server/session 1') at the Client.
	
	If no connection is properly established and the ESPA-X Client is not logged in:
	
	`Presently no active connections`
	
	Check the IP address and the port of DAKS ('IP port'@'Server/ESPA-X Manager/ESPA-X Server').
	➤ see Section 7.4 "IP parameters"

7.	The host system is now connected via ESPA-X, tested and ready for operation.

Table 4-17 Connect and test host system via ESPA-X interface

4.16 Configure and test the WSG or IMS server

How to configure and test the WSG or IMS server, step by step:

No.	Task
1.	Carry out the configuration of the WSG or IMS server. WSG and IMS servers are external components, the configuration of which is not covered in this document.
2.	Start VCON. ➤ see Section 10.2 "Start VCON"
3.	Configure the process "OAPV4". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Configure the OAP protocol. ➤ see Section 7.9 "Parameters of the OAP interface"
Test the OAP interface	
5.	Open the Terminal window of the process 'IMS OAPV4'. ➤ see Section 10.8 "The Terminal window"

6.	Now verify if the WSG or IMS server is properly connected.
	This will trigger the output of one of these exemplary terminal outputs.
	
	If the connection is properly established:
	`OAPV4:connected to server 192.168.69.126:1322`
	
	If no connection is established:
	`OAPV4:connection to 192.168.69.125:1322 closed (Unspecifiable error detected)`
	
	In this case, check the IP address and the port of the WSG or IMS server:
	• 'Server IP address'@'Server/DMC Manager Service/OAPV4' as well as
	• 'Server request port'@'Server/DMC Manager Service/OAPV4'.

7.	The WSG or IMS server is now connected via OAP, tested and ready for operation.

Table 4-18 Configure and test WSG or IMS server

4.17 Configure and test the OM-AXI server

How to configure and test the OM-AXI server, step by step:

No.	Task
1.	Carry out the configuration of the OM-AXI server. The OM-AXI server is an external component, the configuration of which is not covered in this document.
2.	Start VCON. ➤ see Section 10.2 "Start VCON"
3.	Open the configuration of the process "OMAXI". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	Configure the OM-AXI server. ➤ see Section 7.10 "Parameters of the OM-AXI interface"
Test the OM-AXI interface	
5.	Open the Terminal window of the process "IMS OMAXI". ➤ see Section 10.8 "The Terminal window"

6.	Verify if the OM-AXI server is properly connected.
	This will trigger the output of one of these exemplary terminal outputs.
	
	If the connection is properly established:
	`OM-AXI:connected to server 192.168.69.126:12621`
	
	If no connection is established:
	`OM-AXI:connection to 192.168.69.125:12621 closed`
	In this case, check the IP address and the port of the OM-AXI server ('Server IP address'@'Server/ IMS Manager Service/OMAXI' and 'Server request port'@'Server/IMS Manager Service/OMAXI').

7.	The OM-AXI server is connected, tested and ready for operation.

Table 4-19 Configure and test OM-AXI server

4.18 Configure and test the DMC service

How to configure and test DAKS-Mobile-Client (DMC), step by step:

No.	Task
1.	Carry out the configuration of the DMC Services. Start VCON. ➤ see Section 10.2 "Start VCON"
2.	Open the configuration of the process "IMS Manager Service". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Configure the DMC Service. ➤ see Section 7.7 "Parameters of the DMC interface"
4.	In the DAKS database, configure the DMC users. ➤ see Section 8.16 "Subscribers"
5.	Install and configure the DMC App on a smartphone so that a connection is built up to the DAKS server. The DMC App is an external component, the configuration of which is not covered in this document. ➤ see "DMC User Manual"
Test the DMC Services	
6.	Open the Terminal window of the process "IMS DMC". ➤ see Section 10.8 "The Terminal window"
7.	Check if the smartphone is properly connected with the DAKS server. The following Terminal output (example) will now appear: `2018-04-20 11:18:18: DMC:Register Mustermann - 0176111111 OK`
8.	Confirm the emergency call button and check if the administrated broadcast 'Silent Emergency Call'@'Alarm profiles' ->'General' is properly started.
9.	Add the DMC to a broadcast, start that broadcast and verify that the alarm message is properly received.
10.	The DMC is now connected, tested and ready for operation.

Table 4-20 Configure and test DMC Service

4.19 Configure and test DAKScommunicator

How to configure and test DAKS Communicator, step by step:

No.	Task
Configure a SIP trunk for direct VoIP connection:	
1.	Configure a SIP trunk as SIP registrar. Start VCON. ➤ see Section 10.2 "Start VCON"
2.	Open the configuration of the process "VoIP Hardware". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Configure the SIP trunk. ➤ see Section 7.14.7 "Registrar trunk parameters (only for direct VoIP connection)"
4.	In the DAKS database, configure a DAKScommunicator. ➤ see Section 8.16 "Subscribers"
5.	Configure the DAKScommunicator devices to connect with the DAKS server. DAKScommunicator devices are external components whose configuration is not covered in this document. ➤ see "DAKScommunicator User Manual"
Test the SIP trunk and DAKScommunicator:	
6.	Open the Terminal window of the process "VoIP Hardware". ➤ see Section 10.8 "The Terminal window"

7.	Verify if the DAKScommunicator devices are properly connected with the DAKS Server (e.g. by using the phone number 4003).
	The following Terminal output (example) will now appear:
	`2017-06-14 10:01:21.9640 [00004000]: T#2:`
	`REGISTER from :4003 at 192.168.12.35:5060 via '192.168.12.35'`

8.	Make a short press on the emergency call button of a DAKScommunicator and check if the administrated broadcast 'DAKScommunicator emergency call'@'Alarm Profiles'->'General' is properly started.
9.	Make a long press on the emergency call button of a DAKScommunicator and check if the administrated broadcast 'DAKScommunicator silent emergency call'@'Alarm Profiles'->'General' is properly started.
10.	Raise a sensor/timeout alarm from a DAKScommunicator and check if the administrated broadcast 'DAKScommunicator sensor/timeout alarm'@'Alarm profiles'->'General' is properly started.
11.	Add the DAKScommunicator to a broadcast, start that broadcast and verify that the alarm message is properly rec.
12.	DAKScommunicator is connected, tested and ready for use.

Table 4-21 Configure and test DAKScommunicator

4.20 Configure and test VoIP devices registered at DAKS

How to configure and test VoIP devices registered at DAKS, step by step:

No.	Task
Configure a SIP trunk for direct VoIP connection:	
1.	Start VCON. ➤ see Section 10.2 "Start VCON"
2.	Open the configuration of the process "VoIP Hardware". ➤ see Section 10.6.2 "Output in the DAKS Process list"
3.	Carry out the configuration of the SIP trunk. ➤ see Section 7.14.7 "Registrar trunk parameters (only for direct VoIP connection)"
4.	In the DASK database, configure a VoIP device that is registered directly at DAKS. ➤ Section 8.14.2 "Edit Relay Output"
5.	Configure the VoIP devices registered at DAKS to connect with the DAKS server. The VoIP communication devices that are registered at DAKS are external components whose configuration is not covered in this document. ➤ see "DAKS Communicator User Manual"
6.	Install and configure the VoIP devices registered at DAKS so that a connection is built up to the DAKS server. The VoIP communication devices that are registered at DAKS are external components whose configuration is not covered in this document. ➤ see the user manual of the VoIP device
Test SIP trunk and VoIP devices registered at DAKS	
7.	Open the Terminal window of the process "VoIP Hardware". ➤ see Section 10.8 "The Terminal window"

8.	Make sure that the VoIP devices registered at DAKS are properly connected with the DAKS Server.(e.g. by using the phone number 4003).
	The following Terminal output (example) will now appear:
	`2017-06-14 10:01:21.9640 [00004000]: T#2:`
	`REGISTER from :4003 at 192.168.12.35:5060 via '192.168.12.35'`

9.	Add the VoIP devices that are registered at DAKS to a broadcast, start that broadcast and verify that the alarm message is properly received.
10.	The VoIP devices registered at DAKS are now connected, tested and ready for use.

Table 4-22 Configure and test VoIP devices registered at DAKS

4.21 Configure and test hallway/corridor displays

How to configure and test hallway/corridor displays, step by step:

No.	Task
Configure hallway/corridor displays	
1.	Start VCON. ➤ see Section 10.2 "Start VCON"
2.	Carry out the configuration of the hallway/corridor displays. **Note:** As serial protocol, be sure to select "Transparent" and set the interface type to "RS485". ➤ see Section 7.5 "Parameters of the serial interfaces (COM ports)" ➤ see Section 7.20 "Parameters of the corridor displays"
3.	Open the configuration of the process "Display Service". ➤ see Section 10.6.2 "Output in the DAKS Process list"
4.	In the DAKS database, configure the hallway/corridor displays. ➤ see Section 8.12 "Beds"
Test hallway/corridor displays	
5.	Open the Terminal window of the process "Display Service'. ➤ see Section 10.8 "The Terminal window"
6.	Check if the hallway/corridor displays are properly connected with the DAKS server. Output in the Medical Care Operator (MCO), provided the functionality and configuration is correct:  **Note:** If no alarm conditions are pending and depending on the configuration, the output of a clock or of a ticker-style (crawling) green minus sign (-) shows the functionality and operativeness. In all other cases:  **Note:** If there is no connection to the DAKS server, the display will output in red letters: "Out of operation". When the connection to a MAI is lost, the 'Output text' of the der System alarm conditions 'MASI interface failed' will appear.

Table 4-23 Configure and test hallway/corridor displays

No.	Task
7.	Generate the alarm conditions that lead to display outputs. The system outputs the name of the alarm condition.  **Note:** In keeping with the alarm profile settings 'Corridor display output' and 'Corridor display - number of characters', these details are output and prepended to the name of the alarm condition.
8.	The hallway/corridor displays are connected, tested and ready for use.

Table 4-23 Configure and test hallway/corridor displays

4.22 Test the DAKS application

How to test the DAKS application, step by step:

No.	Task
1.	Test the individual initiators. For each initiator, make sure it launches the proper broadcast, including the playback of the assigned voice message and the display of the assigned text message, and that the proper contact output is actuated where applicable. The way in which the text message is shown on the display can vary from device to device, especially when you are using telephones with limited features (QSIG, SIP). For more information see: • General details on broadcasts ➤ see Section 3.3 "Workflow of Broadcasts" • Launch broadcasts over the phone, without selecting any voice announcements ➤ see Section 3.2.1 "... over the phone without announcement selection" • Launch broadcasts over the phone, with selecting the voice announcements ➤ see Section 3.2.2 "... over the phone with announcement selection" • Start conferences over the phone, and also use the phone to enter into a conference (early, i.e. before the actual conference start) ➤ see Section 3.4.3 "Start a conference over the phone via the Start ID" ➤ see Section 3.4.4 "Enter early in a Conference over the phone via the Entry ID" ➤ see Section 3.4.5 "Dial into an active Conference over the phone via the Entry ID" • Launch broadcasts via contact input ➤ see Section 3.2.2 "see Section 3.3 "Workflow of Broadcasts"" • Launch broadcasts via ESPA-X, ESPA4.4.4/TAP: ➤ see Section 3.2.5 "... via SNMP Trap" • Launch broadcasts via GMD Medallion: ➤ see Section 3.2.7 "... via GMD-Medaillon (DECT)" • Launch broadcasts from WL3 communication devices ➤ see Section 3.2.8 "... via OAP Alarms (WiFi)" • Launch broadcasts from MiVoice communication devices ➤ see Section 3.2.9 "... via OM-AXI alarms (DECT)" • Launch broadcasts via data interface or via the contact input of DAKS-Satellite ➤ see Section 3.2.10 "... via DAKS-Satellite" • Launch broadcasts via Mail-to-Phone: ➤ see Section 3.2.11 "... via Mail-to-Phone" • Launch broadcasts via DMC ➤ see Section 3.2.12 "... via DAKS-Mobile-Client (DMC)" • Launch broadcasts through 'Medical alarm conditions' ➤ see Section 3.2.15 "... via 'Medical alarm conditions'" • Launch broadcasts through 'General alarm conditions' ➤ see Section 3.2.16 "... via 'General alarm conditions'" • Launch Broadcasts via 'System alarm conditions' ➤ see Section 3.2.15 "... via 'Medical alarm conditions'"

Table 4-24 Test DAKS application

No.	Task
2.	Test the contact outputs with system functions. Provided they are properly assigned, verify for every system function that the matching contact output is actuated. ➤ see Section 8.14 "Contact outputs"
3.	Open a web browser. ➤ see Section 8.1 "General information"
4.	Log in to DAKS with the authorization 'Edit&upload/save' an. ➤ see Section 8.2 "Login to DAKS"
5.	Delete the test reports. ➤ see Section 8.20.3 "Save reports"

Table 4-24 Test DAKS application

4.23 Save the DAKS configuration

How to save and upload the DAKS configuration, step by step:

No.	Task
1.	Save the current DAKS configuration. ➤ see Section 10.4.3 "Save the DAKS configuration" Export the saved configuration to document it (e.g. printout). ➤ see Section 10.6.4 "Export a DAKS configuration"
2.	Save the DAKS database. ➤ see Section 8.5 "Data/Server" Run a hardcopy printout of the DAKS database for documentation purposes. ➤ see Section 8.5 "Data/Server"
3.	Run a complete backup of the entire DAKS system for later recovery of the DAKS functionalities. ➤ see Section 10.4.2 "Create a complete DAKS backup"

Table 4-25 Save the DAKS configuration



Note:
For more information on how to save and restore the DAKS configuration, the way in which the DAKS database is set up and how to run a backup of the entire system:
➤ see Chapter 5, "DAKS Data Backup, Problem Solving and Hardware Replacement"

5 DAKS Data Backup, Problem Solving and Hardware Replacement

Overview

This chapter covers the data backup, the procedure in case of a technical problem or the restart after e.g. an unplanned reboot and the replacement of DAKS hardware.

Contents

This chapter consists of the following sub-sections:

5.1 DAKS data backup
5.2 Problem solving
5.2.1 DAKS fault diagnosis, repair measures and recommissioning
5.2.2 List of error, system and fault messages
5.3 DAKS hardware replacement
5.3.1 Hardware exchange without memory card replacement
5.3.2 Hardware exchange with memory card replacement
5.3.3 Replace the memory card
5.3.4 Replace ISDN modules of DAKS-200 (mDAKS)

5.1 DAKS data backup

The following options are available to backup DAKS data:

- **Complete backup of the entire CompactFlash card, without boot area or repair system**

  The complete backup of the CompactFlash card is carried out through VCON. Here, entire content of the card is saved, including the system, the application software, the configuration and licences, but without boot area or repair system.

  We recommend that you always run a complete backup when the basic configuration has been edited, and also after every software update of DAKS. This makes it possible to put a replacement hardware into operation quickly and it enables you to restore and recover DAKS quickly through the repair system should you detect that individual files or memory card's file system have defects.

  Please note that a complete backup can only be uploaded to the DAKS as an entity, i.e. not in individual parts, e.g. only the backup of the configuration.

  Immediately after the backup is uploaded to the internal memory card that was used for the backup, DAKS is ready for operation again.

  If you upload the system backup to a different memory card, you will also need to upload a new license file.

  The complete backup is carried out in one step and may take some time due to the large amount of data that is stored (approximately 30 minutes).

  ➤ see Section 10.4.2 "Create a complete DAKS backup"

- **Backup of the configuration and the database**

  Changes that are added to the database and/or to the configuration can be saved separately, without having to run a lengthy backup of the entire system.

  By saving the database and the configuration you can restore the system parameters quickly whenever you need to.

  – **Save the configuration via VCON:**
    The process of saving the configuration takes very little time as the data that needs to be stored is limited.

    ➤ see Section 10.4.3 "Save the DAKS configuration"

  – **Save the database via browser:**
    In a largest system installation setup, the process of saving the database can take up to 10 minutes.

    ➤ see Section 8.5 "Data/Server"

5.2 Problem solving

5.2.1 DAKS fault diagnosis, repair measures and recommissioning

If a malfunction occurs during DAKS operation, the following section will help you with fault diagnosis, repair measures and recommissioning after e.g. an unplanned reboot.

How to carry out DAKS fault diagnosis, repair measures and recommissioning, step by step:

No.	Task
1.	Check the LED status indicator on the front of the casing. Verify if the light-emitting diode signals readiness for operation after a few minutes. ➤ see "µDAKS Hardware Service Manual" ➤ see "mDAKS Hardware Service Manual" • **If yes:** ➤ continue with Step 2. • **If no:** Check the power supply of DAKS. If the power supply is ok, the hardware of DAKS needs to the replaced. ➤ continue with Step 8.
2.	Verify if you can connect to DAKS via browser. ➤ see Section 8.2 "Login to DAKS" • **If yes:** ➤ continue with Step 3. • **If no:** Verify the configuration of the Web interface. ➤ see Section 8.9.2 "General alarm profiles" If changes have been added, try again to connect to DAKS via browser. If the connection buildup is successful: ➤ continue with Step 3. If the connect continues to fail or if entries were incorrect: ➤ continue with Step 5.

Table 5-1 Fault diagnosis, repair measures and recommissioning

No.	Task
3.	Verify the database content. If applicable, correct all database errors by hand or upload a backup of the database. Verify and, if needed, correct all Basic settings. Also make sure that the individual initiators (e.g. contact inputs) are properly configured and activate the right broadcasts processes as configured for each of them. If necessary upload a database backup first. ➤ see Section 8.5 "Data/Server" **Note:** If no database backup is available, the database must be administrated again manually. If a printout of the database is available, you can use it as a template for the administration. Here, the default database on the Installation CD can serve as the basis for the manual administration. ➤ see Section 4.13 "Configure the DAKS database" After the administration, test the settings, run a backup of the database and make a hardcopy printout the database: ➤ continue with Step 4. ➤ see Section 5.1 "DAKS data backup"
4.	Verify if the error or fault has been rectified with these measures. • **If yes:** You can end the fault diagnosis and the restore of the functionalities. • **If no:** ➤ continue with Step 5.
5.	Verify if you can connect to DAKS through VCON: ➤ see Section 10.2 "Start VCON" • **If yes:** ➤ continue with Step 6. • **If no:** ➤ continue with Step 8.
6.	Verify if the configuration of DAKS is correct. If you should detect errors, correct them by hand or upload a configuration backup. Follow the instructions for the system startup. During this process, verify if the basic configuration of the different system components is properly administrated and run a test of the individual components. ➤ see Chapter 4, "Put DAKS into operation" If needed, upload a previously saved configuration first. ➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration" As you move through the different steps of the system startup, please do not forget to stop after each one and verify the settings were successful. • **If yes:** ➤ continue with Step 7. • **If no:** ➤ continue with Step 8.

Table 5-1 Fault diagnosis, repair measures and recommissioning

No.	Task
7.	Verify if the error or fault has been rectified with these measures. • **If yes:** You can end the fault diagnosis and the restore of the functionalities. • **If no:** ➤ continue with Step 8.
8.	Contact the technical support in charge for your system. Decide together how to best proceed. • **Upload a software update** ➤ see Section 5.2.3.1 "Restore the DAKS functionalities using a software update" • **Restore DAKS with the repair system** ➤ see Section 5.2.3.2 "Restore the DAKS functionalities using a bootstrap file" ➤ see Section 5.2.3.3 "Restore the DAKS functionalities from a complete backup" • **Hardware replacement** ➤ see Section 5.3 "DAKS hardware replacement"

Table 5-1 Fault diagnosis, repair measures and recommissioning

5.2.2 List of error, system and fault messages

In this table you will find error, system and fault messages from DAKSmed as well as possible causes and measures to remedy the condition:

Error, system and fault messages	Possible causes	Remedy measure
DAKSmed VCON messages		
Alarm ... has no msg	Incorrect administration. The broadcast call to be started does not have a valid greeting.	Correct administration by assigning a recorded announcement.
SCE root process can‘t be terminated	Internal hardware or software problem	Call technical support
can‘t to open/create...	Internal hardware or software problem	Call technical support
Could not remove temporary upload/download file	Internal hardware or software problem	Call technical support
Login from user ... is already logged in	Login attempt with already logged in user data	Prevent multiple users from working with the same user data.
Login from user ... Too many sessions	License issue	Call technical support
Operator login from user ... is unauthorized	Benutzer ist nicht berechtigt, sich anzumelden	Call technical support
Assertion...	Internal hardware or software problem	Take the device out of operation. Call technical support
Could not use SNMP for ETH: ...	Internal hardware or software problem	Call technical support

Table 5-2 List of error, system and fault messages

Error, system and fault messages	Possible causes	Remedy measure
Error initializing VCON connection data. Data is set to default.	Internal hardware or software problem	Call technical support
VCON stream timed out...	Network problem	Call technical support
License ... has invalid ...	Not enough licenses available	Call technical support
... device ... device not active	Internal hardware or software problem	Call technical support
Device ... watchdog failed	Internal hardware or software problem	Call technical support
Communication lost...	Network problem	Call technical support
Communication reestablis-hed...	Network problem solved	Call technical support
...: parser error: ...	Internal hardware or software problem	Call technical support
Could not start...	Internal hardware or software problem	Call technical support
BUG: unhandled error ...	Internal hardware or software problem	Call technical support
Timeout ...	Network problem	Call technical support
... Invalid invoke ID= ...	Internal hardware or software problem	Call technical support
Error sending data to client. Interface error: ...	Internal hardware or software problem	Call technical support
Parse error: Unexpected cha-racter ...	Internal hardware or software problem	Call technical support
Buffering data failed. Buffer too small.	Internal hardware or software problem	Call technical support
Invalid message received	Internal hardware or software problem	Call technical support
ALIVE timeout. Connection to ... server closed.	Network problem	Call technical support
...: Error sending message: ...	Internal hardware or software problem	Call technical support
INVALID DATA STATE!	Internal hardware or software problem	Call technical support
Duplicate ...	Software problem	Call technical support
Required parameter ... failed on request =...	Internal hardware or software problem	Call technical support
Parameter ... is invalid. Re-quest =... will not be proces-sed	Internal hardware or software problem	Call technical support
Counter too ...	Internal hardware or software problem	Call technical support
Connection not found for re-quest=...	Internal hardware or software problem	Call technical support
Number of maximum connec-tions exceeded. Connection request denied!	License issue	Call technical support

Table 5-2 List of error, system and fault messages

Error, system and fault messages	Possible causes	Remedy measure
exception in ...	Internal hardware or software problem	Take the device out of operation. Call technical support
Invalid configuration...	Configuration problem	Call technical support
ERROR... opening socket...	Internal hardware or software problem	Call technical support
ERROR... connecting to	Network problem	Call technical support
Timeout connecting to ...	Network problem	Call technical support
Application not listening for ...	Configuration problem	Call technical support
...: No MASI server adapter for incoming ...	Software error	Call technical support
... cannot send printer data to connection. Not administrated	Printer data connection problem	Call technical support
Printer queue full. Some lines will be purged	Printer data connection problem	Call technical support
ERROR: Poll timeout on session ...	Configuration or network problem	Call technical support
ERROR: Session timeout on session	Configuration or network problem	Call technical support
ERROR: ...	Internal hardware or software problem	Call technical support
Alarm is already attached for service ...	Software problem	Call technical support
Fatal error updating device ...	Internal hardware or software problem	Call technical support
Notifying not started. Alarm with higher/equal priority is already running.	Normal operating state	No action required
Alarm priority increased.	Normal operating state	No action required
Login from user ... not possible. Error: Too many login attempts.	A user has tried to log in too often with incorrect login data. For security reasons, the login dialog is blocked for one minute.	No action required
...memory access error...	Internal hardware or software problem	Take the device out of operation. Call technical support
MASI Watchdog...takes 1208 ms...	Normal operating state	No action required
MainThread.queue_low...	Normal operating state	No action required

Table 5-2 List of error, system and fault messages

5.2.3 Restoring DAKS

5.2.3.1 Restore the DAKS functionalities using a software update

To upload a software update you need:

- the latest version of DAKS. To get it contact your 2nd Level Support.
- a connection to DAKS via VCON.
  - ➤ see Section 10.12 "Install VCON"
  - ➤ see Section 10.2.1 "Configure and edit a VCON connection"

How to upload a software update to DAKS, step by step:

No.	Task
1.	Connect VCON with DAKS. ➤ see Section 10.2 "Start VCON"
2.	Upload the update of DAKS via VCON. ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
3.	The update is completed and DAKS is ready for operation again.

Table 5-3 Upload a software update to DAKS

5.2.3.2 Restore the DAKS functionalities using a bootstrap file

To restore the DAKS functionalities with a bootstrap file (initial program loading), you need:

- the bootstrap file for the stripped initial program loading of DAKS from the Installation CD, or from the 2nd Level Support.
- the latest version of DAKS. To get it contact your 2nd Level Support.
- the license file of DAKS that matches the memory card you are using.
  It is either available on-site or directly through the manufacturer tetronik GmbH.
  - ➤ www.tetronik.com through the tetronik-Extranet
- a backup of the DAKS configuration.
- a backup of the DAKS database.
- a connection to DAKS via USB service interface.
  - ➤ see Chapter 6, "Configuration of the Service PC'S USB Port"
- a connection between VCON and DAKS via LAN.
  - ➤ see Section 10.12 "Install VCON"
  - ➤ see Section 10.2.1 "Configure and edit a VCON connection"

How to restore the DAKS functionalities with the bootstrap file, step by step:

No.	Task
1.	If needed, enter the IP access data. ➤ see Section 7.1 "Initial startup functions using the USB terminal access"
2.	Start the repair system. ➤ see Section 7.2 "Activate the DAKS repair system"
3.	Connect VCON with DAKS. ➤ see Section 10.2 "Start VCON"
4.	Upload the installation file for the stripped initial program loading of DAKS via VCON. The installation file of DAKS includes the boot area, the system and the repair system (Linux), the application software, plus a basic configuration which, however, is not sufficient for DAKS to be fully operational. The file name of the IPL file (IPL = initial program loading) reads: `<CD-ROM-Drive>:\Update\stripped IPL\DAKS_bootstrap.vtf>` ➤ see Section 10.4.1 "Upload installation files, license files or a backup" When you upload of the IPL file: • the system uploads the Linux operating system and the Linux repair system anew, • the system uploads the application anew, • the system deletes the reports, if available, and • the system sets the configuration and the database to the defaults.
5.	Now reboot DAKS. If needed, disconnect (remove) the Ethernet cable cord from DAKS for a few seconds and plug it back in.
6.	Carry out the startup functions via the terminal emulation program. ➤ see Section 7.1 "Initial startup functions using the USB terminal access" **Note:** Please always bear in mind that when you run the bootstrap file for the stripped initial program loading, the IP parameters and the access authorizations are set back to the factory settings again. IP address: 192.168.20.100, Port: 2180.
7.	Upload the previously saved configuration via VCON. ➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration"
8.	Configure a connection to DAKS via the Web interface. ➤ see Section 8.2 "Login to DAKS"
9.	Upload the database backup, via the Web interface. ➤ see Section 8.5 "Data/Server"
10.	The restore of the functionalities with stripped initial program loading is completed and DAKS is ready to operate again.

Table 5-4 Restore DAKS functionalities with bootstrap file

5.2.3.3 Restore the DAKS functionalities from a complete backup

To restore the DAKS functionalities using a complete previous backup, you need:

- a complete backup of DAKS.
- a VCON or terminal connection to DAKS via USB service interface.
  ➤ see Chapter 6, "Configuration of the Service PC'S USB Port"
- a VCON connection to DAKS via the LAN.
  ➤ see Section 10.12 "Install VCON"
  ➤ see Section 10.2.1 "Configure and edit a VCON connection"

How to restore and recover the DAKS functionalities using a complete backup, step by step:

No.	Task
1.	If needed, enter the IP access data through the terminal. ➤ see Section 7.1 "Initial startup functions using the USB terminal access"
2.	Start the repair system. ➤ see Section 7.2 "Activate the DAKS repair system"
3.	Connect VCON with DAKS. ➤ see Section 10.2 "Start VCON"
4.	Upload the system backup via VCON. ➤ see Section 10.4.1 "Upload installation files, license files or a backup".
Only carry out the below Steps 5 through 9 if you added changes to the DAKS database or to the DAKS configuration after you ran the last backup and saved those changes separately.	
5.	Now reboot DAKS. Press the 'Reset' button.
6.	Connect VCON with DAKS. ➤ see Section 10.2 "Start VCON"
7.	Upload the previously saved configuration via VCON. ➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration"
8.	Configure a connection to DAKS via the Web interface. ➤ see Section 8.2 "Login to DAKS"
9.	Upload the database backup, via the Web interface. ➤ see Section 8.5 "Data/Server"
10.	Now reboot DAKS. To do so, pull the Ethernet cable cord from DAKS and wait a few seconds before you plug it back in, or press the Reset button (applies only to mDAKS).
11.	The restore of the functionalities using a complete backup is now completed and DAKS is ready to operate again.

Table 5-5 Restore DAKS functionalities via backup

5.3 DAKS hardware replacement



Warning!
When replacing hardware, always be careful to follow the safety instructions of the pertinent Hardware Service Manual.

5.3.1 Hardware exchange without memory card replacement

Insert the memory card from your defective DAKS server into the new DAKS hardware.

➤ see corresponding hardware service manual

By replacing the CompactFlash card (DAKS-200) or the microSD card (DAKS-110), the entire system data, including the configuration, licenses, announcement, protocols etc., is automatically transferred to the new hardware and the system can be put back into operation immediately.

5.3.2 Hardware exchange with memory card replacement

Hardware exchange of DAKS including replacement of the microSD or CompactFlash card Step by step:

No.	Task
1.	Prepare DAKS and VCON. ➤ see Section 4.2 "Prepare DAKS and VCON before you put the system into operation"
2.	Configure and test the Web interface of DAKS. ➤ see Section 7.22 "Application parameters"
3.	Upload the latest version of DAKS via VCON. ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
4.	Upload the license for your memory card which you received from tetronik. It is either available on-site or directly through the manufacturer tetronik GmbH (www.tetronik.com through the tetronik-Extranet). ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
5.	Upload the previously saved configuration via VCON. ➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration"
6.	Configure a connection to DAKS via the Web interface. ➤ see Section 8.2 "Login to DAKS"
7.	Upload the database backup, via the Web interface. ➤ see Section 8.5 "Data/Server"
8.	Run a complete function test of DAKS.
9.	The restore of the functionalities is completed and DAKS is ready to operate again.

Table 5-6 Hardware exchange incl. microSD-Card or CompactFlash card

5.3.3 Replace the memory card

Insert the microSD or CompactFlash card.

➤ see corresponding hardware service manual

Next, follow the steps as described here:

➤ see Section 5.3.2 "Hardware exchange with memory card replacement"

DAKS is now ready for operation again.

5.3.4 Replace ISDN modules of DAKS-200 (mDAKS)

ISDN modules can be inserted and replaced in DAKS-200 (mDAKS).

Typical operations are:

- the installation of an ISDN module following a retrofit from a VoIP- to a TDM/ISDN connection.
- the replacement of a defect ISDN module.
- the replacement of an S_0 module with 4 ports by an S_{2M}/E1 or -T1 module with 2 ports, in combination with a channel expansion.

  ➤ see "mDAKS Hardware Service Manual"

6 Configuration of the Service PC'S USB Port

Overview

This chapter shows you how to configure the Service PC to carry out the basic configuration of DAKS via USB.

Contents

This chapter consists of the following sub-sections:

6.1 System requirements
6.2 Install the USB drivers
6.2.1 Install the USB drivers for DAKS
6.2.2 Install the USB drivers for DAKSmed (mDAKS)
6.3 Connect the hardware to the Service PC for the first time
6.4 Configure the USB interface of the Service PC
6.5 Basic configuration of DAKS via the USB port
6.5.1 Use the VCON terminal function for the basic configuration of DAKS
6.5.2 Use a terminal emulation program for the basic configuration of DAKS

6.1 System requirements

The following components are needed in order to install and configure the Service PC:

- up-to-date Windows® compliant PC with at least 4 Gbyte RAM
- Windows operating system:
  - Windows 10
  - Windows Server 2019
  - Windows Server 2022
- CD-ROM drive
- Installations CD
- where applicable, a terminal emulation program, e.g. Putty or Hyperterminal, if you do not want to use VCON's terminal function

6.2 Install the USB drivers

Caution!
Do not connect DAKS to the Service PC before you install the drivers.
The initial connection of DAKS is only made in the next step of the startup.

6.2.1 Install the USB drivers for DAKS

Note:
The USB drivers for DAKS only appear in the device manager after you have connected DAKS for the first time.

How to install the USB drivers for DAKS, step by step:

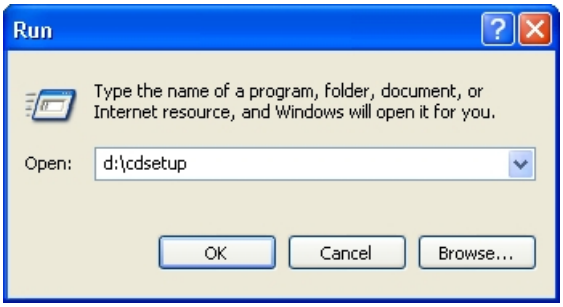
No.	Task
1.	Place the Installation CD in the CD-ROM drive of the PC. If the installation software fails to start automatically, you can also start the installation manually in Windows: Select: **Start** -> **Run...**. Enter: *<CD-ROM drive>*:`\CDsetup.exe` Confirm your entries with **OK**. 

Table 6-1 Install the USB driver for DAKS

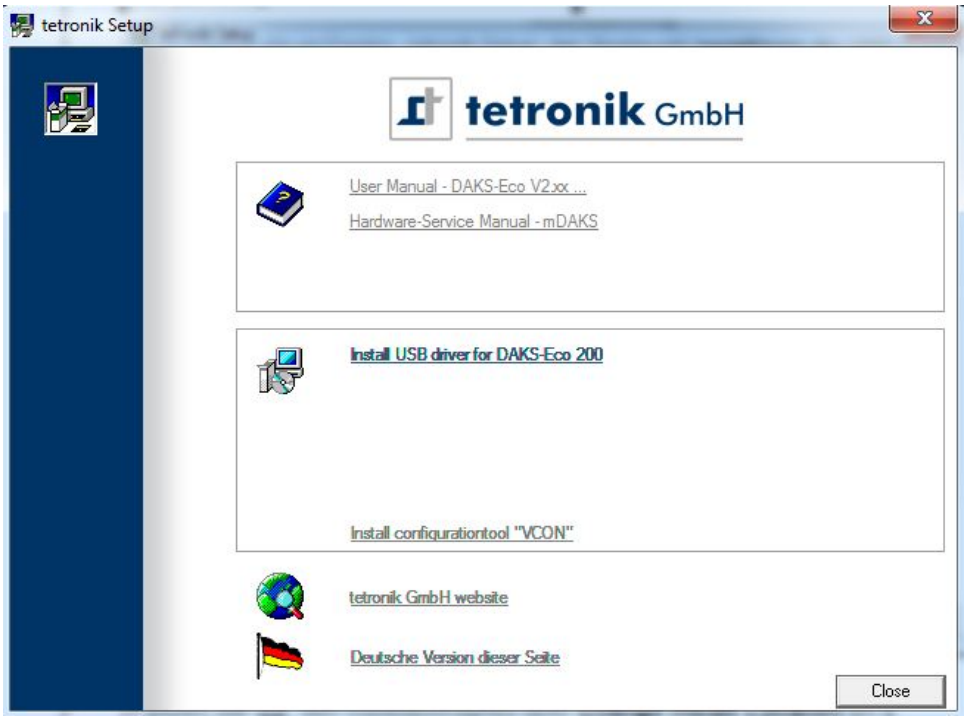
No.	Task
2.	In the window "tetronik Setup" choose the menu item: • **"Install the USB drivers for..."** 
3.	This will open the below window. Extract the FTDI CDM Windows driver. To do so, click **Extract**. 

Table 6-1 Install the USB driver for DAKS

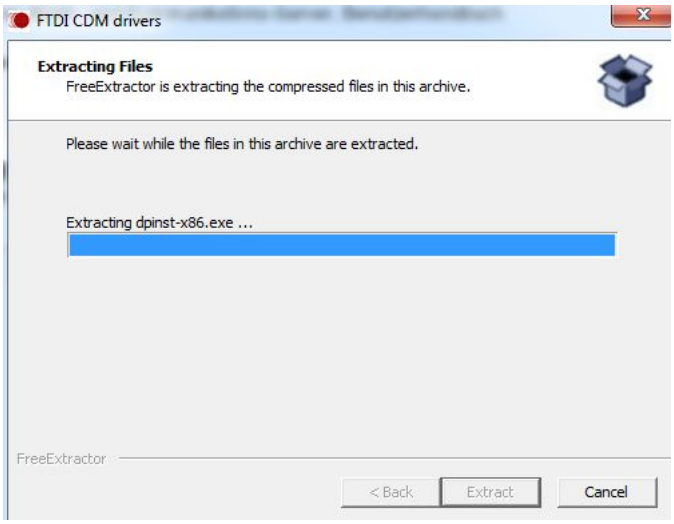
No.	Task
4.	During the extraction process, the below will appear. Please wait. 
5.	Next, the installation dialog for the USB drivers for DAKS will appear. Click **Next**. 

Table 6-1 Install the USB driver for DAKS

No.	Task
6.	The installation has been completed with success. To conclude, click **Finish**. 
7.	The installation of the USB drivers for DAKS is now successfully completed.

Table 6-1 Install the USB driver for DAKS

6.2.2 Install the USB drivers for DAKSmed (mDAKS)

Note:
The USB drivers for DAKSmed (mDAKS) only appear in the device manager after you have connected DAKS for the first time.

How to install the USB drivers for DAKSmed (mDAKS), step by step:

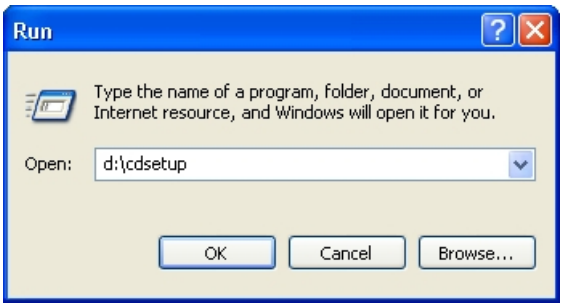
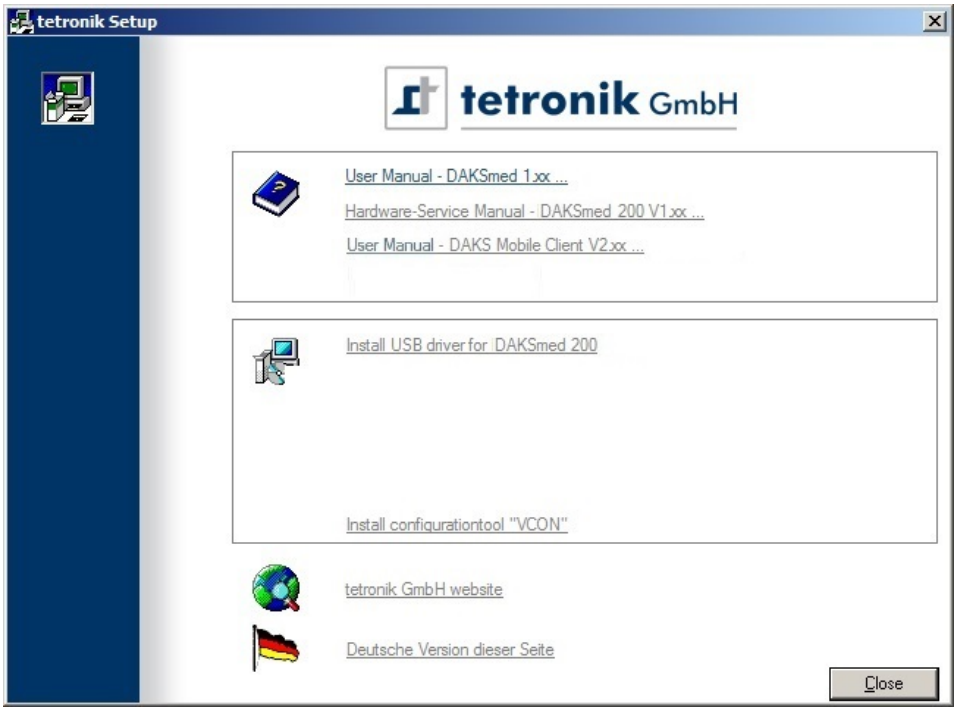
No.	Task
1.	Place the Installation CD in the CD-ROM drive of the PC. If the installation software fails to start automatically, you can also start the installation manually in Windows: Select **Start** -> **Run...**. Enter: `<CD-Rom drive>:\cdsetup.exe` Confirm your entries with **OK**. 
2.	In the window "tetronik Setup" choose the menu item: • **"Install the USB drivers for..."** 

Table 6-2 Install the USB drivers for DAKSmed (mDAKS)

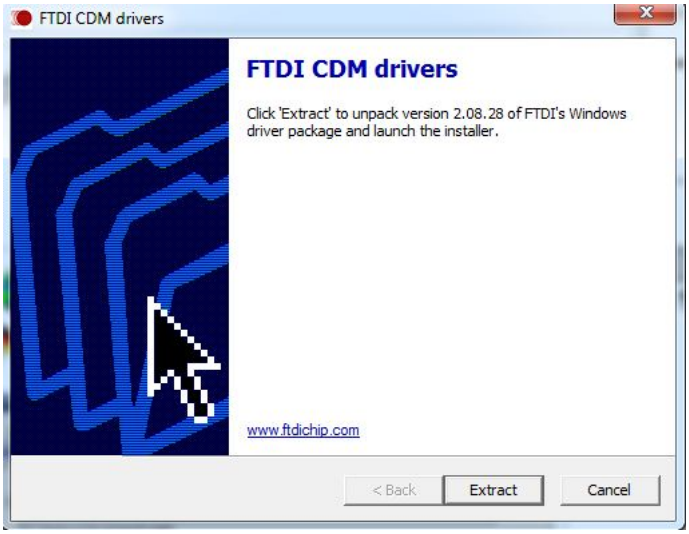
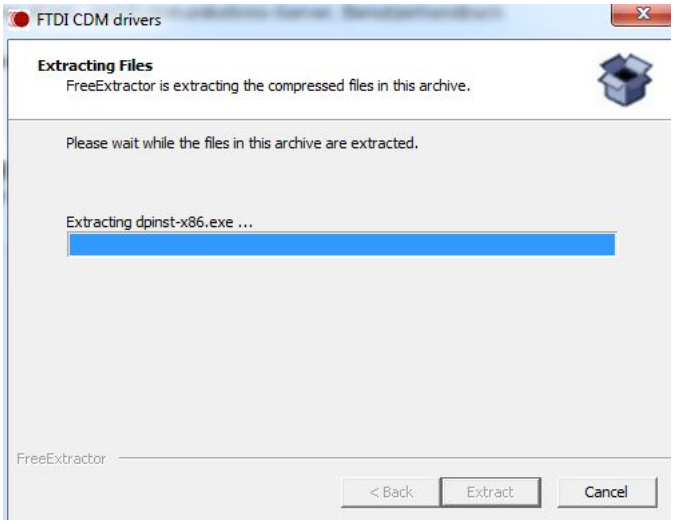
No.	Task
3.	This will open the below window. Extract the FTDI CDM Windows driver. To do so, click **Extract**. 
4.	During the extraction process, the below will appear. Please wait. 

Table 6-2 Install the USB drivers for DAKSmed (mDAKS)

No.	Task
5.	Next, the installation dialog for the USB drivers for DAKSmed will appear. Click **Next**. 
6.	The installation has been completed with success. To conclude, click **Finish**. 
7.	The installation of the USB drivers for DAKSmed is now successfully completed.

Table 6-2 Install the USB drivers for DAKSmed (mDAKS)

6.3 Connect the hardware to the Service PC for the first time

With the initial connection of DAKS to the Service-PC, Windows initializes the hardware drivers.

Before this, the USB divers for the pertinent hardware platform must have already been installed.

➤ see Section 6.2 "Install the USB drivers"

How to connect DAKS-200 (mDAKS) to the Service PC for the first time, step by step:

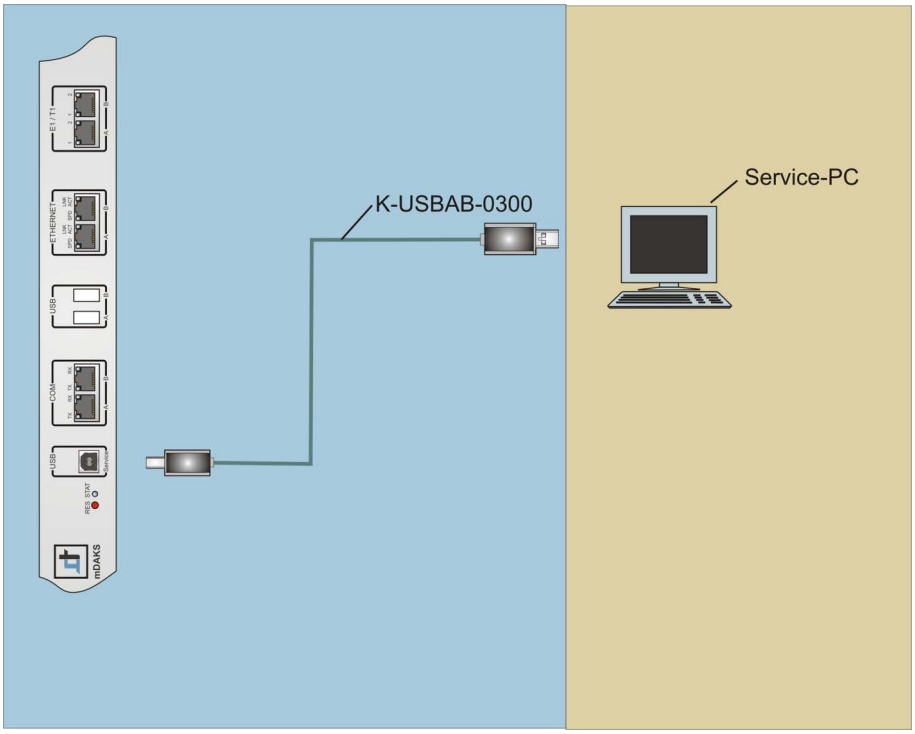
No.	Task
1.	Connect DAKS-200 (mDAKS) to the power supply. ➤ see "mDAKS Hardware Service Manual" When using both types of power supply, mDAKS draws its main power from the AC power supply unit. If one of the two power supplies fails, the system will detect the breakdown and mDAKS can issue a warning (e.g. SNMP).
2.	Connect the Service PC to the USB interface of mDAKS.  • mDAKS — Connection to the USB port of mDAKS • K-USBAB-0300 — USB connector cable • Service PC — Service PC with terminal emulation program
3.	The USB driver is now automatically installed through the Service PC with which you have just connected mDAKS. Confirm the following query: 

Table 6-3 Connect DAKS-200 (mDAKS) to the Service PC for the first time

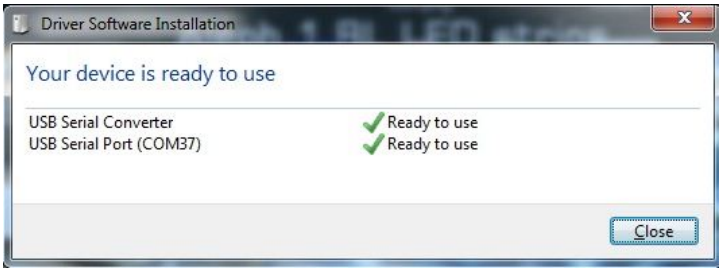
No.	Task
4.	The software needed to connect USB Serial Port and USB Serial Converter was successfully installed. In this example: "(COM7)". End with **Close**. 

Table 6-3 Connect DAKS-200 (mDAKS) to the Service PC for the first time

How to connect DAKS-110 to the Service PC for the first time, step by step:

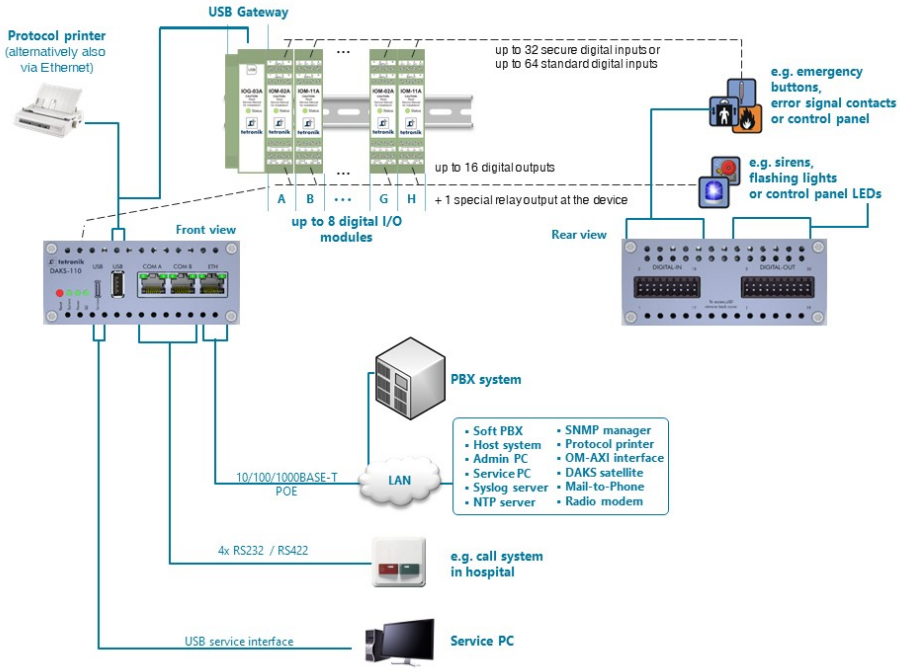
No.	Task
1.	Use a patch cable to connect the Ethernet interface of the DAKS-110 to a PoE injector or a PoE switch. ➤ see "DAKS-110 Hardware Service Manual"
2.	Connect the Service PC to the USB-service interface of DAKS-110.  • DAKS-110 — Connection to the USB-service interface of DAKS-110 • K-USBAB-0300 — USB connector cable • Service PC — Service PC with terminal emulation program

Table 6-4 Connect DAKS-110 to the Service PC for the first time

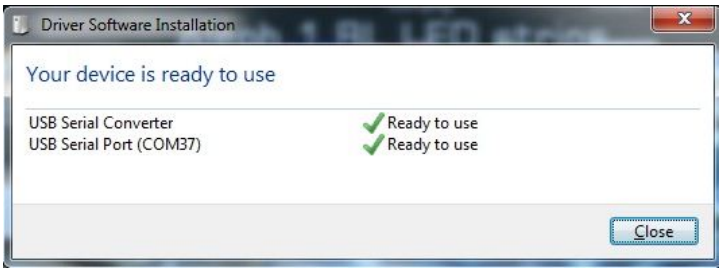
No.	Task
3.	The USB driver is now automatically installed through the Service PC with which you have just connected mDAKS. Confirm the following query: 
4.	The software needed to connect USB Serial Port and USB Serial Converter was successfully installed. In this example: "(COM7)". End with **Close**. 

Table 6-4 Connect DAKS-110 to the Service PC for the first time

6.4 Configure the USB interface of the Service PC

Before you can configure the USB interface of the Service PC for the connection to DAKS you need to install the USB drivers.

➤ see Section 6.2 "Install the USB drivers"

Also, DAKS must already be initially connected to the Service PC.

➤ see Section 6.3 "Connect the hardware to the Service PC for the first time"

How to configure the DAKS USB interface, step by step:

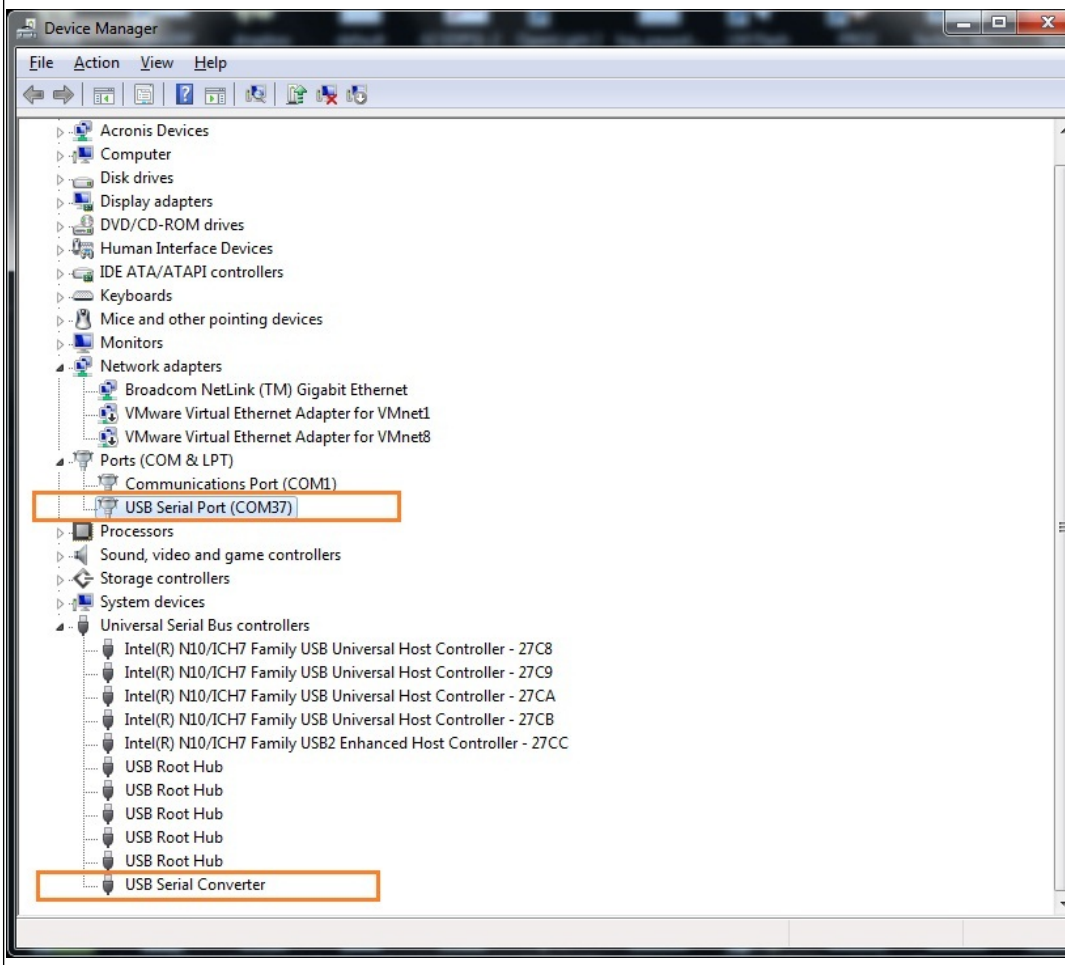
No.	Task
1.	Open the Device Manager: • either by clicking **Administration** in the context menu of the workplace (open it with a right mouse click), • or through the control panel.  Make a double click the entry: "**USB Serial Port (COMxx)**". In this example: "(COM5)".

Table 6-5 Configuration of USB interface

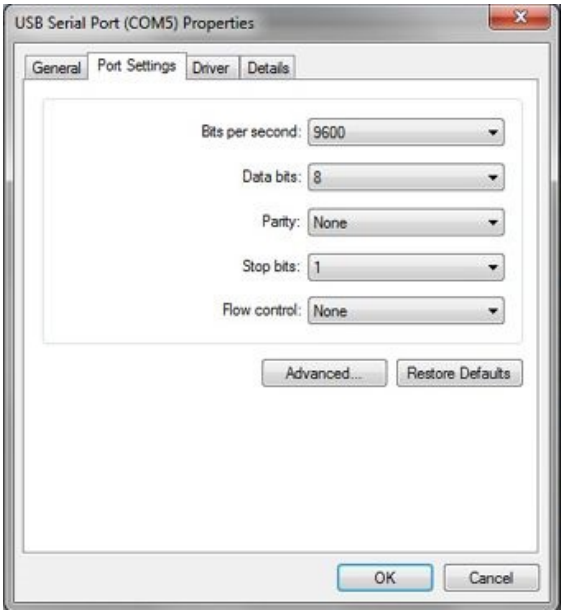
No.	Task
2.	This will open the window "Properties of USB Serial Port (COMxx)". Open the tab "Port Settings" and select the following USB interface parameters for mDAKS: • Bits per second 9600 • Data bits 8 • Parity None • Stop bits 1 • Flow control None  Now click **Advanced...**

Table 6-5 Configuration of USB interface

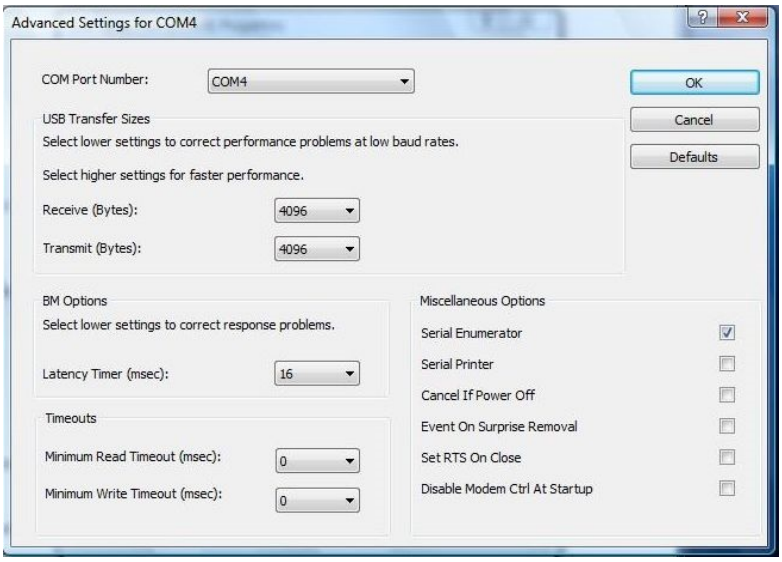
No.	Task
3.	This will lead you to the following enhanced parameters. Select the vacant COM port that you want to assign. In this example: "(COM5)".  Confirm with **Ok**. The installation is now completed. In the next step, you can now configure the terminal emulation program for the operation with mDAKS.

Table 6-5 Configuration of USB interface

6.5 Basic configuration of DAKS via the USB port

There are two ways to carry out the basic configuration of DAKS:

- ether via the terminal function of VCON,
  - ➤ see Section 6.5.1 "Use the VCON terminal function for the basic configuration of DAKS"
- or via a terminal emulation program.
  - ➤ see Section 6.5.2 "Use a terminal emulation program for the basic configuration of DAKS"

6.5.1 Use the VCON terminal function for the basic configuration of DAKS

If you want to use the terminal function of VCON for the initial configuration of DAKS, you need to configure the USB terminal access first.

➤ see Section 10.2.1 "Configure and edit a VCON connection"

To do so, make sure the above-mentioned steps of this chapter have been carried out properly.

6.5.2 Use a terminal emulation program for the basic configuration of DAKS

To configure DAKS via a terminal emulation program (e.g. Windows-Hyperterminal), you first need to connect and configure the terminal emulation program.

To do so, start by performing all of the above-mentioned steps of this chapter.

Note:
Please note that when DAKS is rebooted, the terminal emulation program must also reconnect or, where applicable, also reboot (e.g. Hyperterminal).

How to connect and configure the terminal emulation program, step by step:

No.	Task
1.	Start Windows Hyperterminal or a comparable terminal emulation program.
2.	Select the COM port configured for DAKS. ➤ see Section 6.3 "" ➤ see Section 6.3 ""
3.	Enter the following parameters in the terminal emulation program: • Bits per second 9600 • Data bits 8 • Stop bits 1 • Parity none
4.	Connect a PC to the USB port of DAKS and connect DAKS to the power supply. ➤ see Section 6.3 "" ➤ see Section 6.3 ""

5.	DAKS loads the operating system and the required applications.
	Please find below an example of the start message that will now pop up with important information on the application and on the individual software components:
	
	`Version 3.01 (c) 2020 tetronik`
	`http://www.tetronik.com`
	`2020-03-05 14:48:32.4584 [00000001]: TFL Version 1.76a (March 14 2020)`
	
	• `DAKS` Name of the DAKS application
	• `Version` Version of the DAKS application
	• `TFL-Version` Version of the tetronik Foundation Library (TFL)

Table 6-6 Connect and configure the terminal emulation

7 The Startup Functions and Configuration of DAKS

Overview

This chapter covers the startup functions and configuration of DAKS. This includes the IP parameters, the repair system, the functions of the individual interfaces, hardware ports and services, and the configuration of the digital I/Os.

Contents

This chapter consists of the following sub-sections:

7.1 Initial startup functions using the USB terminal access
7.2 Activate the DAKS repair system
7.3 Configuration via VCON and LAN interface
7.4 IP parameters
7.5 Parameters of the serial interfaces (COM ports)
7.6 Parameters of the ESPA-X interface
7.7 Parameters of the DMC interface
7.8 Parameters of the MASI interface
7.9 Parameters of the OAP interface
7.10 Parameters of the OM-AXI interface
7.11 Parameters of the SMTP interface
7.12 Parameters of the Digital I/O
- 7.12.1 Switching states of the contact inputs
- 7.12.2 Parameters of the Gateway of the I/Os (IOG Module) of DAKS-200
- 7.12.3 Parameters of the Digital I/Os of DAKS-200
- 7.12.4 Parameters of DAKS-Satellite contacts for DAKS-200

7.13 Parameter of DAKS' SNMP Service
7.14 Configuration of the VoIP trunk connections and the direct VoIP connection
- 7.14.1 Parameter basic settings
- 7.14.2 General trunk parameters
- 7.14.3 SIP-Peer trunk settings (not required for direct VoIP connection)
- 7.14.4 SIP trunk parameters (not required for pure SIP-Q trunks)
- 7.14.5 SIP-Q trunk parameters (only for SIP-Q trunks, where needed with OpenScape Branch)
- 7.14.6 MLPP trunk parameters (not required for pure SIP-Q trunks)
- 7.14.7 Registrar trunk parameters (only for direct VoIP connection)
- 7.14.8 Internal softswitch parameters (only for direct VoIP connection)

7.15 Parameters of the ISDN trunk
7.16 Parameters of the SYSLOG Service
7.17 Parameters of the Printer Service
7.18 Parameter of SSL
7.19 Provisioning Host and Provisioning Service
- 7.19.1 Introduction
- 7.19.2 Provisioning Host – DAKS Communicator
- 7.19.3 Parameter Provisioning Service

7.20 Parameters of the corridor displays
7.21 Parameters of the Web interface
7.22 Application parameters
7.23 DCF, NTP and system clock parameters

7.1 Initial startup functions using the USB terminal access

Note:
Before you put DAKS into operation with the USB terminal access, make sure you configure the Service PC first.
➤ see Chapter 6, "Configuration of the Service PC'S USB Port"

Note:
To leave entries that are available or suggested to you unaltered, simply click <enter>.
Otherwise, edit or delete the available or suggested value, enter the value that you want to use instead, and click <enter>.

When configuring the IP access data, you can set the following DAKS parameters:

- IP address
- Network mask
- Gateway
- P-Port to connect VCON
- Authorization to access DAKS via VCON

How to configure the IP access data of, step by step:

No.	Task
1.	Connect DAKS to the power supply and start VCON, or start a terminal emulation program instead.
2.	Wait for the Start Message.
3.	Enter the keyword `ipcfg` and confirm with <enter>:

4.	The following output will e.g. appear:
	`IP Manager / Port A (Various Services) / VCON access:`
	`Access VCON LAN`
	`- none`
	`- user`
	`- service`
	`- support`
	`(use cursor up/down) : service`
	Enter authorization to access VCON and confirm with <enter>, or use the access authorization that is already entered by pressing <enter>,

5.	The following output will e.g. appear: `VCON Port : 2180` Enter the IP port (default = 2180) for the VCON access. Confirm with <enter>.
6.	The following output will e.g. appear: `VCON whitelist <1..10> = 0.0.0.0` For the whitelist entries, specify the IP addresses that are authorized to access DAKS via VCON. Confirm with <enter>. If all whitelist entries are empty, or if they carry the IP address "0.0.0.0", VCON may access DAKS from any IP address.

Table 7-1 Configure the IP access data

No.	Task
7.	For the first LAN port, the following output will e.g. appear. For µDAKS, this is the only LAN port. For mDAKS, this is the LAN port 'A'; with the exception of VoIP, all services are routed via this port. `IP Manager / Port B (VoIP) / IP #1:` `IP address : 192.168.20.100` (delivery state ex works) Enter the IP address. Confirm with <enter>.
8.	The following output will e.g. appear: `IP V4 network mask : 255.255.0.0` (delivery state ex works) Enter the network mask. Confirm with <enter>.
9.	The following output will e.g. appear: `IP V4 gateway address : 192.168.1.1` (delivery state ex works) Enter the gateway address. Confirm with <enter>.
10.	**For *µ*DAKS continue with Step 15.**
11.	mDAKS needs a separate IP address for VoIP. `.. / IP #1:` `IP V4 address : 0.0.0.0` (delivery state ex works)
12.	The following output will now appear: `IP V4 network mask : 0.0.0.0` (delivery state ex works) Enter the network mask. Confirm with <enter>.
13.	The following output will now appear: `IP V4 gateway address : 0.0.0.0` (delivery state ex works) Enter the gateway address. Confirm with <enter>.
14.	If you want to connect VoIP to the network via a separate LAN port, select: `Port B` (entry: `B`) If you want to connect VoIP to the network also via the first LAN port, select: `Port A` (entry: `A`) `Physical connection via port (A,B): A`
15.	For DAKS the following concluding query will now appear: `save config and reboot? (yes/no): -> yes/no` Complete the entry of IP parameters. Enter '`yes`' or '`no`'. Confirm with <enter>. • `no` All entries are discarded • `yes` All changes are saved and the system is restarted

Table 7-1 Configure the IP access data

No.	Task
16.	After the restart of DAKS, the light-emitting diode starts to blink or lights up green to signal that you can now access the system via VCON (only if enabled). ➤ see "mDAKS Hardware Service Manual"

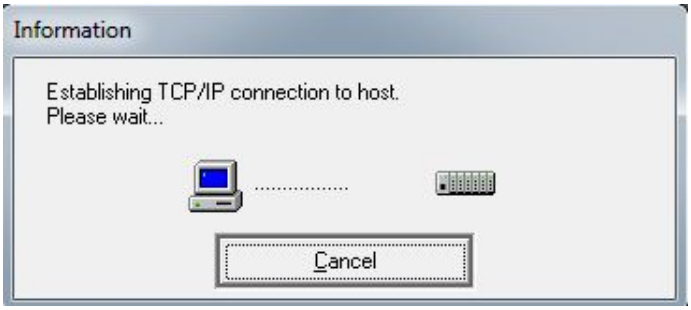
Table 7-1 Configure the IP access data

7.2 Activate the DAKS repair system

If DAKS and its application fail to start correctly, a repair system might need to be activated.

After that, VCON can connect with DAKS and you can run a new system installation, or you can upload a complete system backup of the CompactFlash card.

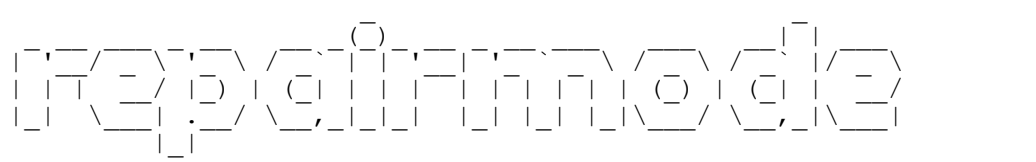
How to start the DAKS repair system, step by step:

No.	Task
1.	Connect DAKS to the power supply and start VCON. ➤ see Section 6.3 "Connect the hardware to the Service PC for the first time" ➤ see Section 10.2 "Start VCON"
2.	If you have not yet configured a serial TCP/IP+COM connection, configure this connection now. ➤ see Section 10.2.1 "Configure and edit a VCON connection"
3.	Due to the fact that a connection to DAKS does not yet exist, the following window will now pop up:  Close this window. Go to the tree and click the serial connection: • "**Serial <COM...>**" for DAKS.
4.	This will open the VCON Terminal window 'Serial <COM...>'.

5.	After the start message in the Terminal window, the following output will appear with the current date.
	This outputs for example:
	`rtc: 2018-03-03 11:45:12`
	`repair:`
	Note:
	If this example does not appear, cut the DAKS power connection. Connect DAKS back to the power supply and wait until the output "Repair" appears.

Table 7-2 Activate DAKS repair system

No.	Task
6.	Enter the keyword `'repair'` within 5 seconds. Confirm with <enter>.

7.	The repair system will start and the following output will e.g. appear:
	
	`2018-03-03 11:45:15.3027 [00000001]: TFL Version 1.76g (March 26 2018) (FR: 1.70 ; VM 1.0 )`
	
	 
	
	`2018-03-03 11:45:15.8262 [00000001]: VCON listening on port 2180`

8.	To carry out an installation via VCON you must at least have the authorization 'service'. ➤ see Section 7.1 "Initial startup functions using the USB terminal access"
9.	Connect VCON with DAKS. The following options are available: • upload a backup of the CompactFlash card or • new installation of DAKS using a bootstrap file: ➤ see Section 10.4.1 "Upload installation files, license files or a backup"

Table 7-2 Activate DAKS repair system

7.3 Configuration via VCON and LAN interface

The configuration of DAKS is carried out via VCON. The tree structure that is shown here illustrates the process list, sorted by its different components.

➤ see Chapter 10, "The Service and Configuration Tool VCON"
➤ see Section 10.6.2 "Output in the DAKS Process list"

Caution!
All changes that are made to the green VCON parameters do not require a reboot of DAKS and take effect immediately.
In contrast, all changes that are made to VCON settings that are **not** shown in green always require a restart of DAKS to take effect.

For example:

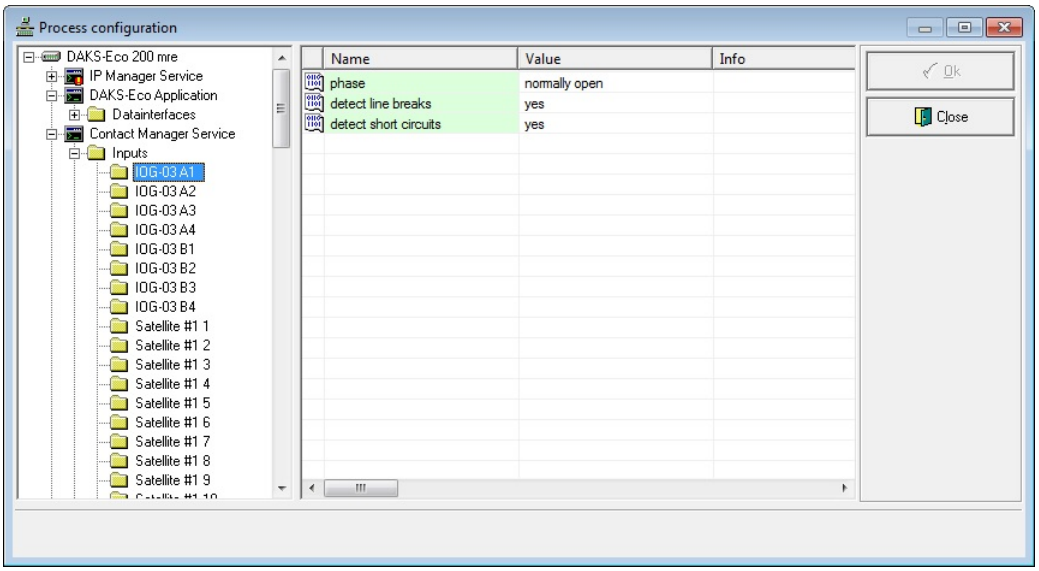


Image 7-1 VCON interface

7.4 IP parameters

Parameters	Value range	Description
Tree structure: Server ➤ IP Manager Service ➤ Various Services (Port A)		
Link mode	10base T/half, 10base T/full, 100base T/half, 100base T/full, Autonegotiation	Transmission parameter Layer 1 of the Ethernet interface Port A.
Tree structure: Server ➤ IP Manager Service ➤ Various Services (Port A) ➤ VCON access		
VCON port	IP port [*2180*]	The IP port for the VCON access to DAKS.
VCON backup port	IP port [*2181*]	IP port for the access of VCON to DAKS, if DAKS can no longer be reached through the Standard IP port.
IP whitelist #1..#10	IP address [*0.0.0.0*]	The IP addresses that are entitled to access DAKS via VCON. If no entries are made in this list there is no access restriction at all.
Tree structure: Server ➤ IP Manager Service ➤ Various Services (Port A) ➤ IP #1		
IP V4 address	IP address [*192.168.20.100*]	The IP address of DAKS ex works.
IP V4 network mask	Network mask [*255.255.0.0*]	Network mask ex works (Subnet mask).
IP V4 gateway address	IP address [*192.168.1.1*]	IP address ex works of the gateway, to communicate with network components outside the subnet.
IP V4 address for dns #1	IP address [*0.0.0.0*]	Defines the IP address of the first DNS that is used by DAKS to resolve computer and domain names.
IP V4 address for dns #2	IP address [*0.0.0.0*]	Defines the IP address of the second DNS that is used by DAKS to resolve computer and domain names.
Tree structure: Server ➤ IP Manager Service ➤ Various Services (Port A) ➤ HTTP/S server		
HTTP port	HTTP port [*8080*]	HTTP port for unencrypted communication between DAKS and DAKScommunicator.
HTTPS port	HTTPS port [*8443*]	HTTP port for encrypted communication between DAKS and DAKScommunicator.
Tree structure: Server ➤ IP Manager Service ➤ VoIP		
Link mode	10base T/half, 10base T/full, 100base T/half, 100base T/full, Autonegotiation	Transmission parameter Layer 1 of the Ethernet interface Port B.
Physical connection via port	B, [*A*]	**VoIP uses the Ethernet port B:** Both ports must be connected with the network. **VoIP uses the Ethernet port A:** Only port A must be connected with the network.
Tree structure: Server ➤ IP Manager Service ➤ VoIP ➤ IP #1		
IP V4 address	IP address [*0.0.0.0*]	The IP address of DAKS ex works.

Table 7-3 Configuration of the IP parameter of DAKS

Parameters	Value range	Description
IP V4 network mask	Network mask [*0.0.0.0*]	Network mask ex works (Subnet mask).
IP V4 gateway address	IP address [*0.0.0.0*]	IP address ex works of the gateway, to communicate with network components outside the subnet.
IP V4 address for dns #1	IP address [*0.0.0.0*]	Defines the IP address of the first DNS that is used by DAKS to resolve computer and domain names.
IP V4 address for dns #2	IP address [*0.0.0.0*]	Defines the IP address of the second DNS that is used by DAKS to resolve computer and domain names.

Table 7-3 Configuration of the IP parameter of DAKS

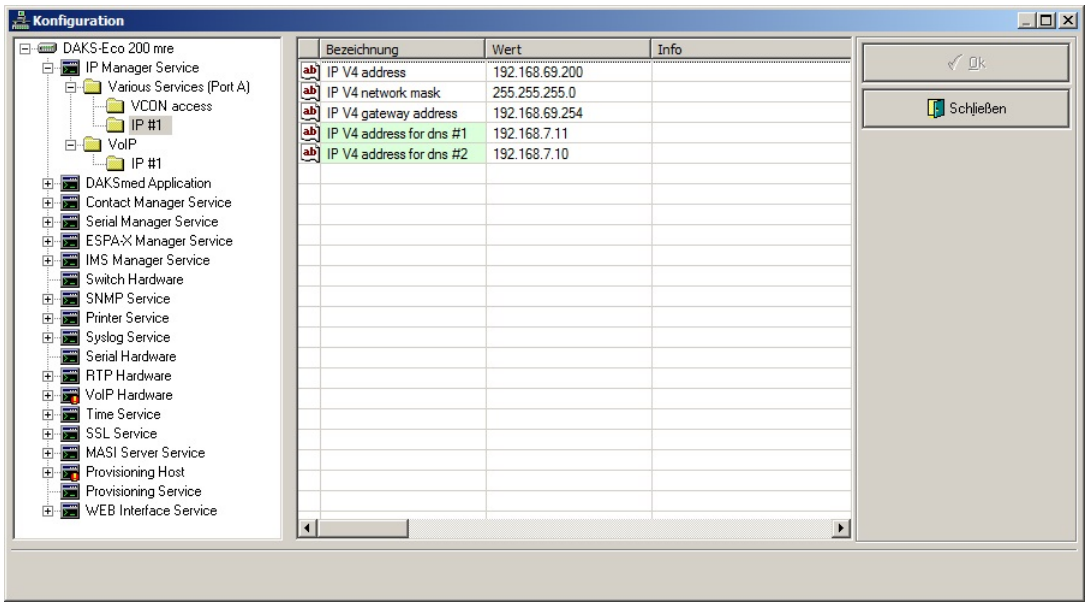


Image 7-2 Configuration of the IP parameters of DAKS-200 (mDAKS)

7.5 Parameters of the serial interfaces (COM ports)

Note:
DAKS supports 2 serial interfaces.

Caution!
In order for them to become active, the serial interfaces of DAKS that launch broadcasts, e.g. ESPA4.4.4 and RLTAP, must first be assigned in VCON to the data interface licenses.
This is done in VCON, and there in "DAKS Application" under "Data interfaces".
➤ see Section 7.22 "Application parameters"

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Serial Manager Service ➤ Ports ➤ Serial-1/..-2/..-3		
Report	[*not used*], ESPA 4.4.4, RLTAP, Transparent	Select protocol of the serial interface: • **ESPA 4.4.4** Communications protocol of the European Selective Paging Manufacturer's Association • **RLTAP** Telelocator Alphanumeric Protocol • **Transparent** Link-up to corridor displays
baud rate	300..38400 [*9600*]	Baud rate
parity	[*no*], even, odd	• No parity • Even parity • Odd parity
data bits	7, [*8*]	Number of data bits
stop bits	[*1*], 2	Number of stop bits
interface type	[*RS232*], RS422, RS485	The type of the serial interface
Tree structure: Server ➤ Serial Manager Service ➤ Ports ➤ Serial-1/..-2/..-3 ➤ ESPA 4.4.4 **Prerequisite: Protocol = ESPA 4.4.4**		
local address	0..9 [*2*]	ESPA 4.4.4 address of DAKS.
external address	0..9 [*1*]	ESPA 4.4.4 address of the external system.
timeout for polling after process ended [s]	1..300 [*120*]	The period of time during which DAKS will save, for the host system, the last status of a completed status request call.

Table 7-4 Serial interface settings DAKS

Parameters	Value range	Description
send 'paged' info	[*standard*], status request is immediately answered with 'paged', accelerated 'paged callback info' after successful buildup of the callback connection	send information 'Paged': • After the call has been ended. • When the process start of ESPA 4.4.4 has been received. • As soon as the callback call connection has been built up.
amount of Status Info records w/o specific Status Request	0..5, [*5*]	Number of 'Status Information' records that are sent without 'Status Request'. '0' = switched off
timeout, external system is inactive	1..10, [*10*]	Time in minutes after which DAKS considers the external system (nurse call system) as no longer active.
keypad echo	yes, [*no*]	Translate keys pressed made by the nurse, from keypad signaling to DTMF: • **yes** send all received keypad information in form of DTMF tones to the telephone interface of the nurse call system • **no** do not send received keypad information to the nurse call system
extended status	yes, [*no*]	Activate extended status messages, i.e. send detailed status values for broadcasts that were ended after one subscriber was reached. ➤ see Section 3.9.9 "Status messages from DAKS"
ignore calltype for callback	yes, [*no*]	• **yes** Callback call is always possible, irrespective of the ESPA call type parameter ➤ see Section 3.9.6 "Evaluation of ESPA call types" • **no** Option for callback is determined by the ESPA Call Type ➤ see Section 3.9.6 "Evaluation of ESPA call types"
The following parameters only appears when the 'extended status' is set to: 'yes':		
1 evaluation	yes, [*no*]	Keystroke '1' pressed by the nurse during the active callback to the patient: • **yes** Evaluate keystroke '1' • **no** Ignore keystroke '1'

Table 7-4 Serial interface settings DAKS

Parameters	Value range	Description
1 disconnects	yes, [*no*]	Automatic call release: • **yes** Keystroke '1' ends the call • **no** Keystroke '1' does not end the call
# evaluation	yes, [*no*]	Keystroke '#' pressed by the nurse during the active callback to the patient: • **yes** Evaluate keystroke '#' • **no** Ignore keystroke '#'
# disconnects	yes, [*no*]	Automatic call release: • **yes** Keystroke '#' ends the call • **no** Keystroke '#' does not end the call
Tree structure: Server ➤ Serial Manager Service ➤ Ports ➤ Serial-1/..-2/..-3 ➤ RLTAP **Prerequisite: Protocol = RLTAP**		
Fixed text 1	Characters 0... 8 [*Room*]	Display output for <Initiator Info> that is always shown and output first. **Note:** The space character (blank space) at the end of the text must be entered by hand, i.e. manually.
Separator	[:]	Separator that divides the <Initiator info> into two parts
Fixed text 2	Characters 0... 8 [*Bed*]	Display output for <Initiator Info> that is always shown and output first. **Note:** The space character (blank space) at the end of the text must be entered by hand, i.e. manually.
Tree structure: Server ➤ Serial Manager Service ➤ Ports ➤ Serial-1/..-2/..-3 ➤ RLTAP ➤ Calltype 1...20		
call type	20 characters [ ]	Call type of an alarm activation, e.g. Normal, Bed, Fire, Emergency aso.
priority	[*low*], high, emergency	• **low** Call type with a low priority • **high** Call type with a high priority • **emergency** Call type with an emergency priority

Table 7-4 Serial interface settings DAKS

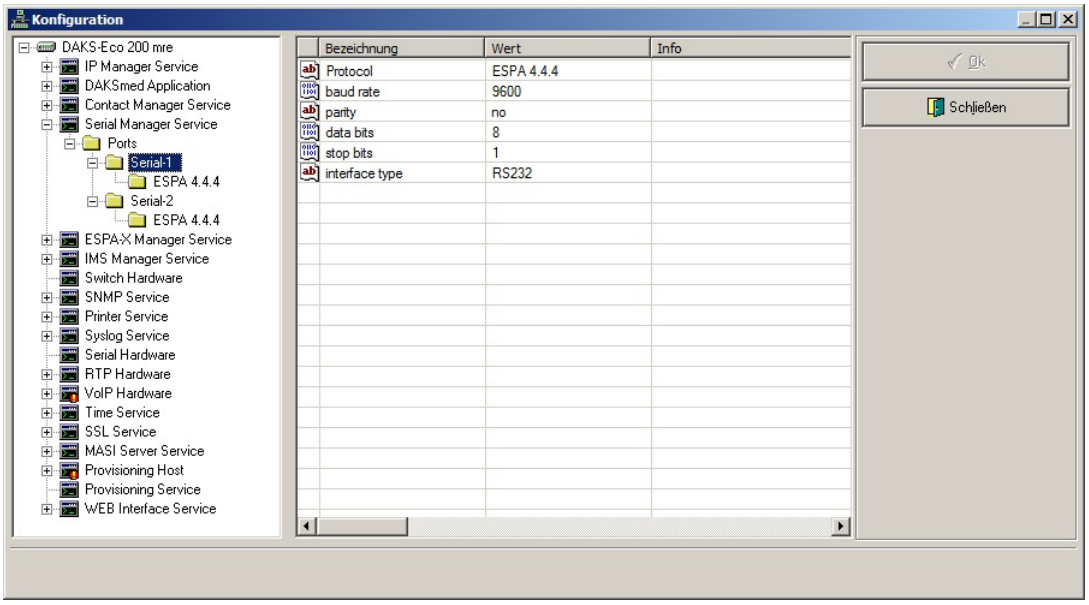


Image 7-3 Configuration serial interface DAKS

7.6 Parameters of the ESPA-X interface

The EXPA-X interface is used by:

- external Host systems
- Mail-to-Phone
- DAKS-Satellite

Caution!
In order for them to become active, the ESPA-X interface must first be assigned to data interface licenses in VCON.
This is done in VCON, and there in "DAKS Application" under "Data interfaces".
➤ see Section 7.22 "Application parameters"

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ ESPA-X Manager Service ➤ ESPA-X server		
ESPA-X server name	30 characters [ ]	The name that is transmitted, at the login, to the client who is logging in.
IP port	IP port [*2023*]	The IP port where the ESPA-X serer can be reached.
Use SSL	[*yes*], no	Use SSL for encryption: • **yes** encrypted data transmission • **no** unencrypted data transmission
IP port SSL	IP port [*2024*]	IP port where the ESPA-X serer can be reached through SLL.
Session timeout	0..120 s [*60 s*]	Maximum time between 2 heartbeats. If no heartbeat is received during this time, the connection is automatically released.
Tree structure: Server ➤ Sessions ➤ ESPA-X-Session-1		
ESPA-X login name	12 characters [ ]	The user name of the session.
ESPA-X login password	12 characters [ ]	The user password of the session.
Remarks	50 characters [ ]	Comment, for information purposes only **Note:** For connections DAKS-Satellite, use this entry to select DAKS-Satellite in the user interface's Contact I/O administration.
Enable Mail-to-Phone	yes, [*no*]	Use the ESPA-X interface for Mail-to-Phone. **Note:** Cannot be activated together with 'Enable Satellite'.

Table 7-5 Parameters ESPA-X server

Parameters	Value range	Description
Enable Satellite	yes, [*no*]	Use the ESPA-X interface for DAKS-Satellite. **Note:** Cannot be activated together with 'Enable Mail-to-Phone'.
Max. number of transparent-mode processes	0..10 [*0*]	The maximum number of transparent mode processes that you can configure for this session.
Max. number of session-specific connections	0..10 (for µDAKS) 0..30 (for mDAKS) [*0*]	The maximum number of connections that can be configured for this session.
Tree structure: Server ➤ Sessions ➤ Whitelist 1-20		
IP address	IP address [*0.0.0.0*]	IP addresses and their corresponding subnet masks, that may access the ESPA-X service.
IP subnet mask	Network mask [*0.0.0.0*]	

Table 7-5 Parameters ESPA-X server

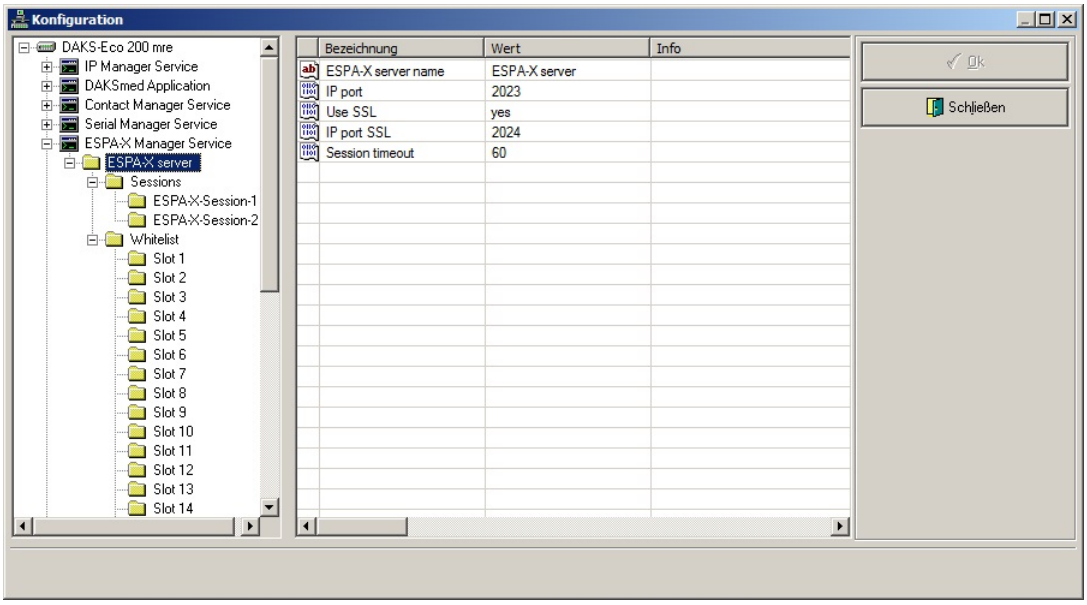


Image 7-4 ESPA-X server configuration

7.7 Parameters of the DMC interface

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ IMS Manager Service ➤ DMC		
IP port	IP port [*1322*]	The IP listen port of DAKS.
Use HTTPS only	[*no*], yes	Exclusive use of HTTPS.
IP port HTTP	IP port [*9080*]	The IP port at which the web interface of DMC-Proxy can be reached via HTTP.
IP port HTTPS	IP port [*9443*]	The IP port at which the web interface of DMC-Proxy can be reached via HTTPS.
Use APNS	[*no*], yes	Apply the Apple Push Notification Service.
Interval for push notifications [sec]	15..9999 [60 s]	Time interval, after which the DMC-Proxy sends push messages.
No-Poll timeout [sec]	1..60 s [*30 s*]	The max. time that may elapse between sending a response from the DMC-Proxy and the receipt of a renewed inquiry from the DMC. Otherwise, the DMC is switched to the offline mode.
Poll timeout [sec]	1..60 s [*30 s*]	The maximum time span that DMC-Proxy will delay a response to an inquiry from DMC, when no current information is available.
Offline timeout [min]	5..10.000 min [*30 min*]	The maximum length of time during which the DMC-Proxy waits for a response from the Client. Otherwise, the DMC-Proxy will end the connection.
Send timeout [sec]	1.. 20 s [*20 s*]	The max. time that the DAKS server must wait for messages from the DMC-Proxy installations.
Max. number of connections	0..200 [*50*]	The maximum number of Clients that may connect with the DAKS server.

Table 7-6 Parameters of DMC interface

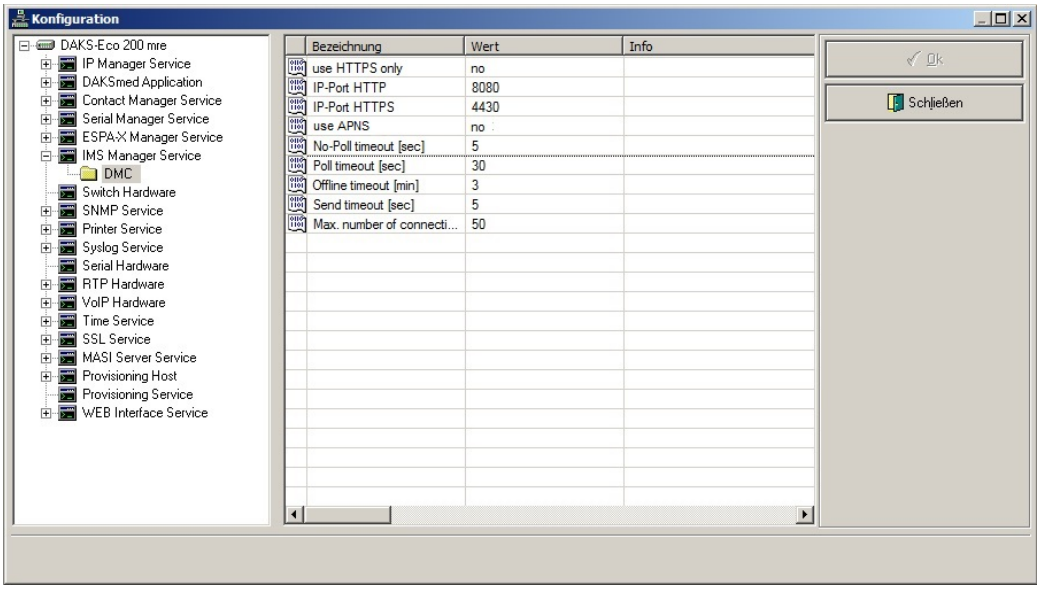


Image 7-5 Configuration DMC interface

7.8 Parameters of the MASI interface

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ MASI Server Service		
No. of clients	1	Number of users.
Tree structure: Server ➤ MASI Server Service ➤ Clients ➤ MASI Client #1		
Port of MASI Server	IP port [*2222*]	The IP listen port of DAKS.
Use TLS encryption	yes, [*no*]	Use TLS for encryption.
User name	12 characters [ ]	The user name of the session.
Password	12 characters [ ]	The user password of the session.
Default care unit filter	Care-Unit-IDs [ ]	Care-Unit-IDs, whose alarm conditions shall be evaluated. **Note:** When this box is empty, the alarm conditions of all Care Units are evaluated.

Table 7-7 Parameters of MASI interface

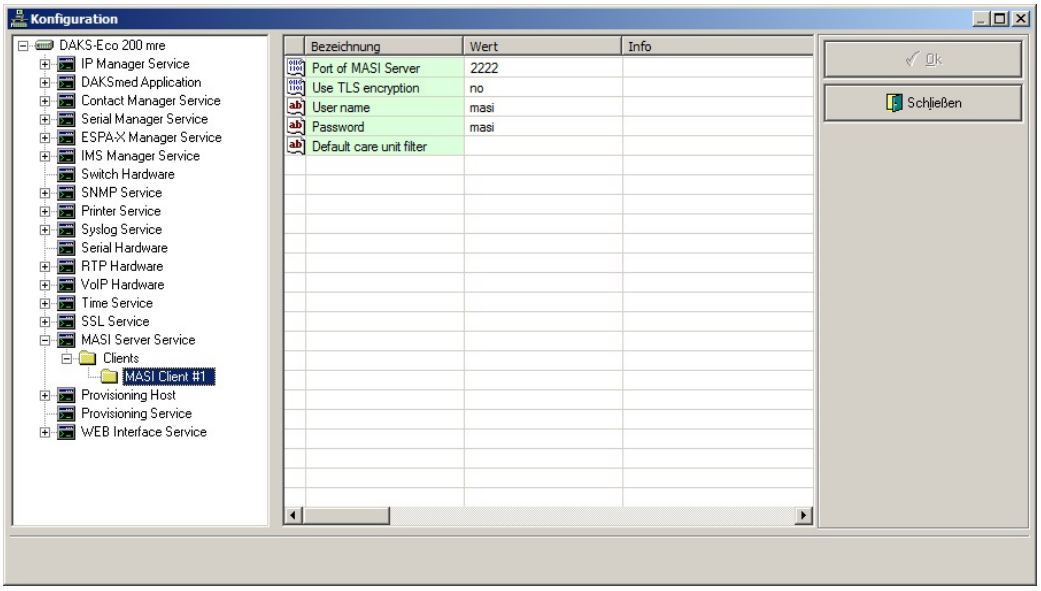


Image 7-6 Configuration MASI interface

7.9 Parameters of the OAP interface

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ IMS Manager Service ➤ OAPV4		
server IP address	IP address [*0.0.0.0]*	IP address of the WSG or IMS server.
server request port	IP port [*1322*]	IP port of the WSG or IMS server.
server response port	IP-Listen Port [*1333*]	IP listen port of DAKS.

Table 7-8 Parameters of OAP interface

7.10 Parameters of the OM-AXI interface

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ IMS Manager Service ➤ OMAXI		
IP address	*IP address [0.0.0.0]*	The IP address of the OM-AXI server.
IP port	IP port [*12621*]	The IP port where the server can be reached.
OMM2 address	IP address [*0.0.0.0*]	The IP address of the OM-AXI standby server.
User name	260 characters [*daks*]	The user name of the OM-AXI user.
Password	260 characters [*daks*]	The user password of the OM-AXI user.
Melody1 (Red)	Alarm tone [*Alarm 6*]	The alarm tone for display text color 'Red'.
Melody 2 (Orange)	Alarm tone [*Alarm 2*]	The alarm tone for display text color 'Orange'.
Melody 3 (Yellow)	Alarm tone [*Alarm 4*]	The alarm tone for display text color 'Yellow'.
Melody 4 (Green)	Alarm tone [*Alarm 3*]	The alarm tone for display text color 'Green'.
Melody 5 (Blue)	Alarm tone [*Alarm 1*]	The alarm tone for display text color 'Blue'.
Standard Calling Number	0	The standard calling number that is sent for outgoing (out-bound) calls.
Standard Calling Name	260 characters [ ]	The default name name that is sent for the first out-going (out-bound) call.
poll interval	10.. 60 s [*30 s*]	The interval within which DAKS will send a heartbeat at the latest.

Table 7-9 Parameters of OM-AXI interface

7.11 Parameters of the SMTP interface

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ SMTP Client Service ➤ Client		
IP host relay server 1	IP address [*0.0.0.0*]	Defines the IP address of the first relay server which forwards the e-mails dispatched by Mail-to-Phone V4.
IP port relay server 1	0..65535 [*25*]	Defines the IP port used by the first relay server to receive e-mails.
IP host relay server 2	IP address [*0.0.0.0*]	Defines the IP address of the second relay server which forwards the e-mails dispatched by Mail-to-Phone V4.
IP port relay server 2	0..65535 [*25*]	Defines the IP port used by the second relay server to receive e-mails.
SMTP default sender mail address	up to 260 characters [ ]	Defines the default address of the sender for e-mails that are dispatched by Mail-to-Phone V4.
SMTP default sender real name	up to 50 characters [ ]	Defines the default name of the sender for e-mails that are dispatched by Mail-to-Phone V4.
Retry e-mail dispatch	1..10 [*3*]	Defines the max. number of repeat attempts for the dispatch of e-mails.
E-mail retry interval	1..9999 [*5*]	Defines the interval between 2 retries for the dispatch of e-mails, in seconds.

Table 7-10 Parameters of SMTP interface

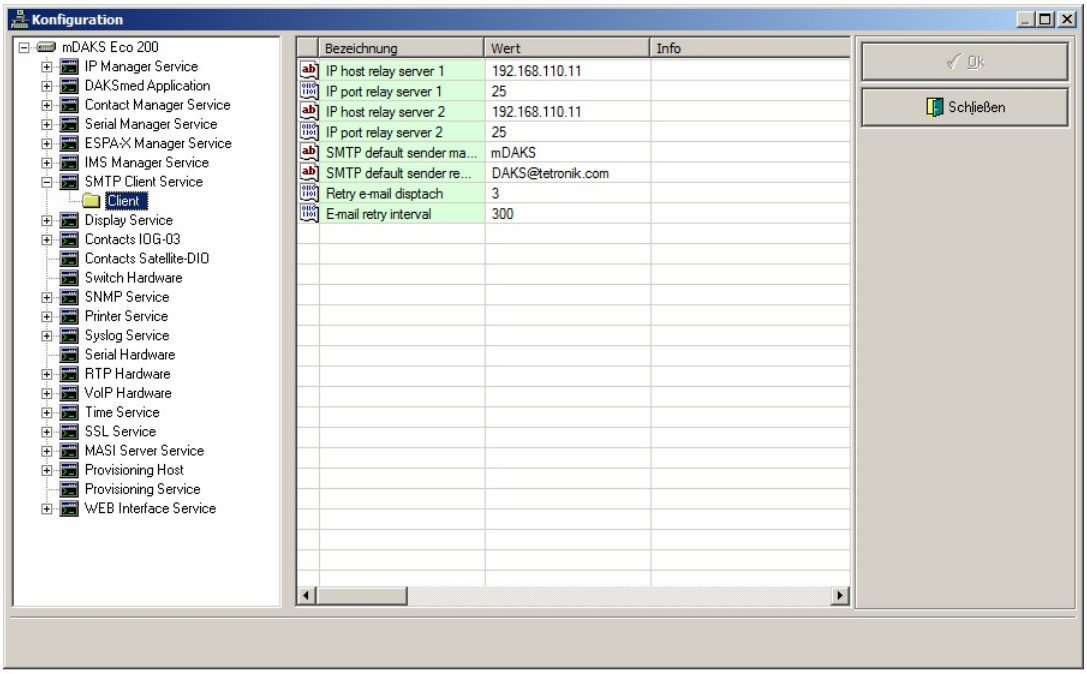


Image 7-7 Configuration SMTP interface

7.12 Parameters of the Digital I/O

7.12.1 Switching states of the contact inputs

The below spreadsheets list all states to which the digital contact inputs can be switched.

Switching states:

- ON — Input active from the point of view of the application
- OFF — Input inactive from the point of view of the application
- LB — Line break detected
- SC — Short circuit detected

Contact configuration:

- sc, $\overline{sc}$ — 'detect short cut' = yes, no
  Short circuit detection activated, not activated
- lb, $\overline{lb}$ — 'detect line break' = yes, no
  Line break detection activated, not activated
- no, nc — 'phase' = normally open, normally closed
  Phase angle of the input

Switching thresholds	**Contact configuration**							
	$\overline{lb}$, $\overline{sc}$		lb, sc		$\overline{lb}$, sc		lb, $\overline{sc}$	
	no	nc	no	nc	no	nc	no	nc
< 2 V	ON	OFF	SC	SC	SC	SC	ON	OFF
2 V..6 V	ON	OFF	ON	OFF	ON	OFF	ON	OFF
6V..10V	OFF	ON	OFF	ON	OFF	ON	OFF	ON
> 10 V	OFF	ON	LB	LB	OFF	ON	LB	LB

Table 7-11 Switching states of digital contact inputs of DAKS-200 with IOM-11



Note:
The external circuitry (wiring) must warrant the required voltage for the switching thresholds.

7.12.2 Parameters of the Gateway of the I/Os (IOG Module) of DAKS-200



Note:

Behavior when pulling and plugging the IOG module, incl. IOM module(s):

When the IOG module, including IOM module(s), is connected later and while the system is already up and running, all IOM modules are supported from this moment on, with no restart required (hot-plug-in function).

When the IOG module, including IOM module(s), is removed, the IOM modules are no longer supported starting from this moment (without restart).

As soon as the IOG module, incl. IOM module(s), is available again:

- Buffered contact output states are switched and
- Broadcasts are started when the contacts are in the pertinent state.

Behavior when pulling and adding IOM modules while the system is up and running:

When an IOM module is added while the system is up and running, the system verifies:

- the configuration in VCON,
- the administrated contact data in the database and
- the connected contacts for consistency:
  - the license against the number of connected modules
  - the right module at the right slot

If the contact inputs that are connected match the configuration in VCON and in the database:

- the application evaluates the contact inputs and
- the status indicator of the IOG module lights up green.

If the contact inputs that are connected do not match the configuration in VCON and in the database:

- the contact inputs are not evaluated (even if partial functionalities would be possible),
- the contact outputs are not activated,
- the system status switches to "Yellow alert",
- the status indicator of the IOG module blinks yellow-green,
- the **configured** contact I/Os are shown in VCON and the hardware that is actually connected can be adopted as the configuration,

  Caution: The system does not show the contact that are **actually and physically** connected!
- the contact I/Os can be put into operation by adjusting the configuration in VCON (sequence of the connected IOM modules).

  Might require you to do a restart.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Contacts ➤ IOG-03 OM-11 (A...D) + IOM-02 (A...H)		
Serial Number	[..]	Serial number of the connected IOG module. The number is automatically read out by the system after the module is connected and the parameter 'Apply Configuration' is switched to: 'Change to Hardware' or 'Change to License'.
Apply Configuration	[*Current Configuration*]	• Default output of the contacts, in keeping with the current configuration data
	Change to License	• If no configuration data is available (e.g. right after the activation), a configuration is generated from the license. Where needed, adjust the sequence of the connected IOM modules to match this configuration.
	Change to Hardware	• If configuration data is available but this data does not mirror the IOM modules that are actually and physically connected, e.g. because the sequence of the modules was altered, the system will read out the configuration from the actual modules that are currently connected.

Table 7-12 DAKS-200: Configure the Gateway of the I/Os (IOG module)

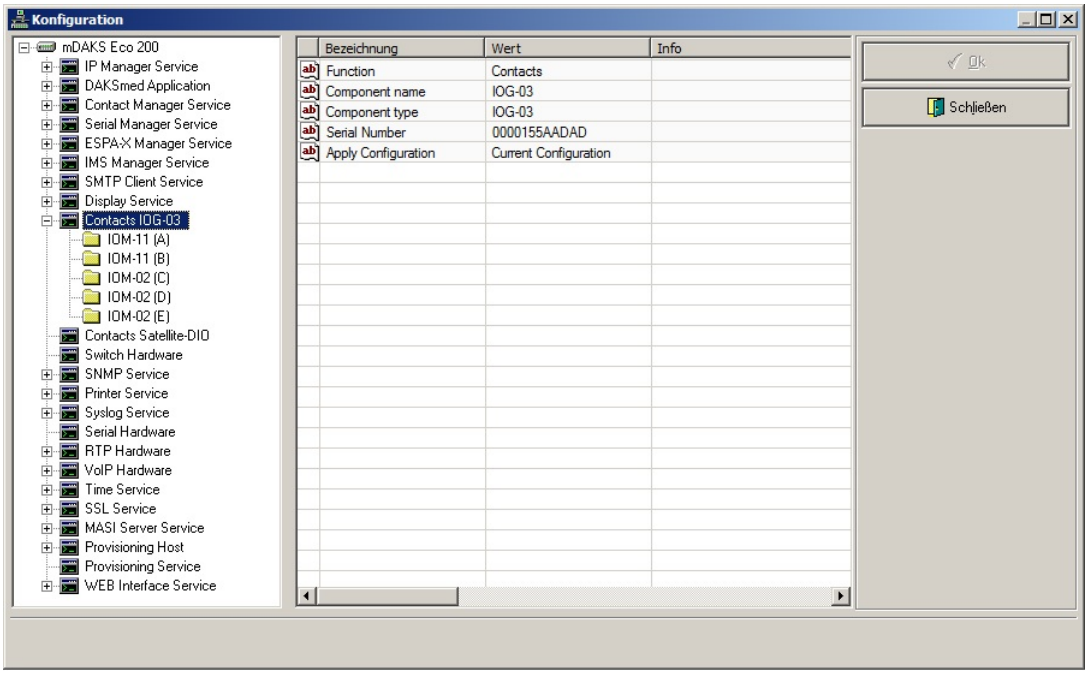


Image 7-8 Configuration DAKS-200: Gateway of I/Os (IOG module)

7.12.3 Parameters of the Digital I/Os of DAKS-200

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Contact Manager Service ➤ Inputs ➤ Inputs A1..A4, .., H1..H4 + Satellite #1..#16,.., Satellite #1..#16 **Inputs, where applicable with short circuit and/or line break detection**		
phase	[*normally open*]	The phase angle defines the input's switching state which the application automatically assesses as active: • **normally open** Working current function = external contact, closed in active state (when connected as recommended = contact switches to 'U-')
	normally closed	• **normally closed** closed current function = external contact open in active state (when connected as recommended = contact switches to 'U-')
detect line breaks	yes, [*no*]	Activate/deactivate short circuit/line-break detection (requires external wiring): ➤ see "mDAKS Hardware Service Manual"
detect short circuits	yes, [*no*]	
Tree structure: Server ➤ Contact Manager Service ➤ Inputs-Std A1..A8, H1..H8 **Inputs without short circuit or line break detection**		
phase	[*normally open*]	The phase angle defines the input state of the contact upon which the application will consider this contact as active: • **normally open** Working current function = external contact, closed in active state (when connected as recommended = contact switches to 'U-')
	normally closed	• **normally closed** closed current function = external contact open in active state (when connected as recommended = contact switches to 'U-')
Tree structure: Server ➤ Contact Manager Service ➤ Outputs ➤ Outputs A1..A2, H1..H2		

Table 7-13 DAKS-200: Settings of the digital I/Os

Parameters	Value range	Description
phase	[*normally open*] normally closed	The phase angle determines the output state taken by the contact when activated by the application: • **normally open** The contact is closed • **normally closed** The contact is opened
Tree structure: Server ➤ Contact Manager Service ➤ Relay ➤ Digital-Relay-1		
phase	[*normally open*] normally closed	The phase angle defines the output state that is taken by the relay when it is activated by the application: • **normally open** NO is closed NC is opened • **normally closed** NO is opened NC is closed

Table 7-13 DAKS-200: Settings of the digital I/Os

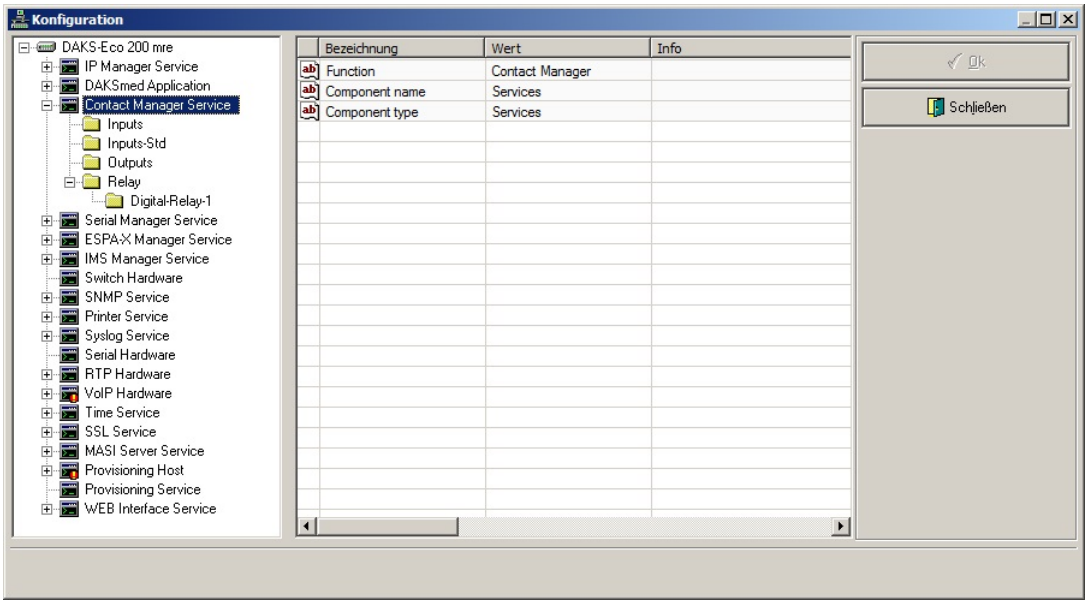


Image 7-9 Configuration DAKS-200: Settings of the digital I/Os

7.12.4 Parameters of DAKS-Satellite contacts for DAKS-200

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Contacts Satellite-DIO		
Apply Configuration	[*Current Configuration*] Change to License	Default output of the contacts, in keeping with the current configuration data. If no configuration data is available (e.g. right after the activation), a configuration is generated from the license.
Tree structure: Server ➤ Contacts Satellite-DIO ➤ ESPA-X #1..5		
Apply Configuration	[*Current Configuration*] Change to Hardware	Default output of the contacts, in keeping with the current configuration data. If no configuration data is available (e.g. directly after the activation), a configuration is generated from for DAKS-Satellite.

Table 7-14 DAKS-200: Settings of DAKS-Satellite contacts

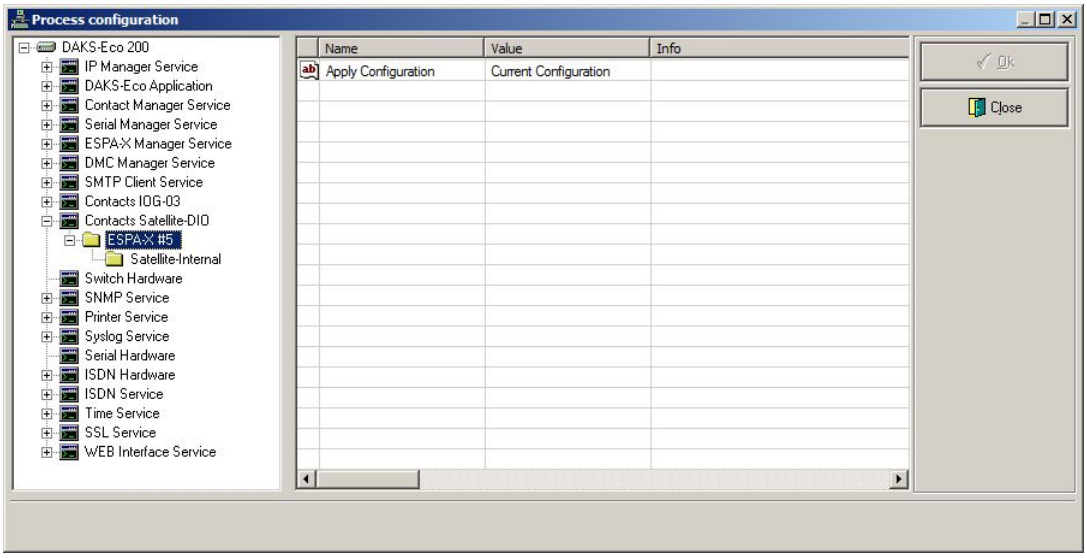
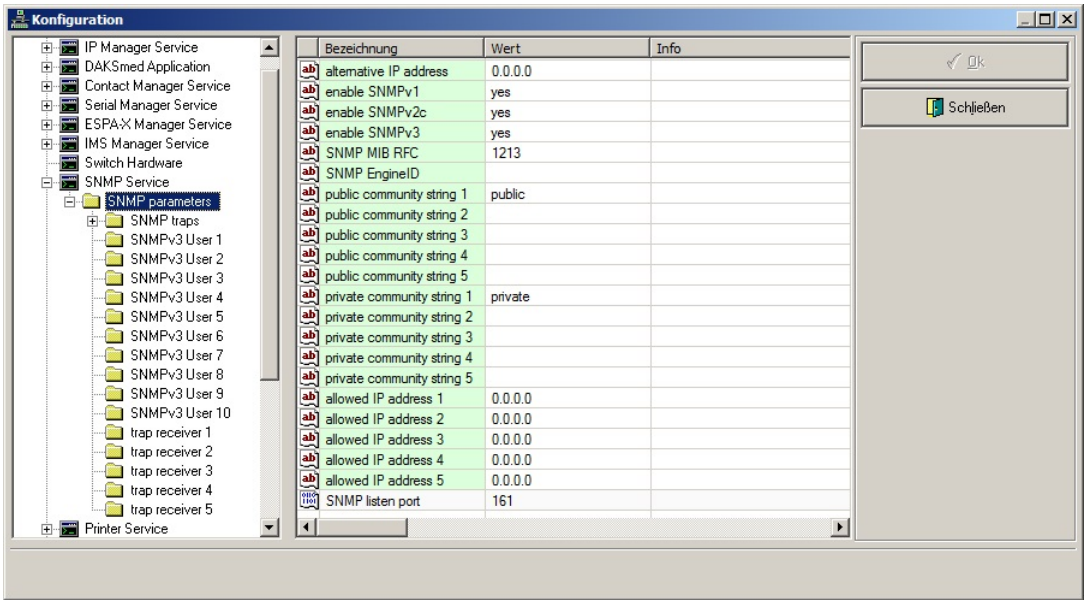


Image 7-10 Configuration DAKS-200: Settings of the DAKS-Satellite contacts

7.13 Parameter of DAKS' SNMP Service

The Simple Network Management Protocol service of DAKS, short SMNP, realizes an SNMP agent that can be queried by SNMP managers.



Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters		
alternative IP address	IP address [*0.0.0.0*]	Alternative IP address for the SNMP agent of DAKS.
enable SNMPv1	[*yes*], no	Allow the SNMP protocol Version v1.
enable SNMPv2c	[*yes*], no	Allow the SNMP protocol Version v2c.
enable SNMPv3	[*yes*], no	Allow the SNMP protocol Version v3.
SNMP MIB RFC	[*1213*], 3418	Utilize the data in keeping with RFC 1213 or RFC 3418, respectively.
SNMP Engine ID	27 characters [ ]	The unique system ID that is required starting from SNMPv3. If not provided, a value is automatically generated from the IP address.
public community string 1..5	256 characters [*public*]	These community strings are used to query SNMP entries (SNMP-Manager to DAKS). Only shown for SNMP Versions v1 and v2c.
private community string 1..5	256 characters [*private*]	Community strings to set or edit SNMP entries (SNMP Manager to DAKS). Only shown for SNMP Versions v1 and v2c.
allowed IP address 1..5	IP address [*0.0.0.0*]	The IP addresses that may access the ESPA-X service. '0.0.0.0' entered throughout means: no access control at all.
SNMP listen port	161	IP port where DAKS listens for SMNP queries.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ ESPA-X-Session 1..5		
interface name	[*ESPA-X- Session-1*]	Given name of this function/interface; name cannot be altered.
interface index	[*805307392*] (0x3000400)	Number of this function/interface.
alternative name	[*ESPA-X-Session-1*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Printer spooler almost full		
interface name	[*Printer spooler almost full*]	Given name of this function/interface; name cannot be altered
interface index	[*1342178652*] (0x50000502)	Number of this function/interface.
alternative name	[*Print spooler almost full*]	Editable, alternative name of this function/interface. If left empty, the system will use 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Printer spooler overrun		
interface name	[*Printer spooler overrun*]	Given name of this function/interface; name cannot be altered
interface index	[*1342178653*] (0x50000503)	Number of this function/interface.
alternative name	[*Print spooler overrun*]	Editable, alternative name of this function/interface. If left empty, the system will use 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Active system printer: network		
interface name	[*Active system printer: network*]	Given name of this function/interface; name cannot be altered
interface index	[*1342178563*] (0x50000503)	Number of this function/interface.
alternative name	[*active system printer: network*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Active system printer: USB		
interface name	[*Active system printer: USB*]	Given name of this function/interface; name cannot be altered
interface index	[*268436739]* (0x10000503)	Number of this function/interface.
alternative name	Active system printer: USB	Editable, alternative name of this function/interface. If left empty, the system will use 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Display service running		
interface name	[*Active system printer: USB*]	Given name of this function/interface; name cannot be altered
interface index	[*536871168]* (0x20000100)	Number of this function/interface.
alternative name	Display service running	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Display #1..#10 running		
interface name	[*Active system printer: USB*]	Given name of this function/interface; name cannot be altered.
interface index	[*536871169]* (0x20000101)	Number of this function/interface.
alternative name	Display #1 running	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ COM-ESPA444 (Trunk#1)		
ESPA 4.4.4/TAP interface active/inactive		
interface name	[*COM-ESPA444 (Trunk #1)*]	Given name of this function/interface; name cannot be altered.
interface index	[*536870912*] (20000000)	Number of this function/interface.
alternative name	[*COM-ESPA444 (Trunk #1)*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ COM-ESPA444 (Trunk#2)		
ESPA4.4.4 interface /TAP interface active/inactive		
interface name	[*COM-ESPA444 (Trunk #2)*]	Given name of this function/interface; name cannot be altered.
interface index	[*553648128*] (0x21000000)	Number of this function/interface.
alternative name	[*COM-ESPA444 (Trunk #2)*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ ISDN Line A ISDN-Line A active/inactive **Note:** Only shown when 'voice communication'@'DAKS Application' is set to: 'ISDN'.		
interface name	[*ISDN Line A*]	Given name of this function/interface; name cannot be altered.
interface index	[*1073741924*] (0x40000000)	Number of this function/interface.
alternative name	[*ISDN Line A*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ ISDN Line B ISDN-Line B active/inactive **Note:** Only shown when 'voice communication'@'DAKS Application' is set to: 'ISDN'.		
interface name	[*ISDN Line B*]	Given name of this function/interface; name cannot be altered.
interface index	[*1090519040*] (0x41000000)	Number of this function/interface.
alternative name	[*ISDN Line B)*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
The following parameters are only shown for mDAKS:		

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ ISDN Line CISDN-Line C active/inactive **Note:** Only shown when 'voice communication'@'DAKS Application' is set to: 'ISDN'.		
interface name	[*ISDN Line C*]	Given name of this function/interface; name cannot be altered.
interface index	[*1107296256*] (0x42000000)	Number of this function/interface.
alternative name	[*ISDN Line C*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ ISDN Line D ISDN-Line D active/inactive **Note:** Only shown when 'voice communication'@'DAKS Application' is set to: 'ISDN'.		
interface name	[*ISDN Line D*]	Given name of this function/interface; name cannot be altered.
interface index	[*1124073472*] (0x43000000)	Number of this function/interface.
alternative name	[*ISDN Line D*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ IP-Module #1 Network connection active (again)		
interface name	[*IP Module #1*]	Given name of this function/interface; name cannot be altered.
interface index	[*805306368*] (0x30000000)	Number of this function/interface.
alternative name	[*IP Module #1*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ IP-Module #2		
interface name	[*IP-Module #2*]	Given name of this function/interface; name cannot be altered.
interface index	[*805306369*] (0x30000001)	Number of this function/interface.
alternative name	[*IP-Module #2*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ AC-Power AC power supply active/inactive		
interface name	[*AC Power*]	Given name of this function/interface; name cannot be altered.
interface index	*[2415919104*] (0x90000000)	Number of this function/interface.
alternative name	[*IP Module #1*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ DC-Power DC power supply active/inactive		
interface name	[*DC-Power*]	Given name of this function/interface; name cannot be altered.
interface index	[*2432696320*] (0x90000000)	Number of this function/interface.
alternative name	[*IP Module #1*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ WSG-Server (OAP) OAP interface active/inactive		
interface name	[*OAP*]	Given name of this function/interface; name cannot be altered.
interface index	[*805308672*] (0x30000900)	Number of this function/interface.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
alternative name	[ ]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ OM-AXI OM-AXI interface active/inactive		
interface name	[*OM-AXI*]	Given name of this function/interface; name cannot be altered.
interface index	[*805308160*] (0x30000700)	Number of this function/interface.
alternative name	[ ]	editable, altern. Name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Application application DAKS active (up and running)		
interface name	[*Application*]	Given name of this function/interface; name cannot be altered.
interface index	[*4026532096*] (0xF000100)	Number of this function/interface.
alternative name	[*Application*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ IOG Contacts active/inactive		
interface name	[*IOG*]	Given name of this function/interface; name cannot be altered.
interface index	[*2432696320*] (0x91000000)	Number of this function/interface.
alternative name	[*IOG*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ NTP Server 1 Synchronized with NTP server 1 yes/no		
interface name	[*NTP Server 1*]	Given name of this function/interface; name cannot be altered.
interface index	[*805307905*] (0x30000601)	Number of this function/interface.
alternative name	[*NTP Server 1*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ NTP Server 2 Synchronized with NTP server 2 yes/no		
interface name	[*NTP Server 2*]	Given name of this function/interface; name cannot be altered.
interface index	[*805307906*] (0x30000602)	Number of this function/interface.
alternative name	[*NTP Server 2]*	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ MASI Server 1 MAI interface active/inactive		
interface name	[*MAI*]	Given name of this function/interface; name cannot be altered.
interface index	[*805308416*] (0x30000800)	Number of this function/interface.
alternative name	[ ]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ MASI Server 2 MAI interface active/inactive		
interface name	[*MAI*]	Given name of this function/interface; name cannot be altered.
interface index	[*805308417*] (0x30000801)	Number of this function/interface.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
alternative name	[ ]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Input-A1..4 through H1..4 short circuit status Contact input A1..4/H1..4 short circuit detected/not detected		
interface name	[*Input-A1..4 through H1..4 short circuit status*]	Given name of this function/interface; name cannot be altered.
interface index	[*805306624*] (0x30000100)	Number of this function/interface Here e.g. the number of the 1st contact A1.
alternative name	[*Input-A1..4 through H1..4 short circuit status*]	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[yes], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Input-A1..4 through H1..4 line break status Contact input A1..4/H1..4 line break detected/not detected		
interface name	[*+ Input-A1..4 through H1..4 line break status*]	Given name of this function/interface; name cannot be altered.
interface index	[*1879048960*] (0x70000300)	Number of this function/interface Here e.g. the number of the 1st contact A1.
alternative name	[*+ Input-A1..4 through H1..4 line break status]*	Editable, alternative name of this function/interface. If left empty, the system will use the 'interface name'.
send trap	[*yes*], no	Configuration that determines if an SNMP trap is activated to monitor this function/interface.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ SNMPv3 User 1..10		
user name	50 characters [ ]	The name of the SNMPv3 user.
authentication protocol	[*none*], MD5, SHA-1	Selection of the protocol via which the authentication is made. Only shown when a 'user name' is properly entered.
authentication passphrase	50 characters [ ]	String for authenticate of the user. Only shown when a protocol is selected under 'authentication protocol'.
privacy protocol	[*none*], DES, AES-128	Selection of the encryption protocol. Only shown when an 'authentication passphrase' is properly entered.
privacy passphrase	50 characters [ ]	String for the date encryption. Only shown when a protocol is selected under 'privacy protocol'.

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ trap receiver 1..5		
trap receiver IP address	IP address	The IP address of the SNMP manager.
Manager SNMP version	[*SNMPv1*], SNMPv2c, SNMPv3	SNMP version used by the receiver of the trap. Only shown when an IP address is properly entered under 'trap receiver IP address'.
trap community string	Characters [*public*]	Community string when sending a trap (DAKS to SMNP Manager). **Note:** Can only be used together with Version SNMPv1 and with SNMPv2c.
SNMP trap type	[*trap*] inform	Selection of the way in which a trap is sent: • **trap** send a trap from the SNMP-Manager; trap needs not be confirmed • **inform** send a trap from the SNMP-Manager; trap must be confirmed **Note:** Can only be used together with Version SNMPv2c and with Version SNMPv3.
user name	50 characters [ ]	The name of the trap user. In order to use SNMP V3, the entry of the user name is imperative. **Note:** Can only be used together with the Version SNMPv3.
authentication protocol	[*none*], MD5, SHA-1	Selection of the protocol via which the authentication is made. Only shown when a 'user name' is properly entered.
authentication passphrase	50 characters [ ]	Selection of the protocol via which the authentication is made. Only shown when a protocol is selected under 'authentication protocol'.
privacy protocol	[*none*], DES, AES-128	Selection of the encryption protocol. Only shown when an 'authentication passphrase' is properly entered.
privacy passphrase	50 characters [ ]	String for the date encryption. Only shown when a protocol is selected under 'privacy protocol'.
Tree structure: Server ➤ SNMP Service ➤ SNMP parameters ➤ SNMP traps ➤ Active system printer: USB System printer used: USB printer active/inactive		

Table 7-15 Parameter SNMP Service

Parameters	Value range	Description
interface name	[*Active system printer: USB*]	Given name of this function/interface; name cannot be altered.
interface index	[*268436739*] (0x10000503)	Number of this function/interface.

Table 7-15 Parameter SNMP Service

7.14 Configuration of the VoIP trunk connections and the direct VoIP connection

Note:
Whenever this chapter talks of **trunk** without mentioning any further details, it shall be understood to include both the PBX trunking and the direct VoIP connection.

Before you can configure VoIP you need to enter certain Basic settings that unanimously apply to all VoIP trunks:

- shared IP address for the RTP data traffic
- shared IP basic port for the RTP data traffic (voice data)
- behavior when trunks are inactive

In addition, you need to specify how many trunks in total (PBX trunking or direct VoIP connection) shall be activated. Once this is completed, you can configure the VoIP trunks individually.

In this process, start by defining the general trunk parameters, e.g. the number of communications channels as well as the **Trunk type**:

- SIP: PBX trunking using the SIP protocol
- SIP-Q: PBX trunking using the SIP-Q protocol
- Branch: PBX trunking to a Unify OpenScape Voice using the SIP-Q or SIP protocol in combination with an OpenScape Branch
- NFON: PBX trunking via SIP using an NFON Cloud PBX
- SIP-Registrar: direct VoIP connection

After this has been completed, you can configure further parameters, especially the parameters that depend on the specific type of the trunk:

- Type of the PBX trunk connection (not needed for 'SIP-Registrar'):
  - one peer ➤ one peer to the softswitch, i.e. configuration of one peer, if needed with parameterization of the branch or parameterization of the NFON authentication.
  - one peer with monitoring ➤ one peer to the softswitch, i.e. configuration of one peer, if needed with parameterization of the branch or parameterization of the NFON authentication.
  - 2 peers prioritized ➤ two peers to the softswitch cluster, i.e. two peers are configured, if needed with parameterization of the branch or parameterization of the NFON authentication.
  - DNS-SRV ➤ two DNS servers can be specified and define the configuration of the peers.
- SIP parameter, where needed with NFON-specific configuration (not needed for trunk type 'SIP-Q')
- MLPP parameters if enabled (not needed for trunk type 'SIP-Q')
- SIP-Q parameters (applies only to the trunk type 'SIP-Q' and 'Branch')
- Registrar and softswitch parameters if enabled (applies only to trunk type 'SIP-Registrar')

The licenses determine:

- the number of trunks that are possible,
- the total number of communications channels that can be used,
- the protocols that are supported,
- the connections that can be made,
- other features or restrictions.

Note:
The the below configuration menu tables, non-editable, pure outputs, i.e. outputs without the option to edit, are shown against a gray background.

7.14.1 Parameter basic settings

Use this area to configure the following parameters:

- the IP address shared by all trunks for the RTP data traffic,
- the IP port that is shared as the basic port by all trunks for the RTP data traffic (voice data),
- the behavior when the trunk is inactive, and
- how many trunks in total shall be activated (PBX trunking or direct VoIP connection).

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ RTP Hardware ➤ IP		
RTP IP address	[*IP address*] as entered in the server's IP settings	Output of the IP address used by DAKS to handle the RTP data traffic.
RTP IP port #1	IP port [*16384*]	The basis IP port that is used by DAKS to handle the RTP data traffic. The IP port that is actually used is the first free IP port starting from the basis IP port.
Tree structure: Server ➤ VoIP Hardware		
number of trunks	[*0*]..n (max. value depends on the license)	Number of SIP trunks.
inactive trunk response	[*no response*] SIP error code 503	Behavior if trunk inactive (Hot Standby): • No responses to SIP data traffic. • DAKS responds to SIP data traffic with the SIP error code 503.

Table 7-16 Configure the Basic settings

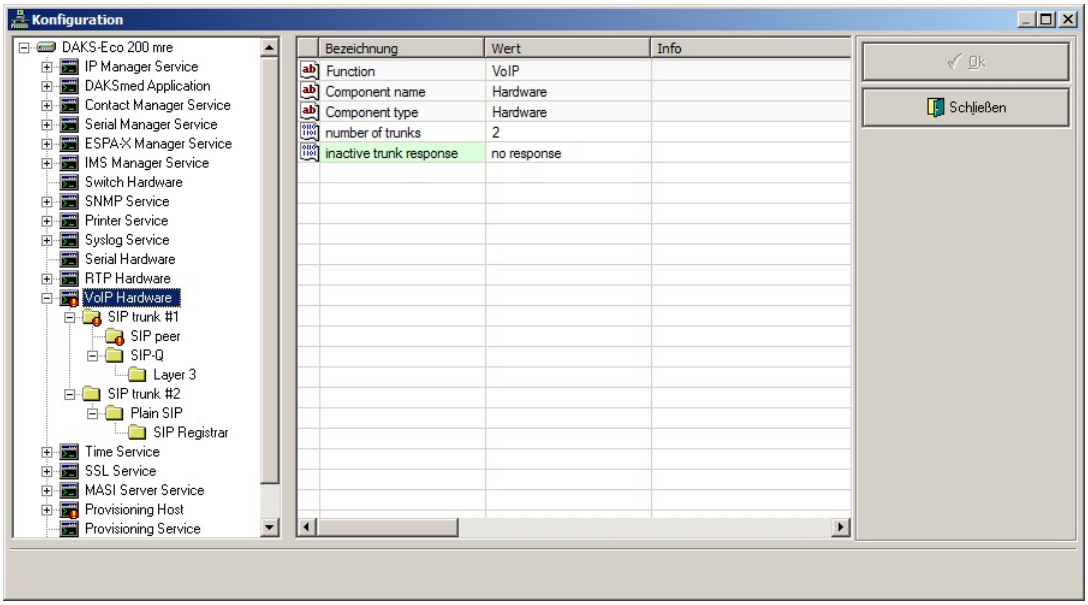


Image 7-11 Basic settings

7.14.2 General trunk parameters

Use this area to configure the following parameters **per trunk**:

- the trunk type (= SIP subprotocol, the trunk types that are possible depend on the license),
- the number of communications channels of the trunk (= RTP channels),
- the trunk's IP settings,
- where applicable the call number prefixes that are needed or truncated,
- the way in which DTMF information is transmitted,
- delays (to prevent overload on the opposite side),
- MLPP activation (yes/no).

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n (n=trunk number)		
SIP subprotocol	[*SIP*] SIP-Q SIP-Branch SIP-NFON SIP-Registrar	Type of the trunk • Application of the default SIP protocol. • Transfer of the CorNet-NQ protocol via SIP. • Connection to a Unify OpenScape Voice as well as to an OpenScape Branch. • special SIP trunk to communicate with NFON. • Trunk operates as registrar.
RTP channels	0..n (max. number depends on license)	Number of RTP channels of this trunk.
disable trunk	yes, [*no*]	Deactivation of the trunk.
Remarks	256 characters [ ]	Description of the trunk.
local SIP IP address	IP address as entered in the server's IP settings	Non-editable output of the IP address used by DAKS to communicate via SIP.
local SIP IP port	IP port [*5060*]	IP port of DAKS for SIP communication. **Note:** When using TLS, we recommend you set the port to the default (port 5061).
UAC Address Of Record	peer address, [local address]	The transmission of the "peer address" or the "local address“ in the SIP header.
SDP on 200 OK	[according to RFC] always send SDP on 200 OK	The time when the SDP data was transmitted • RFC compliant • For "200 OK" also:

Table 7-17 Configure general trunk parameters

Parameters	Value range [default setting]	Description
Full SDP answer	[on], off	The of the SDP reply: • **on** All Codec inquiries are answered. • **Off** The SDP reply only includes the Codec that was negotiated.
Only SAVP if TLS	on, [off]	Type of the code negotiation with or without encryption: • **on** The system will only offers the encryption when SIP encryption is active • **Off** always with encryption
SDP offer: Prefer SAVP over AVP	yes [no]	Defines the order of the SDP Media data: • **yes** "With encryption" preferred over "without encryption" • **no** "Without encryption" preferred over "with encryption"
Encoding of double quotes in quoted names	Replace with single quote, Replace with space, [RFC3261 (BSLASH DQUOTE)], Escape with ‘%22‘ (non-RFC)	Output of double quote-symbols in the display text: • **Replace with single quote** is replaced with a single quote-symbol • **Replace with space** is replaced with a space • **RFC3261 (BSLASH DQUOTE)** is replaced with a backslash, quote-symbol (\‘) • **Escape with ‘%22‘ (non-RFC)** is replaced with **'%22'** (% = Escape character, 22 = Hexadecimal value of ")
prefix incoming cut	20 characters [ ]	Prefix which DAKS cuts off from a received called number, for incoming calls.
prefix incoming add	20 characters [ ]	Prefix which DAKS prepends to a received called number, for incoming calls.
prefix outgoing	20 characters [ ]	Prefix which DAKS prepends to a calling number and to a connected number, for outgoing calls.
DTMF mode	[*RTP (RFC 2833)*] SIP-Info	Type of the DTMF transmission: • RTP signaling purs. to RFC 2833 • SIP info data packages
RTP DTMF map	0..255 [*101*]	DTMF codec in the direction of the PBX system.

Table 7-17 Configure general trunk parameters

Parameters	Value range [default setting]	Description
INVITE delay [*ms*]	0..1000 ms [*5 ms*]	Min. time between 2 (RE-)INVITE commands.
enable MLPP	yes, [*no*]	MLPP functionality activated.

Table 7-17 Configure general trunk parameters

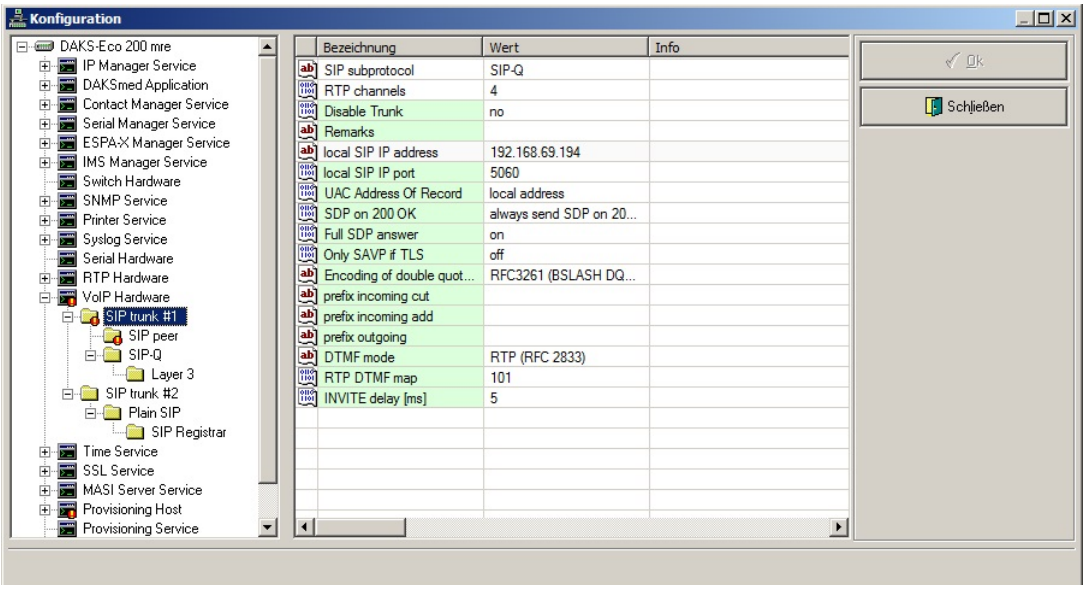


Image 7-12 Configure general trunk parameters

7.14.3 SIP-Peer trunk settings (not required for direct VoIP connection)

Use this area to configure for the PBX trunks the number of peers to the PBX system, softswitch or softswitch cluster, i.e. to specify only one peer with or without monitoring, or two peers with prioritization of the peer 1.

Note:
This settings does not apply to the direct VoIP connection (SIP subprotocol = SIP-Registrar) because here, every end device registers individually at DAKS and communicates individually with DAKS as well.

Initially, for SIP-Peer settings the server offers the option to specify the peer(s):

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer		
peer description		Peer(s) to the softswitch or softswitch cluster with geo separation
	one peer no watchdog	• one connection (= one peer) without monitoring
	[one peer]	• one connection (= one peer) without monitoring (heartbeat every 10 s, timeout after 60 s)
	two peers prioritized	• Connection to a primary and to a secondary softswitch with monitoring (heartbeat every 10 seconds with automatic toggle between the primary and secondary server after a timeout of 60 seconds)
	DNS-SRV	• The configuration of the peer is determined by DNS
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer Prerequisit: peer description = any, except for DNS-SRV		
peer SIP IP address	IP address [*0.0.0.0*]	The softswitch's IP address of the softswitch cluster's primary IP address.
peer SIP IP port	IP port [*5060*]	The IP port for the SIP communication, either via the softswitch's IP address or via the softswitch cluster's primary IP address.

Table 7-18 SIP-Peer settings of the trunk

Parameters	Value range [default setting]	Description
peer protocol type	[*any (TCP or UDP)*] TCP only UDP only TLS	The type of the data transmission to the primary peer: • any (must be defined by other side) • TCP • UDP • TLS
OPTIONS.TO SIP-Identity	[*peer*] 64 characters	SIP URI user of the TO header of the SIP Options Requests (used for the Watchdog).
MTLS Only shown for: peer protocol type = TLS	[*yes*], no	Activate/deactivate MTLS.
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer Prerequisit: peer description = DNS-SRV		
service name	256 characters [ ]	Name of the DNS service.
main dns	IP address [ ]	IP address of the primary DNS server.
alt dns	IP address [ ]	IP address of the secondary DNS server.
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer ➤ Authentication #1 Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer ➤ Authentic. #2 (only for 2 peers) Prerequisit: SIP subprotocol = NFON		
realm	256 characters [ ]	For the first and, if applicable, for the second peer: Realm name that is verified during the authentication process. If no name is entered here, there will be no verification of the realm.
user	256 characters [ ]	For the first and, if applicable, for the second peer: User name of the DAKS server to register at the NFON PBX system.
password	256 characters [ ]	For the first and, if applicable, for the second peer: User password of the DAKS server to register at the NFON PBX system.

Table 7-18 SIP-Peer settings of the trunk

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP peer Prerequisit: SIP subprotocol = SIP Branch		
Branch peer SIP IP address	IP address [*0.0.0.0*]	IP address of the OpenScape Branch.
Branch peer SIP IP port	IP port [*5060*]	The IP port for the SIP communication via the IP address of the OpenScape-Branch
Branch protocol type	TCP UDP TLS	The type of the data transmission to the Open-Scape Branch: • TCP • UDP • TLS
MTLS Only shown for: Branch proto-col type = TLS	[*yes*], no	Activate/deactivate MTLS.

Table 7-18 SIP-Peer settings of the trunk

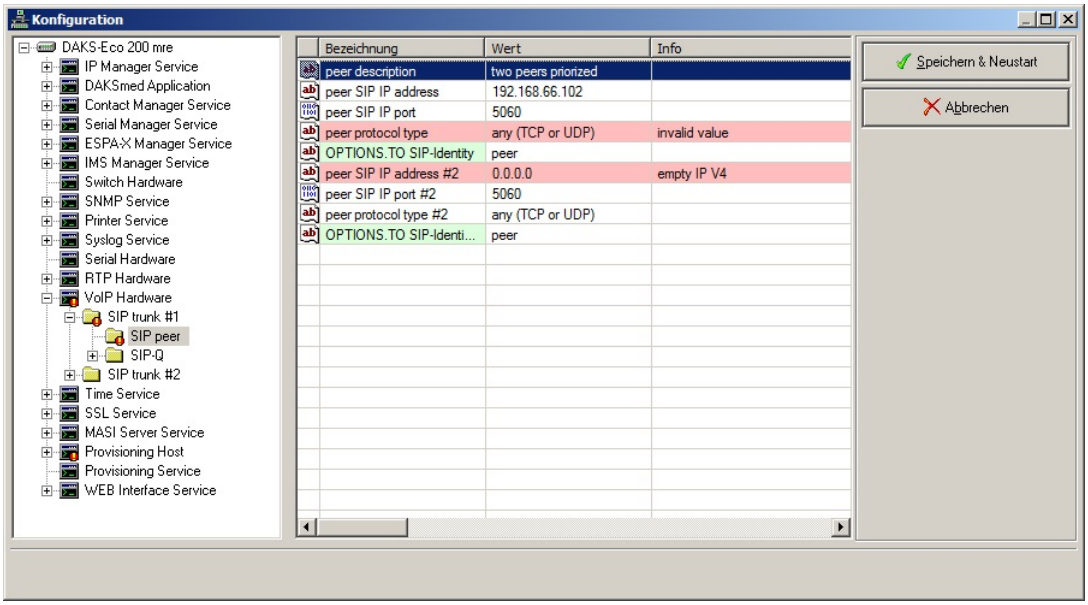


Image 7-13 SIP-Peer settings of the trunk

7.14.4 SIP trunk parameters (not required for pure SIP-Q trunks)

Use this area to configure the below parameters for all trunk types except pure SIP-Q trunks (SIP subprotocol = SIP-Q):

- Allow REINVITE datasets (yes/no),
- Display properties of connected end devices,
- the way in which the connected number is transmitted,
- SIP-T functions activated (yes/no), and
- where applicable: NFON-specific SIP parameters (applies only to SIP subprotocol = NFON).

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ Plain SIP		
REINVITE allowed	[*on*], off	Enable display updates via 'REINVITE' command when using the SIP protocol (yes/no).
number of display columns	0..255 [*27*]	The amount of characters that are available on the terminals displays in combination with DAKS.
number of display rows	0..80 [*2*]	The number of lines that are available on the display of the communication devices in combination with DAKS.
Connected no. with display messages		The way in which a connected number is prepended to the name shown on the display. **Note:** These settings are for PBX systems that do not show any display text messages when the connected number is not included in the call transfer command. The number of available alphanumeric characters on the display decreases subject to this setting, by the number of digits + 1 (+1 = <Space>). **Setting options available:**
	last connected no. -> calling no. -> anonymous	• Output of the last connected number if available; otherwise output of the calling number if available; otherwise no output at all.
	anonymous; not provided	• No output.
	[*last connected no. -> calling no. -> Fixed Text*]	• Output of the last connected number if available; otherwise output of the calling number if available; otherwise output of the configured value of the 'Fixed Text' parameter
	Fixed Text	• Output of the configured value of the 'Fixed Text' parameter

Table 7-19 Configure SIP parameters of the trunk

Parameters	Value range [default setting]	Description
Default calling number		The way in which a calling number is prepended to the name shown on the display. **Note:** These settings are for PBX systems that do not show any display text messages at all if the call number (calling number) is not transmitted. The number of available alphanumeric characters on the display decreases subject to this setting, by the number of digits + 1 (+1 = <Space>). **Setting options available:**
	calling no. -> anonymous	• Output of the calling number if available; otherwise no output at all.
	anonymous; not provided	• No output.
	calling number -> Fixed Text	• Output of the last connected number if available; otherwise output of the calling number if available; otherwise output of the configured value of the 'Fixed Text' parameter
	Fixed Text	• Output of the configured value of the 'Fixed Text' parameter
Alert-Info	RFC7462, [Bellcore], SIP-XT, Proprietary	Setting for "Internal call", "Public call" and "Emergency call". **Note:** When you set "Alert-Info" to "Proprietary", the system maintains the settings that have already been made for "Internal call", "Public call" and "Emergency call" and offers you the option to change these settings as needed.
Requirement: Alert Info = RFC7462		
Internal call	[<urn:alert:source:internal>]	Conversion of a DAKS call signal to a telephone-side call signal.
Public call	[<urn:alert:source:external>]	
Emergency call	[<urn:alert:source:external>], [<urn:alert:priority:high>], [<urn:alert:duration:long>]	
Emergency call	[<urn:alert:source:external>], [<urn:alert:priority:high>], [<urn:alert:duration:long>]	
Requirement: Alert Info = Bellcore		

Table 7-19 Configure SIP parameters of the trunk

Parameters	Value range [default setting]	Description
Internal call	[<urn:alert:source:internal>]	Conversion of a DAKS call signal to a telephone-side call signal.
Public call	[<urn:alert:source:external>]	
Emergency call	[<urn:alert:source:external>], [<urn:alert:priority:high>], [<urn:alert:duration:long>]	
Requirement: Alert Info = SIP-XT		
Internal call	-Internal	Conversion of a DAKS call signal to a telephone-side call signal.
Public call	-External	
Emergency call	-Emergency	
High priority call	-HighPrio	
Medium priority call	-MediumPrio	
Low priority call	-LowPrio	
Info call	-Info	
Requirement: Alert-Info = Proprietary		
Internal call	Free edit fields	Umsetzung des DAKS Rufsignals in ein telefonseitiges Rufsignal. If these telephones are registered directly at DAKS together with DAKScommunicator terminals, the DAKScommunicator call signaling wave files can also be loaded into the telephones. • To do so, select the "Proprietary" setting and enterInternal call = `<http://`[IP-Adresse von DAKS]`/DAKS_Communicator_V1/` [Name des Output-Profils]/[Name der Wavedatei]`;info=alert-internal` • Public call = `<http://`[IP-Adresse von DAKS]`/DAKS_Communicator_V1/` [Name des Output-Profils]/[Name der Wavedatei]`;info=alert-external` • Emergency call = `<http://`[IP-Adresse von DAKS]`/DAKS_Communicator_V1/` [Name des Output-Profils]/[Name der Wavedatei]`;info=alert-emergency`
Public call		
Emergency call		
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ Plain SIP ➤ SIP NFON Prerequisit: SIP subprotocol = NFON		
customer number	256 characters [ ]	The number of the customer, provided by NFON.
expiration time [s]	60..6000 [*600*]	Time offered by DAKS. The re-registration of DAKS is carried out after expiry of half of the time period that was confirmed by the NFON PBX.

Table 7-19 Configure SIP parameters of the trunk

Parameters	Value range [default setting]	Description
Parallel call	prohibited, [*allowed*]	Performance feature of NFON. Allow parallel call to multiple communication devices.

Table 7-19 Configure SIP parameters of the trunk

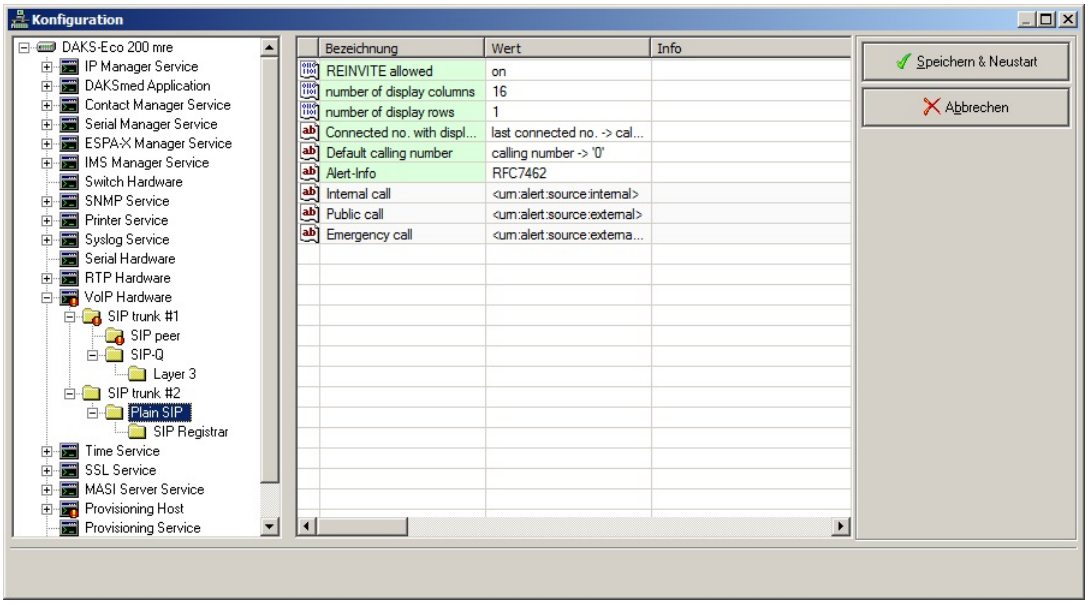


Image 7-14 Configure SIP parameters of the trunk - Part 1

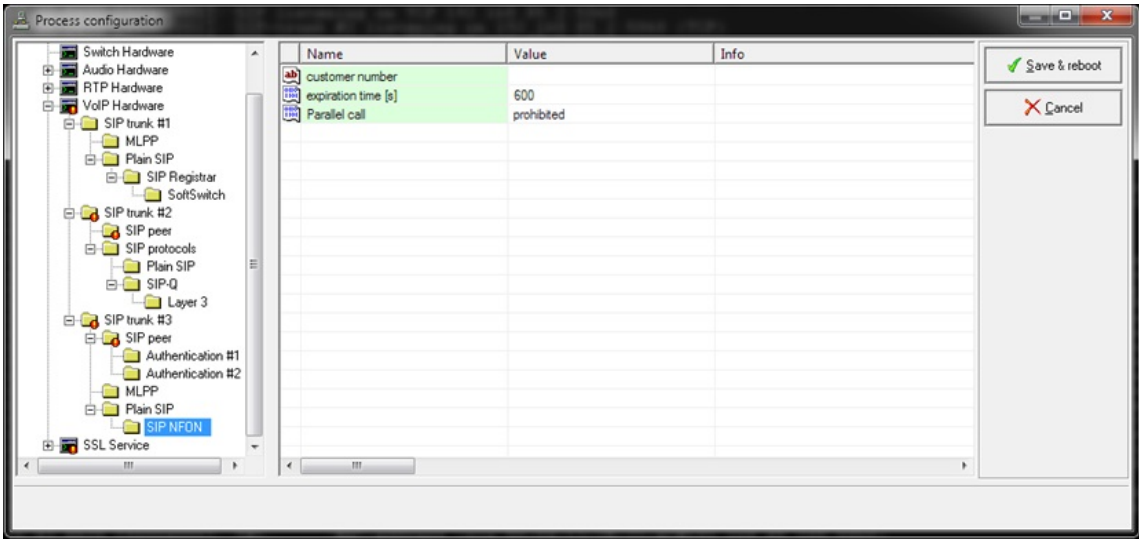


Image 7-15 Configure SIP parameters of the trunk - Part 2

7.14.5 SIP-Q trunk parameters (only for SIP-Q trunks, where needed with OpenScape Branch)

Use this area to configure the below parameters for SIP-Q trunks (SIP subprotocol = SIP-Q) and SIP-Q trunks incl. OpenScape Branch (SIP subprotocol = SIP-Branch):

- application of SIP-Q v2 (yes/non),
- prefixes,
- delays (to prevent overload on the opposite side),
- details regarding the connect acceptance,
- the national character set to use,
- the channel assignment mode,
- the length of the call reference, and
- the way in which the connected number is transmitted.

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n (n= trunk number) ➤ SIP-Q		
Enable SIP-Q v2	no, [*yes*]	Apply the protocol: SIP-Q Version 2 (instead of 1)
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n (n= trunk number) ➤ SIP-Q ➤ Layer 3		
protocol	[*CorNet-NQ*]	Output of the tunneled protocol: CorNet-NQ (cannot be changed).
prefix incoming	20 digits [ ]	Prefix which DAKS cuts off from a received called number, for incoming calls.
prefix outgoing	20 digits [ ]	Prefix which DAKS prepends to a calling number and to a connected number, for outgoing calls.
delay setup [*ms*][a)]	1..1000 ms [*300 ms*]	Minimum time between 2 setup commands in the direction of the softswitch.
delay disconnect [*ms*][1)]	1..1000 ms [*200 ms*]	Minimum time between 2 Disconnect commands in the direction of the softswitch.
delay data set [*ms*][1)]	1..200 ms [*50 ms*]	Delay of entire frames on layer 2 level.
alert before connect	yes, [*no*]	For incoming calls, always send/do not send the status 'ALERT' to the caller.
national character set	7 Bit US-ASCII [*German*] Swedish	Use national special characters. **Setting options available:** • Substitute German special characters with a space • Use German special characters • Use Swedish special characters
channel sequence	[*cyclic*], linear	Cyclical or linear use of the channels.
channel sequence direction	[*forward*], reverse	Use the channels in ascending or descending order.

Table 7-20 SIP-Q trunk parameters configuration

Parameters	Value range [default setting]	Description
length of callref [*Byte*]	1Byte, [*2 Bytes*]	Length of the call reference (identifier for a connection to the PBX): System- and protocol-specific parameter.
Connected no. with display messages		The way in which a connected number is prepended to the name shown on the display. **Note:** These settings are for PBX systems that do not show any display text messages when the connected number is not included in the call transfer command. The number of available alphanumeric characters on the display decreases subject to this setting, by the number of digits + 1 (+1 = <Space>). **Setting options available:**
	last connected no. -> calling no. -> anonymous,	• If available, output of the last connected number; otherwise output of the calling number if available; otherwise no output at all.
	anonymous, not provided	• No output.
	[*last connected no. -> calling no. -> '0'*],	• Output of the last connected number if available; otherwise output of the calling number if available; otherwise '0'.
	generally '0'	• Always output '0'.
number of display columns	0..24 [*16*]	The number of columns (= number of characters per line) that are available on the display of the communication devices in combination with DAKS. The number of columns is determined automatically.

Table 7-20 SIP-Q trunk parameters configuration

Parameters	Value range [default setting]	Description
allow server mode	[*yes*], no	Allow the server mode to enable a 2-line display output at the devices. This features is only available at OpenScape 4000 (HFA-Mode, PN-CAP) in combination with specific communication devices.
intrusion via QSIG	yes, [*no*]	Realize intrusion, for SIP-Q connection via QSIG. **Note:** Required for the feature 'Intrusion' in combination with Hi-Path3000 or OpenScape Business.

Table 7-20 SIP-Q trunk parameters configuration

a. Does not appear with the VCON right "service" and can only be edited by the Support Team.

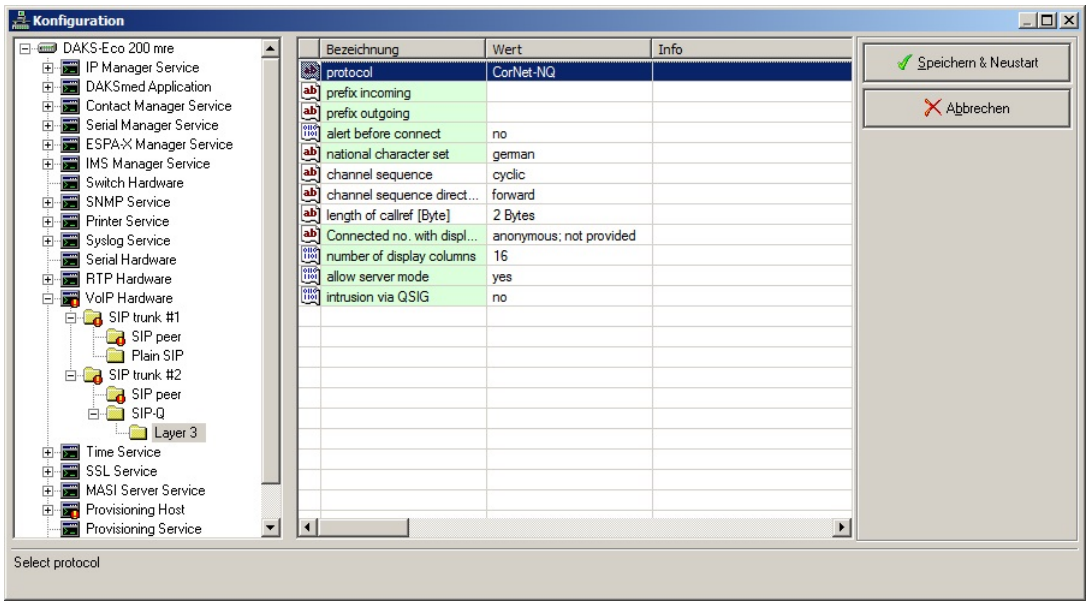


Image 7-16 SIP-Q trunk parameters configuration

7.14.6 MLPP trunk parameters (not required for pure SIP-Q trunks)

Use this area to configure, if the MLPP function was activated in the general trunk settings, the below parameters to specify the MLPP functionality:

- the corresponding MLPP mode,
- domain settings,
- whether Forced Release is sent as MLPP-Level, and if so the MLPP level,
- the default MLPP level incoming and outgoing, and
- the possible re-coding received/administrated MLPP levels at this trunk.

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n (n = trunk number) ➤ MLPP		
mode/name space	• [*DSN*] • DRSN • Q735 • ETS • Proprietary	MLPP mode: • DSN (Default) • DRSN • Q735 • ETS • proprietary (e.g. Cisco-CUCM coupling)
MLPP required	yes, [*no*]	Every connection request requires specification of an MLPP level.
convert domain/id for appl	yes, [*no*]	Conversion of the name into ISDN standard nomenclature (yes/no).
'forced release' as MLPP level	flash-override-override, flash-override, immediate, [*priority*], routine, none	Conversion of Forced Release into an MLPP level.
default MLPP level outgoing	flash-override-override, flash-override, immediate, priority, routine, [*none*]	Default MLPP level for outgoing connections, if no MLPP is provided by the application.
MLPP domain	256 characters [ ]	MLPP service domain
MLPP id	256 characters [ ]	MLPP identifier Part of the domain name.
level 'flash-override-override (highest)	256 characters [*flash-override-override*]	The name that is communicated for this MLPP level. Can only be edited for: mode/name space = Proprietary
level 'flash-override'	256 characters [*flash-override*]	The name that is communicated for this MLPP level. Can only be edited for: mode/name space = Proprietary
level 'immediate'	256 characters [*immediate*]	The name that is communicated for this MLPP level. Can only be edited for: mode/name space = Proprietary
level 'priority'	256 characters [*priority*]	The name that is communicated for this MLPP level. Can only be edited for: mode/name space = Proprietary
level 'routine'	256 characters [*routine*]	The name that is communicated for this MLPP level. Can only be edited for: mode/name space = Proprietary

Table 7-21 MLPP trunk parameters configuration

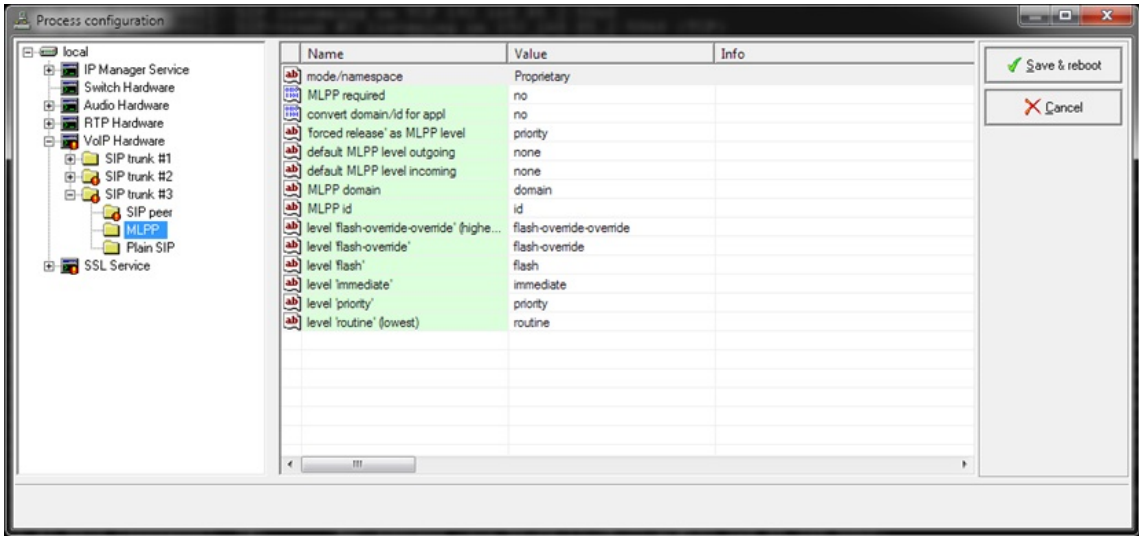


Image 7-17 MLPP trunk parameters configuration

7.14.7 Registrar trunk parameters (only for direct VoIP connection)

Use this area to configure the direct VoIP connection (SIP subprotocol = SIP Registrar):

- the registration timeout,
- the maximum call number length,
- whether the registration shall remain active beyond a restart (yes/no),
- whether authentication is required,
- the type of the data transmission, and
- whether a DAKS-internal softswitch shall be activated (yes/no).

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Trunk number: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP Registrar		
expiration time for registrations [min]	1…999 min. [*5 min.*]	Registration timeout in minutes.
maximum number length	2…32 [*22*]	Maximum length of the call number that may be dialed by a VoIP communications device. If this number is exceeded, the DAKS server will reject the call (e.g. to prevent external calls).
persistent [a)]	yes, [*no*]	The registration survives also beyond a restart of the server.
require authentication	[*none*] host trunk	Authentification on the side of the communications devices **Setting options available:** • none required • where needed with individual authentication by the application • Identical authentication defined in the trunk (see next 2 parameters)
User name Only shown for: require authentication = trunk	256 characters [ ]	The name of the user.
Password Only shown for: require authentication = trunk	256 characters [ ]	The password of the user.
protocol type	[*any*] TCP only UDP only TLS	Type of the data transmission: • any (must be defined by other side) • TCP • UDP • TLS
enable softswitch	yes, [*no*]	Softswitch activated in DAKS.

Table 7-22 Registrar trunk parameters configuration

1.) Does not appear with the VCON right 'service' and can only be edited by the Support Team.

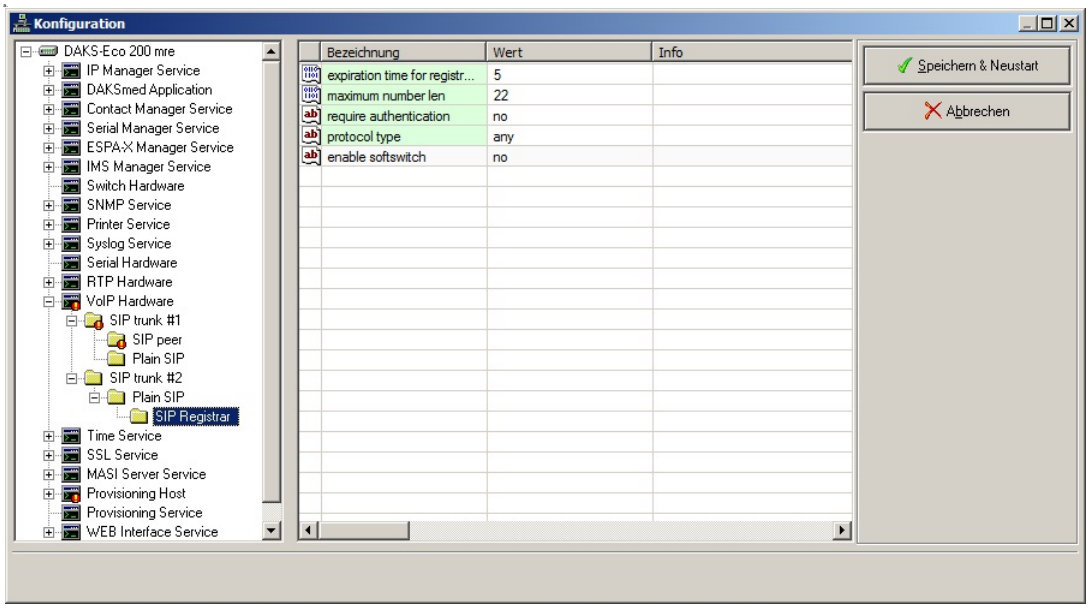


Image 7-18 Registrar parameters of the trunk

7.14.8 Internal softswitch parameters (only for direct VoIP connection)

Use this area to configure - in combination with the direct VoIP connection (SIP subprotocol = SIP-Registrar) - the parameters regarding the functionality of the internal softswitch which enables direct immediate calls between the VoIP end devices that are connected directly, via DAKS.

This includes the following settings:

- the max. number of simultaneous internal calls,
- max. allowed length of a phone number that is called and
- up to 10 breakout prefixes with assigned replacement prefixes to activate DAKS functions, e.g. to launch broadcasts or for calls to the communications network.

Use the configuration menu for the following settings:

Parameters	Value range [default setting]	Description
Tree structure: Server ➤ VoIP Hardware ➤ SIP trunk #n ➤ SIP Registrar ➤ SoftSwitch		
internal calls	1…n (max. value depends on license)	max. number of simultaneous internal calls,
cdnu length	0..48 [*26*]	max. allowed length of a phone number that is called
breakout number #1 : breakout numb. #10	each with up to 4 digits: #1 = [*0*], #2…#10 = [ ]	Up to 10 breakout prefixes
replacement number #1 : replacement number #10	each up to 10 digits: #1 = [*0*], #2…#10 = [ ]	Up to 10 associated replacement prefixes assigned to the the breakout prefixes, evaluated by DAKS instead of the breakout prefixes. This makes it possible to activate DAKS functions, e.g. broadcasts, or to switch call connections to the communications network via DAKS.

Table 7-23 Internal softswitch configuration

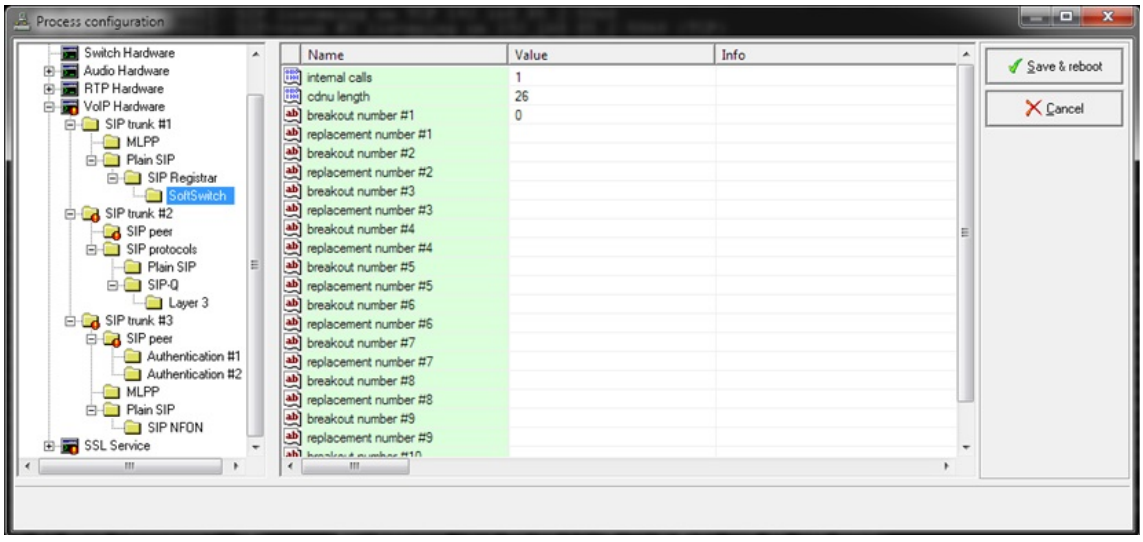


Image 7-19 Internal softswitch configuration

7.15 Parameters of the ISDN trunk

Note:
These parameters only become visible if the parameter 'voice communication'@DAKS Application' is set to: 'ISDN'.

➤ see Section 7.22 "Application parameters"

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ ISDN Hardware		
codec	[*a-law*], mu-law	Digital encoding of the audio signals • **a-law** e.g. Europe • **mu-law** e.g. North America, Japan
Tree structure: Server ➤ Line A..D ➤ Layer 1		
clock master[1)]	yes, [*no*]	Clock master for the $S_{0\ b}$us: • **yes** DAKS • **no** Public exchange system
mode[2)]	T1, [*E1*]	Primary multiplex connection with 4 B-channels: • **E1** (e.g. for Europe) • **T1** (e.g. for North America)
Tree structure: Server ➤ Line A..D ➤ Layer 2		
mode[2)]	[*slave*], master	Definition of the clock master
Tree structure: Server ➤ Line A..D ➤ Layer 3		
protocol	[*CorNet-NQ*], QSIG-ETSI-Basic-Call, QSIG-ETSI-Supplementary Services, QSIG-ISO-Basic-Call, QSIG-ISO-Supplementary Services, NI-2, DSS1 Network-Side	D-channel protocol:

Table 7-24 ISDN digital trunk configuration

Parameters	Value range	Description
prefix incoming	20 digits [ ]	Prefix which DAKS cuts off from a received called number, for incoming calls.
prefix outgoing	20 digits [ ]	The prefix which DAKS prepends to the calling number and to the connected number, for outgoing calls.
alert before connect	yes, [*no*]	For incoming calls send the status 'ALERT' to the caller: • **yes** 'ALERT' required • **no** 'ALERT' not required
national character set	[*German*] Swedish 7Bit US-ASCII	Use national special characters. **Setting options available:** • **7 Bit US-ASCII** Substitute German special characters with a space • **German** Use German special characters • **Swedish** Use Swedish special characters
channel sequence	linear, [*cyclic*]	Cyclical or linear use of the channels.
channel sequence direction	[*forward*], reverse	Use the channels in ascending or descending order.
length of callref [Byte]	1 Byte, [*2 Bytes*]	The length of the call reference. = identifier for a connection to the PBX system This is a system- and protocol-specific parameter.
Channel Identification as on S2M	yes, [*no*]	Only shown for S_0-trunking. For S_0 analog send channel identification to S_{2M}. Relevant for example with HiPath 3000 in comb. with ETSI-QSIG.

Table 7-24 ISDN digital trunk configuration

Parameters	Value range	Description
Connected no. with display messages		Prepend the connected number to the name that is shown on the display. **Note:** These settings are for PBX systems that do not show any display text messages when the connected number is not included in the call transfer command. The number of available alphanumeric characters on the display decreases subject to this setting, by the number of digits + 1 (+1 = <Space>). **Setting options available:**
	last connected no. -> calling no. -> anonymous	• If available, output of the last connected number; otherwise output of the calling number if available; otherwise no output at all.
	anonymous; not provided	• No output.
	[*last connected no. -> calling no. -> '0'*],	• Output of the last connected number if available; otherwise output of the calling number if available; otherwise '0'.
	generally '0'	• Always output '0'.
number of display columns	0..24 [*16*]	The number of columns (= number of characters per line) that are available on the display of the communication devices in combination with DAKS.
allow server mode	[*yes*], no	Only appears for CorNet-NQ: Allow the server mode to enable a 2-line display output at the devices. Make sure this feature is deactivated when the system is not connected to OpenScape 4000 or OpenScape 8000 systems.
delay setup [*ms*] [1)]	1..1000 ms [*300 ms*]	The minimum time between 2 setup commands. Can only be edited for: s in the direction of the PBX
delay disconnect [*ms*] [1)]	1..1000 ms [*200 ms*]	The minimum time between 2 disconnect commands in the direction of the PBX.
delay data set [*ms*][1)]	1..200 ms [*50 ms*]	Delay of entire frames on layer 2 level.
special HiPath coding with NI-2[3)]	yes, [*no*]	Only shown for 'protocol: NI-2'. Special µ-law encoding for OpenScape 4000 in combination with NI-2.

Table 7-24 ISDN digital trunk configuration

Parameters	Value range	Description
suppress one-line display	no, [*yes*]	Only shown for 'protocol: DSS1 Network-Side'. Send no display information to trunk.
send 'Calling-Name' as User-User Information at DSS1	no, [*yes*]	Only shown for 'protocol: DSS1 Network-Side'. Transmit transparent calling name to user.
coding of 'Called Party Number' -> 'Type of Number' at DSS1 1)	[*default*], Unknown, International, International, National, NetworkSpecific, Subscriber, Abbreviated	Only shown for 'protocol: DSS1 Network-Side'. Encoding of the 'Called Party Number'.
intrusion via QSIG	yes, [*no*]	Realize intrusion for CorNet-NQ connection via QSIG. For HiPath 3000. **Note:** Required for the feature 'Intrusion' in combination with Hi-Path3000 or OpenScape Business. Only shown for "protocol: CorNet-NQ".
Tree structure: Server ➤ Line A..D ➤ Channel directions		
Channel 01-30 direction 1)	only incoming, only outgoing, [*bidirectional*], block channel	Direction control of the individual channels
Tree structure: Server ➤ ISDN Service ➤ Hardware_isdn		
Channels for trunk#1..4	[*0 .. @License*]	Number channels assigned to the ISDN trunks #1..#4, respectively (for µDAKS: max. 2).

Table 7-24 ISDN digital trunk configuration

1) Does not appear for the VCON right "service" and can only be edited by the Support Team.

2) Only shown when using the module IIE-02.

3) Only shown for Protocol = NI-2.

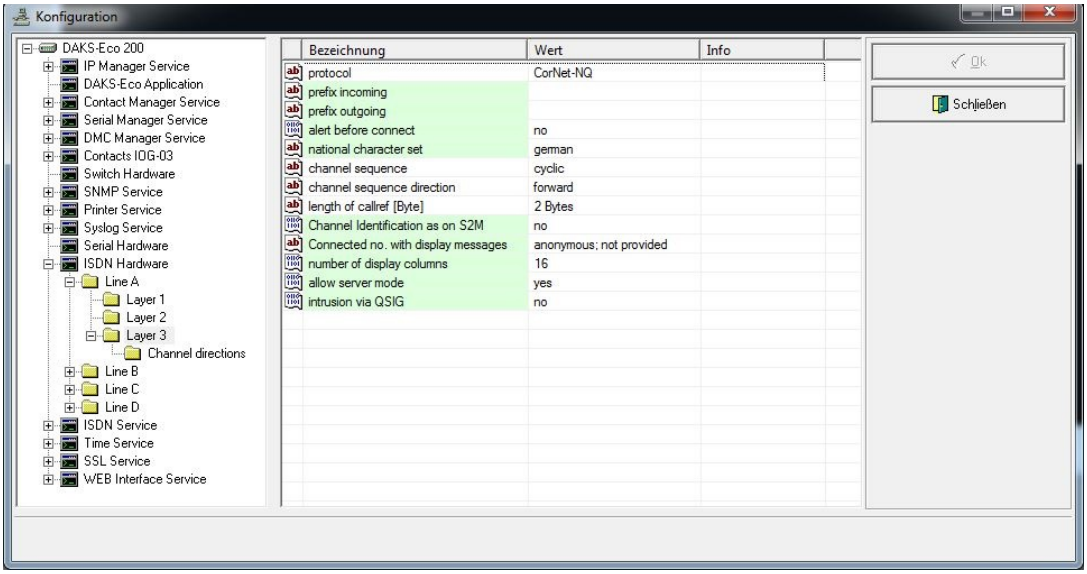


Image 7-20 ISDN digital trunk configuration

7.16 Parameters of the SYSLOG Service

Description:

Use the area "Syslog Service" to configure the IP address and the IP port of the SYSLOG server to which DAKS sends outputs.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Syslog service ➤ SYSLOG #1		
IP host	IP address [ ]	IP address and IP port of the SYSLOG server to which DAKS sends outputs.
IP port	IP port [*514*]	

Table 7-25 SYSLOG settings

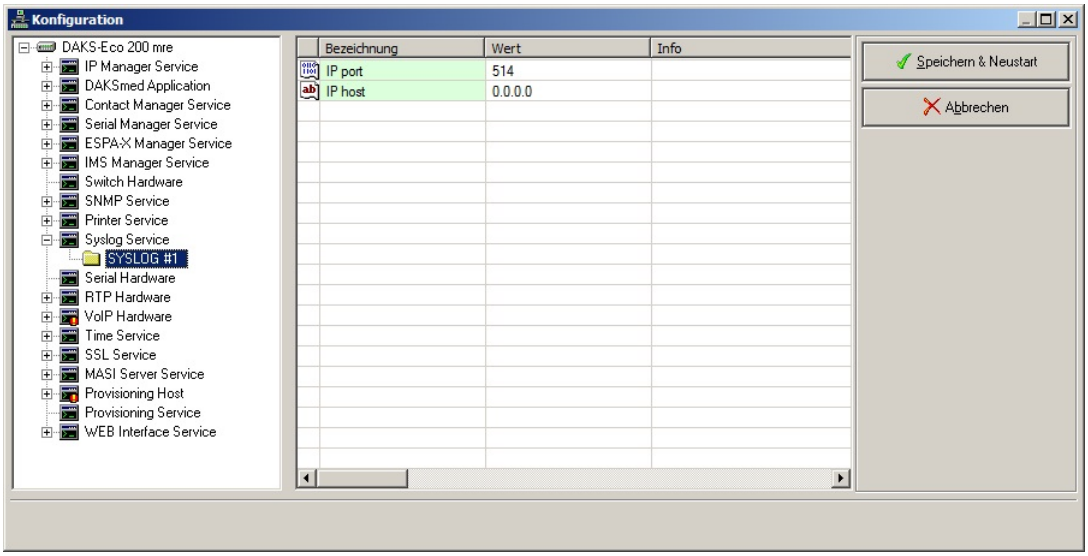


Image 7-21 SYSLOG Service configuration

7.17 Parameters of the Printer Service

Description:

Use the area 'Printer Service' to configure the IP address and the IP port of the printer to which DAKS sends outputs, and the prioritized way of print jobs.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Printer Service ➤ Printer #1		
Print priority	[*priorized USB*], priorized network, network only, USB only, no	The prioritized path via which print jobs are sent.
IP address host	IP address [ ]	The IP address and the IP port of the printer to which DAKS sends outputs.
IP port host	IP port [*9100*]	

Table 7-26 Printer settings

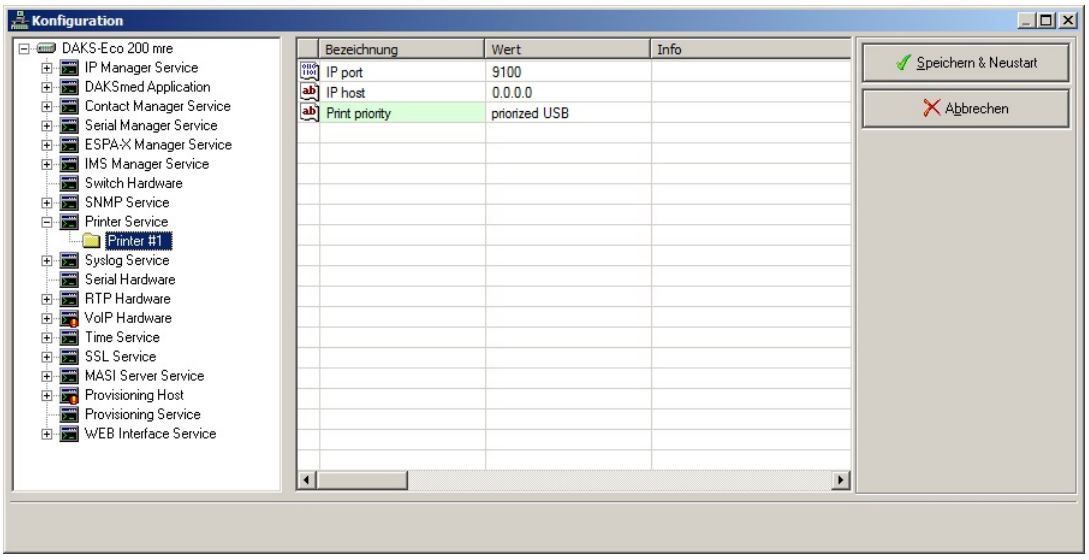


Image 7-22 Printer Service configuration

7.18 Parameter of SSL

Description:

Use the area "SSL" to list and administrate imported certificates.

Parameters:

Parameters	Value range [Default setting]	Description
Tree structure: Server ➤ SSL Service		
allow self signed	yes, [no]	Allow certificates that are self-signed.
allow unknown issuer (CA)	yes, [no]	Allow certificates even if their issuer (CA) is unknown.
allow outdated	yes, [no]	Allow certificates also if their validity date has expired.
sign certificates with sha256	yes, [no]	Sign certificates with SHA256.
ciphers	[TLS v1.0], SSLv3, TLS v1.2 HIGH TLS v1.3	Version of the encryption protocol.
AES coding	[AES-128 and AES-256], AES-128, AES-256	Supported code length of the encryption procedure.
SHA support	SHA1 allowed [SHA256 minimum] SHA384 only SHA prohibited,	Application of SHA1: • **SHA1 prohibited** Connections with SHA1 are not allowed • **SHA1 allowed** Connections with SHA1 are allowed
sign with expiration in	1 year 2 year 3 year 5 year 10 year	Version of the encryption protocol.
Add IPs to CN	[yes], no	IP address is added to the certificate
Add IPs to SAN	[yes], no	IP address is added to the certificate
Add Hostname to SAN	[yes], no	The name of the host is added to the certificate
Hostname (CN)	0..65 characters	
Country (C)	0..2 characters	
Location (L)	0..129 characters	
State (ST)	0..129 characters	
Organization (O)	0..65 characters	
Org. Unit (OU)	0..65 characters	
Mail	0..129 characters	
Tree structure: Server ➤ SSL Service ➤ Machine Certificate		
This area is used for the certificate that is currently used by the DAKS server.		
Tree structure: Server ➤ SSL Service ➤ Issuer		

Table 7-27 SSL settings

Parameters	Value range [Default setting]	Description
This area is used for details on the issuer of the certificate.		
Tree structure: Server ➤ SSL Service ➤ Trusted Certificates		
This area is used to list all certificates that have been uploaded to the memory of trusted certificates.		
Tree structure: Server ➤ SSL Service ➤ Trusted Certificates ➤ Certificate		
Action	[none], remove certificate	Use 'remove certificate' to delete a certificate
Tree structure: Server ➤ SSL ➤ Trusted Certificates ➤ Issuer		
This area is used for details on the issuer of the certificate.		
Tree structure: Server ➤ SSL ➤ Temporary Certificates		
This area is used to list all certificates that are allowed on a temporary basis.		
Action	[none], add to „Trusted certificates“	Use the parameter 'add to trusted certificates' to add trustworthy certificates to the memory of trusted certificates.
Tree structure: Server ➤ SSL ➤ Temporary Certificates ➤ Issuer		
This area is used for details on the issuer of the certificate.		

Table 7-27 SSL settings

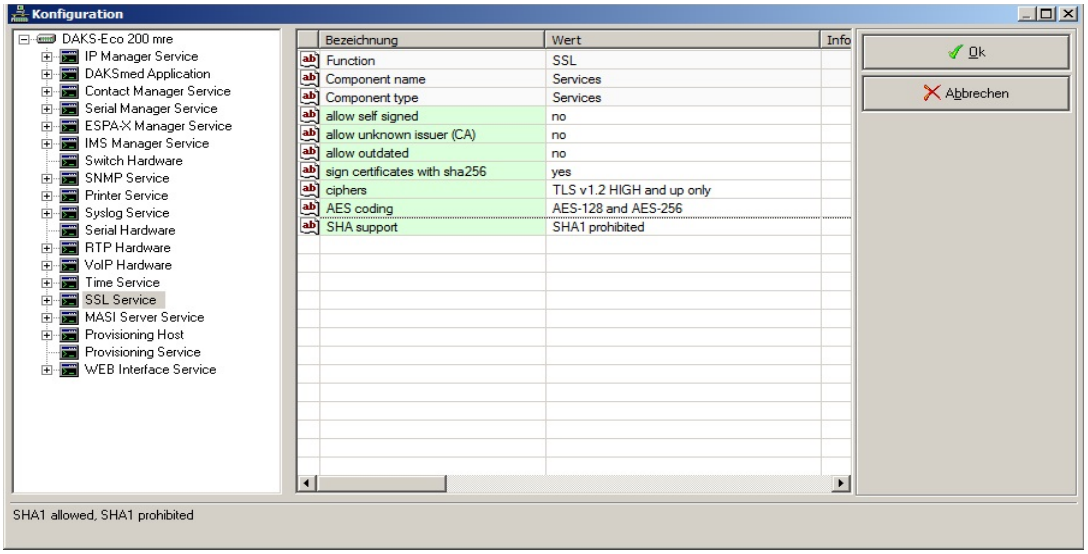
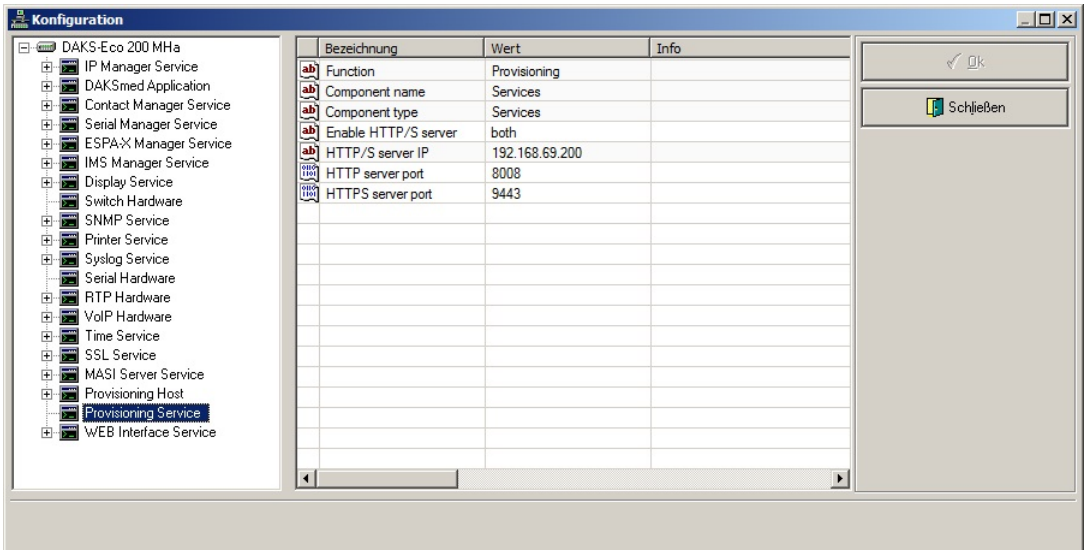


Image 7-23 SSL configuration

7.19 Provisioning Host and Provisioning Service

7.19.1 Introduction



Together, the Provisioning Service and the Provisioning Host enable the "Mobile Device Management" for DAKS Communicator devices that are registered directly at DAKS.

In the Provisioning Host, you can create user profiles with specific settings regarding firm- and software, alarm and communications behaviour, announcements, text messages etc.

Upon request from the device via SIP-XT, usually after the device has been in the charging station for while, the devices can retrieve this data from the Provisioning Service via HTTP(S) when changes/updates are made.

7.19.2 Provisioning Host – DAKS Communicator

Description:

The Provisioning Host contains the following data structure:

- one or several firmware/software versions of the DAKS Communicator
- up to three output profiles of the DAKS Communicator incl. announcements, audible tones and event text messages, especially for different national languages
- one or several user profiles (= User Profiles) with profile-specific data, such as times, activated alarms etc., as well as reference to both a firmware and a software plus an output profile.

Note:

The following information is not administrated in the Provisioning Host:

- the phone numbers of the communication devices,
- the designations or names of the users of the communication devices and
- the pertinent user profiles of the communication devices.

These details are part of the DAKS Communicator's individual initialization.

➤ see documentation of device

Ex works, DAKS is already prepared for the Mobile-Device-Management of DAKS Communicator devices.

If this is not the case, or if the Provisioning Host has obsolete process data, you can upload or update this data through a specific VTF file, just like a new DAKS server software.

With the edit menu of the Provisioning Host you can (with no restart of the DAKS server):

- edit the parameters and event output captions

  Note:
  The texts that the system uses for user guidance depend on the national language you have selected and can not be modified.

- create/delete/copy profiles
- upload new software/firmware versions and delete software/firmware versions that are no longer needed
- the upload of wave files

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator		
Encrypt HTTP(S) Content	yes, [*no*]	Encryption of data between DAKS and DAKS Communicator. **Note:** The current versions of DAKS Communicator exclusively support the unencrypted transmission.
Profile version	Info box	Version and date of the user profile
Output profile version	Info box	Version and date of the language profile
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ Firmware versions		
Load firmware		Select the firmware/software version of DAKS Communicator and upload to DAKS.
Firmware xxxx Firmware yyyy	used by a profile, [*keep*], delete	Delete or keep the firmware/software version of DAKS Communicator.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles		
Add new user profile		Name of the user profile. **Note:** When you enter and confirm the name, a new folder is added to "User Profiles".
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile-1		
Modify entry	[---], rename profile, copy profile, remove profile	You can give a new name to the user profile, copy or delete it.
Output profile	[german], english, dutch	Language profile that shall be used for this user profile.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Device firmware	Firmware version	Firmware/software version of the DAKS Communicator that shall be used for this user profile.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ Main Wi-Fi settings		
WiFi-SSID (not transmitted to devices)	0.. 32 characters	SSID of the WiFi connection. Is not transmitted to the devices in combination with DAKS Communicator, because part of the communication device's individual initialization.
WiFi-PSK (not transmitted to devices)	0..64 characters	PSK of the WiFi connection. Is not transmitted to the devices in combination with DAKS Communicator, because part of the communication device's individual initialization.
Security (not transmitted to devices)	NONE, WPA, WPA2, [*AUTO*]	Security-specific settings of the WiFi connection. Is not transmitted to the devices in combination with DAKS Communicator, because part of the communication device's individual initialization.
Cipher (not transmitted to devices)	NONE, TKIP, CCMP, [*AUTO*]	
Phy Mode (not transmitted to devices)	b, g, [*gn*], a, an	Selection of the frequency band and the type of the data transmission.Is not transmitted to the devices in combination with DAKS Communicator, because part of the communication device's individual initialization.
Retries before trying next profile	1..9 [3]	Number of connection attempts before trying to connect to the next WLAN profile.
Waiting time in s from signal again to active retry	0..99 [0]	Time in seconds to wait for a reconnection in the same WLAN profile after a connection loss.
WiFi connect	0..999 [0]	Time in seconds to wait for a WLAN connection before using the next WLAN profile.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ Main Wi-Fi settings #2..#3		
WiFi-SSID	0.. 32 characters	SSID of the WiFi connection.
WiFi-PSK	0..64 characters	PSK of the WiFi connection.
Security	NONE, WPA, WPA2, [*AUTO*]	Security-specific settings of the WiFi connection.
Cipher	NONE, TKIP, CCMP, [*AUTO*]	
Phy Mode	b, g, [*gn*], a, an	Selection of the frequency the type of the data transmission.
Retries before trying next profile	1..9 [3]	Number of connection attempts before trying to connect to the next WLAN profile.
Waiting time in s from signal again to active retry	0..99 [0]	Time in seconds to wait for a reconnection in the same WLAN profile after a connection loss.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
WiFi connect	0..999 [0]	Time in seconds to wait for a WLAN connection before using the next WLAN profile.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ General settings		
Branding	0..52 characters	Branding information of DAKS Communicator = Start message.
Time output format	12 h [*24 h*]	Time format of the DAKS Communicator.
Delete message/call history when putting back on charger	[*yes*], no	The call or messaging history is deleted when the DAKS Communicator device is returned to the charging station.
Delete device state history when putting back on charger	[*yes*], no	Event log of the DAKS Communicator, is deleted when device is returned to the charging station.
Carrying mode	[*pocket variable*], belt variable	The carrying mode of the DAKS Communicator device. Defines the initial setting of the display orientation.
Display brightness	very dim, dim, [*bright*], very bright	Brightness of the display of the DAKS Communicator.
Fast display changes	[*yes*], no	Activate quick refresh of the display.
Maximum call duration in s (0 = no timeout)	30..9999 [*0*]	Maximum call length in seconds.
Timeout to turn off display in s (0 = no timeout)	30..9999 [*0*]	The time after which the display is switched off when inactive.
Disable Qi charging if fully charged for x seconds (0 = Qi charging always active)	0..999 [*0*]	The time period during which the charging of DAKS Communicator is deactivated, when the device is fully charged. (0 = Qi charging is always active)
Use Acoustic Echo Cancellation	[*yes*], no	Apply acoustic echo suppression.
Acoustic Echo Cancellation mode	least aggressive, mild, more aggressive, [*aggressive*], very aggressive, most aggressive	Specify the mode of the acoustic echo suppression.
Delay estimate for sound card and system buffers in ms	1..9999 [20]	Delay estimation for sound card and system buffer in ms.
Use comfort noise	[*no*], yes	Use comfort noise.
Disable multiple charger Qi charging if fully charged for x seconds (0 = Qi charging always active)	0..9999 [*3600*]	Duration for which charging of the multi-charging station is switched off when DAKScommunicator is fully charged. (0 = Qi charging always active)

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Disable stand alone charger Qi charging if fully charged for x seconds (0 = Qi charging always active)	0..86400 [*0*]	Duration for which the single charging station is switched off when DAKScommunicator is fully charged. (0 = Qi charging always active)
Display orientation in vertical charger	standard, reverse, [dynamic]	Orientation of the display, when placing the DAKS Communicator into the charging station or when laying it onto the charging unit.
Send charge complete message to chager	yes, [no]	Sending the status "battery full" to the charger.
Disconnect Wi-Fi on charger	yes, [no]	Disconnect WLAN connection while DAKS Communicator is on the charger.
Start web server	[never], charger	Define the mode for starting the Web server. Note: This setting may only be altered in consultation with the tetronik Support.
Web server application for logs	default, initial, [info]	Set mode for log output. Note: The setting may only be changed in consultation with tetronik support.
Level for logging data in internal flash memory	none, assert, error, [warning], report	Set the log level that is written to internal memory. Note: The setting may only be changed in consultation with tetronik support.
Debug log level	none, assert, error, warning, report, [log], all	Set debug log level. Note: The setting may only be changed in consultation with tetronik support.
Syslog log level	none, assert, [error], warning	Set syslog log level. Note: The setting may only be changed in consultation with tetronik support.
Start statistics collection	[never], charger, always	Mode for logging data Note: The setting may only be changed in consultation with tetronik support.
Statistics type to collect	startup, system, [network], all	Type of logged data Note: The setting may only be changed in consultation with tetronik support.
Statistics interval in s	10..86400 [7200]	Zeit-Interval, nach dem Daten geloggt werden. Hinweis: Die Einstellung darf nur in Absprache mit dem tetronik-Support verändert werden.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Statistics saved in FLASH	yes, [no]	Log data is written to the internal memory. Note: The setting may only be changed in consultation with tetronik support.
Delay time after which the display will be turned off when the device is charging (0 = display on while charging)	0..86400 [0]	Time interval after which the display on the charger is switched off. (0 = display always remains on during the charging process).
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ Alarm and warning settings		
Sensor alarm	[*no*], no movement, man down	Possible sensor alarms.
Sensor alarm also enabled in Active state	[*no*], yes	Sensor alarms are also evaluated in the active state; otherwise only during the activated monitoring of the connection (=device monitoring).
Waiting time until sensor pre-alarm in s	[*60*], 30..300	Wait time until a sensor pre-alarm is raised, in seconds.
Pre-alarm time before sensor alarm in s	[*30*], 10..99	Time between sensor pre-alarm and sensor alarm, in seconds.
Time alarm enabled	[*no*], yes	Activate/deactivate the time alarm.
Time alarm also enabled in active state	[*no*], yes	Time alarms are evaluated also during the active state.
Waiting time until time pre-alarm in s	[*900*], 1..9999	Wait time until the start of a pre-alarm, in seconds.
Pre-alarm time before time alarm in s	[*30*], 10..99	Time between a time pre-alarm and a time alarm, in seconds.
Time between WiFi connection lost and warning in s (0 = no warning)	[*15*], 0..99	Time between a WLAN connection test and the matching warning, in seconds.
No WiFi connection warning reminder cycle in s (0 = no repetition)	[*600*], 120..9999, 0	Time after which a WLAN connection test warning is repeated, in seconds.
Local switch off of alarms allowed	[*yes*], no	Allow/not allow local deactivation of alarms.
Low battery warning reminder cycle in s (0 = no repetition)	[*600*], 120..9999, 0	Time after which the low battery warning is repeated.
Button alarms	none, [*short*], long, both	Time in which an alarm can be raised via the alarm button.
Long pressed alarm = silent	[*yes*], no	When it is long pressed the alarm button raises a silent alarm, otherwise a normal alarm.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Reminder ringing cycle in s (0 = no reminder ringing in case of missed calls)	0, 5…9999 [*600*]	Time after which the system reminds the user that a call/message was received but has been missed.
Reminder cycle in s of the time pre-alarm message (0 = no repetition)	0...600 [*0*]	The time period after which the time pre-alarm is repeated.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ SIP settings		
SIP host name of primary DAKS (not transmitted to devices)	IP address [*0.0.0.0*]	Output of the IP address of the primary DAKS.
SIP domain of primary DAKS (not transmitted to devices)	SIP domain [0.0.0.0:0]	Output of the SIP domain of the primary DAKS.
SIP host name of secondary DAKS	IP address [*0.0.0.0*]	IP address of the backup DAKS.
SIP domain of secondary DAKS	SIP domain [*0.0.0.0:0*]	SIP domain of the backup DAKS.
First retry interval in s to register again if failed	10…999 [*60*]	When the first SIP registration fails, the system tries a new SIP registration after the configured time.
Retry intervals in s to register again if failed	10…999 [*60*]	When the second attempt of a SIP registration fails, the system again tries a new SIP registration after the configured time interval.
Maximum sequence size	0, 1280...1460 [*1380*]	Restriction of the maximum segment size (MSS) for TCP packages from DAKS Communicator.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ SIP-XT settings		
If device monitoring by DAKS enabled by DAKS license: Automatic activation when removing from charger	yes, [*no*]	Automatic activation of the device monitoring when the DAKS Communicator is taken out of the charging station.
If device monitoring by DAKS enabled by DAKS license: Requesting monitoring manually by local menu allowed	yes, [*no*]	Allow manual activation of the device monitoring through the local menu of the DAKS Communicator.
Sending of status info with WiFi scan in Active state in s	15.. 999s [*300*]	The time cycle on which status information and details on Access-Points that are located in the vicinity are sent in the active state.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Sending of status info with WiFi scan in Monitored state in s	15.. 999s [*60*]	The time cycle in which status information and details on the Access-Points that are located in the vicinity are sent when the device monitoring is active.
Sending of status information with WiFi scan in Alarm state in s	15.. 999s [*30*]	The time cycle on which status information and details on Access-Points that are located in the vicinity are sent in the active alarm state.
Searching for updated profile cycle in s	0..86400 [1200]	Time interval, after which an updated profile is checked cyclically. Note: The setting may only be changed in consultation with tetronik support.
Repeat interval in s in case of error	0..86400 [3600]	Time interval after which an updated profile is checked cyclically in case of an error. Note: The setting may only be changed in consultation with tetronik support.
Repeat interval in s in case of problem	0..86400 [3600]	Time interval after which an updated profile is checked cyclically in case of a problem. Note: The setting may only be changed in consultation with tetronik support.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ User Profiles ➤ Profile ➤ Audio settings		
Standard voice volume	0..9 [*5*]	The standard sound intensity for voice.
Standard announcement volume	0..9 [*5*]	The standard sound intensity for announcements.
Standard tone volume	0..9 [*5*]	The standard sound intensity for audible tones.
Standard ringing volume	0..9 [*5*]	The standard volume of the ringing signal.
Positioning tone volume	0..9 [*5*]	The standard sound intensity for the positioning tone.
Max. settable volume (applies to all changeable volumes)	1..9 [*8*]	The maximum possible sound volume. Applies to all audio signals.
Min. settable volume (applies to all changeable volumes)	0..9 [*0*]	The minimum possible sound volume. Applies to all audio signals.
Reload standard volumes with every new call	[*yes*], no	The standard sound volume of signals is restored after every call; otherwise, the device saves the intensity of the sound volume that was selected last.
Reload standard volumes when device is put back on charger	[*yes*], no	The standard sound intensity of signals is restored when the DAKS Communicator device is returned to the charging station.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ Output profiles		

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Add new output profile		The name of the output profile **Note:** When you enter and confirm the name, a new folder is added to "Output Profiles".
Modify Entry	[---], Rename output profile, Copy output profile, Set all message strings to system language, Remove output profile	You can copy, delete or give a new name to the selected output profile. With "set all message strings to system language", the DAKS Communicator announcement texts and menu names are set to the selected "System language".
Load announcement package		Select the DAKS Communicator announcement packet and upload it to DAKS.
System language	[*British English*], US English, German, Dutch, French	Choice of the language that applies to the announcement texts and menu names of the output profile **Note:** The announcement texts and menu names are only switched when the parameter "Modify Entry" is set to "set all message strings to system language".
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ Output profiles ➤ Messages For an overview of all available announcements and display texts: ➤ see Table 7-29, "Event-specific outputs (announcements and display texts)", on page 75		
Load wave file		Choose and upload a voice announcement (wave file). **Note:** The maximum length of an individual announcement is 7.5 seconds.
Wave file info	Information about the file	File information about the announcement (wave file) that is stored in DAKS.
Play back announcement	[*yes*], no	The announcement that is sent to the DAKS Communicator device is only played when the pertinent event occurs.
Display text	128 characters	Display output at the DAKS Communicator device at the same time as the relative announcement.
Output display text	[*yes*], no	Output of the display text when the pertinent event occurs.
Vibration motor ticks	0..10 [*0*]	Number of vibrations when the pertinent event occurs.
Minimum display time in ms	0, 2..99999 [*0*]	Minimum duration for the display of the announcement text at the DAKS Communicator device, 0 = automatic.

Table 7-28 Parameterization of DAKS Communicator

Parameters	Value range	Description
Maximum display time in ms	0, 2..99999 [*0*]	Maximum duration for the display of the announcement text at the DAKS Communicator device. The display duration may not be smaller that the minimum display duration and applies for as long as the announcement is played, 0 = automatic.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ Output profiles ➤ Ringing signals • Emergency ringing • Public ringing • Internal ringing • Info ringing • Reminder ringing (in case of missed calls) • Positioning signal		
Load wave file		Selection and upload of a call signal.
Wave file info	Information about the file	File information about the announcement (wave file) that is stored in DAKS.
Play back signal	[*yes*], no	The call signal is played when the pertinent event occurs.
Vibration motor ticks	0..10 [*0*]	Number of vibrations when the pertinent event occurs.
Tree structure: Server ➤ Provisioning Host ➤ DAKS Communicator ➤ Output profiles ➤ Tones Dual tone definition string:[freq1] [freq2] [on time] [off time] [count] [interval] – freq1 and freq2: 0…4000 Hz – on time and off time in ms – interval in ms (for repeated output); not sent or 0 = no repetition		
Audio monitoring prevention ticks	[*1000 0 50 0 1 10000*]	Number of vibrations when the pertinent event occurs.
Error tone	[*425 0 64 64 5 0*]	The tone played for an error
Ringback tone	[*425 0 1000 0 1 4000*]	The ring tone/dial tone
Busy or disconnect tone	[*425 0 210 290 4*]	The busy tone/engaged signal

Table 7-28 Parameterization of DAKS Communicator

Event-specific outputs (announcements and display texts):

Parameters	Announcement/display text	Particulars
Put device on charger	[*US/UK: Put the device on charger*] [DE: Gerät auf Ladegerät legen]	
Sensor o.k.	[*US/UK: Sensor o.k.*] [DE: Sensor funktionsfähig]	
No upright position detected	[*US/UK: No upright position detected*] [DE: Keine aufrechte Position erkannt]	
Hold device in upright position	[*US/UK: Hold device in upright position*] [DE: Bitte Gerät senkrecht halten]	
Press both alarm buttons simultaneously	[*US/UK: Press both alarm buttons simultaneously*] [DE: Beide Alarmtasten gleichzeitig drücken]	
Alarm buttons o.k.	[*US/UK: Alarm buttons o.k.*] [DE: Alarmtasten funktionsfähig]	
Alarm buttons error	[*US/UK: Alarm buttons defect*] [DE: Alarmtasten defekt]	
No WiFi connection	[*US/UK: No WiFi connection*] [DE: Keine WLAN-Verbindung]	
Again WiFi connection	[*US/UK: WiFi connection available*] [DE: WLAN-Verb. wieder vorhanden]	
Device active	[*US/UK: Device active*] [DE: Gerät aktiv]	
IP connectivity error	[*US/UK: IP connectivity error*] [DE: IP Verbindungsfehler]	
SIP Registration error	[*US/UK: SIP Registration error*] [DE: SIP Registrierungsfehler]	
SIP Registration failed	[*US/UK: SIP Registration failed*] [DE: Keine SIP-Registrierung möglich]	
No longer SIP registered	[*US/UK: No longer SIP registered*] [DE: Nicht mehr SIP-registriert]	
Device offline	[*US/UK: Device off-line*] [DE: Gerät ohne Netzverbindung]	

Table 7-29 Event-specific outputs (announcements and display texts)

Parameters	Announcement/display text	Particulars
Communication problem with DAKS	[*US/UK: Communication probl.w/ DAKS*] [DE: Kommunikationsproblem mit DAKS]	
Monitoring started	[*US/UK: Monitoring started*] [DE: Verbindungskontrolle aktiviert]	
Monitoring declined	[*US/UK: Monitoring declined*] [DE: Verbindungskontrolle abgewiesen]	
Monitoring request timeout	[*US/UK: Stop monitoring request timeout*] [DE: Ende Verb.-kontrolle Timeout]	
Monitoring ended	[*US/UK: Monitoring ended*] [DE: Verbindungskontrolle beendet]	
Stop monitoring declined	[*US/UK: Stop monitoring declined*] [DE: Ende Verb.-kontrolle abgewiesen]	
Stop monitoring request timeout	[*US/UK: Stop monitoring request timeout*] [DE: Ende Verb.-kontrolle Timeout]	
Time pre-alarm	[*US/UK: Time pre-alarm*] [DE: Zeit-Voralarm]	
Sensor pre-alarm	[*US/UK: Sensor pre-alarm*] [DE: Sensor-Voralarm]	
Time pre-alarm ended	[*US/UK: Time pre-alarm ended*] [DE: Zeit-Voralarm beendet]	
Sensor pre-alarm ended	[*US/UK: Sensor pre-alarm ended*] [DE: Sensor-Voralarm beendet]	
Time alarm initiated	[*US/UK: Time alarm initiated*] [DE: Zeitalarm aktiviert]	
Sensor alarm initiated	[*US/UK: Sensor alarm initiated*] [DE: Sensoralarm aktiviert]	
Push button alarm initiated	[*US/UK: Push button alarm initiated*] [DE: Tasten-Alarm aktiviert]	
Silent alarm initiated	[*US/UK: Silent alarm initiated*] [DE: Stiller Alarm aktiviert]	Play back announcement = [no] Vibration motor ticks = [10]
Time alarm confirmed	[*US/UK: Time alarm confirmed*] [DE: Zeitalarm bestätigt]	
Sensor alarm confirmed	[*US/UK: Sensor alarm confirmed*] [DE: Sensoralarm bestätigt]	

Table 7-29 Event-specific outputs (announcements and display texts)

Parameters	Announcement/display text	Particulars
Push button alarm confirmed	[*US/UK: Push button alarm confirme*d] [DE: Tastenalarm bestätigt]	
Silent alarm confirmed	[*US/UK: Silent alarm confirmed*] [DE: Silent alarm bestätigt]	Play back announcement = [no] Vibration motor ticks = [10]
Time alarm not answered	[*US/UK: Time alarm not answered*] [DE: Zeitalarm nicht beantwortet]	
Sensor alarm not answered	[*US/UK: Sensor alarm not answered*] [DE: Sensoralarm nicht beantwortet]	
Push button alarm not answered	[*US/UK: Push button alarm not answered*] [DE: Tastenalarm nicht beantwortet]	
Silent alarm not answered	[*US/UK: Silent alarm not answered*] [DE: Stiller Alarm nicht beantwortet]	Play back announcement = [no]
Time alarm declined	[*US/UK: Time alarm declined*] [DE: Zeitalarm abgewiesen]	
Sensor alarm declined	[*US/UK: Sensor alarm declined*] [DE: Sensoralarm abgewiesen]	
Push button alarm declined	[*US/UK: Push button alarm declined*] [DE: Tastenalarm abgewiesen]	
Silent alarm declined	[*US/UK: Silent alarm declined*] [DE: Stiller Alarm abgewiesen]	Play back announcement = [no]
Alarm end request	[*US/UK: Alarm end request*] [DE: Alarm-Ende Anfrage]	
Alarm ended	[*US/UK: Alarm ended*] [DE: Alarm beendet]	
Low battery warning	[*US/UK: Low battery warning*] [DE: Batterie fast leer]	
Switching off	[*US/UK: Switching off…*] [DE: Gerät schaltet sich aus...]	
Internal device error	[*US/UK: Internal device error*] [DE: Interner Gerätefehler]	
Update problem	[*US/UK: Update problem*] [DE: Update-Problem]	
Update error	[*US/UK: Update error*] [DE: Update-Fehler]	
Ringing volume check	-	
Message volume check	[*US/UK: Sound check*] [DE: Tontest]	

Table 7-29 Event-specific outputs (announcements and display texts)

7.19.3 Parameter Provisioning Service

Description:

Use the area "Provisioning Host" to configure the Web Service for the transmission of software/ firmware, parameters, announcements and announcement texts to the DAKS Communicator devices.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Provisioning Service		
Enable HTTP(S) server	[*none*], both, HTTP only, HTTPS only	Selection of the server mode. **Note:** The current versions of DAKS Communicator exclusively support the unencrypted transmission.
HTTP(S) server IP	IP address [*0.0.0.0*]	The IP address of DAKS **Note:** A drop-down combobox appears whenever there a several options to choose from.
HTTP server Port	IP port [*8080*]	The IP port for the unencrypted communication between DAKS and the DAKS Communicator device.
HTTPS server port	IP port [*844*]	The IP port for the encrypted communication between DAKS and the DAKS Communicator device.

Table 7-30 Parameterization of DAKS Communicator

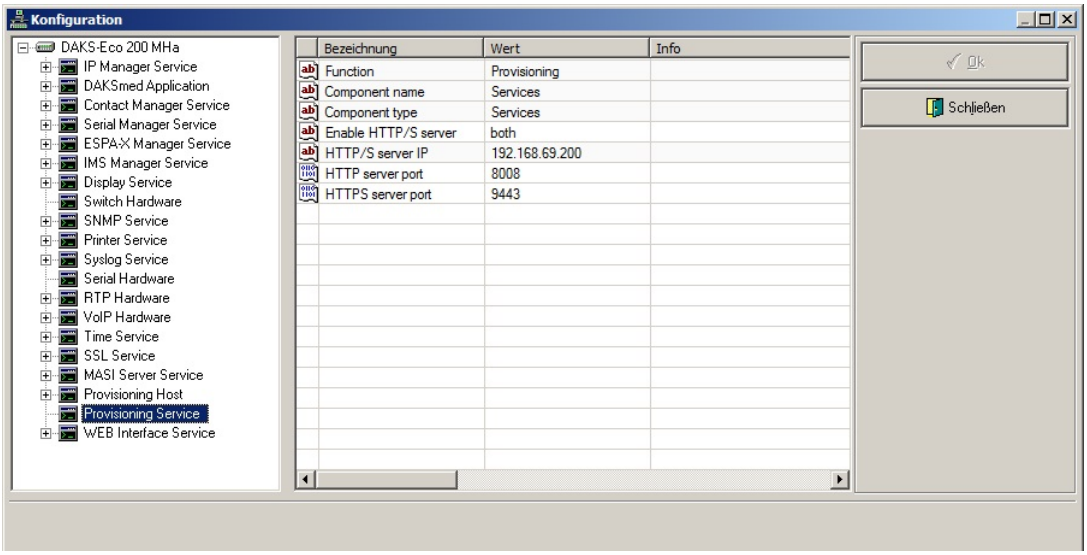


Image 7-24 DAKS Communicator configuration

7.20 Parameters of the corridor displays

Description:

Use the area "Display Service" to configure the parameters for the corridor displays.



Caution!
When the system detects a license violation in MCO it will, if no other messages is received and before the time or the minus sign appear on the display, signal the below error message in yellow letters for 5 seconds:

- if the default language is German: "System-Problem L"
- in all other cases: "System problem L"

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Display Service ➤ Display #1.. #n		
Display name	30 characters	The name of the corridor display.
Display type	[*<none>*], Schauf LED display	The type of corridor display
Connection	0..255	IP address of the corridor display.
Address	0..30 digits	The address of the corridor display.
Display group	[*<none>*], 1..5	The assignment of a corridor display to a corridor display group. All displays of a corridor display how the same message.
Alert tone	[*yes*], no	The system plays an alerting tone signal when a new message appears or upon a message with a higher priority.
Display lines	1, 2, [*3*]	Number of lines that are supported by the corridor display.
Display...when empty	[nothing], time, dash	If there are no alarm messages, the following is displayed: • **nothing** no display • **time** current time • **dash** a green continuous line
Tree structure: Server ➤ Display Service ➤ Visualization settings ➤ 1 line display.. 3 lines display		

Table 7-31 Parameterization of corridor displays

Parameters	Value range	Description
Max. number of displayed messages	1..100 [*15*]	The max. number of messages that are shown on the display, if needed alternatively. **Note:** If many messages are received and a high values is entered here, it can take a long time until the most important messages are shown again. If, however, a small value is entered here, messages of a lesser importance are not shown at all.
Display preference	[*old to new*], new to old	Sorting order for same-priority messages: • **new to old** give higher priority to new messages than to older messages • **old to new** give higher priority to older messages than to new messages
Shown priorities	[*all*] high & medium, high only	Select the messages that are shown depending on their priority: • **all** The system shows all messages. • **high & medium** The system only shows messages that have a medium or high priority. • **high only** The system only shows messages that have a high priority.

Table 7-31 Parameterization of corridor displays

Parameters	Value range	Description
Simultaneous priorities	[*all*], two, one, one - fill up with next lower priority, one - fill up with lower priorities, two - fill up with low priority	Max. priority levels that are shown at the same time (simultaneously) or alternately (toggle) • **all** The system shows messages of all currently available priority levels. • **two** The system only shows messages of the two highest priority levels that are currently available. • **one** The system only shows messages of the highest priority level that is currently available. • **one - fill up with next lower priority *** The system shows messages of the highest priority level that is currently available. The system additionally shows messages of the next lower priority level, but only if otherwise it would output empty lines. **Note:** The system offers this option only for multiline displays. **•one - fill up with lower priorities*** The system shows messages of the highest priority level that is currently available. The system additionally shows messages of lower priority levels, but only if otherwise it would output empty lines. **Note:** The system offers this option only for multiline displays. **•two - fill up with low priority*** The system shows messages of the two highest priority levels that are currently available. The system additionally shows messages of lowest priority level, but only if otherwise it would output empty lines. **Note:** The system offers this option only for multiline displays.

Table 7-31 Parameterization of corridor displays

Parameters	Value range	Description
		*** Example:** You want a three-line display to output four high-priority messages, one medium priority message and one low-priority message. In the first toggle sequence, three high-priority messages are shown; in the second toggle sequence, the fourth high-priority message is shown in the first line. If you select the setting "**one**", both the the second and the third display line would stay empty. If you select "**one- fill up with next lower priority**", the medium-priority message would be shown in the second line and the third display line would stay empty. If you select "**one- fill up with lower priorities**", the medium priority and the low priority message would be shown in the second and third display line.
Toggle mode	toggle off, toggle on, toggle bottom line, toggle middle and bottom line, [*toggle all lines*] **Note:** "toggle on" is the default for one-line displays. "toggle on" is the default for multiline displays.	Select the toggle mode • **toggle off** The system does not toggle messages. • **toggle on** The system toggles messages. **Note:** The system offers this option only for multiline displays. **•toggle bottom line** The system uses the bottom line to toggle messages. **Note:** The system offers this option only for multiline displays. **•toggle middle and bottom line** The system uses the two bottom lines to toggle messages. **Note:** The system offers this option only for three-line displays. **•toggle all lines** The system uses all lines to toggle messages. **Note:** The system offers this option only for multiline displays.
Toggle time	1500..5000 [*2000*]	Minimum time that the messages are shown (in ms).

Table 7-31 Parameterization of corridor displays

Parameters	Value range	Description
Tree structure: Server ➤ Display Service ➤ Schauf display configuration		
Port	[*<none>*], Serial-1, Serial-2	Selection of the serial port. **Note:** Only serial interfaces are offered whose protocol type is set to "Transparent" and whose interface type is set to "RS485".
Show ... when empty	[*nothing*], time, dash	When no alarm conditions are pending, the system outputs the following: • **nothing** no display • **time** the current time • **dash** a running green line

Table 7-31 Parameterization of corridor displays

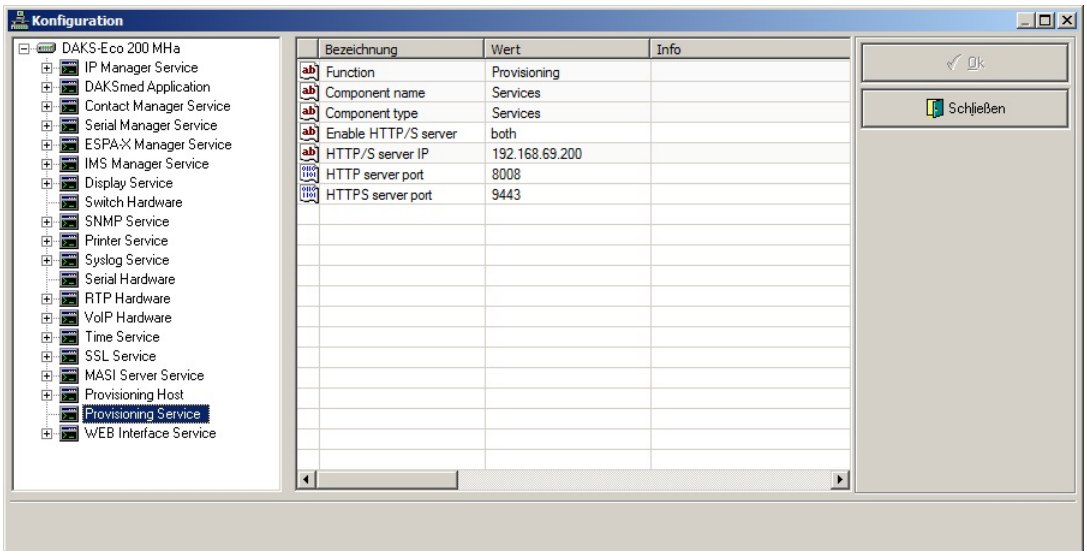


Image 7-25 DAKS Communicator configuration

7.21 Parameters of the Web interface

Description:

Use the area "WEB Interface Service" to configure the parameters of the Web interface of DAKS.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ WEB Interface Service ➤ WEB Interface		
Use HTTPS only	[*yes*], no	Only use HTTPS.
IP port HTTP	IP-Port *[80]*	The IP port at which the Web interface of DAKS can be reached via HTTP.
IP port HTTPS	IP-Port *[443]*	The IP port at which the Web interface of DAKS can be reached via HTTPS.
Session timeout admin [*min*]	1..9999 [*60*]	The time after which a session during which no user entries are made is closed, forcing the user to log in anew. (0 = session is not automatically terminated).
Session timeout operator [*min*]	0..9999 [*60*]	
Poll timeout[1)] [*s*]	1..10 [*5*]	The length of time that DAKS waits for the next polling by the Web browser.
Poll interval [1)] [*s*]	1..60 [*10*]	The time interval during which DAKS will, at the latest, answer a polling.

Table 7-32 Parameterization of Web interface

1.) Does not appear for the VCON right "service" and can only be edited by the Support Team.

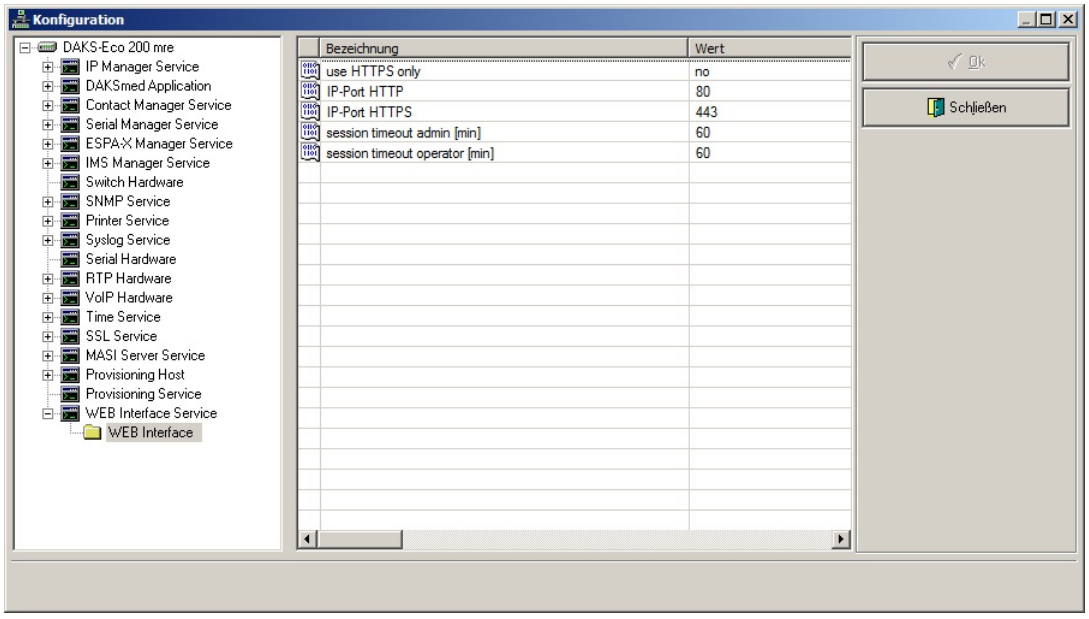


Image 7-26 Web interface configuration

7.22 Application parameters

Note:
When changes are made to either of these parameters, the new entries will not appear in the configuration tree until you reboot DAKS.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ DAKSmed/DAKS-Eco Application		
Voice communication	none, VoIP, [*ISDN*]	Selection of the type of the telephone technology.
Language	[*Deutsch*], English, Français, Nederlands, Türçe	Specification of the language of the e-mail protocol.
Power supply usage	[*Both*], AC, DC	Choice of power supply units. • **Both:** Both power supply units are utilized. **Note:** Should either of the power supply units fail, a partial mains failure can be signaled. • **AC:** Only the 230V power supply unit is used. • **DC:** Only the 48V power supply unit is used.
Authorized MAI client	0..30 characters	Authentication name of a MASI client (except IDGS)
MARS-AR connected	yes, [no]	**yes:** The relay is briefly set passive every 100 minutes and then set active again.
The data interface licenses		
Tree structure: Server ➤ DAKSmed/DAKS-Eco Application ➤ Data Interfaces ➤ Interface 1..7		
Type	[*not used*], ESPA-X-Session-1.. 5, Serial-1, Serial-2, Serial-3	Licenses for data interfaces. To activate data interfaces you need to assign a serial interface or an ESPA-X interface to one of these licenses.
Callback	[*no*], yes	Activation of the callback function for this interface.

Table 7-33 Application parameters

Parameters	Value range	Description
Tree structure: Server ➤ DAKSmed/SDAKS-Eco Application ➤ External Reports		
Server IP address	IP address [0.0.0.0]	IP address of the external server where the log files are stored. Note: DAKS requires an open port for the Port 445 (if needed, adjust the firewall settings) in order to save the log files on the server.
Path on server	256 characters [ ]	Name of the folder in which the log files are stored. Must be an shared folder of a Windows system. Note: Only enter the name of the folder, not the path.
User name	256 characters [ ]	User name for the access to the external server.
Password	256 characters [ ]	Password for the access to the external server.
Domain	256 characters [ ]	Domain of the external server.
Tree structure: Server ➤ DAKS-Eco Application ➤ AVIOTEC		
Boot Statusinterval	90..3600 [90]	Abfrageintervall in Sekunden während sich die Kamera im Bootvorgang befindet.
Queryinterval	10..3600 [20]	Zustandsabfrage des Videosensors und der beiden Kontakte in Sekunden

Table 7-33 Application parameters

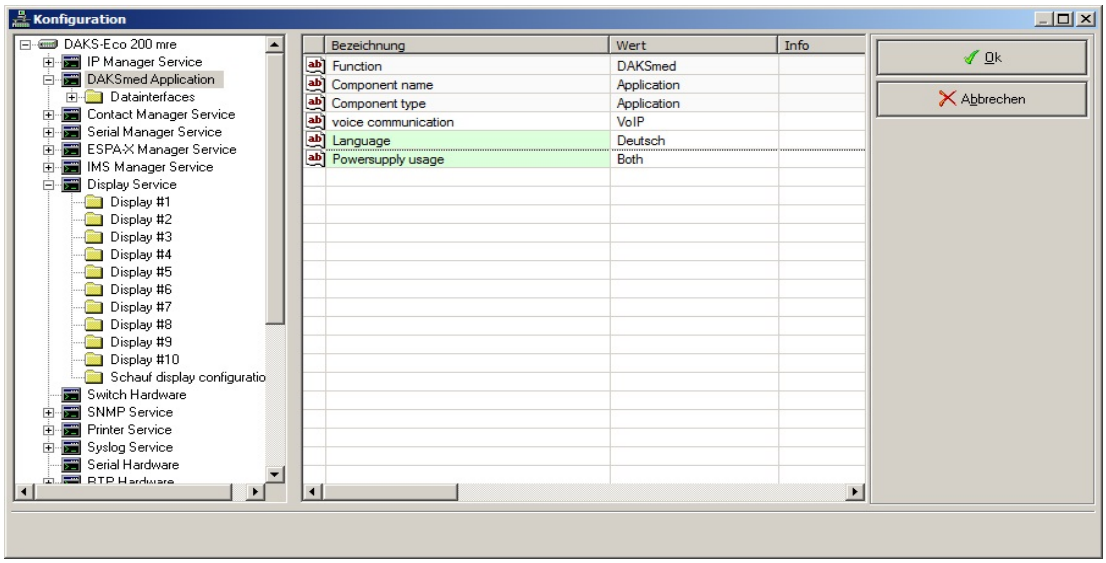


Image 7-27 Konfiguration Application parameters

7.23 DCF, NTP and system clock parameters

The internal real-time clock of DAKS can be synchronized via a DCF receiver or via max. 2 NTP servers (NTP host #1, #2). If this time is not synchronized for more than 2 hours, an output will automatically be triggered via VCON and the printer, or via Syslog, respectively.

Parameters:

Parameters	Value range	Description
Tree structure: Server ➤ Time Service ➤ SNTP		
NTP host #1, #2	IP address [ ]	IP address of the NTP server 1 or 2
DCF-77 Priority		
	Off	• **Off** Deactivation of the DCF receiver
	Lower Priority than NTP	• **Lower Priority than NTP** Priority is given to the evaluation of the NTP signal
	Higher Priority than NTP	• **Higher Priority than NTP** Priority is given to the evaluation of the DCF signal
timezone	(GMT-12:00) International Date Line West (GMT-11:00) Midway Island, Samoa (GMT-10:00) Hawaii (GMT-09:30) French Polynesia (GMT-09:00) Alaska (GMT-08:00) Pacific Time (US and Canada); Tijuana (GMT-07:00) Chihuahua, La Paz, Mazatlan (GMT-07:00) Mountain Time (US and Canada) (GMT-06:00) Guadalajara, Mexico City, Monterrey (GMT-06:00) Central Time (US and Canada) (GMT-06:00) Central America (GMT-06:00) Saskatchewan (GMT-05:00) Indiana (East) (GMT-05:00) Bogota, Lima, Quito (GMT-05:00) Eastern Time (US and Canada) (GMT-04:30) Caracas (GMT-04:00) La Paz (GMT-04:00) Santiago (GMT-04:00) Atlantic Time (Canada) (GMT-04:00) Manaus (GMT-03:30) Newfoundland and Labrador (GMT-03:00) Buenos Aires, Georgetown (GMT-03:00) Greenland (GMT-03:00) Brasilia (GMT-02:00) Mid-Atlantic (GMT-01:00) Cape Verde Islands (GMT-01:00) Azores	

Table 7-34 Parameterization of NTP and clock

Parameters	Value range	Description
timezone	(GMT+/- 0) Casablanca, Monrovia	
	(GMT+/- 0) Greenwich Mean Time	
	(GMT+/- 0) Dublin, Edinburgh, Lisbon, London	
	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna	
	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague	
	(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb	
	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris	
	(GMT+01:00) West Central Africa	
	(GMT+02:00) Minsk	
	(GMT+02:00) Cairo	
	(GMT+02:00) Helsinki, Kiev, Riga, Sofia, Tallinn, Vilnius	
	(GMT+02:00) Athens, Bucharest, Istanbul	
	(GMT+02:00) Jerusalem	
	(GMT+02:00) Windhoek	
	(GMT+02:00) Harare, Pretoria	
	(GMT+03:00) Kuwait, Riyadh	
	(GMT+03:00) Baghdad	
	(GMT+03:00) Nairobi	
	(GMT+03:00) Moscow, St. Petersburg, Volgograd	
	(GMT+03:30) Tehran	
	(GMT+04:00) Abu Dhabi, Muscat	
	(GMT+04:00) Baku	
	(GMT+04:00) Yerevan	
	(GMT+04:00) Tblisi	
	(GMT+04:30) Kabul	
	(GMT+05:00) Yekaterinburg	
	(GMT+05:00) Islamabad, Karachi, Tashkent	
	(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi	
	(GMT+05:45) Kathmandu	
	(GMT+06:00) Astana, Dhaka	
	(GMT+06:00) Almaty, Novosibirsk	
	(GMT+06:00) Sri Jayawardenepura	
	(GMT+06:30) Yangon (Rangoon)	
	(GMT+07:00) Krasnoyarsk	
	(GMT+07:00) Bangkok, Hanoi, Jakarta	
	(GMT+08:00) Beijing, Chongqing, Hong Kong SAR, Urumqi	
	(GMT+08:00) Irkutsk, Ulaanbaatar	
	(GMT+08:00) Kuala Lumpur, Singapore	
	(GMT+08:00) Taipei	
	(GMT+08:00) Perth	
	(GMT+09:00) Seoul	
	(GMT+09:00) Osaka, Sapporo, Tokyo	
	(GMT+09:00) Yakutsk	
	(GMT+09:30) Darwin	
	(GMT+09:30) Adelaide	
	(GMT+10:00) Canberra, Melbourne, Sydney	
	(GMT+10:00) Brisbane	
	(GMT+10:00) Hobart	
	(GMT+10:00) Vladivostok	
	(GMT+10:00) Guam, Port Moresby	

Table 7-34 Parameterization of NTP and clock

Parameters	Value range	Description
timezone	(GMT+11:00) Magadan, Solomon Islands, New Caledonia (GMT+11:30) Kingston (GMT+12:00) Fiji Islands, Kamchatka, Marshall Islands (GMT+12:00) Auckland, Wellington (GMT+13:00) Nuku'alofa (GMT+14:00) Kiribati	
DST	yes, [*no*]	Switch/do not automatically switch to summer daylight saving time.

Table 7-34 Parameterization of NTP and clock

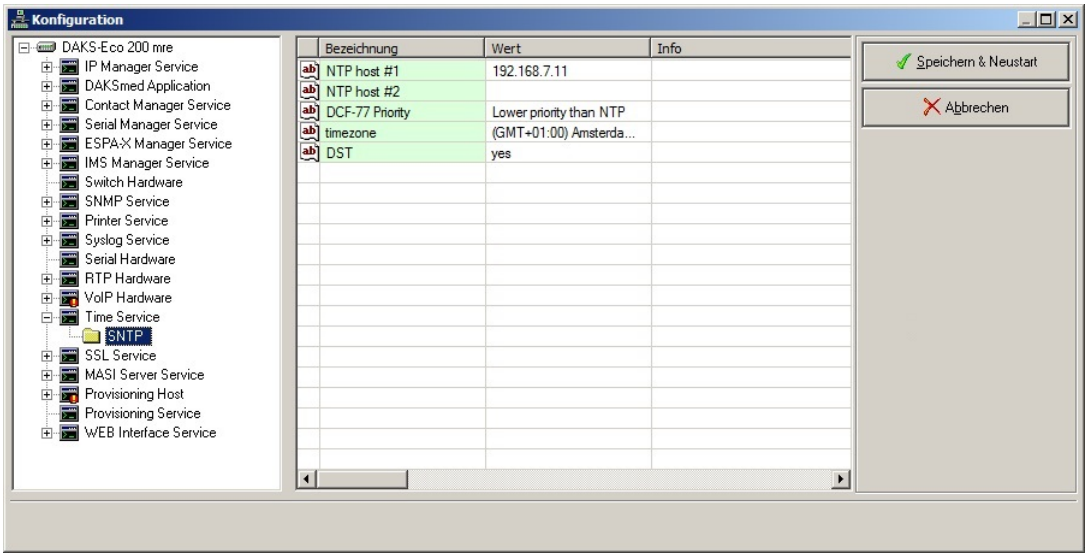


Image 7-28 NTP and clock configuration

8 Browser-Based DAKS Administration

Overview

This chapter covers the browser-based administration of DAKS.

Contents

8.1 General information
8.2 Login to DAKS
8.3 The browser-based user interface
8.4 General buttons
8.5 Data/Server
8.6 Basic configuration
- 8.6.1 General details
- 8.6.2 Telephony
- 8.6.3 System Display/Audio info
- 8.6.4 Dialthru codes
- 8.6.5 Routing
- 8.6.6 The Login data
- 8.6.7 Add and edit the access data

8.7 Time Segments
- 8.7.1 Add and edit Time Segments
- 8.7.2 Add and edit Holidays

8.8 Display/audio information
- 8.8.1 Add and edit Display/Audio info
- 8.8.2 Upload announcements (wave files) for the first time

8.9 Alarm profiles
- 8.9.1 Medical alarm profiles (only DAKSmed)
- 8.9.2 General alarm profiles
- 8.9.3 System alarm profiles

8.10 Access Points
- 8.10.1 Add and edit Access Points

8.11 Base Stations
- 8.11.1 Add and edit Base Stations

8.12 Beds
- 8.12.1 Add and edit Beds

8.13 Inputs
- 8.13.1 The contact inputs
- 8.13.2 Edit a Contact input
- 8.13.3 AVIOTEC Camera
- 8.13.4 SNMP trap receiver

8.14 Contact outputs
- 8.14.1 Edit a Contact output
- 8.14.2 Edit Relay Output

8.15 Terminals
- 8.15.1 Add and edit Communication devices

8.16 Subscribers
- 8.16.1 Add and edit Subscribers

8.17 MCO-views
- 8.17.1 Add and edit MCO-views

8.18 Broadcasts
- 8.18.1 Group-specific settings

8.18.1.1 General details
8.18.1.2 Edit the Launch over the phone
8.18.1.3 Conference mode
8.18.1.4 Results e-mail
8.18.2 Add and edit new Broadcast members
8.18.2.1 Edit Broadcast members
8.18.3 Create and edit new Skillgroups
8.19 Conferences
8.19.1 Parameters of a Conference
8.19.2 Add and edit Conferences
8.20 Reports
8.20.1 The sections of Report
8.20.1.1 Example of a Broadcast Report
8.20.1.2 Example of a Conference Report
8.20.1.3 Example of a Broadcast-Conference Report
8.20.2 Printout reports as hardcopy
8.20.3 Save reports
8.20.4 Delete reports

8.1 General information

For a user-friendly administration and analysis of the reports for Broadcasts, Broadcasts with automatic entry into a Conference, and Meet-Me Conferences, DAKS offers an easy-to-use, intuitive browser interface in German, English, Dutch, French or Turkish.



Image 8-1 The browser-based user interface

For best output and functionality of the user interface you need one of the below-listed browsers:

- Mozilla Firefox Version 52 and up
- Microsoft Internet Explorer Version 11 and up

Caution!
Please bear in mind that the DAKS functionality can only be ensured with the above-mentioned browsers.

Note:
Make sure that the pop ups are enabled.

Caution!
To output the DAKS user interface, make sure you activate JavaScript in your browser (= default setting of the above-mentioned browsers).

8.2 Login to DAKS

Start the browser and enter the following URL:

- if you are using HTTPS:
  https://<Host>:<Port>
- if you are using HTTP:
  http://<Host>:<Port>

• <Host>	The name or IP address of DAKS **Default settings ex works:** IP address 192.168.20.200.
• <Port>	The IP ports of DAKS are freely adjustable: ➤ see Section 7.21 "Parameters of the Web interface" If you decide to use default ports, you can omit the output of the pertinent port incl. the opening colon. **Default settings ex works:** IP port HTTP: 80; IP port: HTTPS 443.

This will open the login window of DAKS-Eco/DAKS-Indico:



Image 8-2 Login window of DAKS-Eco

This will open the login window of DAKSmed:

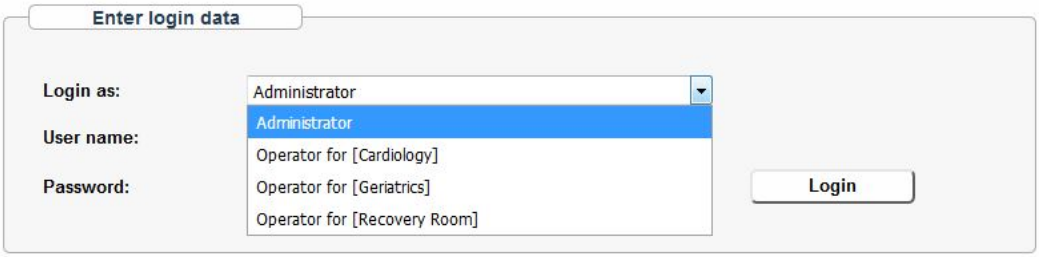


Image 8-3 Login window of DAKSmed

To login as Administrator, enter your user name and password in keeping with your authorization (View, Edit, Edit+Upload/save).

For DAKSmed, also select if you are logging in as Administrator or Operator (including MCO-view).

➤ see Section 8.6.5 "Routing"
➤ see Section 8.16 "Subscribers"

If a wrong user name or password is entered, the system will reject the login and the following message will appear:

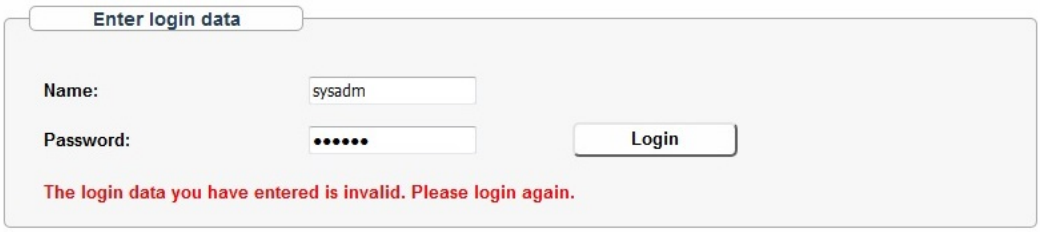


Image 8-4 Wrong login data

If a user tries to login to DAKS while another user is already connected, the system will send the following message:

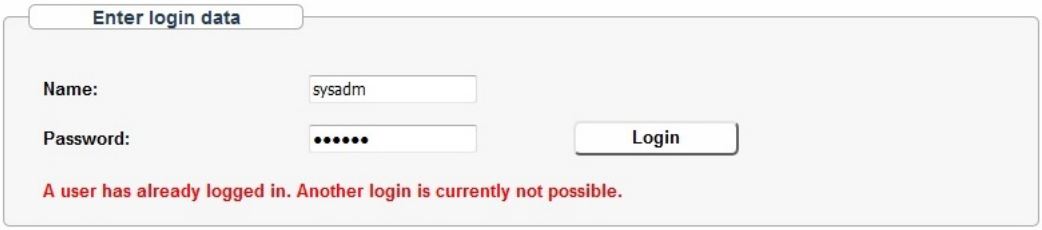


Image 8-5 Another user already logged in to DAKS

8.3 The browser-based user interface

The below picture shows the different areas of the user interface.

These areas have the functions described below.

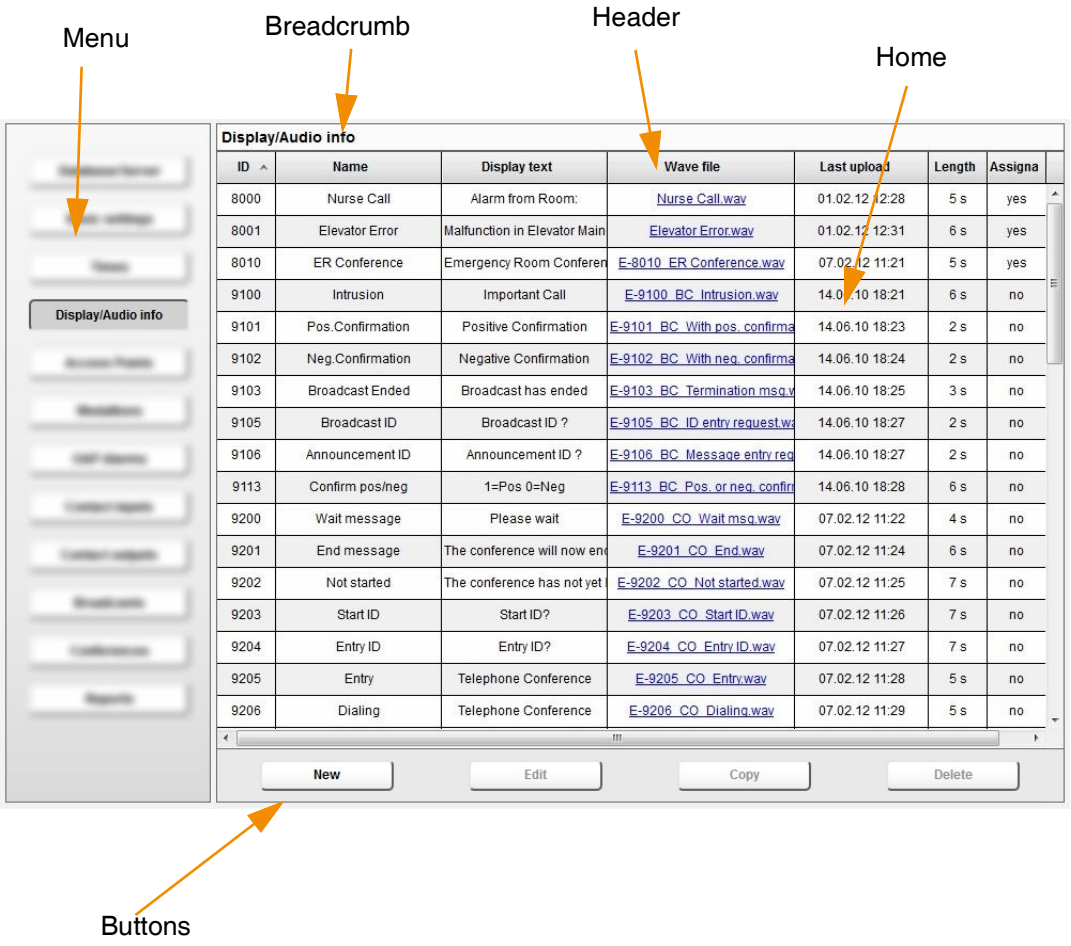


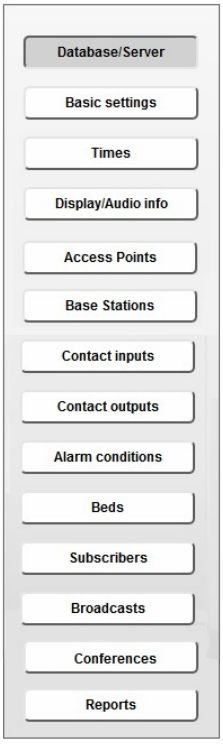
Image 8-6 User interface - structure

Header:

- The header is used for the product name.
- To change the language of the user interface, use the following buttons:
  - Deutsch — German user interface
  - English — English user interface
  - Nederlands — Dutch user interface
  - Français — French user interface
  - Türkçe — Turkish user interface
- Use the button Logoff to log off the user interface.

Menu:

Use the menu to go to the different administration areas:



- Data/Server, see Section 8.5 "Data/Server"
- Basic settings, see Section 8.6 "Basic configuration"
- Times, see Section 8.7 "Time Segments"
- Display/Audio info, see Section 8.8 "Display/audio information"
- Access Points, see Section 8.10 "Access Points"
- Base Stations, see Section 8.11 "Base Stations"
- Contact inputs, see Section 8.13 "Inputs"
- Contact outputs, see Section 8.14 "Contact outputs"
- Alarm profiles, seeSection 8.9 "Alarm profiles"
- Beds, see Section 8.12 "Beds"
- Comm. devices, see Section 8.14.2 "Edit Relay Output"
- Subscribers, see Section 8.16 "Subscribers"
- MCO-views, seeSection 8.16.1 "Assign communication devices"
- Broadcasts, see Section 8.18 "Broadcasts"
- Conferences, see Section 8.18.3 "Create and edit new Skillgroups"
- Reports, see Section 8.20 "Reports"

Image 8-7 Menu

Note:
The menu items access points and base stations are mutually exclusive.

Main window:

Depending on the current menu item, the main window shows:

- the database contents in form of information or for editing (incl. the buttons) or
- report entries.

Breadcrumb:

The breadcrumb trail outputs the complete path to the table or form that is currently open in the main window. You can also click the individual sub paths to get there directly.

Buttons:

Depending on the table or form that is currently open, this area shows you the buttons that are currently available for use (e.g. to add an entry to a table, to save database entries, or to navigate through tables).

Note:
For DAKS, if you want to return to the previous page of your browser, please be careful not to use the corresponding browser navigation button.
Instead, press **Back** or switch to the page via the menu bar or breadcrumb trail.
➤ see Section 8.4 "General buttons"

8.4 General buttons

The below table lists the general table that always have the same function. Please note that these buttons are not further described the further sections.

Some of these buttons are only visible when the user has the matching authorization.

➤ see Section 8.6.5 "Routing"



Note:
All buttons that only appear once in a table or form are described at the location where they appear.

Button	Description
The following buttons appear for all authorization levels:	
Back	Click this button to return to the previous page.
View	This button has the following functions: • Read forms, provided you are logged in with the authorization 'View': ➤ see Section 8.6.5 "Routing" • Read reports: ➤ see Section 8.20 "Reports" Alternatively, you can also open this window by double clicking the pertinent entry in the table.
Print	Click this button for a report printout.
	Use these buttons to jump to the previous or next entry in a dialog.
The following buttons only appear for the authorization level 'Edit' or 'Edit & Upload/ save':	
Save	Click this button to copy edited form entries to the database, or confirm the message box.
Cancel	Click this button to discard changes made to form entries.
New	Click this button to add an entry to a table in the main window. This will automatically open the user dialog window to edit the newly added dataset. The different parameters are automatically filled with their matching default values (shown in square brackets in the below detailed description of the different dialogs).
Delete	Use this button to delete an individual line from a table. Before the line is actually deleted you need to confirm a security prompt first.
Edit	Use this button to switch to the respective form and edit the database entries. Alternatively, you can also open the edit window by double clicking the pertinent entry in the table.
Copy	Click this button to duplicate an entry you selected in the table.

Table 8-1 General buttons

8.5 Data/Server

Use this menu item to configure server information, database information, general database functions, and logging parameters.

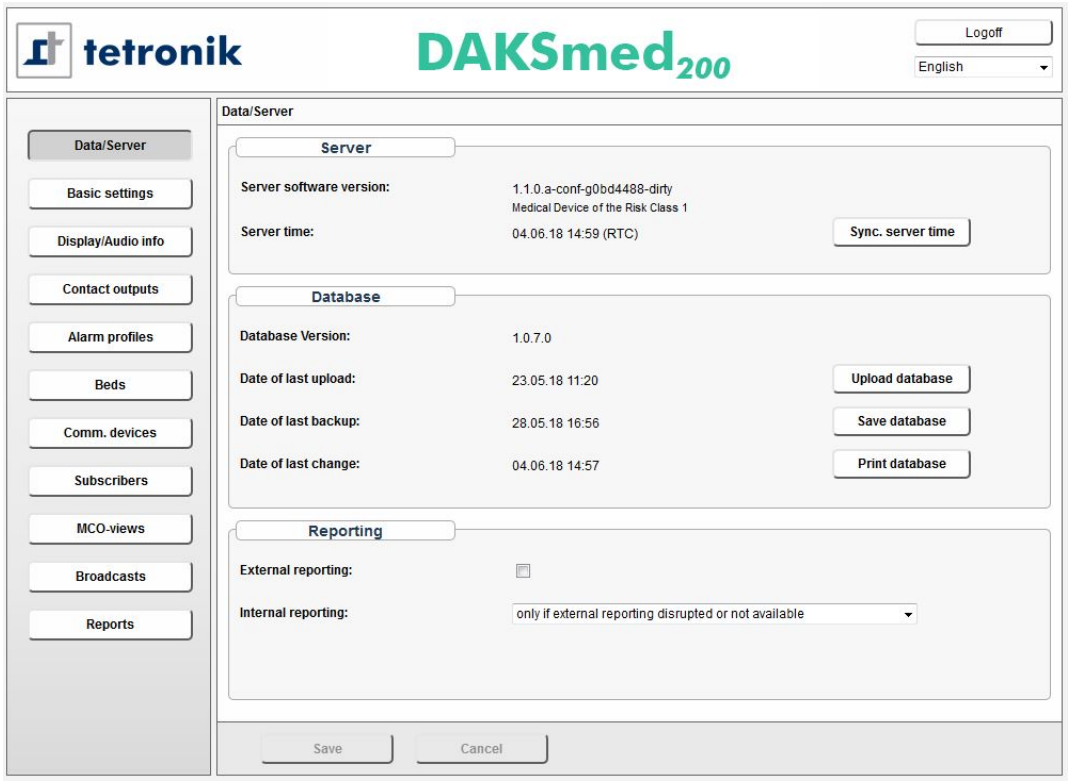


Image 8-8 Data/Server

Parameters	Value range	Description
The area 'Server'		
Server software version	Info field	The name of the software version: <Version>. <Revision 1>. <Revision 2>. <Build Counter>

Table 8-2 Information/parameters of the menu item Data/Server

Parameters	Value range	Description
Server time	Info field	The current internal time of DAKS. This time is refreshed every minute. The type of the internal synchronization is shown in brackets: • (RTC) Synchronization with the internal real-time clock • (NTP) Synchronization via NTP (Network Time Protocol) • (DCF) Synchronization via DCF (only for DAKS-200) ➤ see Section 7.23 "DCF, NTP and system clock parameters"
The area 'Database'		

Database version	Info field	The name of the version of the DAKS database:
		`<Version>.`
		`<Revision 1>.`
		`<Revision 2>.`
		`<Patch Level>`

Last upload	Info field	Date and time when a database was last uploaded to DAKS.
Date of last backup	Info field	Date and time of the last backup of the DAKS database.
Last change	Info field	Date and time when the database was last changed.
The area 'Reporting'		
External reporting	yes, [*no*]	Store reports on an external network drive.
Internal reporting	[*yes*], no, only if external reporting disrupted or not available	Save the reports on the internal CF card.

Table 8-2 Information/parameters of the menu item Data/Server

Buttons:

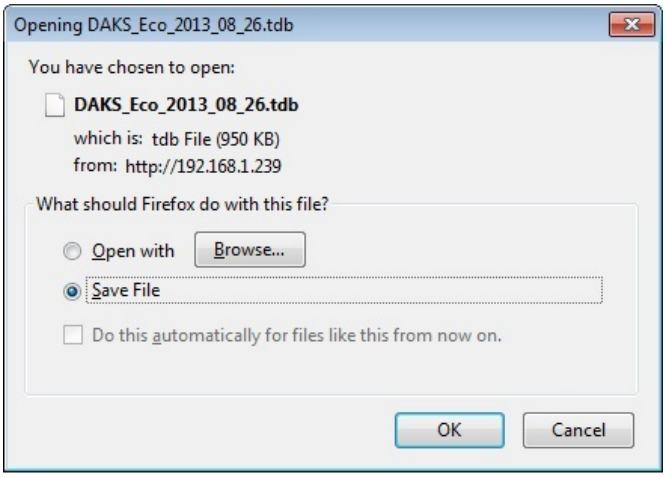
Button	No.	Description
Sync. server time		Click **Synch. server time** to synchronize the system clock time with the local clock time of your PC. In this process, DAKS reads the local time of the PC, irrespective of the configured time zone. **Note:** To synchronize the server time you need to have the authorization 'Edit+Upload/save'.
Save database		Click **Save DB** to save the database in a file with the below name in this format: `'DAKS_Eco_<YYYY>_<MM>_<DD>.tdb'` • <YYYY> year • <MM> month • <DD> day **Note:** To save the database server, you need to have the authorization 'Edit+Upload/save'. The archive location and the storing behavior depend on the browser you are using. A dialog window may pop up, e.g. in the Firefox Browser, asking you to choose the path where you want to save the file and to give to this file a new name: 

Table 8-3 Buttons of Data/Server

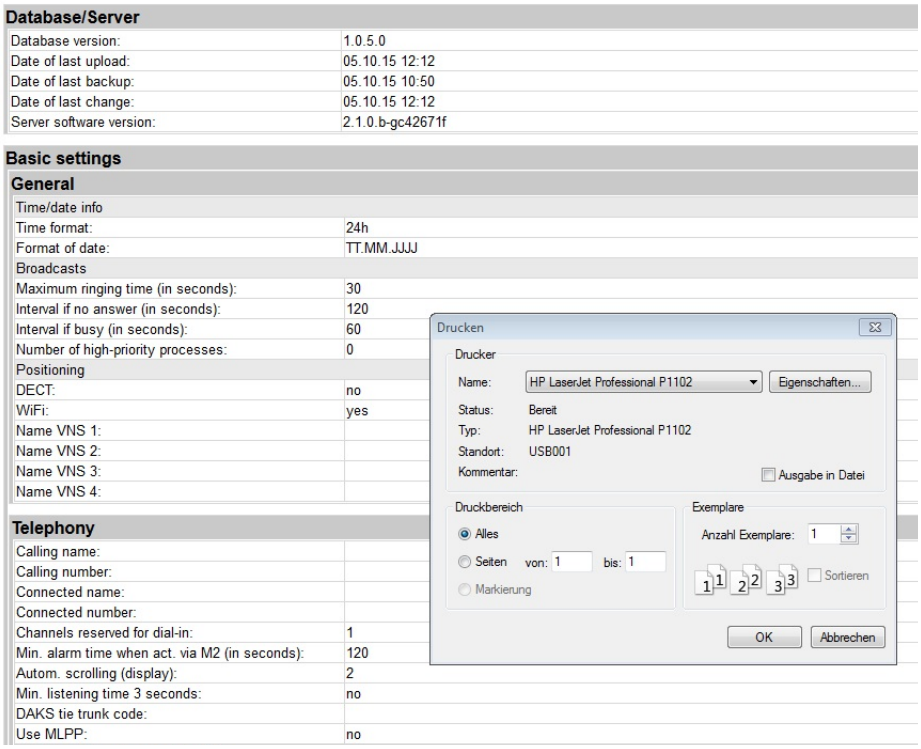
Button	No.	Description
Print DB		Click **Print DB** for a hardcopy printout of the entire content of the database. When you click this button, the following window will pop up with the database content. In addition, the below user dialog will pop up to start a hardcopy printout. **Note:** To printout the database content, you need to have the authorization 'Edit+Upload/save'.  **Note:** If you do not want to printout the file as a hardcopy but save it, close the printout user dialog and use the browser option 'Save'.

Table 8-3 Buttons of Data/Server

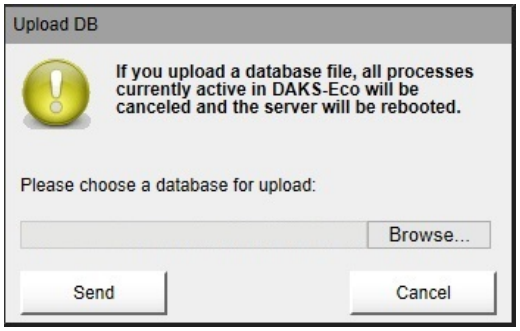
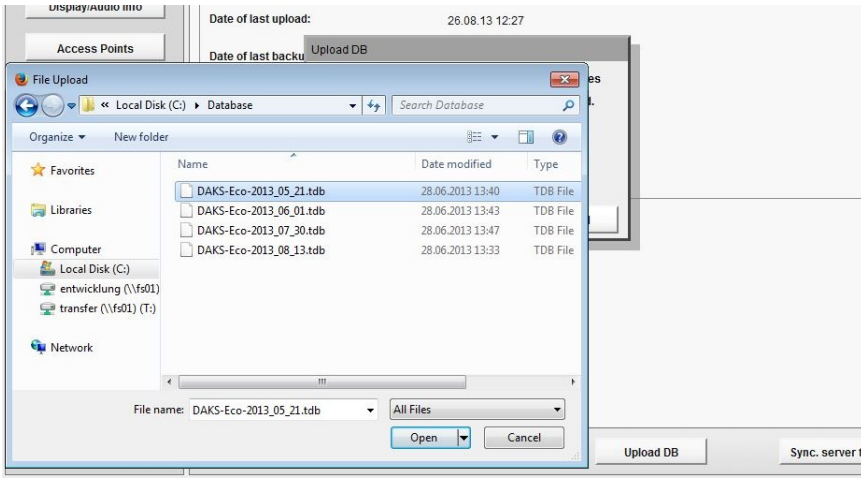
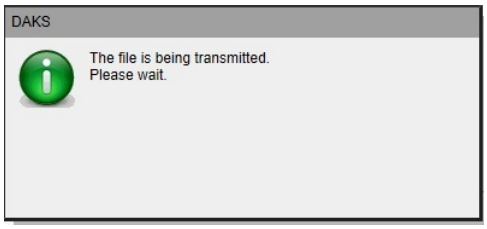
Button	No.	Description
Upload DB		**Note:** To upload a database you need to have the authorization: 'Edit+Upload/save'.
	1.	 After you click **Upload DB**, the above dialog will pop up. This dialog warns you that the system will end all processes and reboot DAKS. Use this input field to enter the complete archive path for the backup file or database file. To do so, click **Send**. ➤ see Step 3. Or click **Browse...** ➤ see Step 2. Click **Cancel** to abort the process without uploading a database. **Note:** With some browsers, a click on the edit field has the same effect as a click on **Browse...**

Table 8-3 Buttons of Data/Server

Button	No.	Description
	2.	 This will open the above user dialog. Choose the backup or database file you want to upload. Next, click **Open**. Click **Send** In the user window 'Upload database'.
	3.	 This will open the above user window. Please wait.
	4.	After the data has been successfully uploaded, the below final user dialog will now pop up. Wait until the server has rebooted, and logon again. ➤ see Section 8.2 "Login to DAKS". 
	5.	 This dialog will pop up when the data upload failed, e.g. when the TCP connection was lost or when the database contains more entries than are enabled. Details are output in VCON, and there in the terminal window 'Web interface'.

8.6 Basic configuration

This menu item contains a number of basic system settings, e.g. dialthru codes and access parameters, to tweak DAKS to specific site requirements.

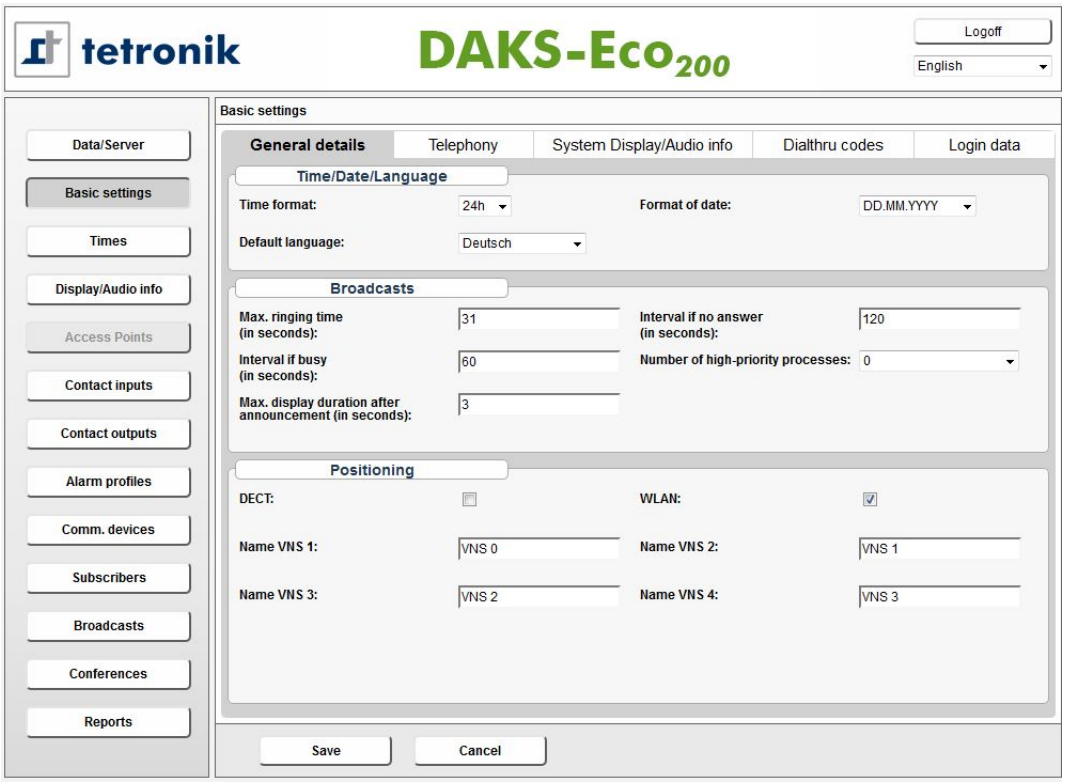


Image 8-9 Basic settings

The below sections describe the forms and the different parameters:

- ➤ see Section 8.6.1 "General details"
- ➤ see Section 8.6.2 "Telephony"
- ➤ see Section 8.6.3 "System Display/Audio info"
- ➤ see Section 8.6.4 "Dialthru codes"
- ➤ see Section 8.6.5 "Routing"

8.6.1 General details

Edit area 'Time/Date/Language'

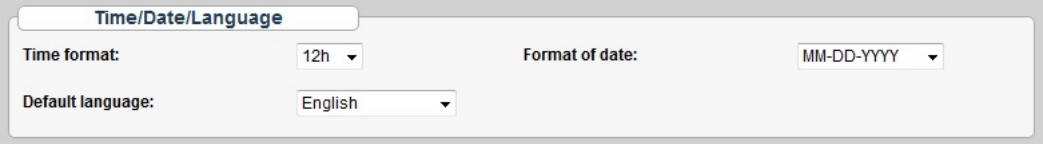


Image 8-10 The area 'Time/Date/Language'

Parameters	Value range	Description
Time format	[*24h*] 12h	The format applied by DAKS to indicate the time.
Format of date	[*DD.MM.YYYY*] MM-DD-YYYY	The format applied by DAKS to indicate the date.
Default language	[*Deutsch*], English, Nederlands Français, Turkçe	The default language used by DAKS.

Table 8-4 Configure Time/Date/Language

Edit area 'Broadcasts'

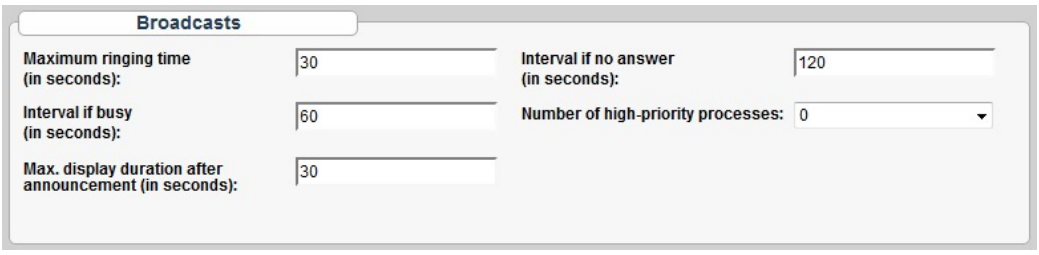


Image 8-11 The area 'Broadcasts'

Parameters	Value range	Description
Maximum ringing time (in seconds)	1..9999 s [*30 s*]	• **For call destinations with the connection type 'Telephony'** The maximum time during which DAKS signals an incoming call to a subscriber. After expiry of this ringing time DAKS ends the call process. • **For call destinations with the connection type 'OAP/OM-AXI'** The maximum time during which DAKS outputs an incoming text message to an OAP/OM-AXI subscriber on the display. After expiry of this ringing time, the text message continues to be shown on the display, but without the softkeys for confirmation.
Call attempts of Busy (in seconds)	1..9999 s [*60 s*]	The wait time between two dial attempts when the line is busy.

Table 8-5 Configuration of Broadcasts

Parameters	Value range	Description
Max. display duration after announcement (in seconds)	1..9999 s [*30 s*]	Use this input field to determine the length of lime a message remains shown on the display after the last playback of the announcement, before DAKS releases the connection.
Interval if 'Not reached' (in seconds)	1..9999 s [*120 s*]	The wait time between two dial attempts when the system was unable to reach the subscriber. ➤ see 'Maximum ringing time'
Number of high-priority processes	[*0*]..9	Reserve and set aside process resources for high-priority processes, e.g. for a fire alarm. High-priority processes interrupt low-priority processes to ensure maximum channel capacity.

Table 8-5 Configuration of Broadcasts

Edit area 'Positioning'

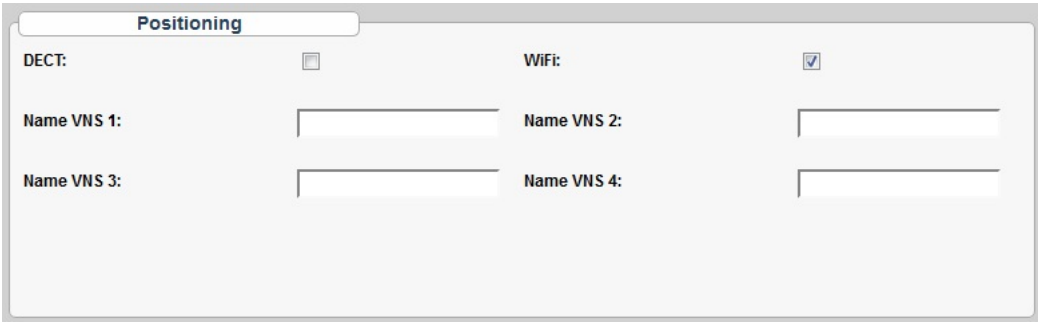


Image 8-12 The area 'Positioning'

Parameters	Value range	Description	
DECT	On, [*Off*]	Positioning is via DECT network. This setting activates the button **Base Station** in the menu bar.	You can select max. of the options!
WLAN	[*On*], Off	Positioning is via WiFi network. This setting activates the button **Access Points** in the menu bar.	
VNS name only visible if WiFi is = 'On'			
Name VNS 1..4	32 characters [ ]	The names of up to 4 virtual WiFi networks used by the medallions to communicate. For every access point, a separate MAC address can be assigned to each VNS. For the access points, only the virtual networks that are configured here are offered: ➤ see Section 8.10 "Access Points"	

Table 8-6 Configuration of Positioning

Edit area 'Messaging types'

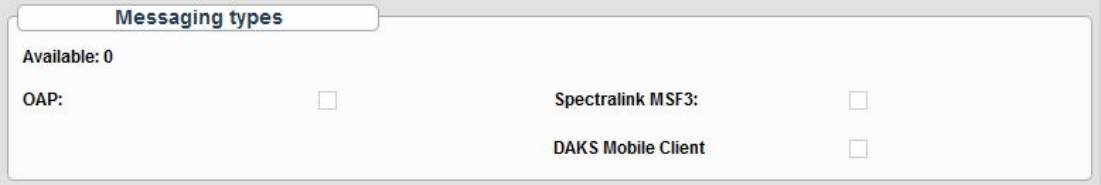


Bild 8-13 Bereich Messaging-Typen

Parameters	Value range	Description
Available	Info box	Available number of usable messaging types **Note:** When removing certain messaging types, either connection types already assigned to a terminal device must be removed from the terminal device list or corresponding terminal devices must be deleted.
OAP	*on*, [off]	Connection type OAP is enabled for terminal devices
OM-AXI	*on*, [off]	Connection type OM-AXI is enabled for terminal devices
Spectralink MSF3	*on*, [off]	Connection type Spectralink MSF3 is enabled for terminal devices
DAKS-Mobile-Client	*on*, [off]	Connection type DMC is enabled for terminal devices

Tabelle 8-7 Konfiguration Messaging-Typen

8.6.2 Telephony

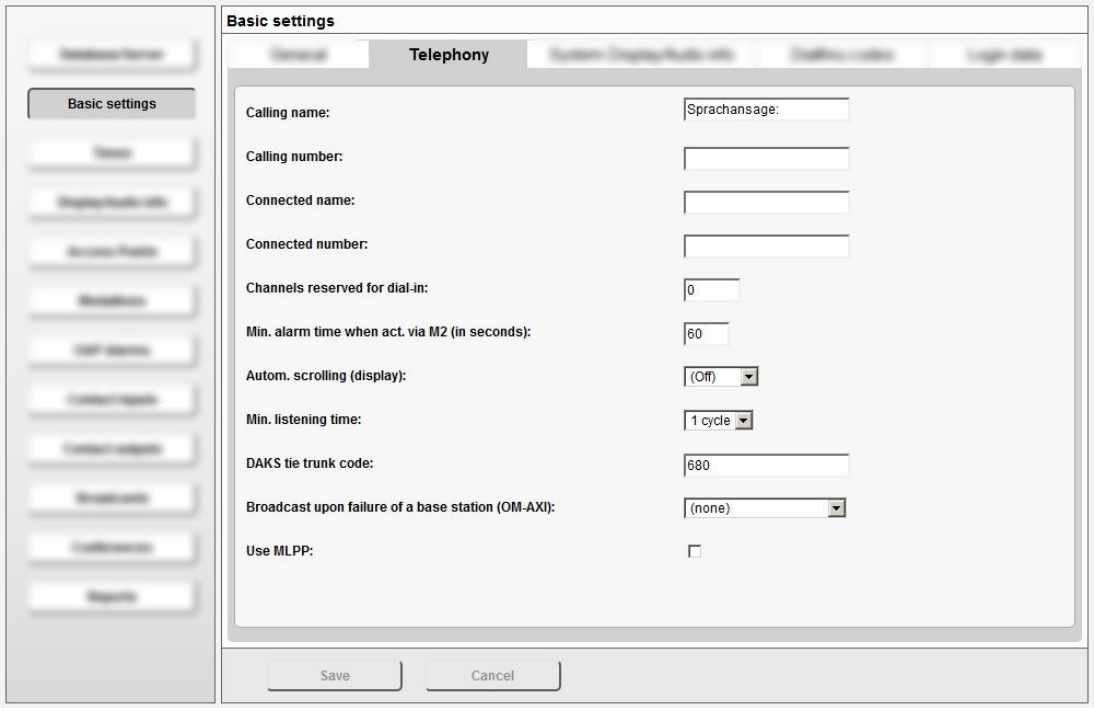


Image 8-14 The area 'Telephony'

Parameters	Value range	Description
Calling Name	32 characters [ ]	Where applicable, the name and number that are sent for outgoing (external) calls and that are output within the network to the call recipient during the ringing phase, namely as the calling name and calling number: ➤ see Section 3.3.6 "The reached criteria"
Calling Number	22x {0..9,*,#, +,-,/,(,)} [ ]	
Connected Name	32 characters [ ]	The name and number that are output to the caller as the connected subscriber for incoming calls during the ringing phase.
Connected Number	22x {0..9,*,#, +,-,/,(,)} [ ]	
Channels reserved for dial-in	0..3 [*0*]	Number of channels reserved for the dial-in **Caution!** All channels that are reserved for subscribers to call in by themselves (dial-in), are not available for any outgoing calls and can therefore not be used in an alarm, not even if no subscriber is currently calling in.

Table 8-8 Configuration of Telephony

Parameters	Value range	Description
Min. alarm time when act. via M2 (in seconds)	0...999 [*0*]	To make sure that the same broadcast is not activated twice or even more times from the M2 device, configure the minimum run time for the activated alarm. If the broadcast that was launched from the M2 device ends before all dial attempts made by the M2 have been completed, the process length of the broadcast is extended by the time that is still remaining. In this way, excess M2 call activations are ignored.
Autom. scrolling (display)	[*off*], 1.5 s 2.0 s 2.5 s 3.0 s 3.5 s	The broadcast message shown on the subscriber's display is automatically scrolled line by line and at the selected interval. If this option is not selected the subscriber can scroll the message himself with '*' and '#'.
Min. listening time	[*1 cycle*] 0.5 s 1.0 s 1.5 s 2.0 s 2.5 s 3.0 s	For broadcasts/alertings, you can define if the voice announcements must generally be played to the called subscribers once (1x) and in their full length, or if it is sufficient that the voice announcements are played to the called subscriber only for the specified minimum length of time.
DAKS tie trunk code	0..16 [ ]	Input field to enter the tie trunk code (max. 16 digits) which DAKS transmits to the WL3 or i62 communication devices, for callback (return) calls.
Use MLPP	[*no*], yes	When this parameter is enabled the system applies MLPP. Otherwise the MLPP function is deactivated and the parameter 'Call with MLPP-Level Flash'@'Broadcasts'->'Broadcast members' is not shown.
Broadcast call if a base station fails (OM-AXI)	Reference Broadcast []	Broadcast call that is started when a Mitel/Aastra base station fails.

Table 8-8 Configuration of Telephony

8.6.3 System Display/Audio info

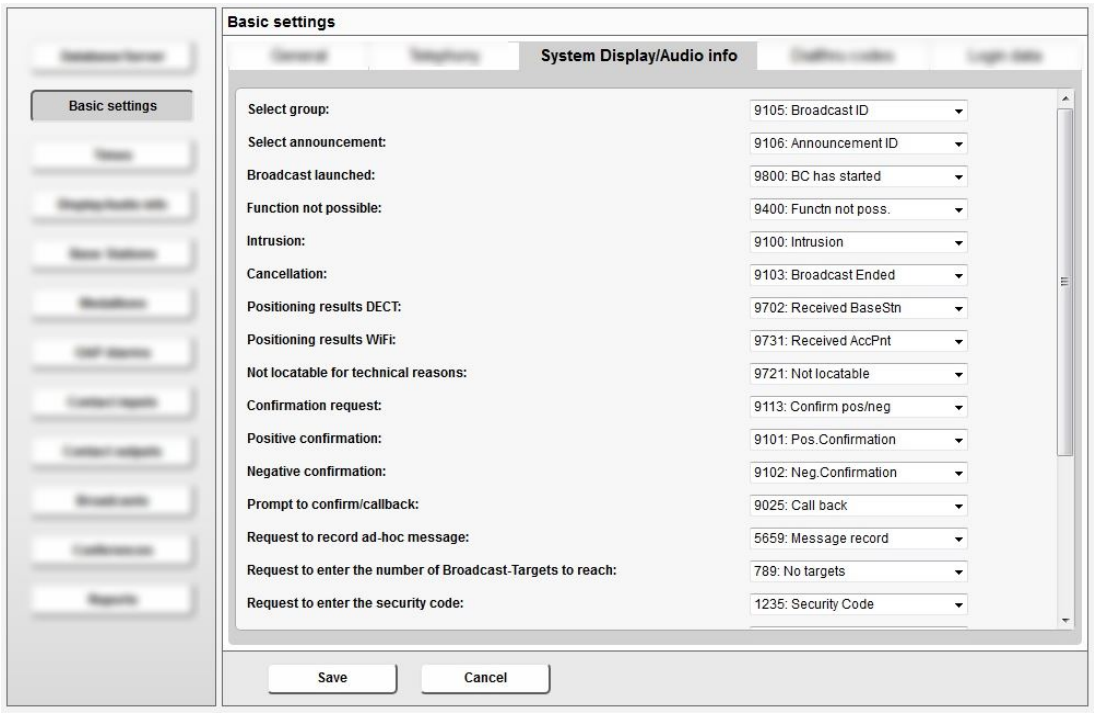


Image 8-15 The area 'System Display/Audio info'

Parameters	Description
Entry of Broadcast ID	Prompt to enter the broadcast identifier when launching a broadcast over the phone. **Default ex works:** • Display text: `Broadcast ID?` • Voice message: *"Please enter the Broadcast ID."*
Entry of Display/ Audio info ID	Prompt to enter the announcement identifier when starting a broadcast over the phone. **Default ex works:** • Display text: `Announcement ID?` • Voice message: *"Please enter the announcement ID"*
Broadcast has started	This message appears when the broadcast was successfully launched. **Default ex works:** • Display text: `BC has started` • Voice message: *"Broadcast has started"*
Function not possible	This message appears when the system is not able to launch the broadcast over the phone. **Default ex works:** • Display text: `Functn not poss.` • Voice message: *"The service is not active at the present time."*

Table 8-9 Configuration of System Display/Audio info

Parameters	Description
Intrusion	This message is played for intrusion to a subscriber whose line is busy. **Default ex works:** • Display text: `Important call!` • Voice message: *"Please finish your conversation for an urgent message."*
Cancellation	This message is played to a called broadcast target when DAKS ends this broadcast. **Default ex works:** • Display text: `Broadcast Ended` • Voice message: "We don't need you for the time being. Please hang up now."
Positioning results DECT	The intro of the positioning results for a Medallion, e.g. for a GMD medallion, for positioning processes via DECT. **Default ex works:** • Display text*:* `received BaseStn.` • Voice message: "Base stations received'
Positioning results WLAN	The introduction of the positioning results computed for a WL3 or i62 communication device, in combination with positioning via WiFi. **Default ex works:** • Display text: `received Access-P.` • Voice message: "*Access Points received*"
Not locatable for techn. reasons	This message is played when a medallion, e.g. a GMD medallion or a WL3 or i62 communication device, can currently not be located for technical reasons. **Default ex works:** • Display text: *Not locatable* • Voice message: *"The terminal can currently not be located."*
Confirmation request	Prompt to confirm a broadcast announcement positive or negative. **Default ex works:** • Display text*:* `1=POS 0=NEG` • Voice message: *"For a positive confirmation: press 1. For a negative confirmation: press 0."*
Positive confirmation	The message played to a subscriber who confirmed positive. **Default ex works:** • Display text: `Pos. Confirmation` • Voice message: *"You have confirmed positively."*
Negative confirmation	The message played to a subscriber who confirmed negative. **Default ex works:** • Display text: `Neg. Confirmation` • Voice message: *"You have confirmed negative."*
Request for confirmation/ callback	Prompt to the called target to confirm a broadcast announcement positive or negative, or to trigger a callback call to the caller. **Default ex works:** • Display text: `1=POS 0=NEG 5=CB` • Voice message: *"To talk to be caller, press 5. To bookmark the call, press 1. If you cannot take the call, press 0."*

Table 8-9 Configuration of System Display/Audio info

Parameters	Description
Prompt to record ad hoc message	Prompt to record an ad hoc announcement. **Default ex works:** • Display text: `RECORD.#=Cancel` • Voice message: *"Recording announcement. Please speak after the tone. Press the # pound key to end the recording."*
Prompt to enter the number of broadcast targets to reach	Prompt to enter the total number of broadcast targets that must be reached, in form of a single digit. **Default ex works:** • Display text: `Number targets?` • Voice message: *"Please enter the umber of subscribers to reach."*
Prompt to enter the security code	Prompt requesting the entry of the Security code. **Default ex works:** • Display text: `Sec. code?` • Voice message: *"Please enter the security code and close your entry with the pound # key."*
Prompt to enter the activation code	Prompt requesting the entry of the activation code. **Default ex works:** • Display text: `Active. code?` • Voice message: *"Please enter the activation code."*
Prompt to start the broadcast	Prompt to press the star * key in order to launch the broadcast. **Default ex works:** • Display text: `*=Broadcast start` • Voice announcement: *"Please press the star key to launch the Broadcast."*
Waiting for conferencing	This message is to inform that no other subscriber has yet entered into the conference. **Default ex works:** • Display text: `Please wait...` • Voice message: *"Please wait."*
End of conference	This message is played to the conferees at the conference end. **Default ex works:** • Display text: `End message` • Voice message: *"The Conference is now ended."*
Conference not started	This message is played to indicate that the conference has not started yet. **Default ex works:** • Display text: `Wait for start` • Voice message: *"The Conference was not started yet. Please wait."*
Entry of Conference Start ID	Prompt to enter of the Start ID of the conference that shall be started. **Default ex works:** • Display text: `Start-ID?` • Voice message: *"Please enter the Conference Start ID."*

Table 8-9 Configuration of System Display/Audio info

Parameters	Description
Entry of Conference Entry ID	Prompt to enter the Entry ID of an already active and running conference, in order to enter into it. **Default ex works:** • Display text: `Entry ID?` • Voice message: *"Please enter the Conference Entry ID."*
Confirmation request for DAKS Communicator	Prompt to confirm notifications received from DAKS Communicator either positive or negative. **Default ex works:** • Display text*: Pos/Neg (green/red)* • Voice message: *"To confirm positive, press the green button. To confirm negative, press the red button."*
Speaker signal at low alarm priority	Alarm sound that is played on the SIP speakers when a low-priority alarm condition is present. **Note:** If no alarm tone is assigned, there is no output to the SIP speakers. If the assigned announcement is invalid (announcement duration is zero), a default sound is played.
Speaker signal at medium alarm priority	Alarm sound that is played on the SIP speakers when a medium priority alarm condition is present.
Speaker signal at high alarm priority	Alarm sound that is played on the SIP speakers when a high priority alarm condition is present.
Activation connection control M3 Plus	Message that the connection control on M3 Plus has been activated. **Default ex works:** • Display text: DAKS-PNA • Voice message: *"You have activated personal security"*
Registered M3 Plus	Message when an M3 Plus is registered. **Default ex works:** • Display text: DAKS-PNA • Voice message: *"Your emergency handset is now logged in to the emergency call center"*
Deactivation of connection control M3 Plus	Message that the connection control on M3 Plus has been deactivated. **Default ex works:** • Display text*:* DAKS-PNA • Voice message: *You have deactivated personal security"*
Logged off M3 Plus	Message when an M3 Plus is logged off. **Default ex works:** • Displayt text*:* DAKS-PNA • Voice message: *Your emergency handset is now logged off from the emergency call center"*

Table 8-9 Configuration of System Display/Audio info

8.6.4 Dialthru codes

The different dialthru codes serve to:

- start broadcasts or conferences.
- dial into active and ongoing processes.
- record voice announcements and have them played back.

➤ see in particular Section 3.3 "Workflow of Broadcasts"

Note:
The Dialthru codes must be unambiguously left-aligned. For example, if the dialthru code **10** is already assigned, **10**0 or **10**00 can no longer be assigned.

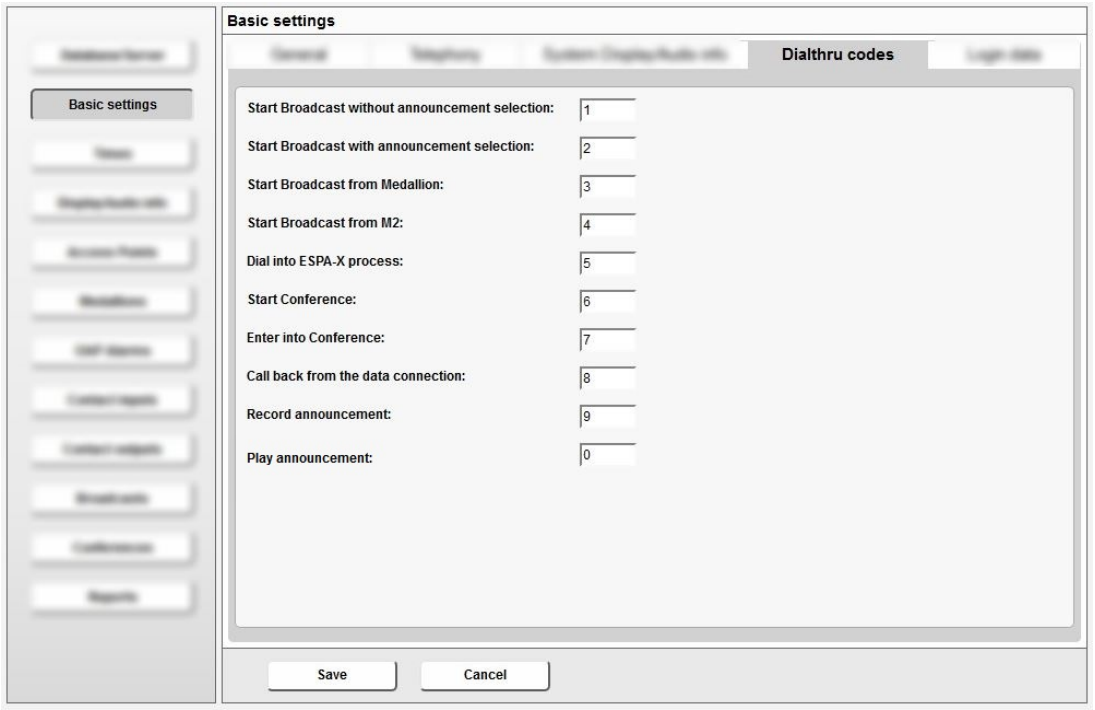


Image 8-16 The area 'Dialthru codes'

Parameters	Value range	Description
Start broadcast without announcement selection	0.. 4 digits, [ ]	This is the dialthru code to activate a broadcast over the phone, with DAKS transmitting the display/audio info that is assigned to that broadcast. ➤ see Section 3.2.1 "... over the phone without announcement selection"
Start broadcast with announcement selection	0.. 4 digits, [ ]	This is the dialthru code to activate a broadcast over the phone, with the initiator having to select the display/audio info that shall be transmitted to the alerted targets. ➤ see Section 3.2.2 "... over the phone with announcement selection"

Table 8-10 Configuration of Dialthru codes

Parameters	Value range	Description
Start broadcast from medallion	0..4 digits [ ]	This is the dialthru code to launch a broadcast, e.g via a GMD Medallion, with DAKS transmitting the voice message that is assigned to that broadcast, incl. the computed positioning results. ➤ see Section 3.2.7 "... via GMD-Medaillon (DECT)"
Start broadcast from M2	0..4 digits [ ]	This is the dialthru code to start a broadcast from an M2 device. ➤ see Section 8.6.1 "Edit area 'Broadcasts'"
Dial into ESPA-X process	0..4 digits [ ]	The Dialthru code to dial into an ESPA-X transparent mode process.
Start Conference	0..4 digits [ ]	This is the dialthru code to start a conference over the phone. ➤ see Section 3.4.2 "Behavior of Conferences"
Enter into conference	0..4 digits [ ]	Dialthru code to enter into an ongoing conference over the phone. ➤ see Section 3.4.5 "Dial into an active Conference over the phone via the Entry ID"
Callback from data connection	0..4 digits [ ]	The dialthru code for callback calls from a WL3 or i62 telephone to DAKS.
Record announcement	0..4 digits [ ]	The dialthru code to record a voice announcement over the phone.
Play announcement	0..4 digits [ ]	The dialthru code to have a voice announcement played back over the phone.

Table 8-10 Configuration of Dialthru codes

8.6.5 Routing

This section is used to set up the routing table for outgoing calls.

➤ see Section 3.5 "VoIP-Switch"

Note:
Post-dialling codes, subscriber numbers and routing entries must be unique and left-justified. For example, if the post-dialling code **10** is assigned, the **10**0 or **10**00 cannot be assigned.

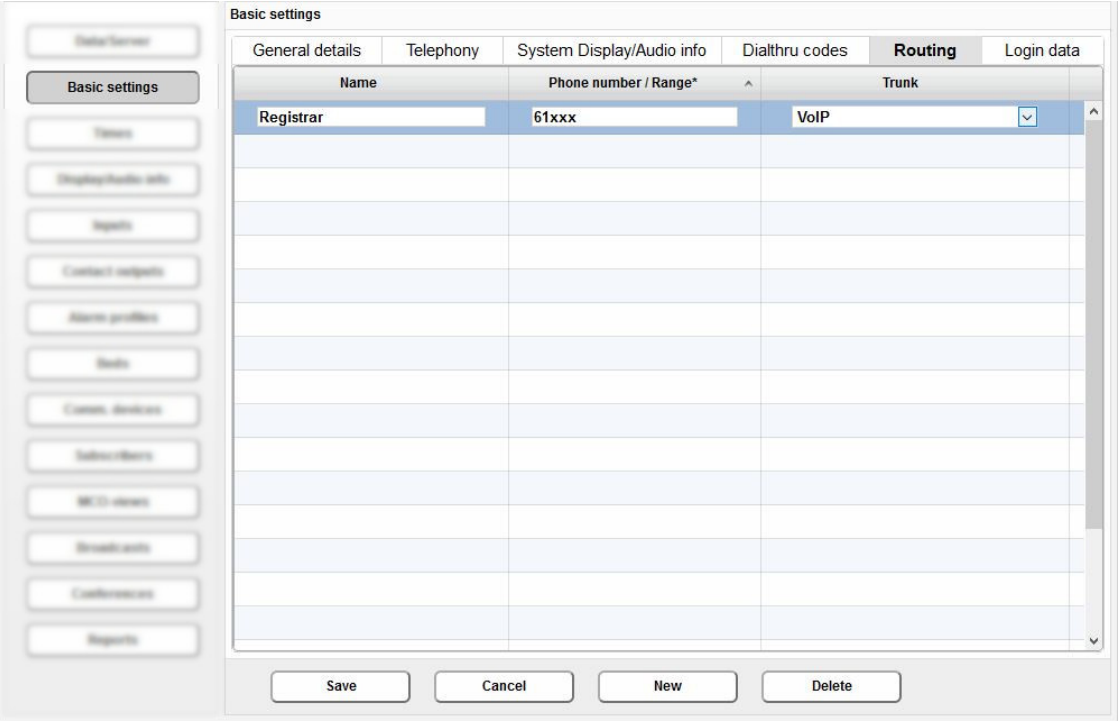


Bild 8-17 The area 'Routing'

Parameter	Werte-bereich	Beschreibung
Name	0..30 characters, [ ]	Name of the route.
Phone number/Range	16x {0..9,*,x} [ ]	Phone number or phone number range, where "x" is a wildcard for any dial-in digits. After an "x", no other characters except "x" are allowed.
Trunk	Reference Trunk [*(none)*]	Trunk via which these numbers/number ranges can be reached.

Tabelle 8-11 Konfiguration Routing

8.6.6 The Login data

Use the 'Login data' to assign the password security you want to apply as well as the user names and user passwords for the following authorization levels:

- **View**
  Users with this authorization level may only read the database and reports, but have no right to make any changes.
- **Edit**
  Users with this authorization level may read and edit the database. They do not, however, have the right to save or upload the entire database, nor are they allowed to delete reports.
- **Edit & Upload/save**
  Users with this authorization level may read and edit the database. They may also save, import and export the entire database, and also export and delete reports.

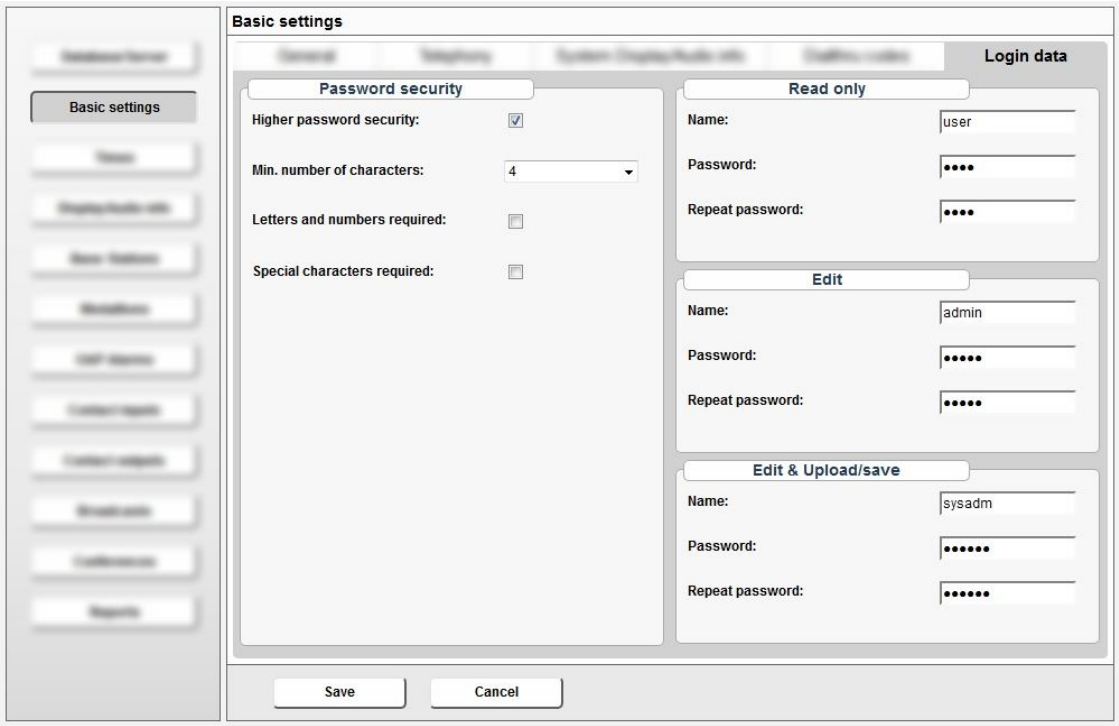


Image 8-18 The area 'Login data'

8.6.7 Add and edit the access data



Parameters	Value range	Description
Password security		
Higher password security	yes, [*no*]	Defines if the minimum password length is increased, from at least one character to at least four characters.
Min. number of characters	4..16 characters [*4*]	Defines the minimum length of the passwords.
Letters and numbers required	yes, [*no*]	Defines if the password must consist of both letters and numbers.
Special characters required	yes, [*no*]	Defines if the password must also contain special characters.

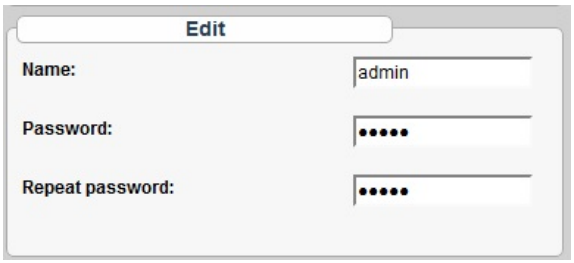
Table 8-12 Configuration of access data - Password security

Note:
You can only see and edit access data if it matches your own authorization level or a lower authorization level.



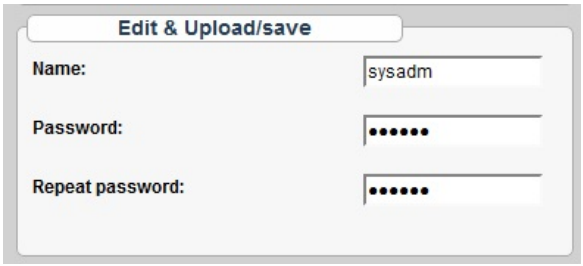
Parameters	Value range	Description
View		
User name	1..16 characters [*user*]	The user name and password of the respective authorization level.
Password	1..16 characters [*user*]	DAKS only accepts passwords when the entries made in the fields 'Password' and 'Repeat password' are fully identical.
Repeat password	1..16 characters [*user*]	

Table 8-13 Configuration of Login data - View



Parameters	Value range	Description
Edit		
User name	1..16 characters [*admin*]	s. a.
Password	1..16 characters [*admin*]	s. a.
Repeat password	1..16 characters [*admin*]	s. a.

Table 8-14 Configuration of Login data - Edit



Parameters	Value range	Description
Edit+Upload/save		
User name	1..16 characters [*sysadm*]	s. a.
Password	1..16 characters [*sysadm*]	s. a.
Repeat password	1..16 characters [*sysadm*]	s. a.

Table 8-15 Configuration of Login data - Edit & Upload/save

8.7 Time Segments

Use this area to define up to 10 different time segments and as many as 20 individual holidays. You can assign to each broadcast target and every contact an individual time segment.

Once assigned, it is during this time segment that the system calls the broadcast members and evaluates the contact.

For each time segment you can configure if its setting shall also apply to holidays.

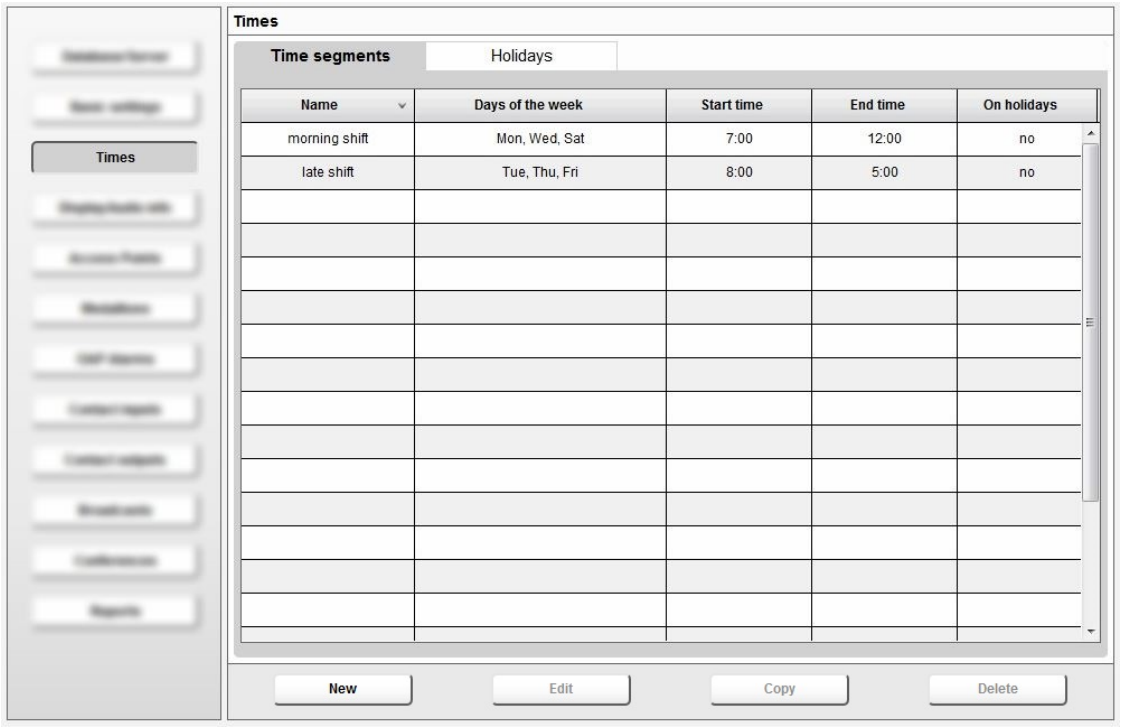


Image 8-19 The area 'Time segments/Holidays'

The below sections describe the forms and the different parameters:

- ➤ see Section 8.7.1 "Add and edit Time Segments"
- ➤ see Section 8.7.2 "Add and edit Holidays"

8.7.1 Add and edit Time Segments

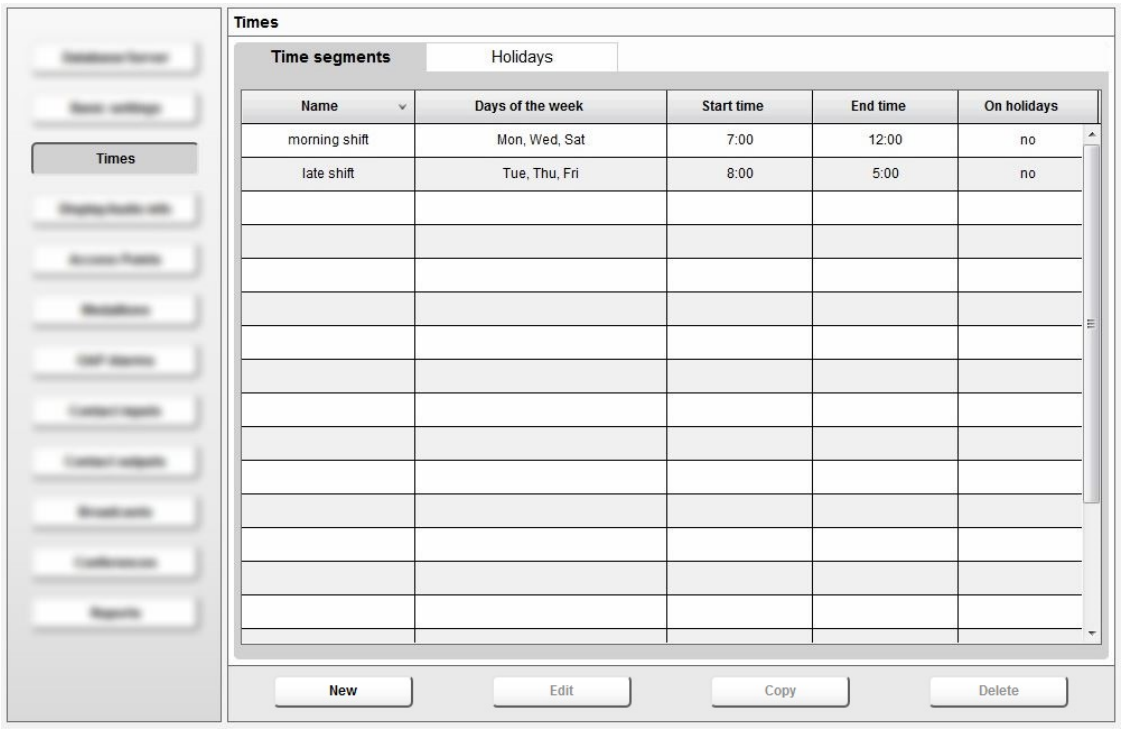


Image 8-20 The area 'Time segments'

Add and edit Time Segments

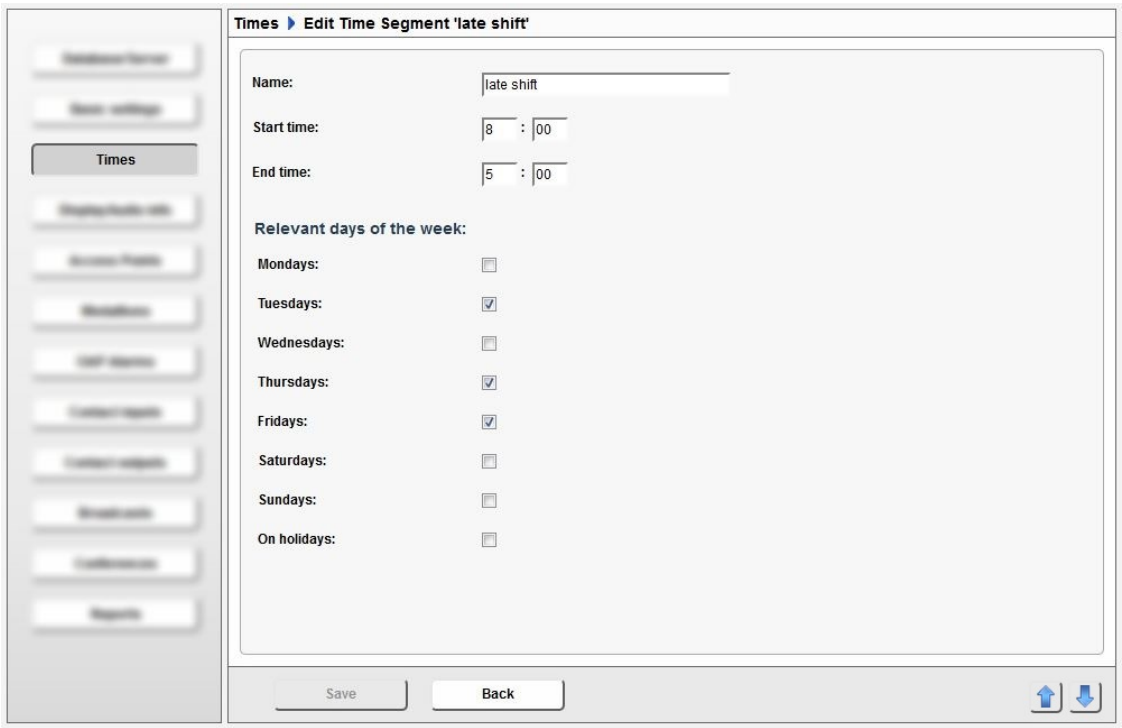


Image 8-21 Edit time segments

Parameters	Value range	Description
Description	32 characters [ ]	The name given to the time segment.
Start time	0..24 [ ]	The start time of the time segment.
End time	0..24 [ ]	The end time of the time segment.
Mondays...Sundays	yes, [*no*]	This time segment is evaluated/not evaluated Mondays...Sundays.
On holidays	yes, [*no*]	This time segment is evaluated/not evaluated on holidays.

Table 8-16 Edit parameters of Time Segments

8.7.2 Add and edit Holidays

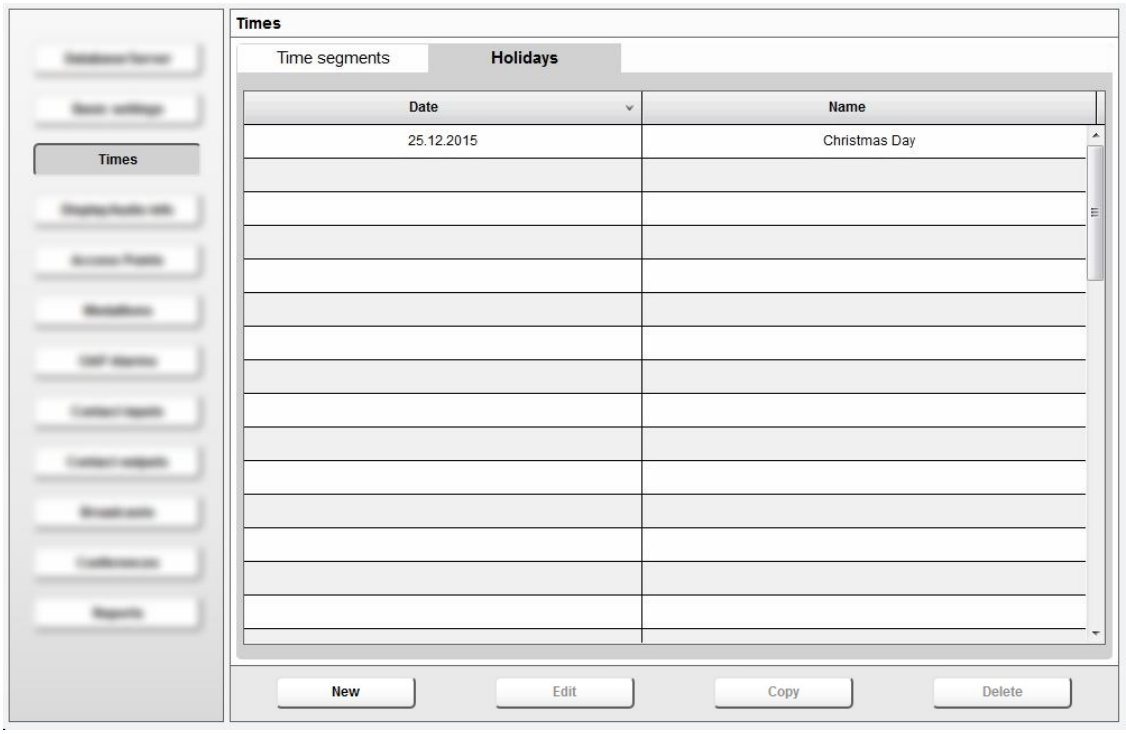


Image 8-22 The area 'Holidays'

Add and edit Holidays

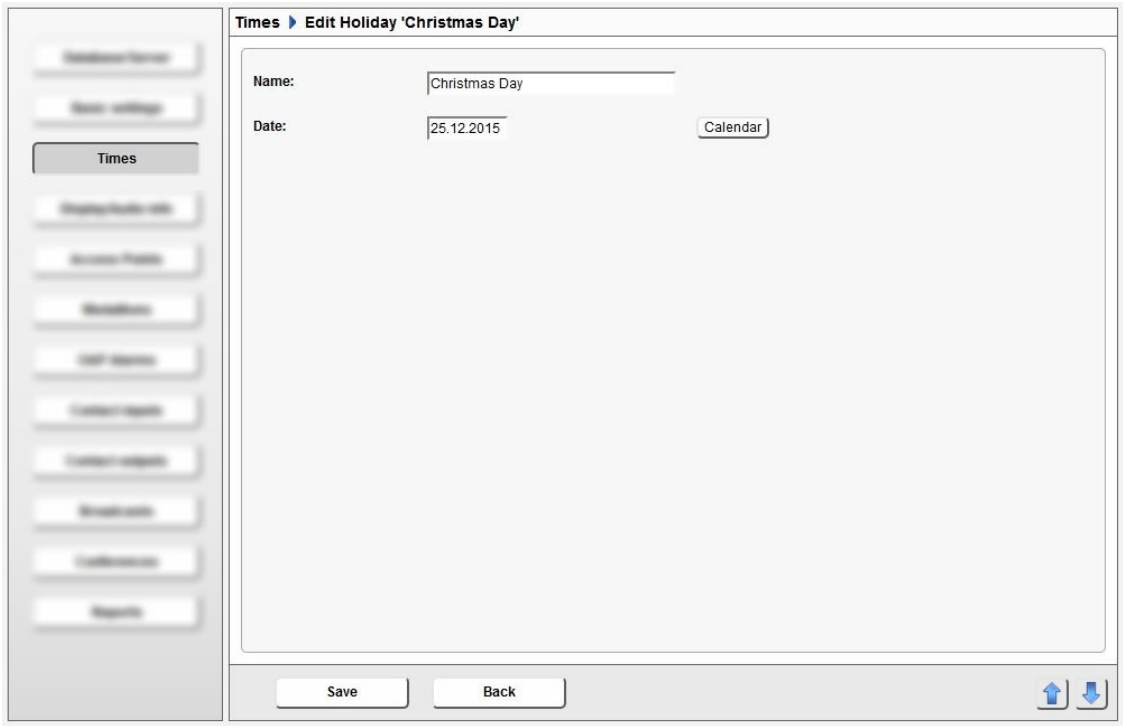


Image 8-23 Edit holidays

Parameters	Value range	Description
Description	32 characters [ ]	The name of the holiday.
Date	DD.MM.YYYY [ ]	Date of the holiday.
Calendar	DD.MM.YYYY [ ]	Calendar for a better overview and to select the date.

Table 8-17 Edit parameters of Holidays

8.8 Display/audio information

The display/audio info is a combination of a text message that is output by DAKS on the display of the alerted subscriber, plus a voice message that DAKS plays to the subscriber.

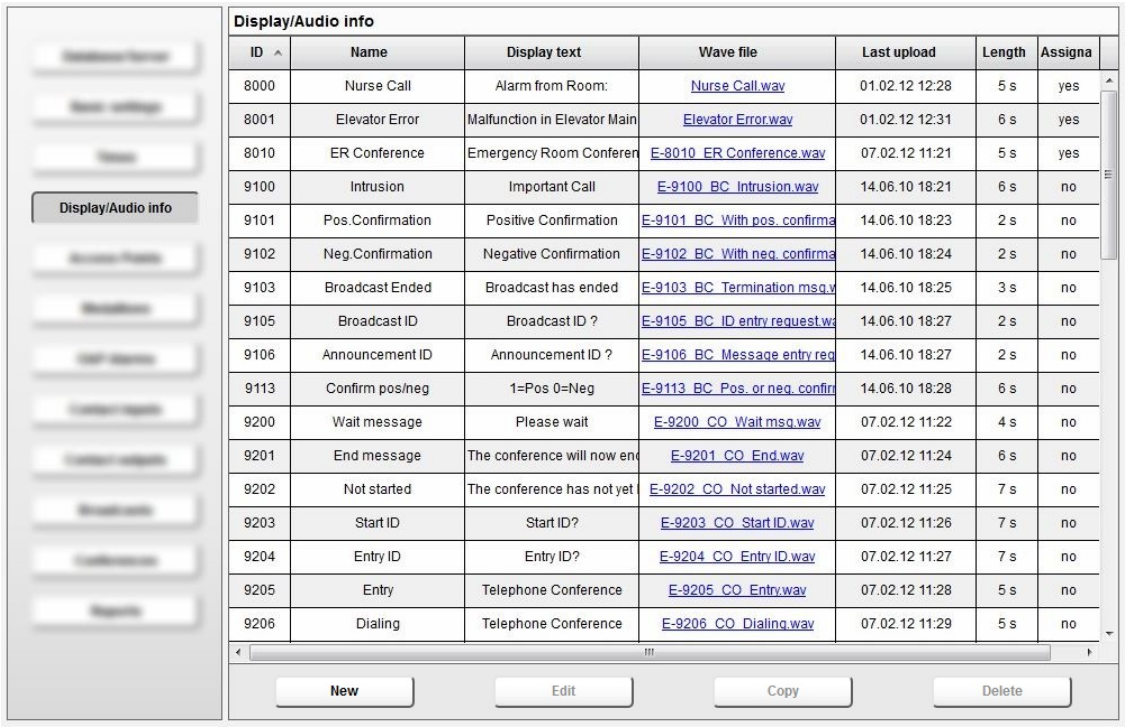


Image 8-24 Display/Audio info

8.8.1 Add and edit Display/Audio info



Image 8-25 Edit Display/Audio info

Parameter/ Button	Value range	Description
ID	4 digits [ ]	Identifier of the display/audio info. This identifier is used: • when launching a broadcast over the phone with announcement selection. ➤ see Section 3.2.2 "... over the phone with announcement selection" • when launching a broadcast via a host interface (ESPA 4.4.4/TAP or ESPA-X). ➤ see Section 3.2.5 "... via SNMP Trap" • when recording a voice announcement or having an announcement played back. ➤ see Section 3.1.1 "Record voice announcements over the phone" ➤ see Section 3.1.2 "Have Voice Announcements Played Back over the Phone"
Description	16 characters [ ]	The name of the display/audio info that is output by DAKS when using this info where applicable.

Table 8-18 Edit display/audio info

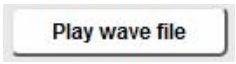
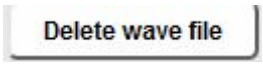
Parameter/ Button	Value range	Description
Can be assigned to a broadcast via telephone	[*yes*], no	This display/audio info may be selected when launching a broadcast over the phone, and used as the broadcast announcement.
Record over the phone	yes, [*no*]	This display/audio info may be recorded/may not be recorded over the phone.
Display text	160 characters [ ]	This text is output on the display of the called communication device.
Comment	128 characters [ ]	Comment area to describe the function or content of the display/audio info.
Name of wave file	Info field	The name of the original wave file that was uploaded.
Length	Info field	The length of the announcement in seconds, rounded up to the next full second.
Last upload	Info field	The date and time when this wave file was last uploaded.
	Button	Playback of this wave file. This button is not active unless a wave file is assigned.
	Button	Upload wave file: ➤ see Section 8.8.2 "Upload announcements (wave files) for the first time"
	Button	Delete the wave file's assignment to this display/audio info. This button is not active unless a wave file is assigned.

Table 8-18 Edit display/audio info

8.8.2 Upload announcements (wave files) for the first time

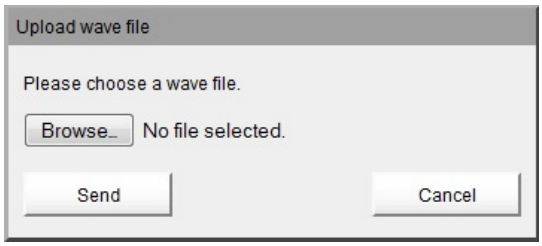
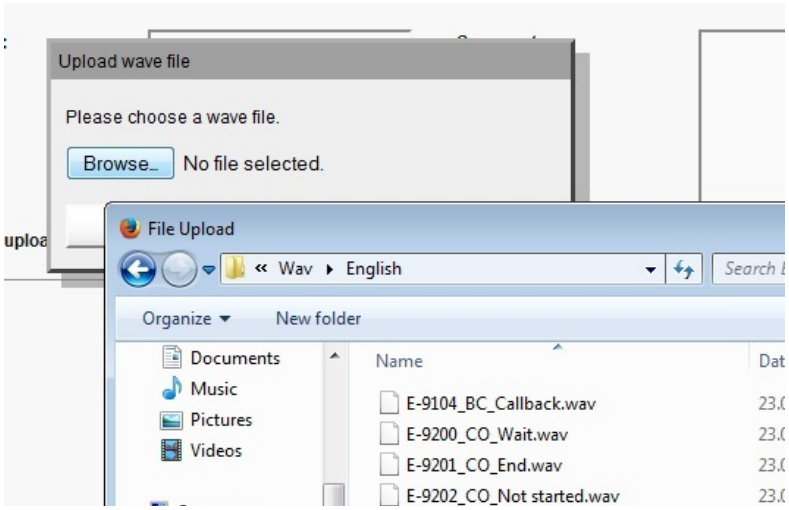
Button	No.	Description
Upload wave file		**Note:** The following message procedure automatically appears when a new voice message is added, after it is saved. The button 'Upload wave file' is only shown when this form is opened the next time.
	1.	 After you click the button **Upload wave file**, the above dialog will open. Use this input field to enter the name of the wave file including its complete path. Click **Send**. ➤ see Step 3a. or 3b. Next, click **Browse...**: ➤ see Step 2. **Note:** With some browsers, the click on the edit field has the same effect as the click on **Browse...**.
	2.	 This will open the above user window. Select the proper wave file. Next, click **Open**. Finally, click **Send** in the user window 'Upload wave file'.

Table 8-19 Upload announcements (wave files) for the first time

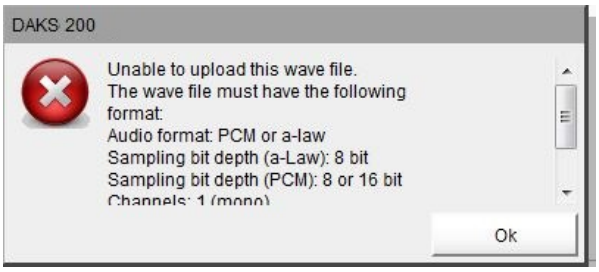
Button	No.	Description
	3a.	 Dialog when the data transfer was successful
	3b.	 Dialog when the data transfer failed

Table 8-19 Upload announcements (wave files) for the first time

Note:
Wave files must have the following properties:

- Audio format: PCM or a-law
- Sample size (a-law): 8 bit
- Sample size (PCM): 8 or 16 bit
- Channels: 1 (mono)
- Sample rate: 8 kHz
- Maximum length: 15 seconds

8.9 Alarm profiles

Use this area to add and edit alarm profiles. Alarm profiles subdivided into:

- 'Medical alarm profiles'
- 'General alarm profiles'
- 'System alarm profiles'

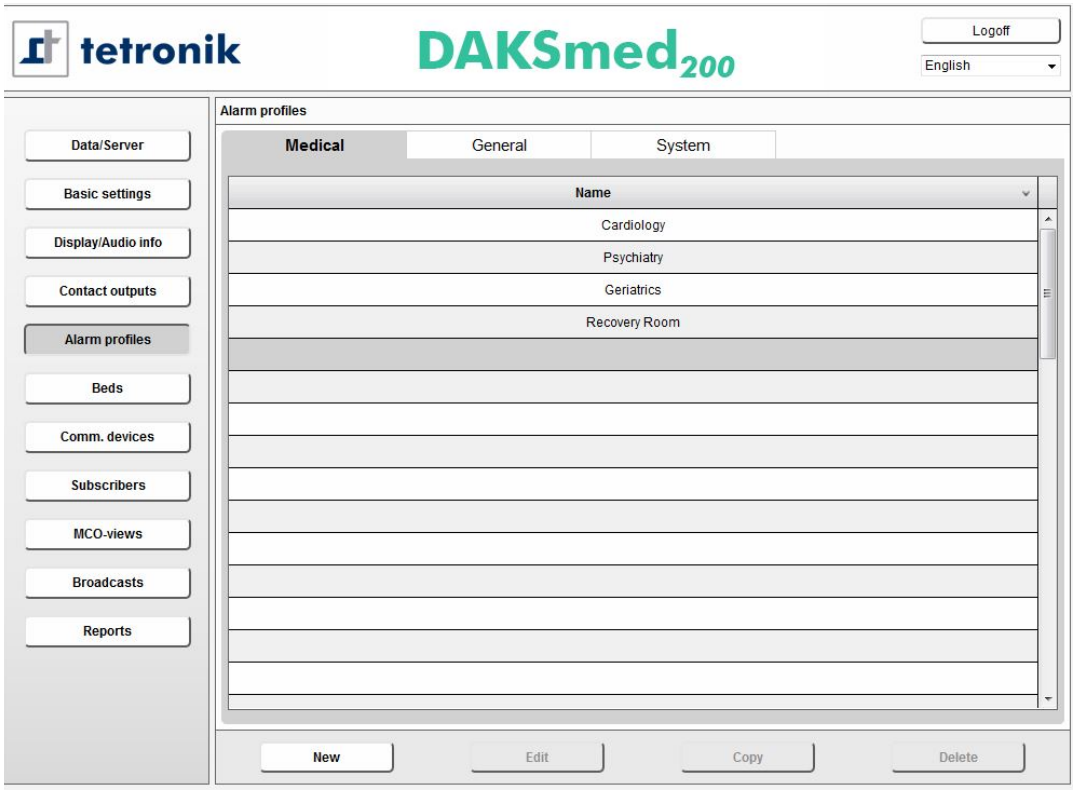


Image 8-26 Alarm profiles - Overview

8.9.1 Medical alarm profiles (only DAKSmed)

Use this area to configure the General parameters, the Initiator info and the Medical alarm conditions.

You can assign a medical alarm profile to every administrated bed. This makes it possible to alarm different groups of persons matching the individual bed (e.g. station-dependent).

➤ see Section 8.12 "Beds"

Note:
The default alarm conditions that are shown against green background are predefined and need to be configured.

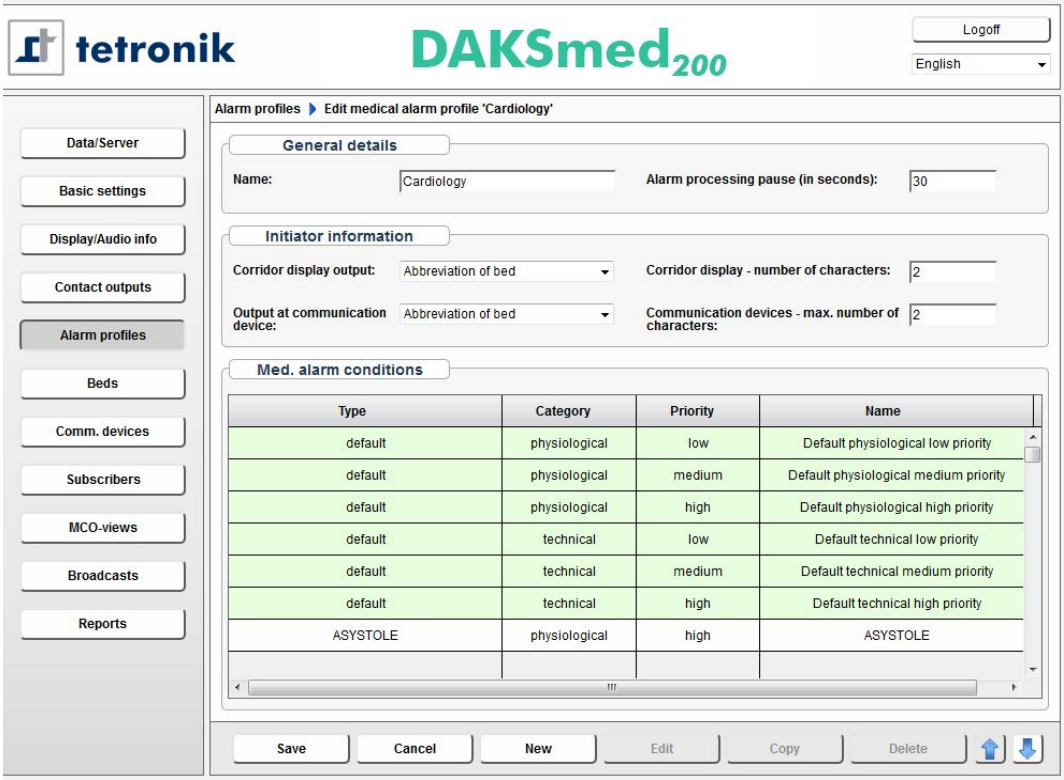


Image 8-27 Medical alarm profiles - parameters

Parameters	Value range	Description
The area 'General details'		
Description	1..30 characters [ ]	The name of the medical alarm profile.
Alarm processing pause (in seconds)	0..300 s [ ]	This is the wait time that the system applies when several alarm conditions are pending at the same time, and that it inserts between the end of one alarm condition and the processing of an alarm condition that is already pending, but that has not yet been signaled.
Area 'Initiator information':		
Corridor display output	[*Abbreviation of bed*], Patient name	Defines the output on the corridor display.

Table 8-20 Medical alarm profiles - parameters

Parameters	Value range	Description
Corridor display - number of characters	2..7 characters [ ]	The exact number of characters that are shown on the corridor displays.
Output at communication device:	[*Abbreviation of bed*], Patient name	Defines the output at the communication device.
Comm. devices - maximum number of characters	2..15 characters [ ]	The exact number of characters that are shown at the communication device.

Table 8-20 Medical alarm profiles - parameters

Medical alarm conditions - Add and edit parameters

Use the area 'Trigger/Name' to specify the alarm condition by source, type, category, and priority. Use the area 'Process' to specify the conditions that govern the process flow.

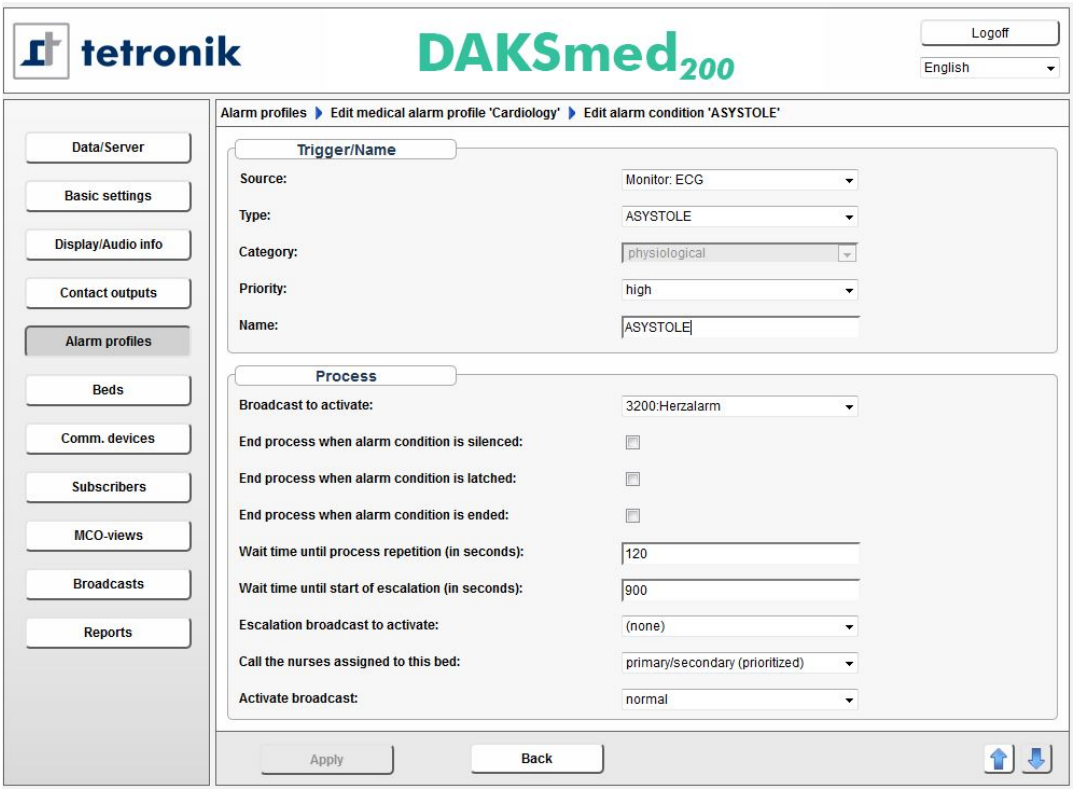


Image 8-28 Medical alarm conditions - Parameters

Parameters	Value range	Description
Source	Any (incl. "DEVICE") Monitor: Respiration Monitor: SPO2 values Monitor: Non-invasive blood pressure Monitor: Invasive pressure Monitor: Temperatures Monitor ECG Monitor: CO2 w/Ventilation Infusion pump Ventilator Dialysis machine Nursecall system	Source of the medical alarm condition that is signaled by the MAI via MASI protocol.
Type	The type that are possible depend on the selected source. Further details result from the MASI protocol process.	Type of the medical alarm condition that is signaled by the MAI. **Note:** The value selected here is automatically applied to the parameter "Name".

Table 8-21 Edit Medical alarm conditions

Parameters	Value range	Description
Category	physiological, technical	Category of the alarm condition.
Priority	low, medium, high	Priority of the alarm condition.
Description	40 characters [ ]	The name of the medical alarm condition.
Broadcast to activate	Reference Broadcast [ ]	The broadcast that is launched as soon as the alarm conditions is detected.
End process when alarm condition is silenced	yes, [*no*]	**yes** The broadcast is ended as soon as the alarm condition is silenced.
End process when alarm condition is latched	yes, [*no*]	**yes** The broadcast is ended as soon as the alarm condition has been saved, i.e. latched.
End process when alarm condition is ended	yes, [*no*]	**yes** The broadcast is ended as soon as the alarm condition has ended.
Wait time until process repetition (in seconds)	1..9999 s [*240 s]*	Use this field to enter the wait time in seconds until the broadcast is started anew after it ended with a positive result, provided the alarm condition is still active. During this time, the nurse should have deactivated the alarm condition to avoid that the broadcast process is started anew.
Wait time until start of escalation (in seconds)	60..9999 s [*900 s*]	This area is used to enter the wait time in seconds, starting from the moment the alarm process is activated until the moment the escalation broadcast is launched. **Note:** The activation is delayed wait time until process repetition is still active.
Escalation broadcast to activate	Reference Broadcast [ ]	The escalation broadcast that is set off if the alarm condition is still present after expiry of the "Wait time until start of escalation".

Table 8-21 Edit Medical alarm conditions

Parameters	Value range	Description
Call the nurses assigned to this bed	[*primary/secondary (prioritized)*], equivalent (prioritized), with broadcast priority	• **primary/secondary (prioritized)** The primary nurse gets a higher priority than the broadcast priority 'high', and the secondary nurse gets a lower priority. • **equivalent (prioritized)** The primary and secondary nurse are prioritized in the same way, and are prioritized higher compared to the broadcast priority 'high'. • **with broadcast priority** The primary and secondary nurse are given the priority of the member as is configured in the broadcast. ➤ see Section 3.3.3 "The processing of Broadcast targets"
Activate broadcast	[*normal*], emergent (prioritized), downgraded	The priority of an alarm condition is defined by the MAI. With this parameter, the alarm condition can, with regard to other same-priority alarm conditions that are raised at the same patient bed, be given a higher priority (emergent) or a lower priority (downgraded): • **emergent** signifies that the system stops, if needed, a same-priority broadcast that is running in parallel and configured "normal" or "downgraded", and starts the broadcast that is assigned to this alarm condition. • **downgraded** signifies, where necessary, the stopping of the currently up and running broadcast that is assigned to this alarm condition because a different same-priority alarm condition starts a broadcast configured "normal" or "emergent". • **normal** no application of emergent or downgraded.

Table 8-21 Edit Medical alarm conditions

8.9.2 General alarm profiles

Every subscriber can be assigned a 'General alarm profile'. These alarm profiles are administrated in the area 'Alarm profiles - General'.

This is where you can assign broadcasts and display/audio info to the below-listed alarm conditions sent from communication devices (DMC, DAKS Communicator, GMD medallion, OAP comm. devices):

- 1st to 2nd MASI interface failed
- 1st to 5th ESPA-X interface failed
- 1. to max. 3. serial interface failed
- Network access disturbed
- Unsaved logs in internal memory
- Hallway display problem
- SIP speaker problem
- Yellow alarm
- Red alarm
- Power supply partial failure
- OM-AXI base station failure
- Min. one speaker failure
- Elevator station problem
- Gigaset DECT-IP serial interface failed

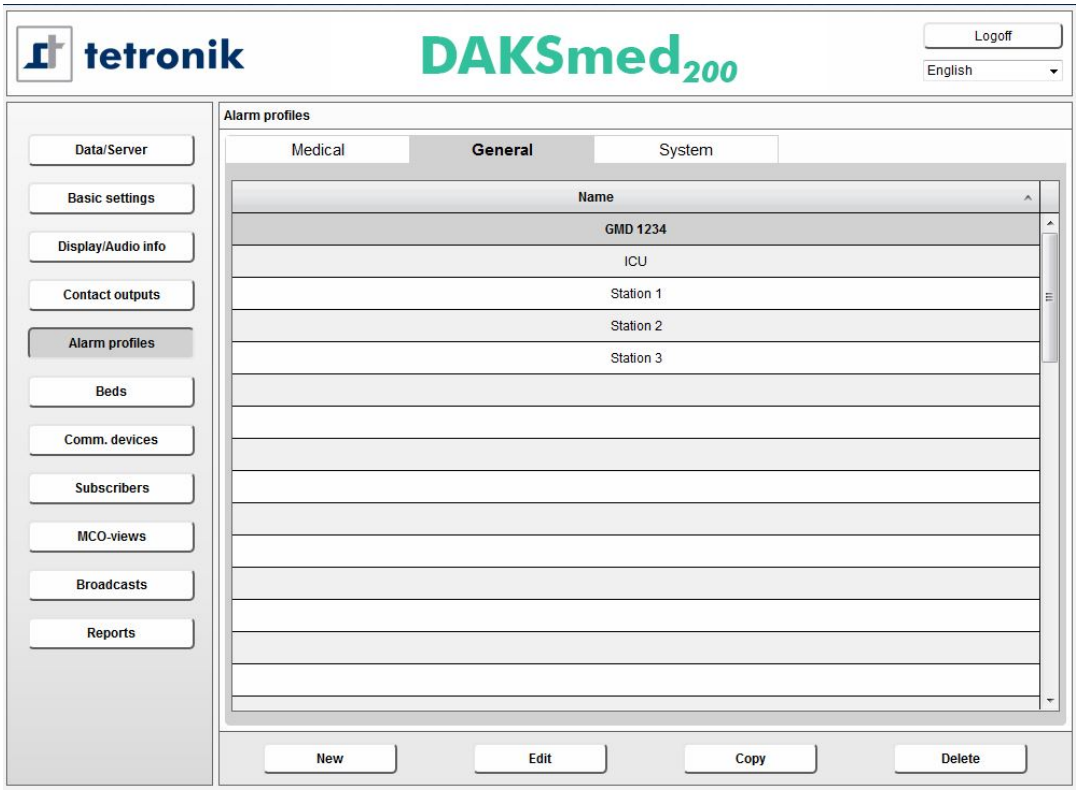


Image 8-29 General alarm profiles - Overview

Edit general alarm profiles

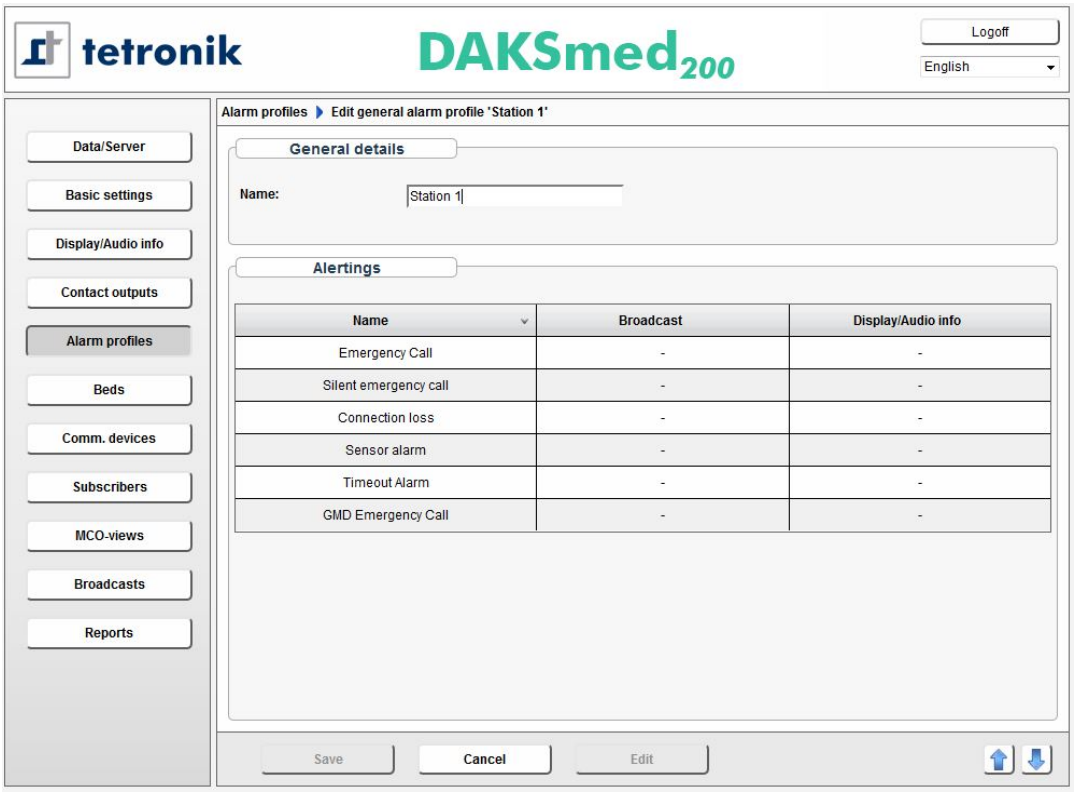


Image 8-30 General alarm profiles - Parameters

Parameters	Value range	Description
The area 'General details'		
Description	24 characters [ ]	The name of the 'General alarm profile'.
The area 'Alerting' (the following parameters can be configured for every General alarm condition)		
Broadcast	Reference Broad-cast [ ]	Broadcast that is launched when this general alarm condition is activated. ➤ see Section 3.3.2 "Start Broadcasts"
Display/Audio info	Reference Display/Audio info [ ]	The display/audio info that is sent to the subscribers (broadcast targets) during the broadcast, when this general alarm conditions applies.

Table 8-22 General alarm profiles - Parameters

GMD Medallions

GMD medallions can be used to set off emergency calls both deliberately and automatically.



Note:
Medallions can only be positioned and located when base stations are properly configured.

➤ see Section 3.2.7 "... via GMD-Medaillon (DECT)"
➤ see Section 8.11 "Base Stations"



Note:
For GMD emergency calls the broadcast cannot be edited. Instead, the display will read 'Sent by GMD'.

OAP communication devices

Emergency calls can be set off deliberately via WL3 or i62, or automatically via WL3.



Note:
i62 and WL3 communication devices can be positioned in small networks with up to 50 access points, provided these access points are properly configured.

➤ see Section 3.2.8 "... via OAP Alarms (WiFi)"
➤ see Section 8.10 "Access Points"

OM-AXI communication devices

Emergency calls can be set off deliberately via MiVoice communication devices.

➤ see Section 3.2.9 "... via OM-AXI alarms (DECT)"
➤ see Section 8.10 "Access Points"

DMC terminal devices

Emergency calls can be can be set off deliberately by DMC terminals



Note:
DMC devices can be positioned in small networks with up to 50 access points, provided these access points are properly configured.

➤ see Section 3.2.12 "... via DAKS-Mobile-Client (DMC)"
➤ see Section 8.10 "Access Points"

8.9.3 System alarm profiles

Use the area 'System' to assign broadcasts, display/audio info and corridor display outputs to the below-listed alarm conditions:

- 1st or 2nd MASI interface failed
- 1st through 5th ESPA-X interface failed
- 1st through 2nd Serial interface failed
- Network access disrupted
- Unsaved reports in the internal memory
- Corridor display problem
- Yellow Alert
- Red Alert
- Partial power supply failure
- Failure of the OM-AXI base station
- Elevator call station problem

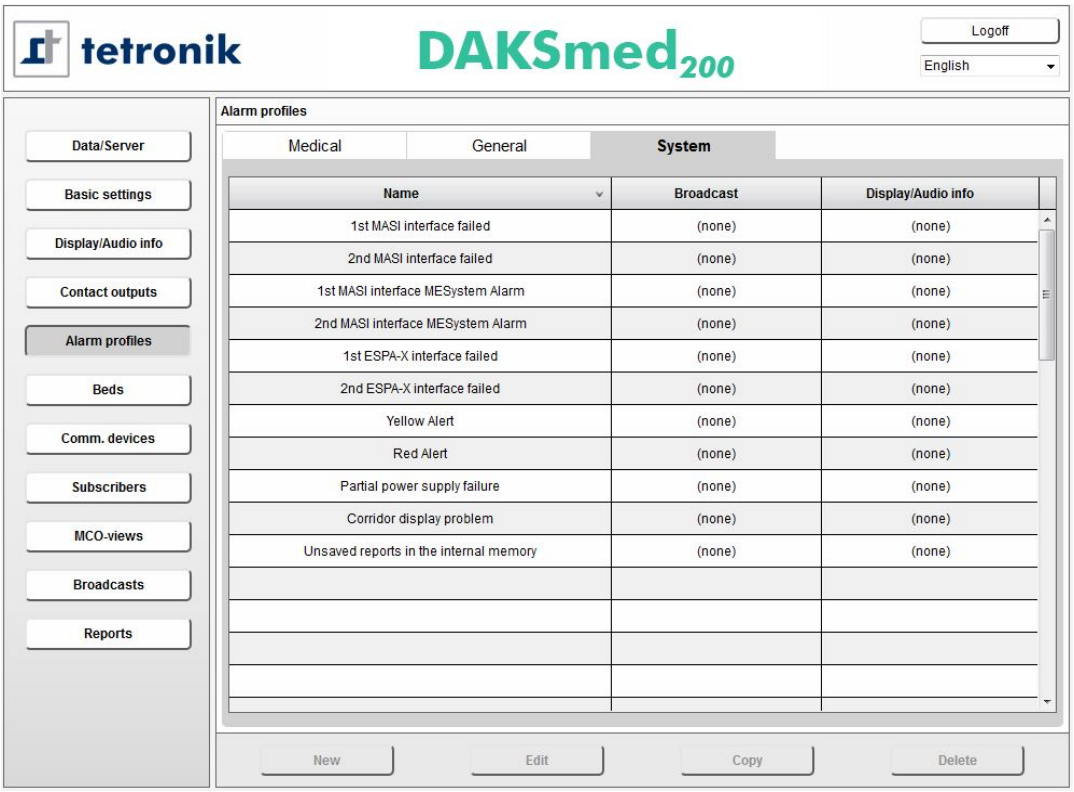


Image 8-31 The area 'System alarm profiles'

Description of the Alarm profiles - System

Alarm condition	Description
MASI interface failed	Several options available: • interface protocol is not active. • connection from MAI to the Infinity-Network is lost. • invalid credential from MAI at the Infinity-Gateway. • invalid software version at the Infinity-Gateway. • patient name and patient ID not unique. • the Infinity-Gateway's computing and processing power not sufficient.
ESPA-X interface failed	The alarm condition is present when: • no client is connected any longer. • no heartbeats are mutually exchanged any longer.
Serial interface failed	The alarm condition is present when: • the serial interface is no longer active. • no valid dataset was received e.g. during the last 10 minutes (time configurable in VCON, between 1 and 10 minutes).
network access disrupted	No access possible to a network drive.
Unsaved reports in the internal memory	The internal log database contains reports that have not been saved externally.
corridor display problem	Not all corridor displays are functioning or the corridor displays were not configured properly.
SIP-Speaker problem	The alarm condition is present when: • not all SIP speakers were reached. • not all SIP speakers are registered.
Yellow Alert	At least one of the configured TC interfaces is active and at least one of the configured initiators is still operational, but not all TC interfaces and/or all initiators are operating error-free.
Red Alert	All TC interfaces or all configured initiators have failed.
Partial power supply failure	One of the two power supply units has failed.
Failure of the OM-AXI base station	The data connection to the OM-AXI base stations has failed.
Min. one call station failed	At least one call station has failed.
Elevator call stations problem	Not all elevator call stations work.

Table 8-23 Description Alarm profiles - System

Edit System alarm conditions

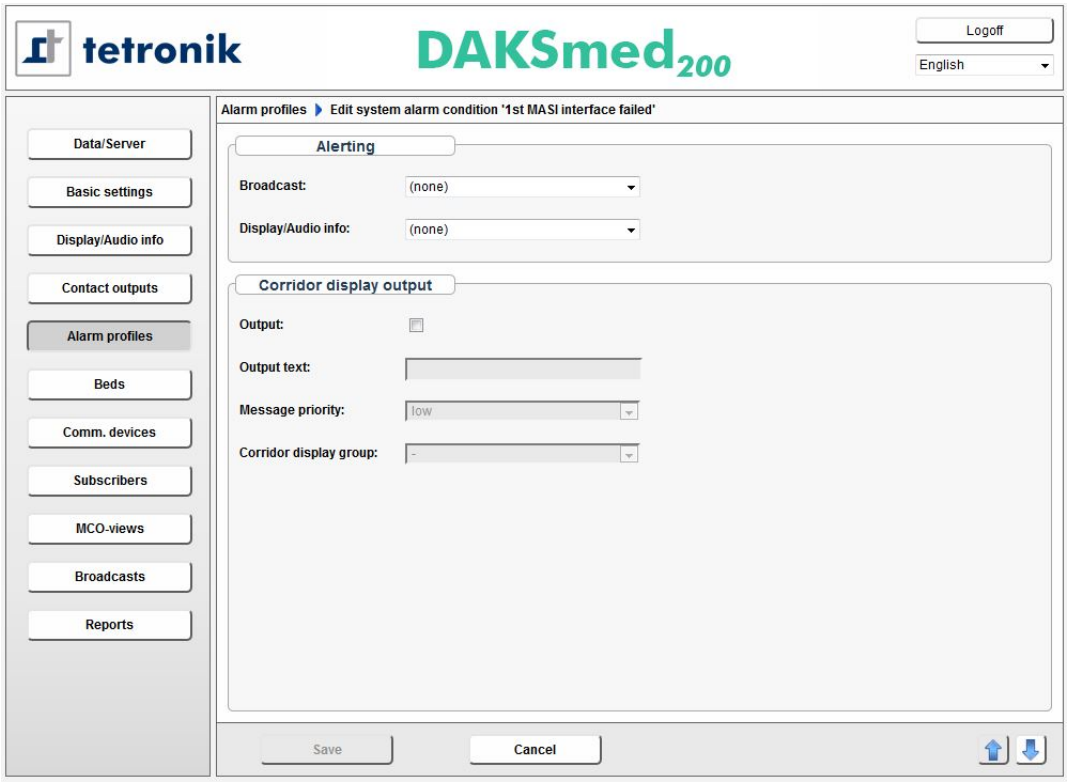


Image 8-32 Edit System alarm conditions

Parameters	Value range	Description
The area 'Alerting'		
Broadcast	Reference Broadcast [ ]	The broadcast that is started upon this system alarm condition.
Display/Audio info	Reference Display/Audio info [ ]	Display/audio info that is transmitted to the alerted subscriber.
The area 'Corridor display output'		
Output	yes, [*no*]	Defines if this system alarm condition is shown on the corridor displays.
Output text	0..24 characters [ ]	The text that is shown on the corridor displays when this system alarm condition is present.
Message priority	high, [*medium*], low	The priority with which this system alarm condition is signaled at the corridor display group.
Corridor display group	Reference Corridor display group [ ]	The corridor display group at which this system alarm condition is signaled.

Table 8-24 Edit the parameters of System alarm conditions

8.10 Access Points

This menu item only appears when the option 'WiFi' was activated under Positioning.

➤ see Section 8.6 "Basic configuration"

To position WL3 communication devices, DAKScommunicator and DAKS Mobile Clients access points must be properly administrated.

➤ see Section 3.7 "Positioning of WL3 and i62 devices"

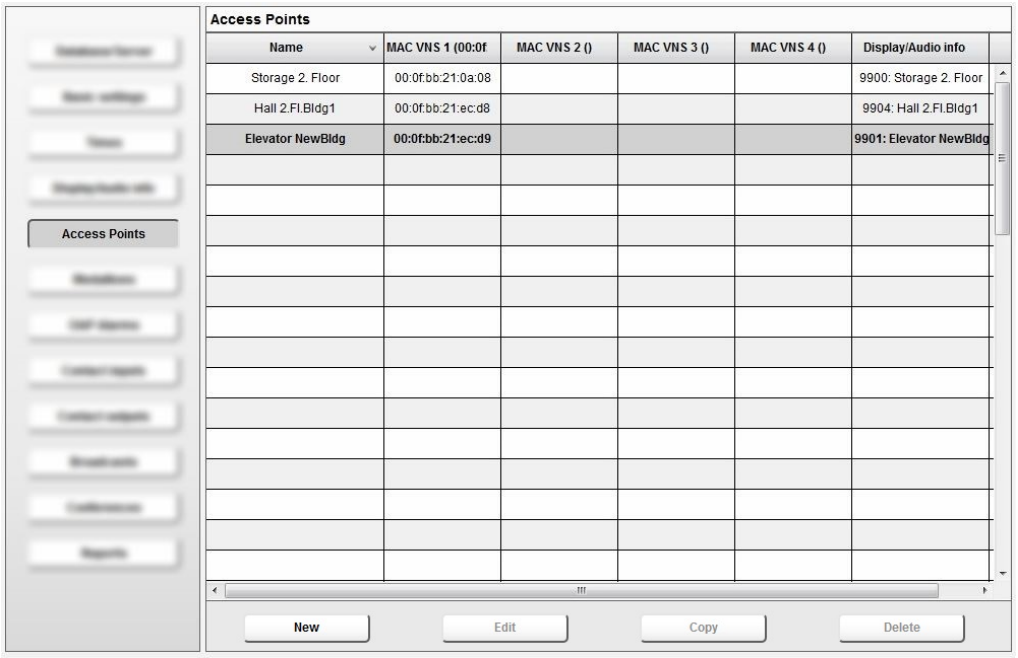


Image 8-33 Access Points

8.10.1 Add and edit Access Points



Parameters	Value range	Description
Description	16 characters [ ]	The name of the access point. The name is used for information purposes only.
Display/Audio info	Reference Display/Audio info [ ]	This display/audio info that is sent when this access point is included in the positioning results. ➤ see Section 3.3.2 "Start Broadcasts"

Table 8-25 Configuration of Access Points

Parameters	Value range	Description
MAC VNS 1..4	xx:xx:xx:xx:xx:xx xx = 8 bit hexadecimal value [ ]	The MAC address of the access point for VNS 1..4 The system only shows the virtual networks that are configured in the Basic Settings, and there under 'Positioning' ('Name VNS 1..4'@'Basic settings'->'General details').

Table 8-25 Configuration of Access Points

8.11 Base Stations

This menu item only appears when the option 'DECT' was activated under Positioning.

➤ see Section 8.6 "Basic configuration"

If you want to position GMD-1x medallions, make sure the base stations are properly administrated.

➤ see Section 8.5 "Data/Server"

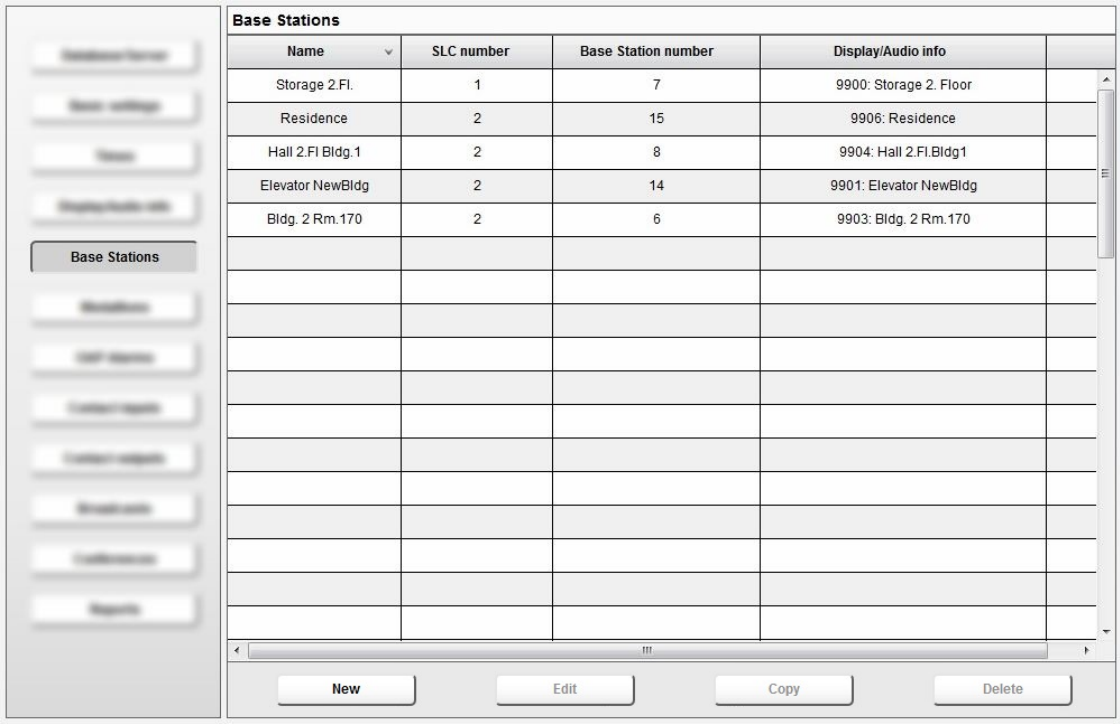
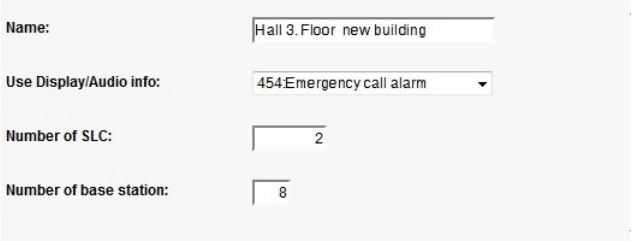


Image 8-34 Base Stations

8.11.1 Add and edit Base Stations



Parameters	Value range	Description
Description	16 characters [ ]	The name of the base station. The name is used for information purposes only.
Display/Audio info	Reference Display/Audio info [ ]	This display/audio info is sent when this base station is included in the positioning results. ➤ see Section 3.3.2 "Start Broadcasts"
Number of SLC	0..65535 [*0*]	• **HiPath 3000/Open Scape Business/OpenScape 4000** The number of the SLC board and of the port to which the base station is connected. • **other PBX systems** Identifier of the base station. The significance of this identifier depends on the corresponding DECT system.
Number of base station	0..15 [*0*]	

Table 8-26 Configuration Base Stations

8.12 Beds

Use this area to configure the settings for Beds.

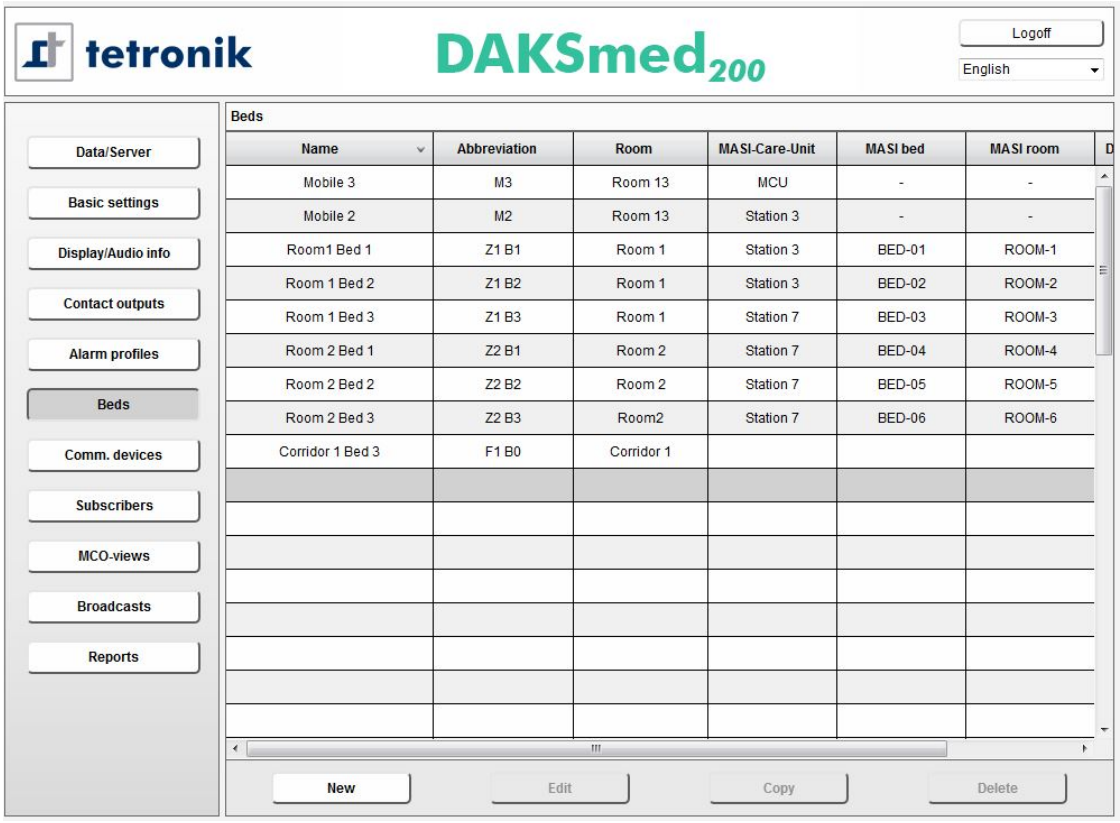


Image 8-35 Beds

8.12.1 Add and edit Beds

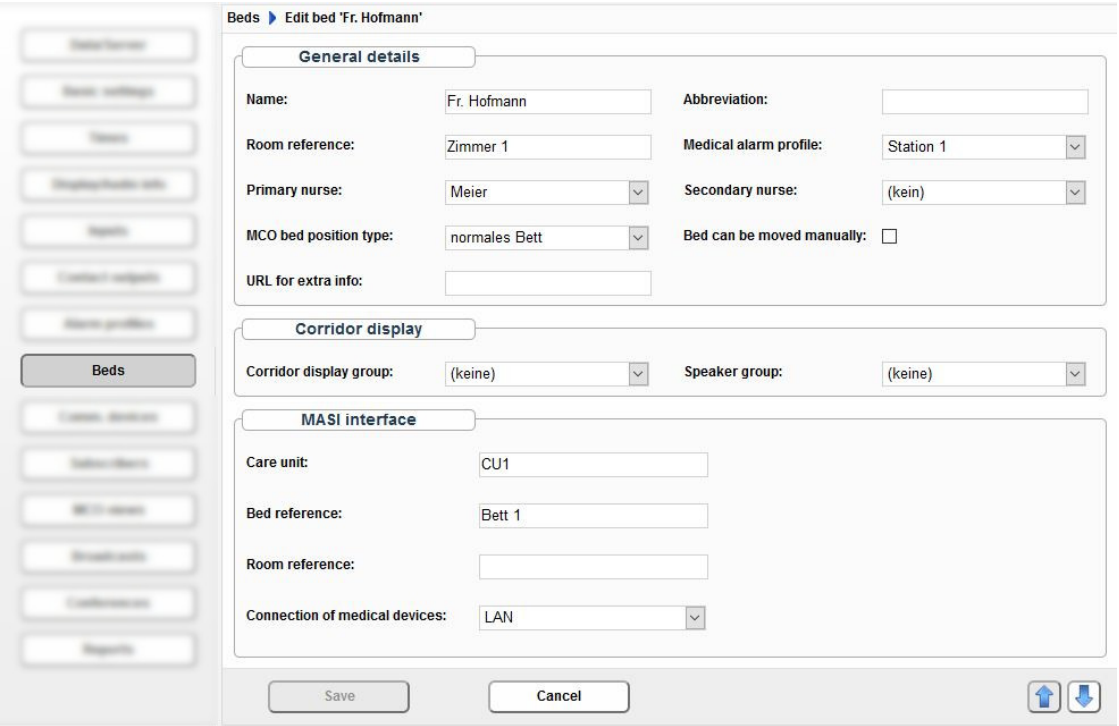


Image 8-36 Edit Patient Beds

Parameters	Value range	Description
The area 'General details'		
Description	30 characters [ ]	The name of the pertinent bed.
Abbreviation	15 characters [ ]	Short descriptor for the pertinent bed.
Room	30 characters [ ]	The name of the room in which the bed is located.
Medical alarm profile	Reference Alarm profile [ ]	The 'Medical alarm profile' that is assigned to the bed.
Primary nurse	Reference to subscribers who can be assigned as a nurse [ ]	Primary nurse assigned fix to the bed. This assignment cannot be edited MCO.
Secondary nurse	Reference to subscribers who can be assigned as a nurse [ ]	Secondary nurse assigned fix to the bed. This assignment cannot be edited MCO.

Table 8-27 Configuration of Beds

Parameters	Value range	Description
MCO bed position type	[*defined place*], normal bed	• **defined place** This bed position type serves as placeholder for an alternative positioning 'normal beds'. **Note:** With this type you can neither enter a MASI bed reference nor a MASI room reference; the MASI-Care-Unit must be specified. • **normal bed** This bed position type is identified on the basis of the parameters MASI-Care-Unit, MASI bed reference, MASI room reference as well as the connection of the medical devices.
Bed can be moved manually	yes, [*no*]	Defines if this bed can be moved manually.
The area 'MASI'		
MASI-Care-Unit	1..30 [ ]	The MASI reference to the care unit.
MASI bed reference	0..30 [ ]	The MASI reference to the bed. This field is automatically deactivated when the parameter 'MCO bed position type'@'Beds' is set to 'defined place'.
MASI room-reference	0..30 [ ]	The MASI reference to the room. This field is automatically deactivated when the parameter 'MCO bed position type'@'Beds' is set to 'defined place'.
Connection of ME equipment	[*LAN+WLAN*], LAN, WLAN	Defines the way in which the medical devices may be connected.
The area 'Corridor display		
corridor display group	[*none*], group 1..5	Use this field to assign a bed to a corridor display group. The medical alarm conditions of this bed are shown on the corridor displays of this corridor display group. High-priority alarm conditions are shown in red, medium-priority alarm conditions are shown in yellow, and low-priority alarm conditions are shown in green. ➤ see Section 7.20 "Parameters of the corridor displays"

Table 8-27 Configuration of Beds

8.13 Inputs

Use this area for the administration of the contact inputs to launch broadcast.

8.13.1 The contact inputs

- For DAKS-110:
  - 16 internal, fed contact inputs with short circuit and line break detection
  - up to 64 contact inputs connected via USB
  - up to 5 remote DAKS-Satellite connections, each with 16 fed contact inputs

- For DAKS-200 (mDAKS):
  - up to 64 contact inputs connected via USB
  - up to 5 remote DAKS-Satellite connections, each with 16 fed contact inputs



Caution!

If DAKS is unable to assign contacts, all contacts are shown in the color red on the user interface.

This may be the result of changes of the sequence in which contacts are plugged, a mix-up of boards, a wrong administration, or a contact failure.

Contacts are also signaled in red when a function was assigned for a short circuit or line beak detection, but this option was deactivated for the contact in VCON.

Check the boards and assign the contacts again correctly.

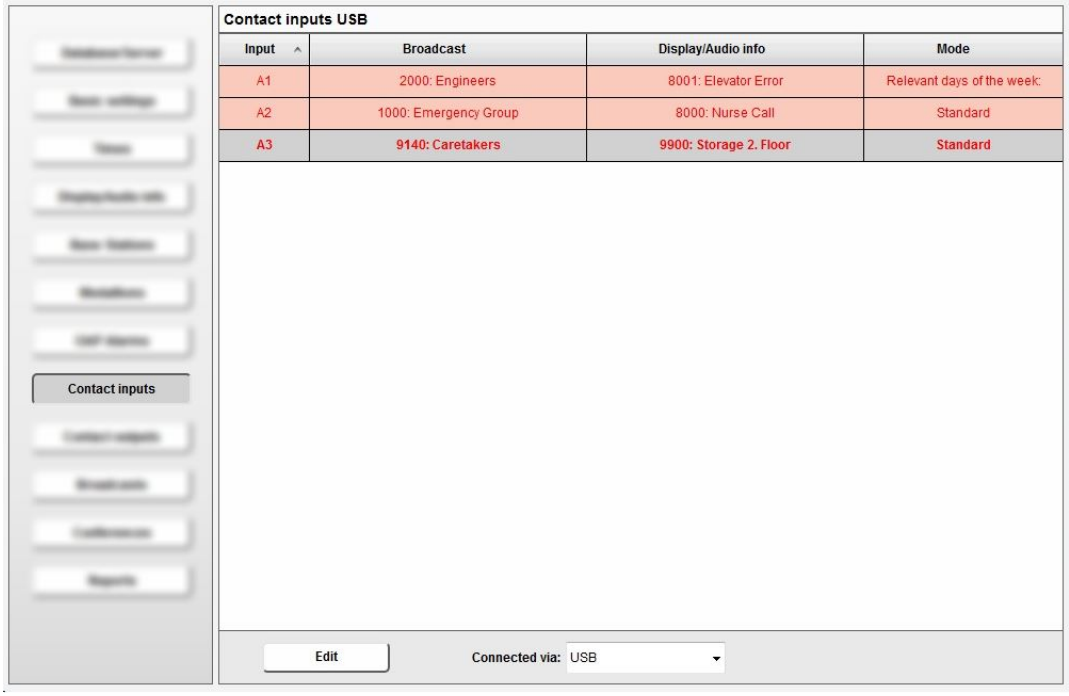


Image 8-37 Contact inputs

DAKS supports several contact types that can be selected with the button 'Connected via'.

Once you have selected a certain contact type, you can edit the individual contact inputs.

Parameters	Value range	Description
Connected via:	USB USB DAKS-Satellite 1.. 5 [ ]	Select a contact type whose contact inputs you want to edit.

Table 8-28 Configuration of Contact inputs

8.13.2 Edit a Contact input

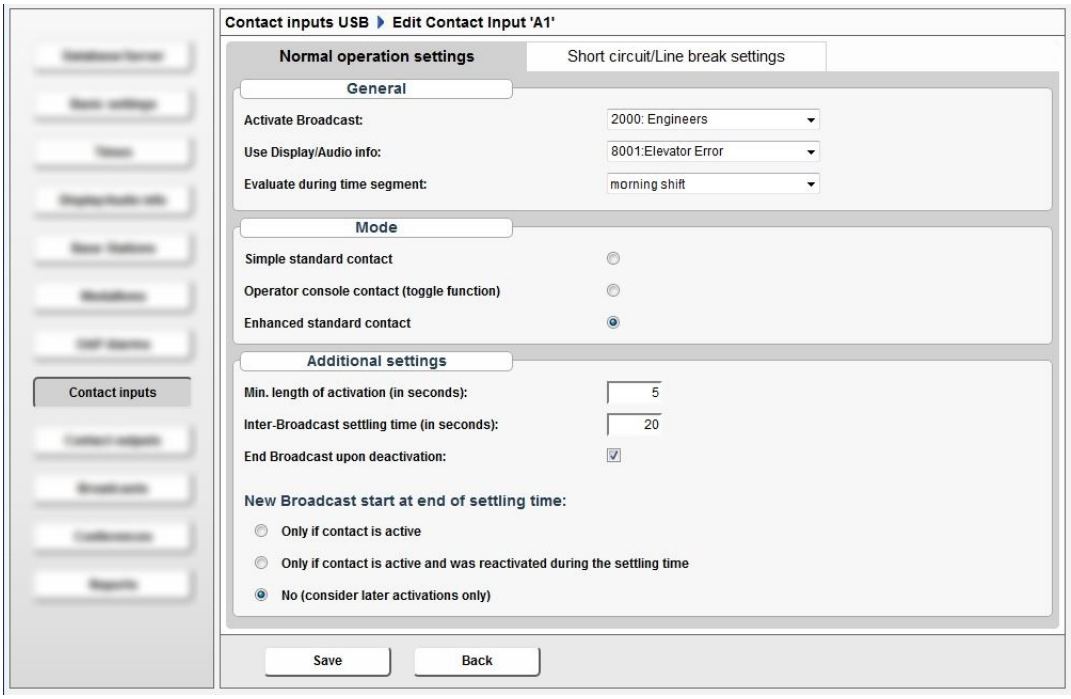


Image 8-38 Edit contact Inputs

Parameters	Value range	Description
The sub area 'Normal operation settings'		
Broadcast to activate	Reference Broadcast [ ]	The broadcast that is launched by DAKS when this contact input becomes active.
Display/Audio info	Reference Display/Audio info [ ]	The display/audio info that is, among other tings, transmitted to an alerted broadcast member when the broadcast is launched. ➤ see Section 3.3.2 "Start Broadcasts"
Evaluate during the time segment	Predefined time segment [ ]	The time segment during which the contact is evaluated. ➤ see Section 8.7.1 "Add and edit Time Segments"
Mode	[*Simple standard contact*], Operator console contact (toggle function) Enhanced standard contact	The type of wiring of the contact input.
Only becomes visible for Mode = 'Enhanced standard contact'		
Min. length of activation	0..99999 s [*0 s*]	Minimum time period during which the input contact must be active for DAKS to start the assigned broadcast (long-time debouncing).
Inter-broadcast settling time	0..99999 s [*0 s*]	Period of time after the end of the broadcast during which this contact input will not start a new broadcast.

Table 8-29 Configuration of Contact inputs

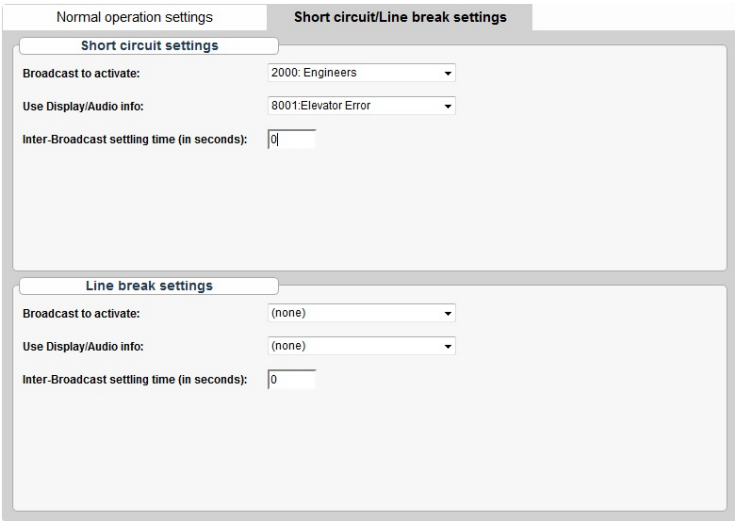
Parameters	Value range	Description
End broadcast upon deactivation	yes, [*no*]	The contact cancels/does not cancel the broadcast process when the contact input is deactivated.
New broadcast start at end of Inter-broadcast settling time	[*Only if contact is active*] Only if contact is active and was reactivated during the Inter-broadcast settling time No (consider later activations only)	The condition upon which DAKS will restart the assigned broadcast, after the Inter-broadcast settling time.
 **Partial area 'Short circuit settings'** Only becomes visible when the functionality short circuit detection via VCON is activated.		
Broadcast to activate	Reference Broadcast [ ]	The broadcast that is activated when a short circuit is detected at the contact input.
Display/Audio info	Reference Display/Audio info [ ]	The display/audio info that is, among other things, transmitted to an alerted subscriber when a short circuit is detected. ➤ see Section 3.3.2 "Start Broadcasts"
Inter-broadcast settling time	0..99999 s [*0 s*]	The time after the broadcast end that DAKS will, in the event of a short circuit, wait before it re-launches the same broadcast.
Partial area 'Line break settings' Only becomes visible when the functionality line break detection via VCON is activated.		
Broadcast to activate	Reference Broadcast [ ]	The broadcast that is activated when a line break is detected at the contact input.
Display/Audio info	Reference Display/Audio info [ ]	The display/audio info that is, among other things, transmitted to an alerted subscriber when a line break is detected. ➤ see Section 3.3.2 "Start Broadcasts"
Inter-broadcast settling time	0..99999 s [*0 s*]	The time after the broadcast end that DAKS will, in the event of a line break, wait before it re-launches the same broadcast.

Table 8-29 Configuration of Contact inputs

8.13.3 AVIOTEC Camera

Via data interfaces to Bosch AVIOTEC cameras, conditions such as open flames, smoke or contact inputs of the respective camera can be queried in order to trigger a broadcast call if necessary.

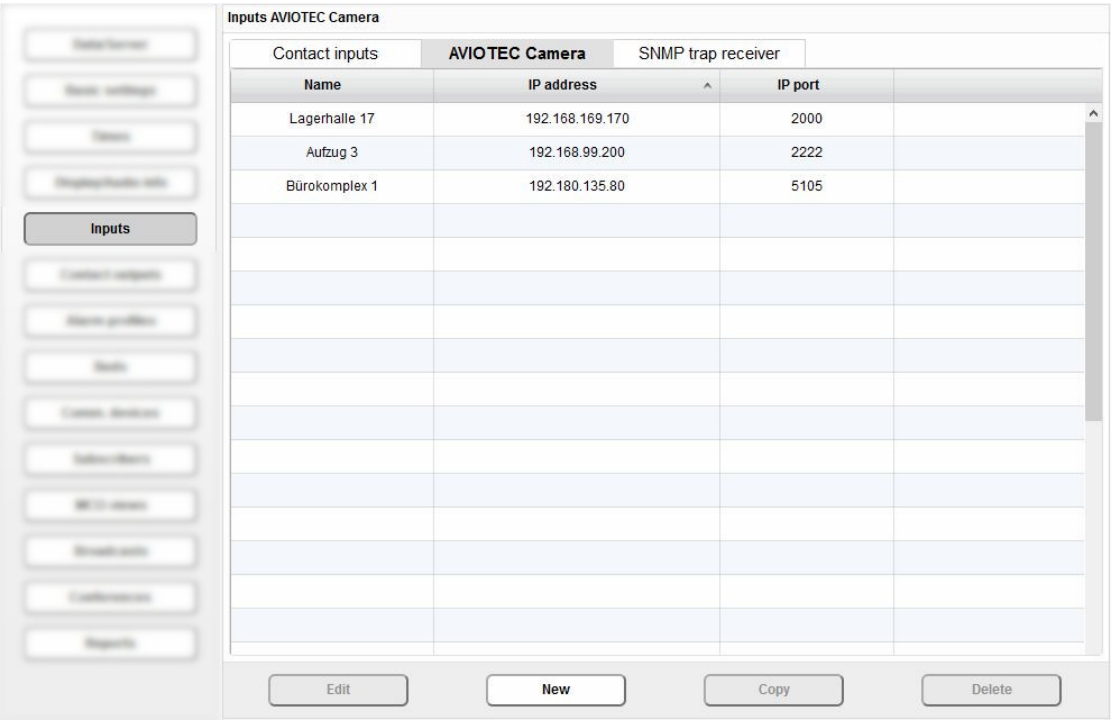


Bild 8-39 AVIOTEC Camera

Create or edit AVIOTEC Camera

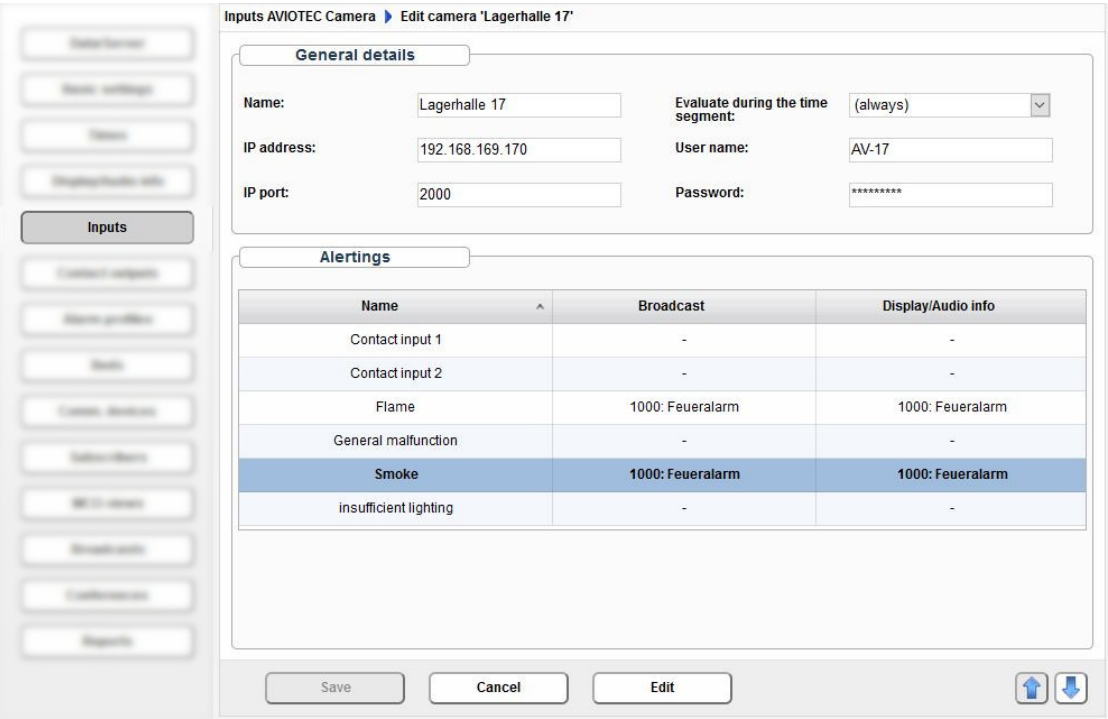


Bild 8-40 Edit Camera

Parameter	Werte-bereich	Beschreibung
Partial area 'General details'		
Name	1..24 characters [ ]	The name of the AVIOTEC Camera.
IP address	IP-address [0.0.0.0]	IP address via which the AVIOTEC Camera can be reached.
IP port	1..5 characters [ ]	IP-Port over which the data traffic with the AVIOTEC Camera is handled.
Evaluate during the time segment	Predefined time segment [ ]	The time segment during which the contact is evaluated. ➤ see Section 8.7.1 "Add and edit Time Segments"
User name	1..40 characters [ ]	User name the DAKS server uses to log on to the AVIOTEC Camera.
Passwort	1..40 characters [ ]	Password the DAKS server uses to log on to the AVIOTEC Camera.

Tabelle 8-30 Configuration Aviotec Camera

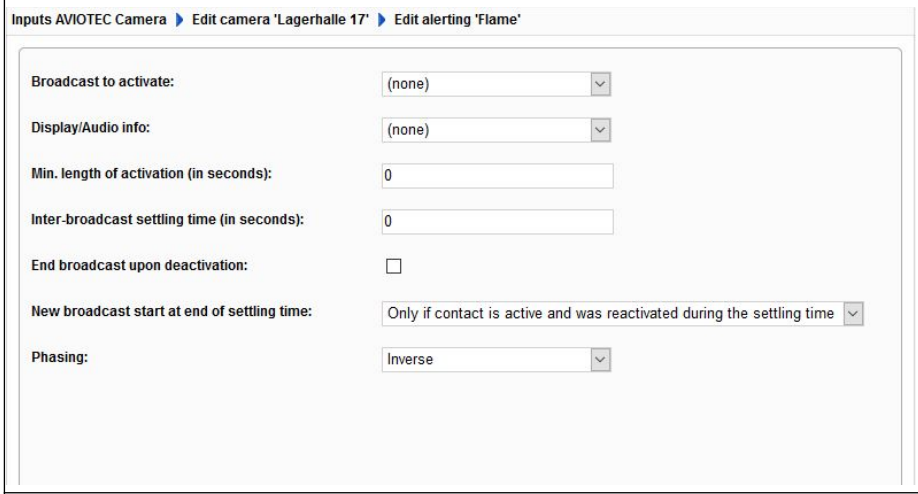
Parameter	Werte-bereich	Beschreibung
		
Partial area 'Alertings' The following parameters can be configured for each cause of alarm.		
Broadcast to activate	Reference Broadcast [ ]	Assignment of a broadcast that is launched when this camera event applies
Display/Audio info	Reference Display/Audio info [ ]	Assignment of a display/audio info that is sent to the broadcast members during the broadcast when this camera event applies. ➤ see Section 3.3.2 "Start Broadcasts"
Min. length of activation	0..99999 s [*0 s*]	Minimum time period during which the input contact must be active for DAKS to start the assigned broadcast (long-time debouncing).
Inter-broadcast settling time	0..99999 s [*0 s*]	Period of time after the end of the broadcast during which DAKS waits if the cause of alarm is present before the broadcast is started again.
End broadcast upon deactivation	yes, [*no*]	The removal of the cause of alarm cancels/does not cancel the broadcast process.
New broadcast start at end of Inter-broadcast settling time	[*Only if contact is active*] Only if contact is active and was reactivated during the Inter-broadcast settling time No (consider later activations only)	The condition upon which DAKS will restart the assigned broadcast, after the Inter-broadcast settling time.
Phasing	[*Normal*], Inverse	Defines the phasing in which the contact inputs are to be evaluated. **Note:** Only displayed if the cause of alarm is "Contact input 1" or "Contact input 2.

Tabelle 8-30 Configuration Aviotec Camera

8.13.4 SNMP trap receiver

Via the SNMP trap receiver, traps can be received from devices administered here via the Simple Network Management Protocol (SNMP) to trigger broadcast calls.

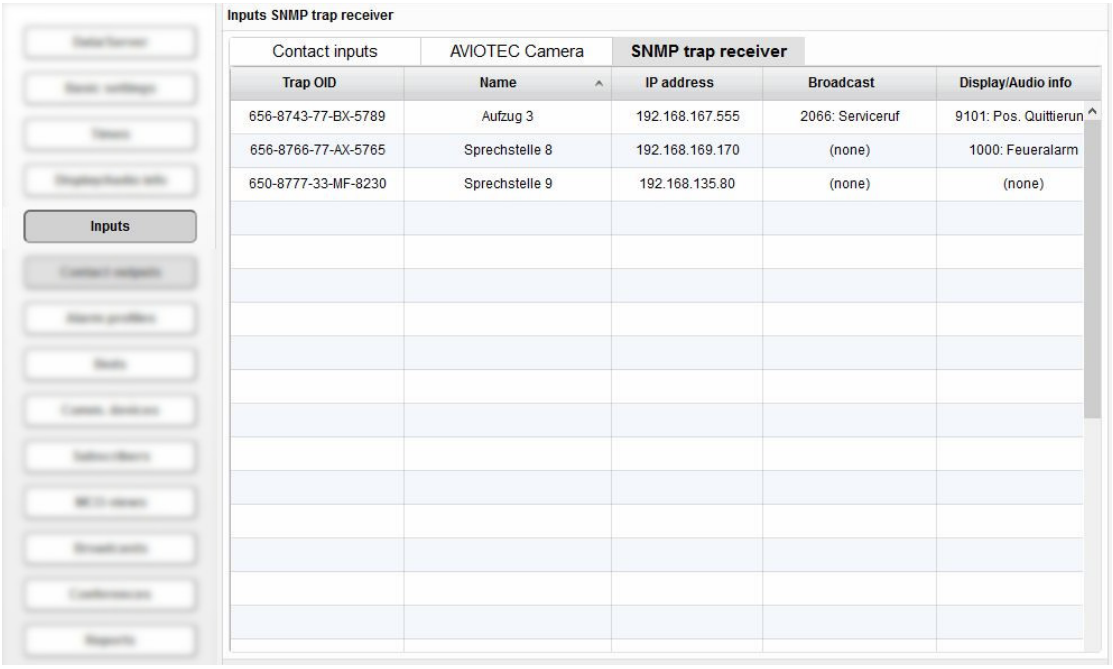


Bild 8-41 SNMP trap receiver

Create or edit SMNP trap

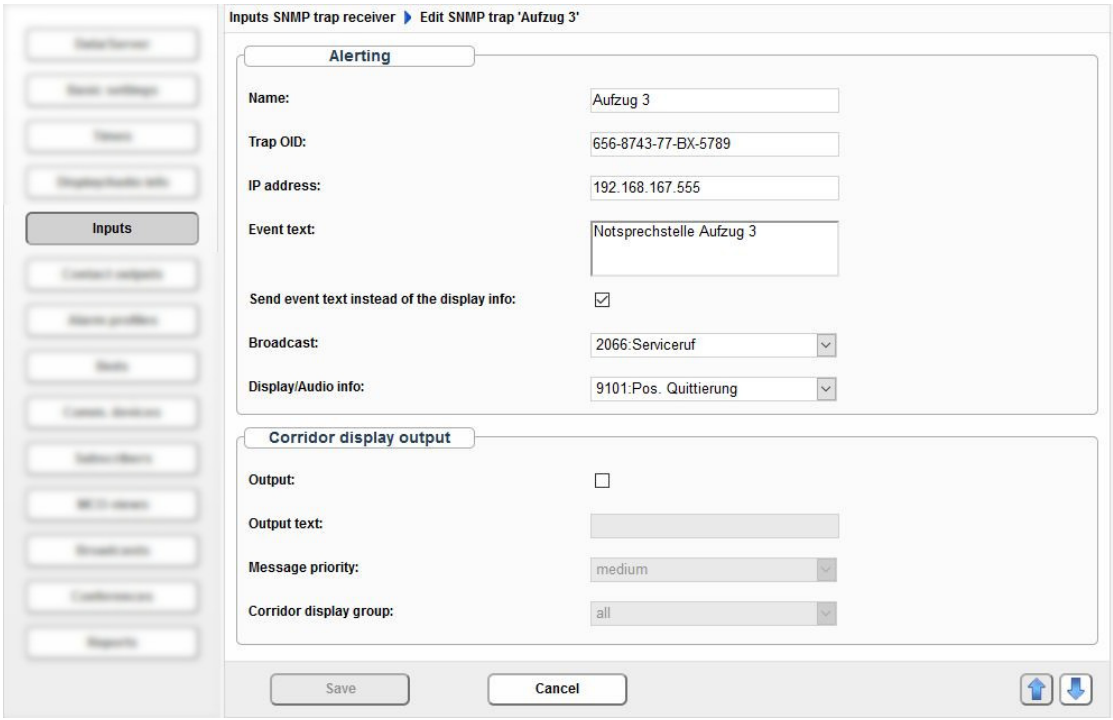


Bild 8-42 Edit SNMP trap

Parameter	Werte-bereich	Beschreibung
Partial area 'Alerting'		
Name	1..24 characters [ ]	The name of the SNMP trap

Tabelle 8-31 Configuration SNMP trap receiver

Parameter	Werte-bereich	Beschreibung
Trap-OID	1..40 characters [ ]	Manufacturer-specific OID of the device that generated the trap. The OID specifies the type of device.
IP address	IP adress [0.0.0.0]	IP address of the device that sents the SNMP trap.
Event text	1..160 characters [ ]	Event text that is transmitted to an alarmed subscriber during this SNMP trap reception.
Send event text instead of the display info	on, [off]	This selection field determines whether the event text is transmitted to the subscriber instead of the display info.
Broadcast to activate	Reference Broadcast [ ]	Broadcast which DAKS starts as a result of the trap reception.
Display-/Audio-Info	Referenz Display-/Audio-Info [ ]	Display/audio information that is transmitted to an alarmed subscriber in the event of this alarm.
Partial area 'Corridor display output'		
Output	on, [off]	Specifies whether this SNMP trap reception results in output to corridor display groups.
Output text	0..24 characters [ ]	Text that is displayed on the corridor display groups when this SNMP trap is received.
Message priority	low, [*medium*], high	Priority with which the output text is displayed on the corridor display groups.
Corridor Display group	Reference Display group [ ]	Corridor display group where the output text is displayed.

Tabelle 8-31 Configuration SNMP trap receiver

8.14 Contact outputs

This area is reserved for the administration of both the contact outputs and the relay output that are either assigned to a broadcast or used to indicate a system state.

- For DAKS-110:
  - 8 + 1 potential-free contact outputs for system and process messages
  - 1 relay output
  - up to 16 digital outputs connected via USB
  - up to 5 remote DAKS satellite connections with 8 digital outputs each

- For DAKS-200 (mDAKS) also:
  - 1 relay output
  - up to 16 digital outputs connected via USB
  - up to 5 remote DAKS satellite connections with 8 digital outputs each

Note:
Administrated contact outputs without a matching connected hardware are signaled in the color red.

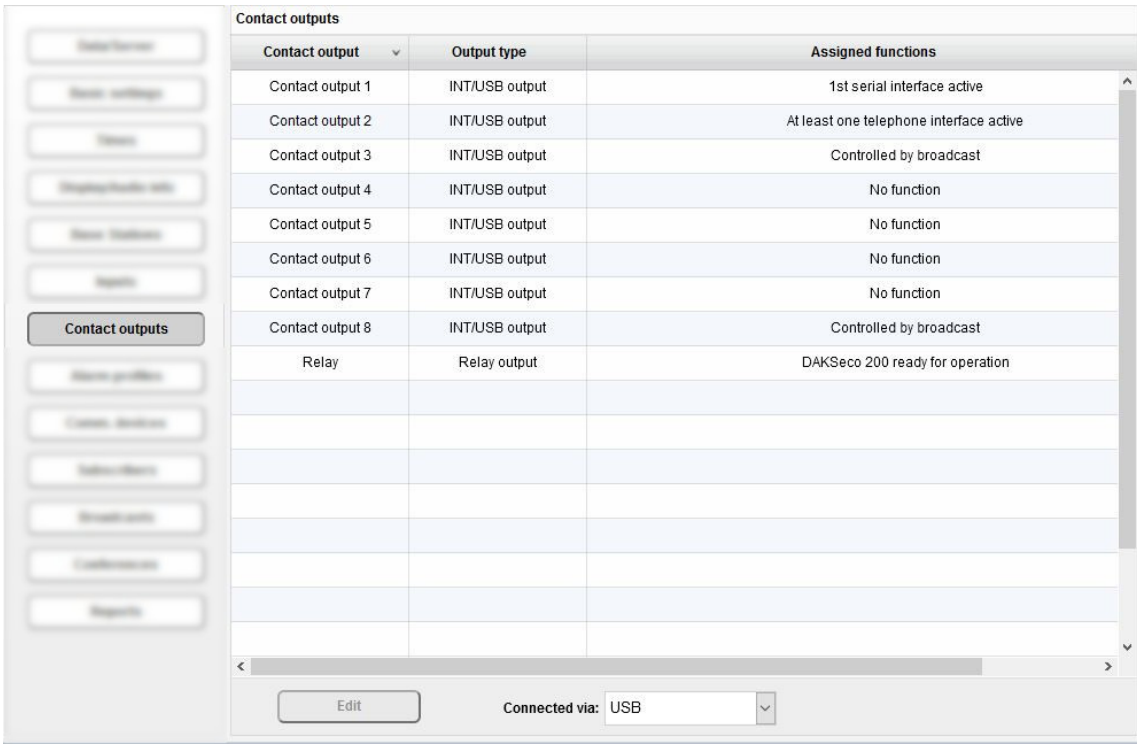


Image 8-43 Contact outputs

8.14.1 Edit a Contact output

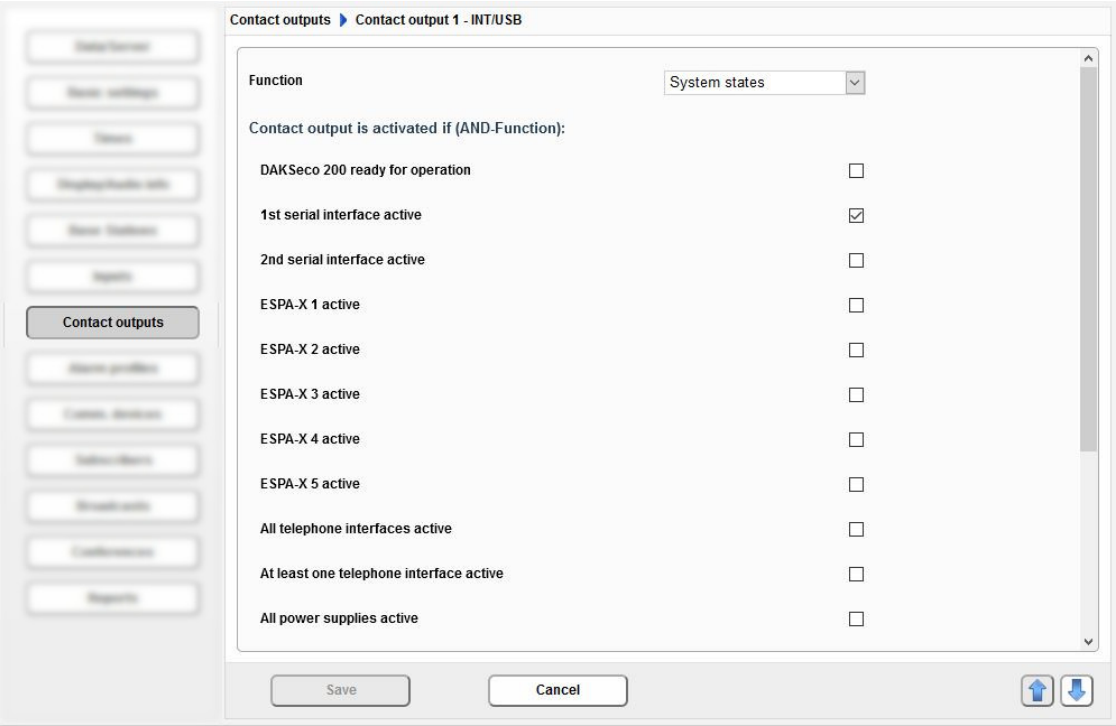


Image 8-44 Partial view of ‘Parameter Contact outputs‘

Parameters	Value range	Description
Relay or contact output (DAKS-200: depending on system size 0..16 contact outputs plus 1 relay output)	[*no function*]	No function assigned.
	Controlled by broadcast	One or more broadcast processes can activate this contact output. It remains active for as long as at least one of the broadcasts is ongoing.
	DAKSmed/DAKSeco 200 ready for operation	DAKSmed is ready for operation.
	1st/2nd serial interface active	The first/second (1st)(2nd) serial interface is activated and has received a valid dataset, e.g. during the last 10 minutes (time configurable in VCON, between 1 and 10 minutes).
	At least one directly connected terminal device active or no medical device active	At least one terminal is registered at DAKSmed (only when working with directly connected terminals). Exception: If no medical device is active (all switched off or in standby), no terminal need to be registered at DAKSmed.
	ESPA-X 1.. 5 active	The ESPA-X interface is activated, a Client is connected and heartbeats are exchanged in regular intervals.

Table 8-32 Configuration of Contact outputs

Parameters	Value range	Description
	No short circuit/line break	No contact input has detected a line break or short circuit, provided short circuit/line break detection is configured. ➤ see Section 7.12 "Parameters of the Digital I/O"
	At least 1 alarm process active	At least one broadcast currently active.
	Broadcast process resources available	Further process resources are available, further broadcasts can be started. Exception: (GMD-) medallions, contact inputs and WL3 or i62 communication devices. ➤ see Section 3.3 "Workflow of Broadcasts"
	At least one telephone interface active	At least one of the configured TC interfaces is active.
	All telephone interfaces active	All configured TC interfaces are active.
	No Yellow Alert	A yellow alarm is active when at least one of the configured TC interfaces is active and at least one of the configured initiators is still operational, but not all TC interfaces and/or all initiators are operating error-free.
	No Red Alert	A Red alarm is active when all TC interfaces or all configured initiators have failed.
	No Red or Yellow Alert	The conditions for a red or yellow alert are met (s.a.).
	High priority	At least one high-priority broadcast process is currently active and has ended all lower priority broadcast processes.
	All power supplies active	All power supplies are active
	1st / 2nd MASI interface active	The 1st or 2nd MASI interface are active
	All corridor displays are active	All hall/corridor displays are functioning and were configured properly.
Connected via:	INT/USB, Satellite 1.. 5	Use this button to select the contact outputs which you want to configure.

Table 8-32 Configuration of Contact outputs

8.14.2 Edit Relay Output

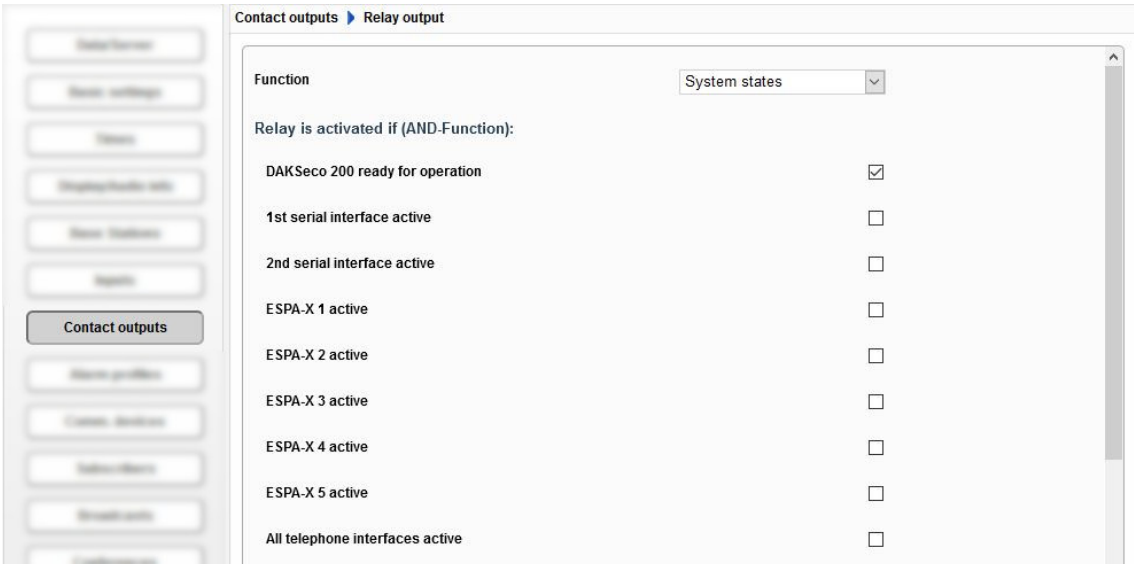


Bild 8-45 Display 'Parameter relay output'

Parameter	Wertebereich	Beschreibung
Relay or contact output (DAKS-200: depending on system size 0..16 contact outputs plus 1 relay output)	[*no function*]	No function assigned
	Used by the broadcast	One or more broadcast processes can activate this contact output. It remains activated as long as at least one of the broadcast calls is running.
	System states:	Only if all of the selected system states are given (AND link), the relay becomes active
	– At least one directly connected end device active or no medical device active – 1./2. serial interface active – ESPA-X 1..5 active – MASI interface 1/2 active – All corridor displays active – All SIP speakers active – All telephone interfaces active – At least one telephone interface active – All power supplies active – No short circuit/line break – At least 1 alarm process active – Broadcast process resources available – No yellow alarm – No red alarm – High Priority	

Tabelle 8-33 Konfiguration Kontaktausgänge

8.15 Terminals

Use this menu item to add new communication devices and configure their settings.

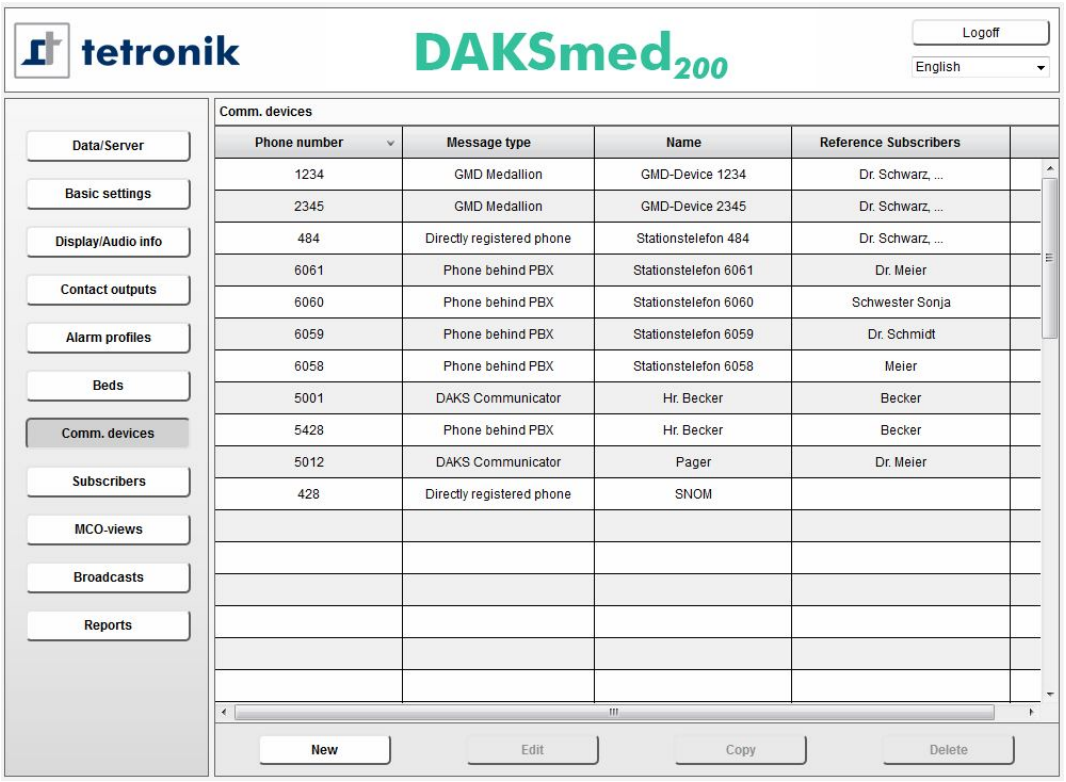


Image 8-46 Comm. devices

8.15.1 Add and edit Communication devices

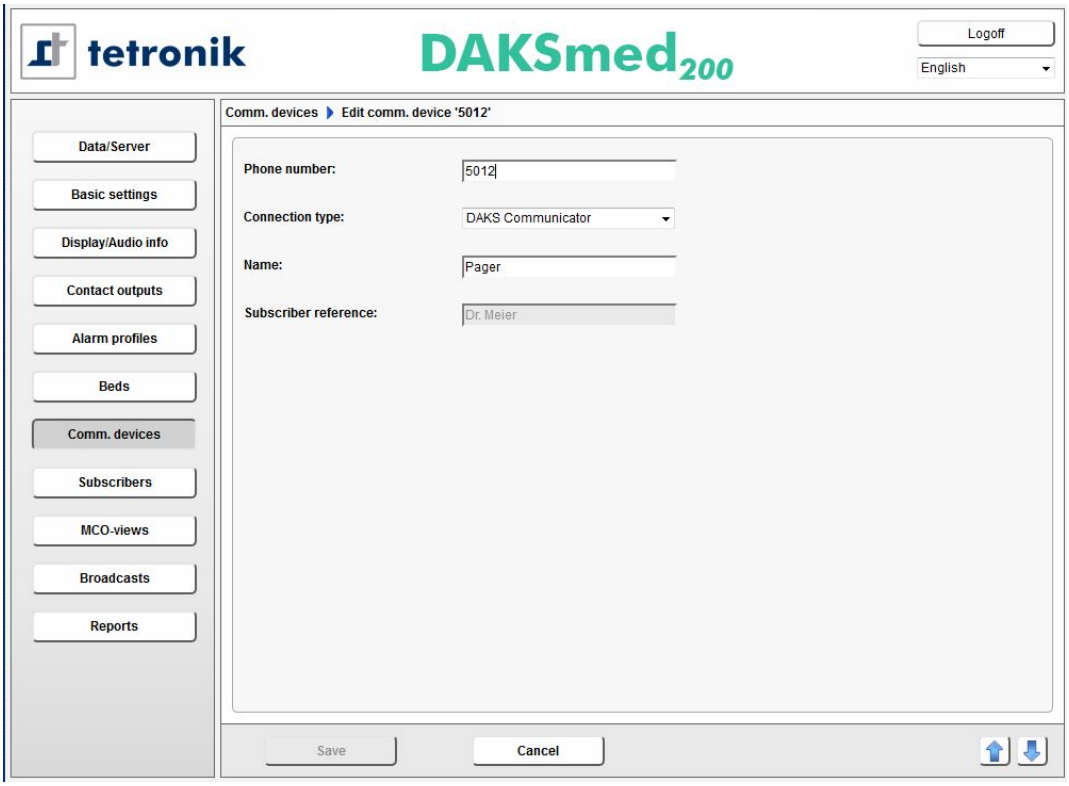


Image 8-47 Parameters communication devices

Parameters	Value range	Description
Phone number	24x {0..9, *, #} [ ]	The phone number of the communication device. **Note:** For the connection type 'DMC' you can skip the entry of a phone number.

Table 8-34 Comm. devices

Parameters	Value range	Description
Connection type	[*Phone behind PBX*] OAP, OM-AXI, DMC, Directly registered phone, GMD Medallion, DAKS Communicator DECT-phone on Openscape cordless E, M3 Plus on Openscape cordless E, SIP-Lautsprecher direct, Spectralink MSF-3 phone on external PBX, Spectralink MSF-3 phone on DAKS, Gigaset DECT-IP	Connection type of the communication device: • Phone behind PBX (TDM/VoIP) • Phone registered directly on DAKS (VoIP) • Data connection to OAP communication devices • Data connection to OM-AXI communication devices • Data connection to DMC communication devices • GMD Medallion • DAKS Communicator • DECT-Telefon on Openscape cordless E • M3 Plus on Openscape cordless E • SIP speaker registered directly on DAKS (VoIP) • Spectralink MSF-3 telephone on external PBX system • Gigaset DECT-IP
Description	30 characters [ ]	The name of the communication device.
Reference Subscribers	16 characters [ ]	Reference to subscribers to whom this communication device is assigned.

Table 8-34 Comm. devices

8.16 Subscribers

Use this menu item to add new subscribers and configure their settings.

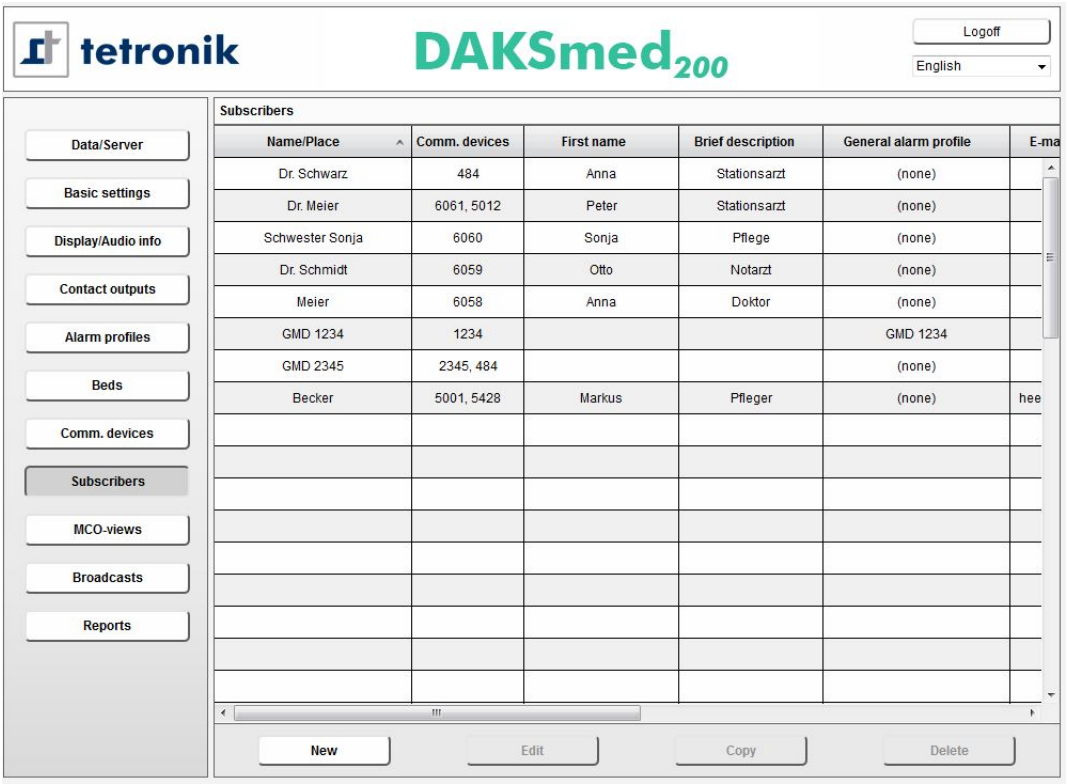


Image 8-48 Subscribers

8.16.1 Add and edit Subscribers

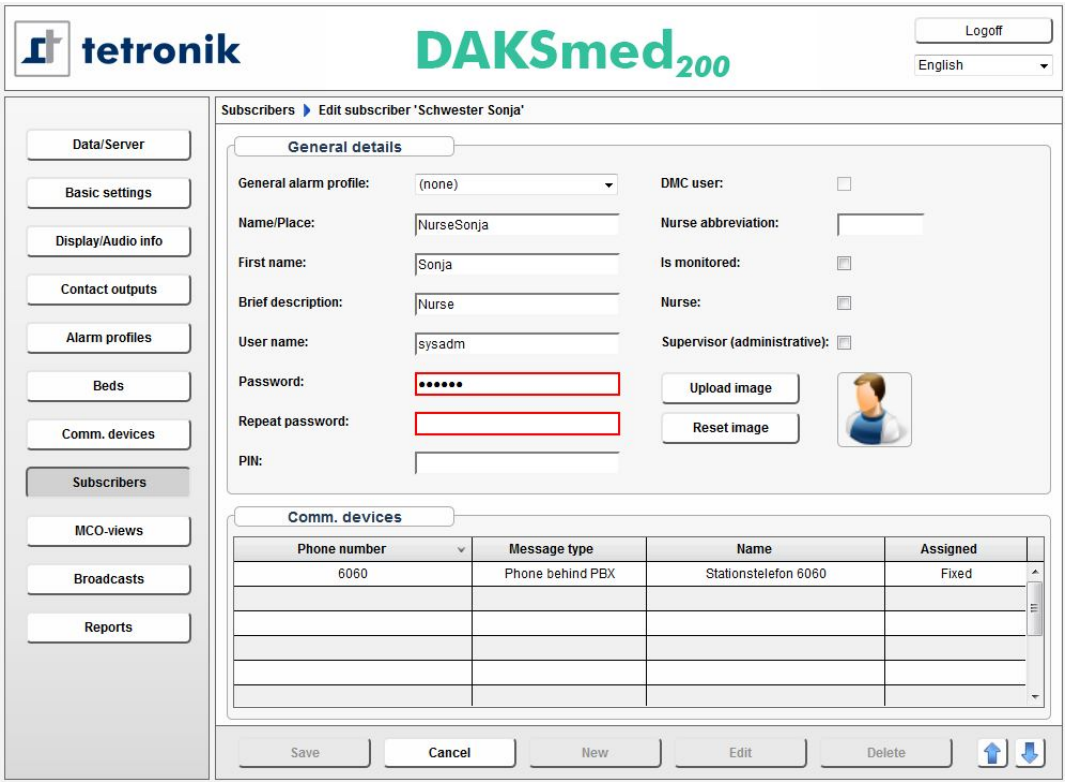


Image 8-49 Subscribers - Parameters

Parameter/ Button	Value range	Description
Window area 'General details'		
General alarm profile	Reference Alarm profile [ ]	The 'General alarm profile' that is assigned to the subscriber.
Name/Place	30 characters [ ]	The name of the subscriber or place.
First name	30 characters [ ]	First name of the subscriber.
Brief description	16 characters [ ]	The brief description of the subscriber.
User name	16 characters [ ]	The user name with which the subscriber logs in to MCO and DMC.
Password	16 characters [ ]	The password with which the subscriber logs in to MCO and DMC.
Repeat password	16 characters [ ]	Repeat administrated password for verification.
PIN	0..5 digits [ ]	PIN of the subscriber to log in to MCO (as alternative to password).
E-mail address	100 characters [ ]	E-mail address of the subscriber.

Table 8-35 Edit subscriber

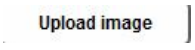
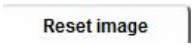
Parameter/ Button	Value range	Description
DMC user	yes, [*no*]	**yes** The subscriber may use DMCs. This means that you cannot assign any fixed or automatic communication devices.
Nurse abbreviation	3 characters [ ]	When administrated, the MCO-view shows a text field with this abbreviation (e.g. the nurse's initials), instead of the image for nurses.
Is monitored	yes, [*no*]	**yes** DAKSmed monitors the subscriber's reachability. When a monitored DMC subscriber can no longer be reached, the system automatically launches a broadcast after 4-6 minutes.
Can be assigned as nurse	yes, [*no*]	Defines if this subscriber can be assigned as 'Primary nurse' or as 'Secondary nurse'.
Supervisor (administrative)	yes, [*no*]	**yes** The subscriber is a supervisor. The Supervisor has the following rights in the Administrator interface: • Assign other nurses to beds • Edit or add new subscriber (not delete) • Edit broadcasts (not add, not delete) • Add, edit or delete new broadcast members • save reports (without deleting them in the server) • Move 'normal beds' to 'defined places' With the mouse, a supervisor who is properly logged in to the Medical Care Organizer can assign nurses to a patient's bed as primary or secondary nurse (drag and drop).
	Button	Use this button to upload a picture for the subscriber.
	Button	Use this button to reset the picture for the subscriber.

Table 8-35 Edit subscriber

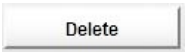
Parameter/ Button	Value range	Description
Window area 'Communication devices' List of assigned communication devices. Use the respective buttons to assign, edit, add or delete communication devices (see below).		
Phone number	Info field	Reference to the communication device's phone number.
Connection type	Info field	Reference to the communication device's connection type.
Description	Info field	Reference to the communication device's name.
Subscriber reference	Info field	Reference to subscribers to whom this communication device is assigned.
	Button	Use this button to open a table with the communication devices that can be assigned.
	Button	Use this button to edit the assignment of a communication device.
	Button	Use this button to delete the assignment of a communication device.

Table 8-35 Edit subscriber

Assign communication devices

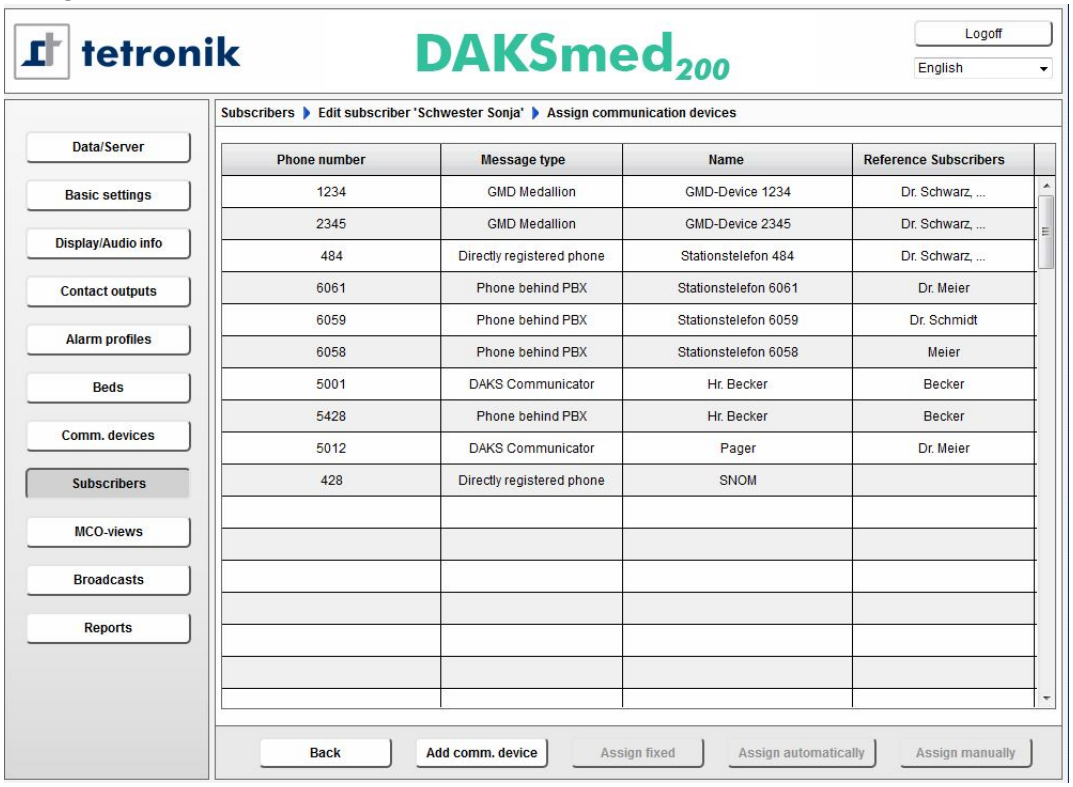


Image 8-50 Assign communication devices

Parameter/ Button	Value range	Description
Add comm. device	Button	Use this button to add a new communication device. ➤ see Section 8.15.1 "Add and edit Communication devices"
Assign fixed	Button	Use this button to assign the device as a 'fixed communication device'.
Assign automatically	Button	Use this button to assign the device as an automatic communication device.
Assign manually	Button	Use this button to assign the device as a manual communication device.

Table 8-36 Assign communication devices

The assignment of communication devices to subscribers is carried out in keeping with the below definition:

- If a fixed communication device is assigned to a subscriber:
  - you can assign additional manual communication devices.
  - you cannot assign any additional fixed or automatic communication devices.
  - you cannot utilize DMCs.
- If the subscriber is assigned an automatic communication device:
  - you cannot assign any additional fixed or manual communication devices.
  - you cannot utilize DMCs.
- If the subscriber is assigned a manual communication device:
  - you can assign an additional fixed communication device.
  - you cannot assign additional manual communication devices.
  - you can utilize DMCs.

The assignment of communication devices is carried out in keeping with the below definition:

- You can simultaneously assign fixed and manual communication devices to multiple subscribers through the administration.
- Automatic communication devices may only be assigned to a single subscriber, through the administration.
- DMCs are not assigned through the administration, but during the actual runtime by entering the credentials of the respective subscriber.

8.17 MCO-views

Use this menu item to add new MCO-views and configure their settings.

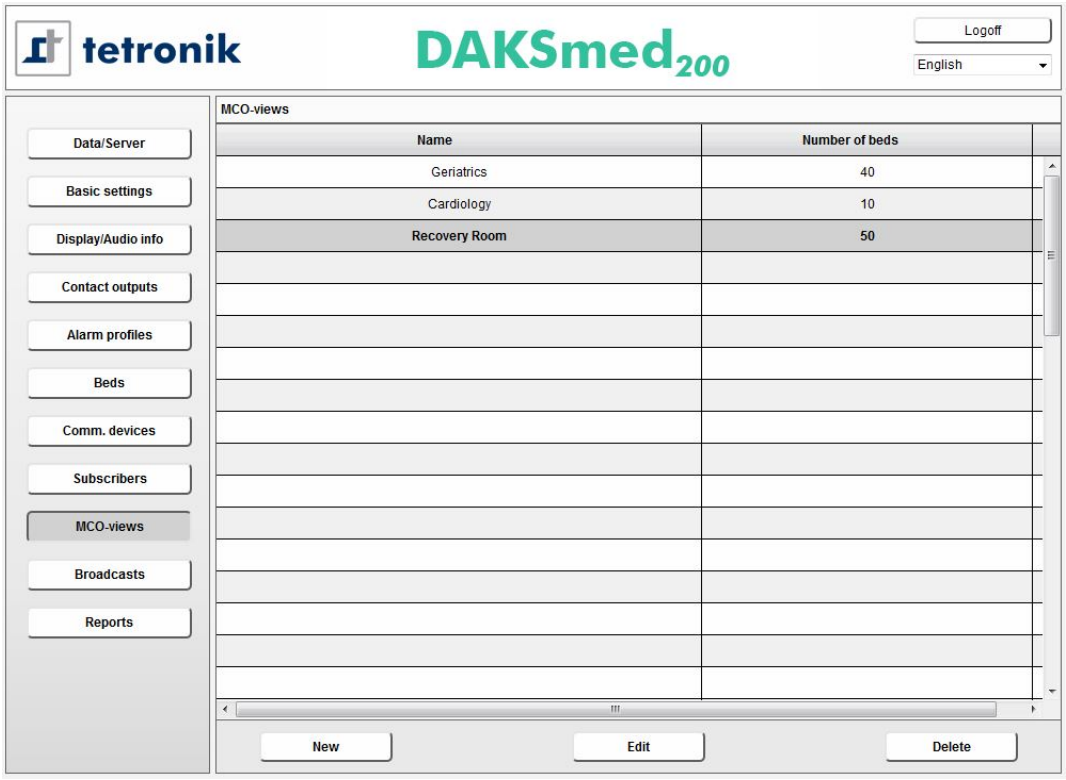


Image 8-51 MCO-views

8.17.1 Add and edit MCO-views

Tab 'Settings'

Use this tab to configure MCO-views.

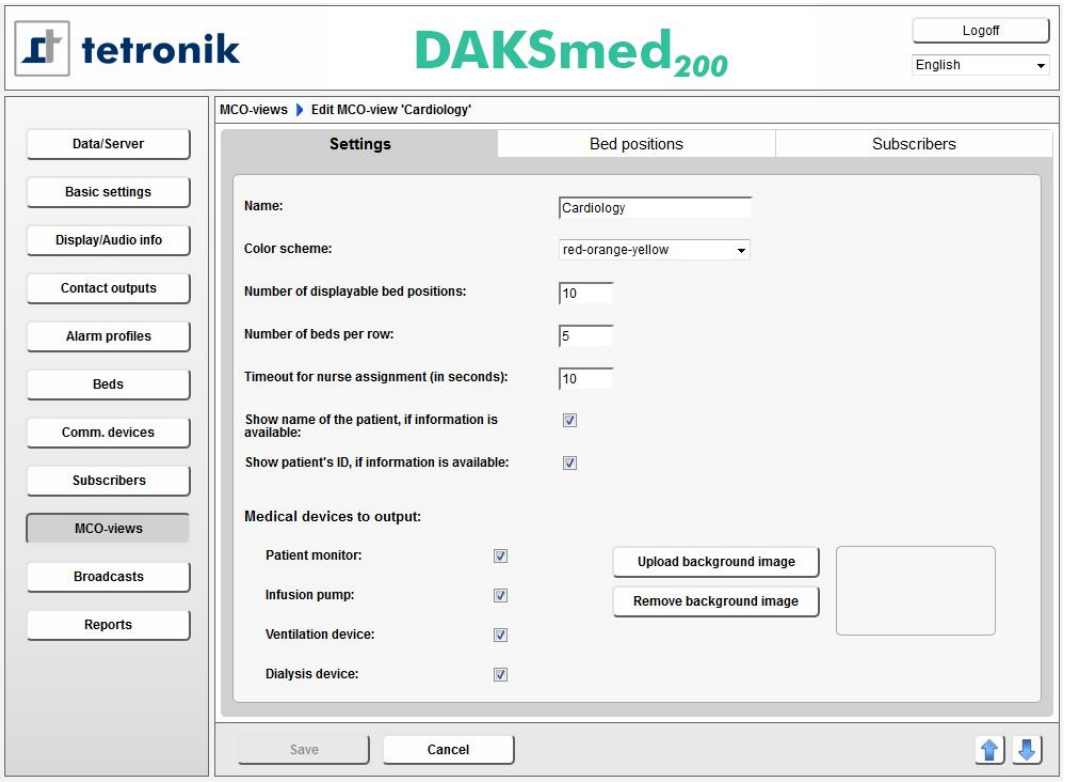


Image 8-52 MCO-views - Settings

Parameters	Value range	Description
Description	1..30 characters [ ]	The name of the MCO-view.
Color scheme	[*red-orange-yellow*], red-yellow-cyan	Color scheme that is used to output the priority levels in this MCO-view.
Number of displayable bed positions	1..50 [*4*]	The number of beds that are shown in the Medical Care Organizer.
Number of beds per row	1..9	The maximum number of beds that can be output per line.
Timeout for nurse assignment (in seconds)	1..9999 s 0 = unlimited [*30*]	Within the time that is configured here, the user who is logged on can: • Assign and delete nurses. • move beds. This parameter defines defines the length of time that the nurse may be inactive before he/she is automatically logged off from MCO.
Show name of the patient, if information is available	yes, [*no*]	**yes** The patient's name is shown in MCO, provided the information is available.

Table 8-37 MCO-views - Settings

Parameters	Value range	Description
Show patient's ID, if information is available	yes, [*no*]	**yes** The patient's ID is shown in the browser, provided the information is available.
ME equipment to output		
Patient monitor	yes, [*no*]	**yes** States of patient monitors are output in MCO.
Infusion pump	yes, [*no*]	**yes** The MCO shows the states of infusion pumps.
Ventilation device	yes, [*no*]	**yes** The MCO shows the states of ventilation devices.
Dialysis device	yes, [*no*]	**yes** The MCO shows the states of dialysis devices.
Alarm processing pause (in seconds)	0 ..300 s [*30*]	This is the wait time that the system applies for alarm conditions that are pending at the same time and which the system inserts between the end of one alarm condition and the processing of an alarm condition that is already pending or that has newly arrived and that has the same or a lower priority, until this alarm condition sets off a broadcast process. **Note:** An alarm condition with a higher priority is signalled irrespective of this pause.
Upload background image	Use this button to upload an image file to use it as the background image in MCO. This file is not part of the scope of delivery and must be provided individually by the customer. **Note:** The graphic image must correlate with the screen resolution and must not exceed 500 KB.	
Delete MCO-Background Image	The button can also be used to remove the uploaded background image from MCO.	

Table 8-37 MCO-views - Settings

Tab 'Bed positions'

Use this tab to add and edit available beds to/for this MCO-view.

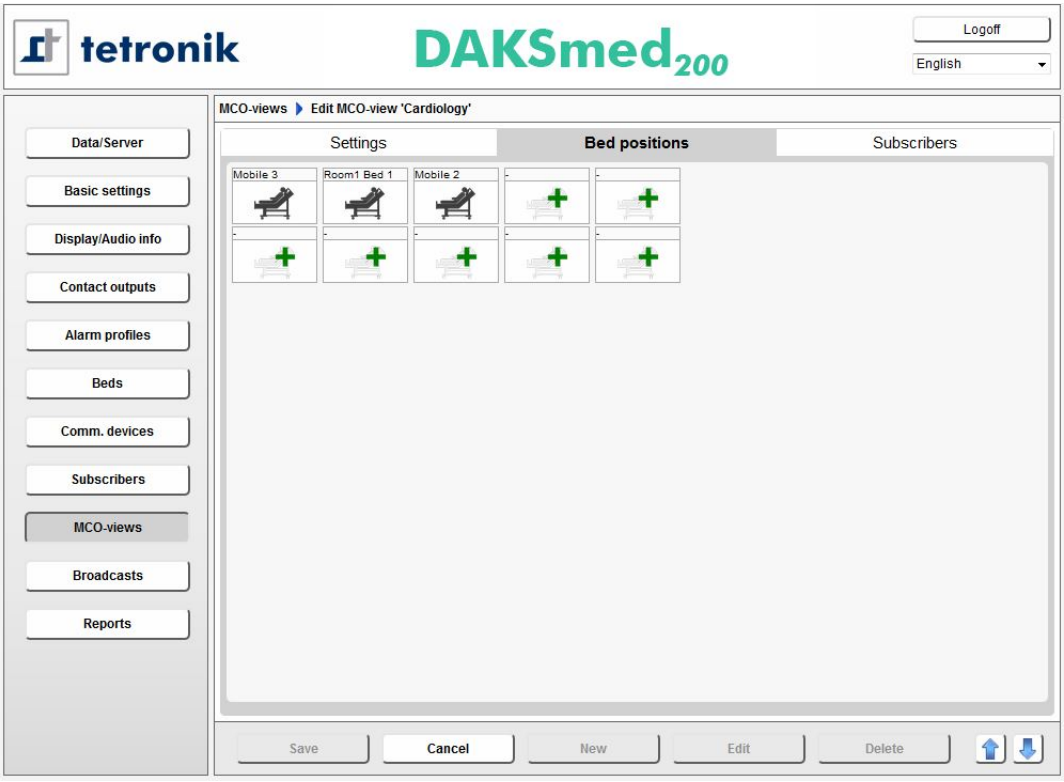


Image 8-53 MCO-views - Add and edit bed positions

Parameter/ Button	Value range	Description
New	Button	Use this button to open a table with the beds that can be assigned.
Edit	Button	Use this button to edit the assignment of a bed.
Delete	Button	Use this button to delete the assignment of a bed.

Table 8-38 Add and edit bed positions

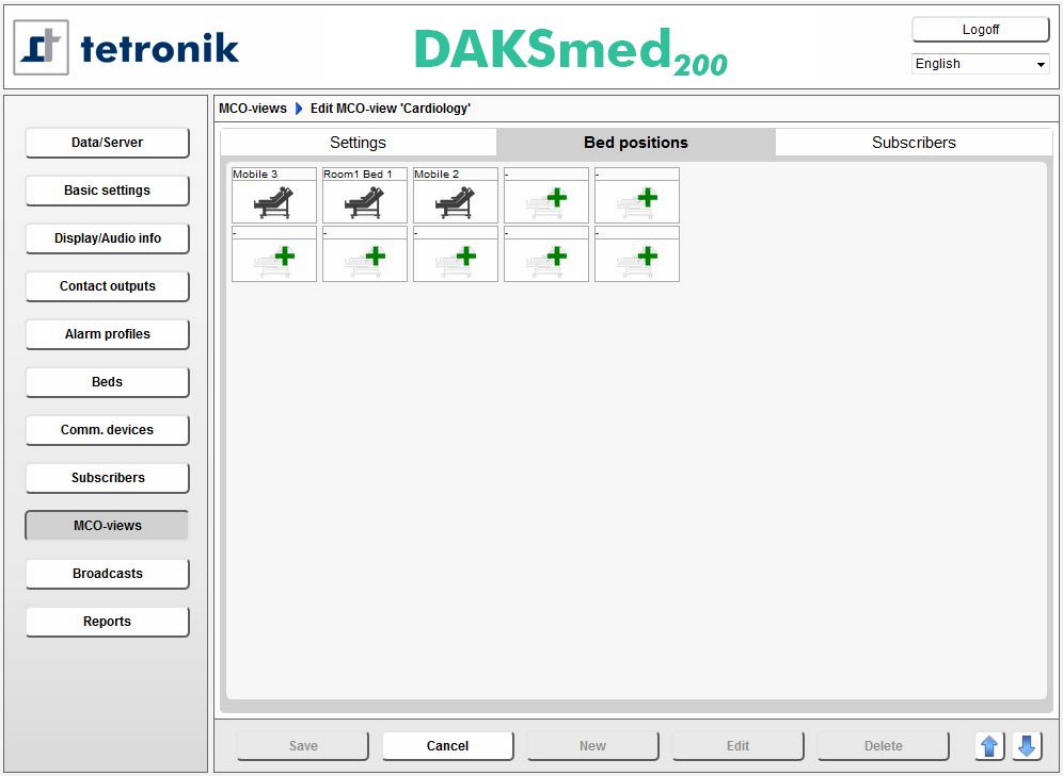


Image 8-54 Bed positions - Add new bed

Parameter/ Button	Value range	Description
New	Button	Use this button to add a new bed. ➤ see Section 8.12.1 "Add and edit Beds"

Table 8-39 MCO-views - Add new bed

Tab 'Subscribers'

Use this tab to add and edit subscribers to this MCO-view.

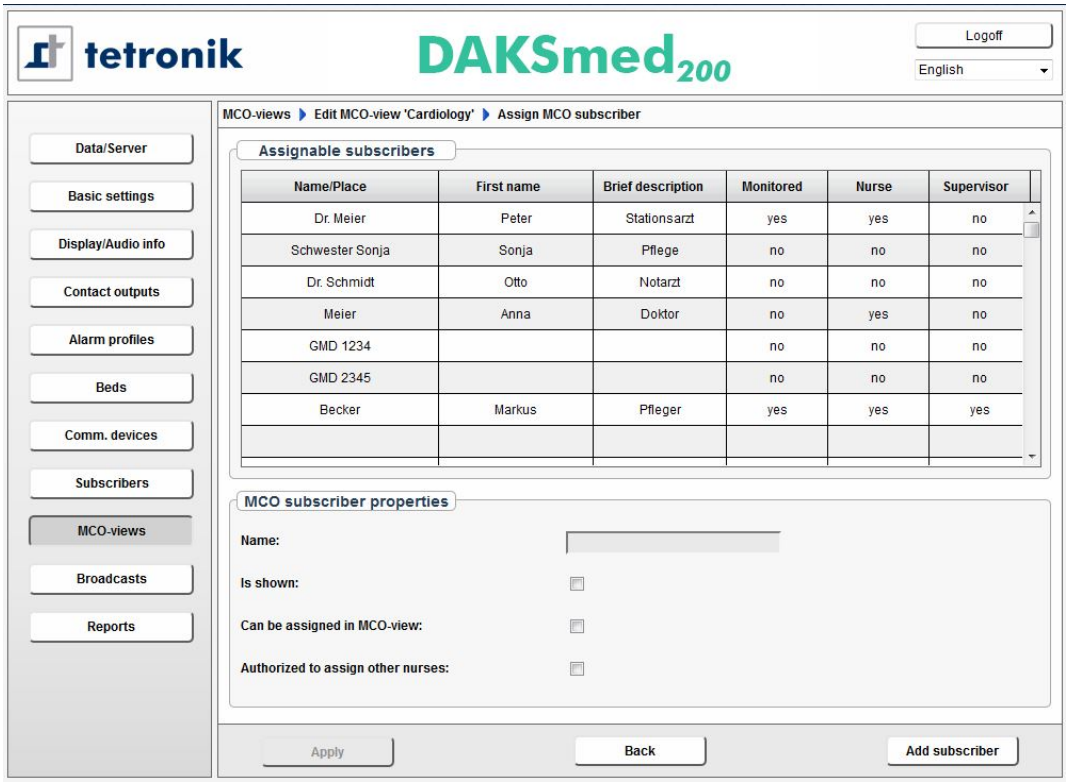


Image 8-55 MCO-views - Subscribers

Parameter/ Button	Value range	Description
Tab 'Assignable subscribers' Table with all assignable subscribers.		
Area 'MCO subscriber properties'		
Description	Subscriber reference [ ]	Reference to a subscriber.
Is shown	yes, [*no*]	Define if this subscriber is shown in this MCO-view.
Can be assigned in MCO-view	yes, [*no*]	Define if this subscriber may be assigned to a bed in this MCO-view.
Authorized to assign other nurses	yes, [*no*]	Specify if this subscriber has the authorization to assign other nurses in this MCO-view.
Authorized to activate alarm pauses	yes, [*no*	Define whether this subscriber is authorized to enable or disable alarm pauses for beds in the MCO view.
Add subscriber	Button	Use this button to add a new subscriber. ➤ see Section 8.16.1 "Add and edit Subscribers"

Table 8-40 MCO-views - Subscribers

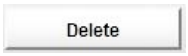
Parameter/ Button	Value range	Description
	Button	Use this button to open a table with the subscribers that can be assigned.
	Button	Use this button to edit the assignment of a subscriber.
	Button	Use this button to delete the assignment of a subscriber.

Table 8-40 MCO-views - Subscribers

8.18 Broadcasts

This area governs the behavior of broadcasts and their members.

For more information on the functions of broadcasts:

➤ see Section 3.3 "Workflow of Broadcasts"

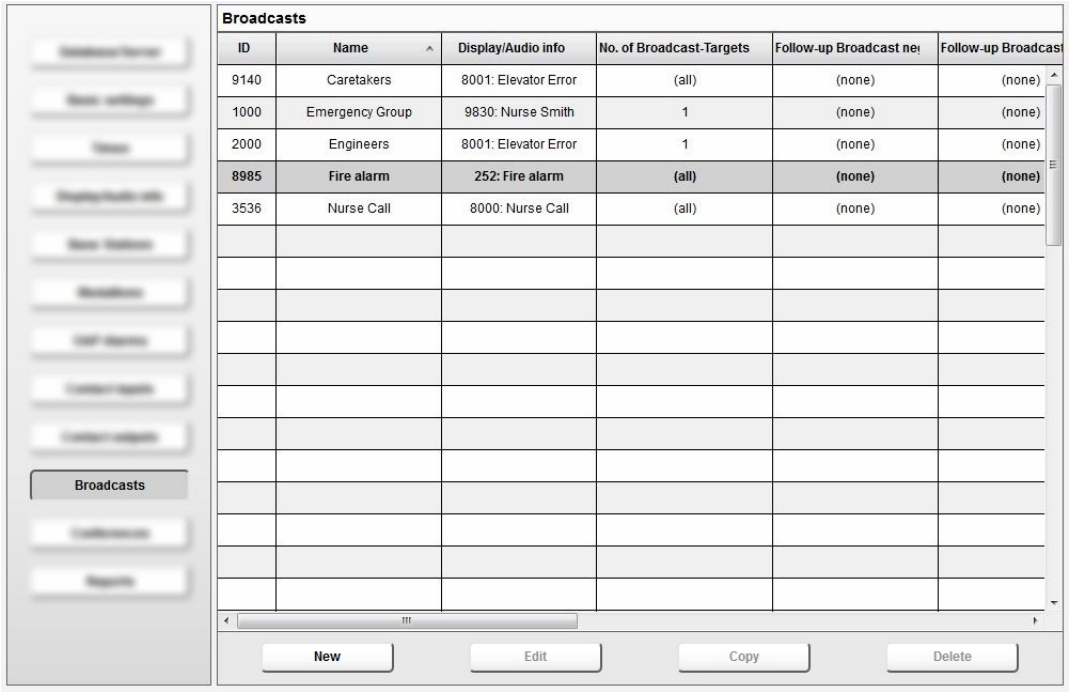


Image 8-56 Broadcasts

The below sections cover both the broadcast parameters and the broadcast members, including their respective parameters.

➤ see Section 8.18.1 "Group-specific settings"

➤ see Section 8.18.2.1 "Edit Broadcast members"

8.18.1 Group-specific settings

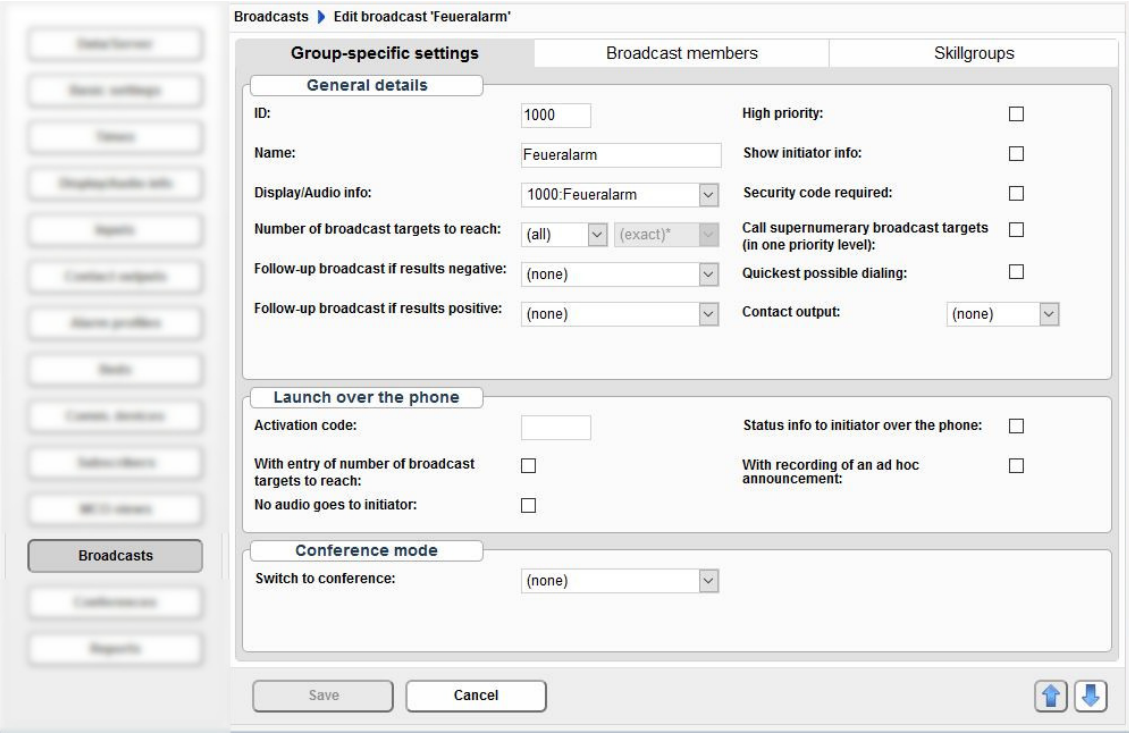
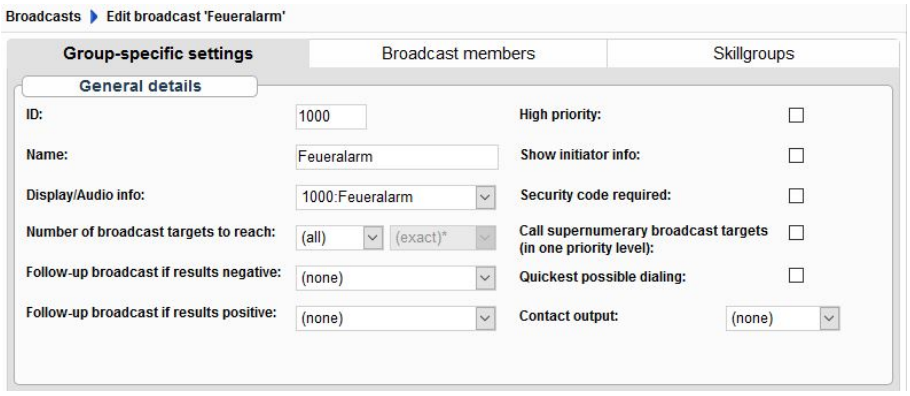


Image 8-57 The area 'Broadcasts - Group-specific settings'

8.18.1.1 General details



Parameters	Value range	Description
ID	4 digits [ ]	Identifier to launch a broadcast over the phone, via ESPA-X or via ESPA 4.4.4/TAP. **Note:** The IDs must be unambiguously left-aligned. For example, when the ID **10** is already assigned, **10**0 or **10**00 can no longer be assigned.

Table 8-41 Area Broadcasts - Group-specific settings

Parameters	Value range	Description
Description	30 characters [ ]	The name of the broadcast. If needed, this name is output as the calling name on the alerted subscriber's display. ➤ see Section 3.3.3 "The processing of Broadcast targets"
Display/Audio info	Reference Display/Audio info [ ]	The display/audio info that, if needed, is transmitted to the individual subscribers when the broadcast is launched. ➤ see Section 3.3.2 "Start Broadcasts"
Number of broadcast targets to reach	all, undetm.,1 .51 [*1*]	Number of broadcast targets (participants) that must be reached for a positive broadcast result. Since a broadcast contains a maximum of 50 participants, "51" means that DAKS will always start the "Follow-up broadcast if results negative". **Note:** Only possible if the automatically following "Switch to conference" was NOT selected for the broadcast. **all** The broadcast result is positive if all administered broadcast targets have been reached. **undetermined** The broadcast result is always positive. **Note:** The following two fields can only be selected if a value between 1 and 51 has been set as "Number of broadcast targets to reach". **exact** Exact number of broadcast targets that must be reached for a positive broadcast result. The broadcast is terminated when the number is reached. **at least** Minimum number of broadcast targets that must be reached for a positive broadcast result. The broadcast process tries to reach additional broadcast targets beyond the number.

Table 8-41 Area Broadcasts - Group-specific settings

Parameters	Value range	Description
Follow-up broadcast if results positive	Reference Broadcast [ ]	The follow-up broadcast that is launched when the overall broadcast results are positive. **Note:** Only possible if the parameter 'Switch to conference' was NOT selected for this broadcast! The function Follow-up broadcast CANNOT be used for high priority broadcasts. Medical alarm conditions cannot set off broadcasts with follow-up broadcast as they already include their own escalation strategy.
Follow-up broadcast if results negative	Reference Broadcast [ ]	The follow-up broadcast that is launched when the overall broadcast results are negative. **Note:** Only possible if the parameter 'Switch to conference' was NOT selected for this broadcast! The function Follow-up broadcast CANNOT be used for high priority broadcasts. Medical alarm conditions cannot set off broadcasts with follow-up broadcast as they already include their own escalation strategy.
High priority	yes, [*no*]	**yes** A high-priority broadcast process interrupts all broadcast processes with a lower priority. After the high priority process ends, the interrupted lower priority processes will continue again. High priority broadcast processes cannot be canceled by other high priority processes. **Note:** Please bear in mind that you **cannot** assign a follow-up broadcast to a high-priority broadcast.

Table 8-41 Area Broadcasts - Group-specific settings

Parameters	Value range	Description
Show initiator info	yes, [*no*]	Activate this box for direct output of the details on the initiator who launched the broadcast. **yes** The information on the initiator or the information provided by the initiator is output immediately (= Show initiator info). **no** The display of the broadcast targets will first show the display/audio info assigned to the broadcast, and only then the information on the initiator who launched the broadcast. **Note:** This parameter is also assessed during the escalation broadcast.
Security code required	yes, [*no*]	**yes** A security code can be administrated for the broadcast targets and queried when targets are called. **no** No security code can be administrated (field is grayed out). If a security code was administrated before, it will be saved, remain visible in the grayed out field and reactivated as soon as this flag is set to 'yes' and thus enabled again. **Note:** Only relevant for broadcast targets with the connection type 'Telephony'.
Call supernumerary broadcast targets (in one priority level)	yes, [*no*]	**yes** If sufficient channels are available, the system calls more subscribers with the same priority level in parallel than are needed for the broadcast. **no** The system will not exceed the total number of subscribers to reach when it calls this broadcast target.
Quickest possible dialing	yes, [*no*]	**yes** If sufficient channels are available, the system calls the subscribers as quickly as possible and irrespective of the priority level. **no** The system only calls subscribers that share the same priority level.
Contact output	Reference Contact output [ ]	Contact output that is activated during the runtime of the broadcast.

Table 8-41 Area Broadcasts - Group-specific settings

Parameters	Value range	Description
Skillgroup	yes, [no]	**yes** Within the broadcasts, skillgroups can be administered with names and the number of participants to be reached with individual targets.
Signaling for Mitel/ Aastra	[*none*], Orange + Melody 1 Yellow + Melody 2 Green + Melody 3 Red + Melody 4	Background color on the communication device's display and the melody that is used for the broadcast.

Table 8-41 Area Broadcasts - Group-specific settings

8.18.1.2 Edit the Launch over the phone



Image 8-58 Launch over the phone

Parameters	Value range	Description
Activation code	0..99999 [ ]	Use this input field to enter the Activation code (max. 5 digits). When an activation code is configured, it must be entered when launching this broadcast over the telephone.
With entry of number of broadcast targets to reach	yes, *[no]*	**yes** When the broadcast is launched over the phone, the initiator can enter the number (one digit) of targets that need to be reached. **Note:** If the number is equal to '0', the system will apply the number of broadcast targets to reach that has been administrated for the broadcast.
No audio goes to initiator	yes, *[no]*	**yes** The initiator who launched the broadcast gets no audio signal, e.g. for 'Silent alarms'.
Status info to initiator over the phone	yes, *[no]*	**yes** The initiator can see on his/her display how many broadcast targets have already been reached and how many broadcast targets need to be reached in the broadcast.
With recording of an ad hoc announcement	yes, *[no]*	**yes** The initiator who launches the broadcast over the phone can record an ad hoc voice announcement from his/her phone during the alarm activation, and this announcement is played back during the broadcast, where applicable after the administrated broadcast announcement.

Table 8-42 Configuration of Launch over the phone

8.18.1.3 Conference mode

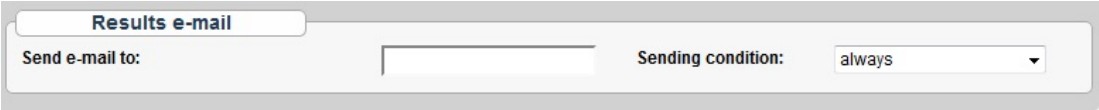


Image 8-59 Conference mode

Parameters	Value range	Description
Switch to conference	Reference Conference [ ]	Drop-down combo to select the conference that shall immediately follow after the broadcast and into which the reached broadcast targets shall be switched together. **Note:** Is you assign to a broadcast a subsequent conference into which all reached broadcast targets are switched together, you cannot assign a follow-up broadcast can be assigned to that broadcast. **Note:** If the broadcast has been triggered via DAKS Communicator, this person is selected as the initiator with the highest priority and the features "Disconnect", "Ignore call forwarding" and "Speaker call".
Right to speak only for highest priority	yes, *[no]*	**yes** Only conferees who have the highest priority when the conference is switched together have the right to speak during the conference. In contrast, conferees with a lower priority are only able to listen. Once the last conferee from the highest priority level hangs up while the conference is still active, all remaining conferees will gain the right to speak.
No welcome message to high-priority broadcast targets	yes, *[no]*	**yes** Conferees with high priority do not get a welcome message when they enter into the conference. This makes it switch together emergency conferences quicker between a distressed person and the responders.

Table 8-43 Configuration of Conference mode

8.18.1.4 Results e-mail



Parameters	Value range	Description
Send e-mail to	100 characters [ ]	Use this field to enter the e-mail address where the results e-mail with the report is sent. No entry here signifies: No e-mail service.
Sending condition	*[always],* only pos. final results only neg. final results	The sending condition that must apply for this results e-mail to be dispatched: • **always** The results e-mail is sent always. • **only pos. final results** The results e-mail is only sent when the broadcast results are positive. • **only neg. final results** The results e-mail is only sent when the broadcast results are negative.

Table 8-44 Configuration of Results e-mail

8.18.2 Add and edit new Broadcast members

Use this area to:

- assign available subscribers to the selected broadcast.
- edit available broadcast members.
- add new subscribers.

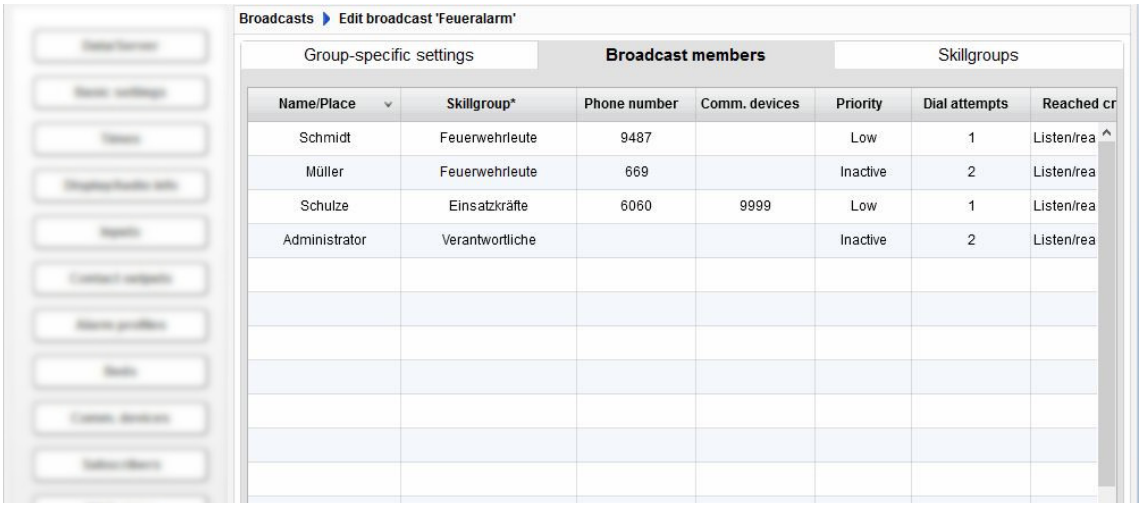


Image 8-60 Broadcast members

8.18.2.1 Edit Broadcast members

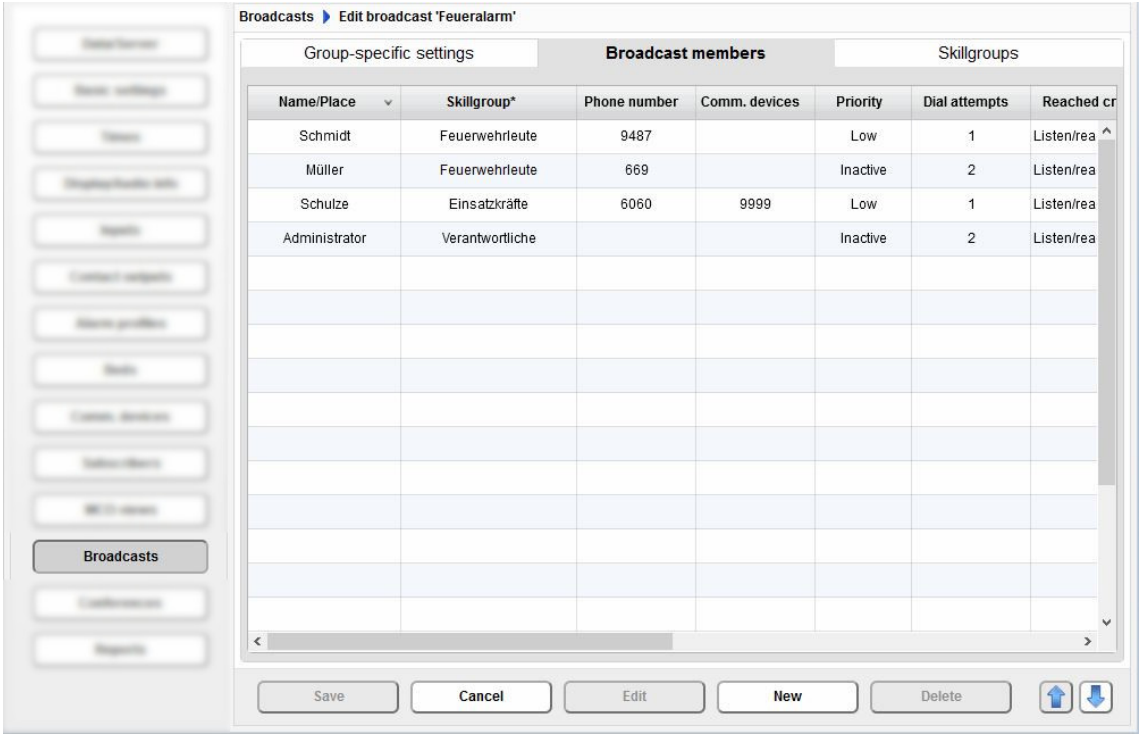


Image 8-61 Broadcast members

Parameter/ Button	Value range	Description

Table 8-45 Edit broadcast members

Parameter/ Button	Value range	Description
Name/Place	Info field	The name of the subscriber or place.
Addressing priority	Inactive, [*low*], medium, high	The priority with which the broadcast target is called.
Dial attempts	1..99 [*3*]	The number of dial attempts when the subscriber failed to take the call, or when his/her line was busy.
Reached criterion	[*Listen only*], pos./neg. confirmation	• **Listen only** DAKS has played the broadcast announcement sufficiently long enough to the subscriber. • **pos./neg. confirmation** The subscriber must press '0' to confirm negative or '1' to confirm positive. ➤ see Section 3.3.6 "The reached criteria"
Call signal [1)]	[*Normal*], Urgent (External), Alarm	The signaling of the call if no answer (only if supported by the PBX).
Security Code	5 digits [ ]	This field only becomes active when the parameter 'Security code required' is enabled fort the broadcast. When a security code is entered here, and on condition the parameter 'Security code required ' is enabled for the broadcast, the subscriber must enter this specific security code before he/she can be played the message or be switched into the conference. **Note:** Only relevant for broadcast targets with the connection type 'Telephony'.
	Note: The following area is deactivated when the either of the connection types OAP, E-mail - Service, OM-AXI, DMC or Internal Telephony is selected.	
If line busy [1)]	[*none*], Camp on, Forced release, Intrusion, Emergency intrusion	Special alarm function when calling subscribers whose lines are momentarily busy (if supported by the PBX). **Note:** If a member is occupied by a broadcast process and should be reached by a second one at the same time, the following applies: If the flag 'Disconnect' is not set for the busy member and 'Disconnect' is set for the member in the second broadcast process, the member is disconnected in the first broadcast process and dialed by the second broadcast process.

Table 8-45 Edit broadcast members

Parameter/ Button	Value range	Description
If trunk busy [1]	[*none*], Intrusion, Forced release	Special alarm function when calling trunks that are momentarily busy (if supported by the PBX).
Voice calling (speaker-phone control)[1]	yes, [*no*]	Speakerphone control is activated/not activated. The terminal is automatically switched to the call state with the loudspeaker activated ('ON'). With this feature, the subscriber does not need to actually pick up the speaker or press the call-acceptance key.
Ignore call-pickup group [1]	yes, [*no*]	**yes** The call cannot be accepted by a member of the call-pickup group. In this case, the members of the call-pickup group get no alarm tone signal either.
Ignore call deflection [1]	yes, [*no*]	**yes** The call forwarding that may be configured will be ignored/applied.
Override executive/secretary function 1[1]	yes, [*no*]	**yes** Override of an executive/secretary function (CHESE) in order to reach the wanted person directly, even if all of his/her calls are usually routed the secretariat.
Override do-not-disturb function [1]	yes, [*no*]	**yes** A possible do-not-disturb function will be ignored.
Call with MLPP-Level Flash	yes, [*no*]	**yes** MLPP protocol function that enables a prioritized call with the priority 'Flash' = flash call. **Note:** This parameter is automatically deactivated as long as 'Use MLPP'@'Basic settings'->'Telephony' is **not** enabled.
Add subscriber	Button	Use this button to add a new subscriber. ➤ see Section 8.16.1 "Add and edit Subscribers"

Table 8-45 Edit broadcast members

1) To activate this feature, it must be supported by the signaling protocol, by the PBX system or network, or by the softswitch, and frequently also by the end device itself.

8.18.3 Create and edit new Skillgroups

In this section you can:

- available participants are assigned to the selected broadcast.
- available broadcast members can be edited.
- new subscribers can be created.

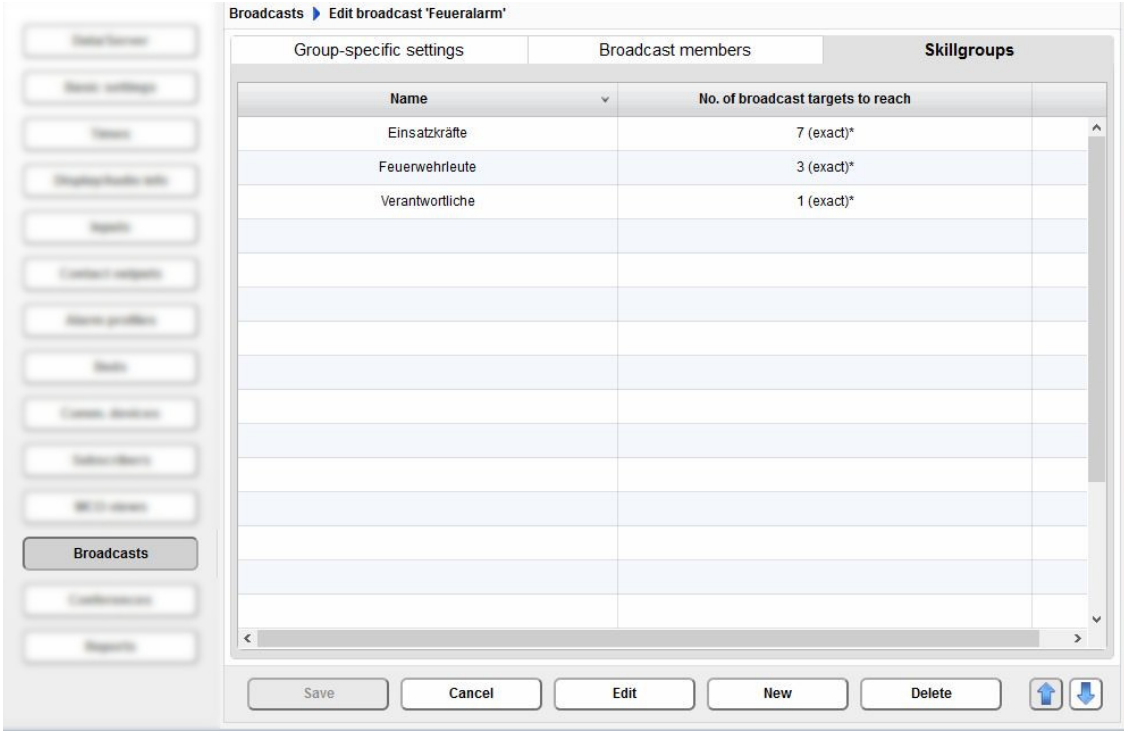


Bild 8-62 Area broadcast members

8.18.3.1 Edit Skillgroups

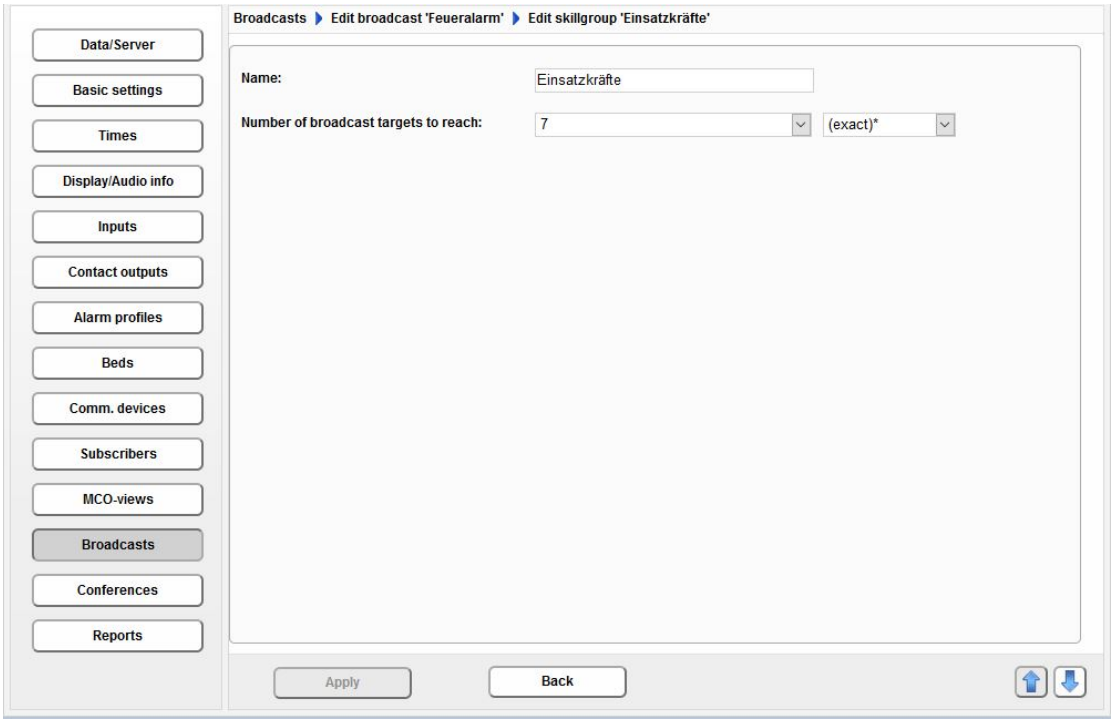


Bild 8-63 Edit broadcast members

Parameter/ Schaltfläche	Werte-bereich	Beschreibung
Name	Info box	Name of the Skillgroup

Tabelle 8-46 Edit broadcast members

Parameter/ Schaltfläche	Werte-bereich	Beschreibung
Number of broadcast targets to reach	all, undeterm., 1 ..51 [*1*]	Number of broadcast targets (subscribers) that must be reached in this Skillgroup. **all** Only if all administered broadcast targets have been reached, this Skillgroup is considered to have been processed positively. **undetermined** Regardless of the number of broadcast targets reached, this Skillgroup is always considered to have been processed positively. **Note:** The following two fields can only be selected if a value between 1 and 51 has been set as "Number of broadcast destinations to reach". **exact** Exact number of broadcast targets that must be reached for a positive result. Dialing in this Skillgroup is terminated when the selected number is reached. **at least** Minimum number of broadcast targets that must be reached for a positive result. The broadcast process tries to reach additional broadcast targets beyond the number.

Tabelle 8-46 Edit broadcast members

8.19 Conferences

This area governs the behavior of conferences, including their individual announcements and parameters.

For more information on the functions of conferences:

➤ see Section 3.4 "Conferences"

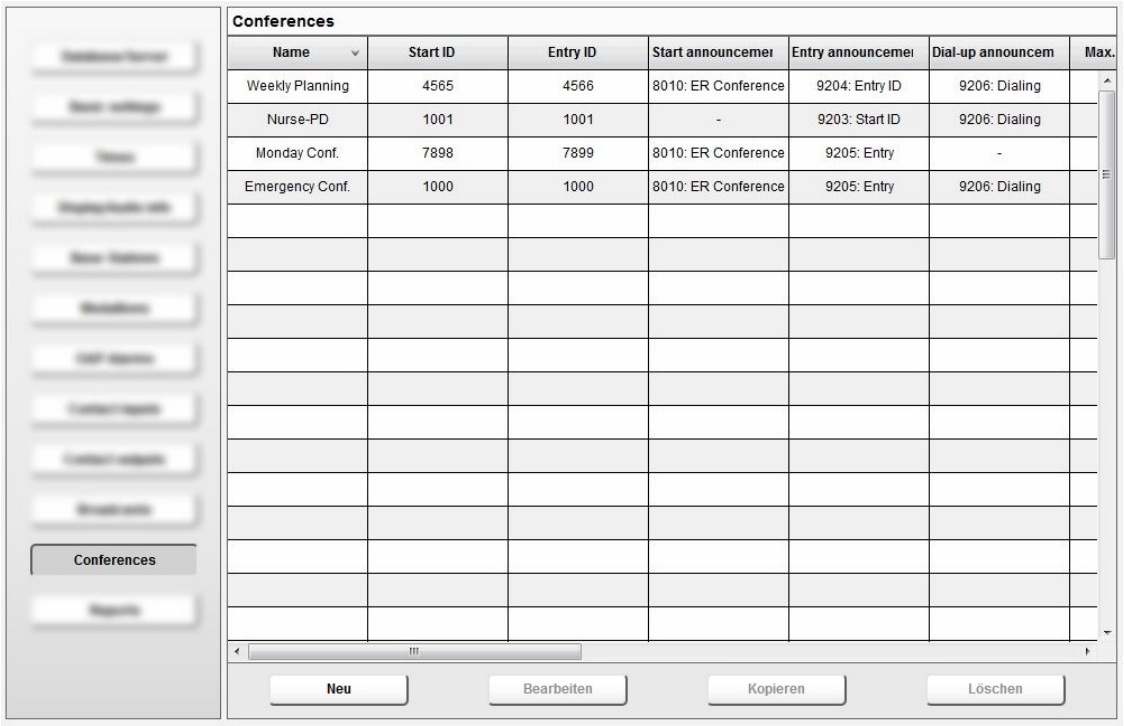


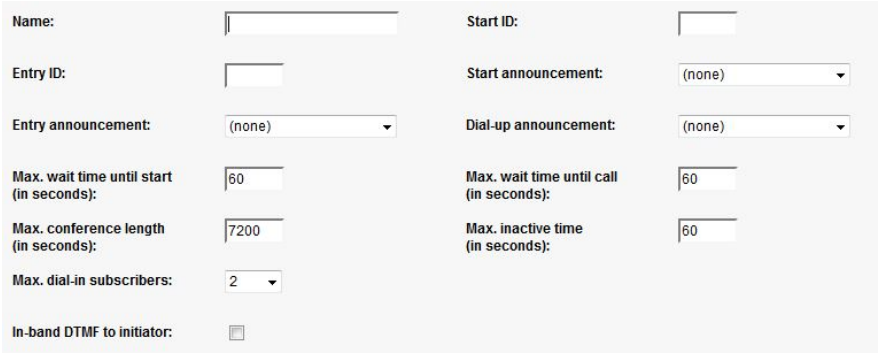
Image 8-64 Conferences

8.19.1 Parameters of a Conference



Image 8-65 Parameters of a Conference

8.19.2 Add and edit Conferences



Parameters	Value range	Description
Description	16 characters [ ]	The name of the conference.
Start ID	4 digits [ ]	Identifier to start the conference. **Note:** The Start ID and the Entry ID may be identical.

Table 8-47 Edit Conferences

Parameters	Value range	Description
Entry ID	4 digits [ ]	Identifier to enter into a conference that has already been started, or to enter into a conference in advance, i.e. before the conference has actually started. Make sure the 'Max. wait time until start' is set to: >0. **Note:** The Start ID and the Entry ID may be identical.
Start announcement	Reference Display/Audio info [*9207 Conf. started*]	The display/audio info that is played to the initiator when he/she activates this conference, unless 'No audio goes to initiator' is enabled. **Default ex works:** • Display text: `Phone Conference` • Voice message: *"You have started a Conference. Please wait for other participants."*
Entry announcement	Reference Display/Audio info [*9205 Entry*]	The Display/audio-info is played when a subscriber enters into this conference. **Default ex works:** • Display text: `Phone Conference` • Voice message: *"Telephone Conference"*.
Dial-up announcement	Reference Display/Audio info [*9206 Dial in*]	The display/audio-info that is played to a broadcast target before he/she is switched into the conference. **Default ex works:** • Display text: `Phone Conference` • Voice message: *"Telephone Conference"*.
Max. wait time until start (in seconds)	0...999 [*60*]	The maximum length of ahead time for subscribers who dial into this conference before it is actually started. **Note:** If this time is set to '0' seconds, nobody will be able to dial into the conference in advance, i.e. before the conference start.
Max. wait time until call (in seconds)	0...999 [*60*]	The maximum wait time during which a second subscriber must enter into the conference after it has started. If no one actively dials into the conference and no called target can enter into the conference after the lapse of this time, the conference is automatically terminated.
Max. conference length (in seconds)	0...999 [*7200*]	Maximum length of the conference after its beginning.
Max. inactive time (in seconds)	0...999 [*60*]	This is the maximum time that a conference will remain active if only one master is left in the conference as its sole member.
In-band DTMF to initiator	yes, [*no*]	**yes** VoIP-DTMF and keypad entries from called subscribers are converted and signaled as inband DTMF to the initiator.

Table 8-47 Edit Conferences

8.20 Reports

The reports that are stored on the internal CompactFlash card (for DAKS-200) are listed in chronological order and can be retrieved and printed out individually, including their intrinsic details.

DAKS differentiates between three different types of reports:

- Type B = Report of a Broadcast
- Type C = Report of a Conference, and
- Type B/C = Report of a Broadcast with automatic entry into a Conference

With the authorization 'Edit & Upload/save', the reports can be exported in blocks and deleted from the internal memory.

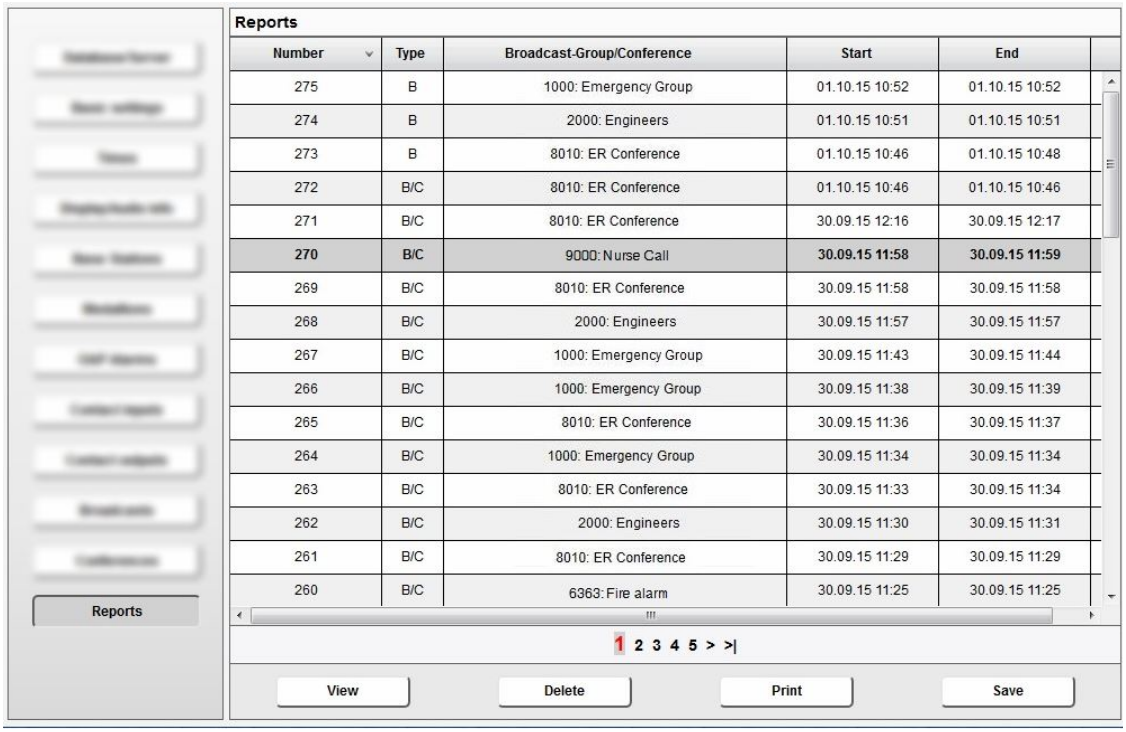


Image 8-66 Reports

Buttons:

Button	Description
View	Read reports with printout option. ➤ see Section 8.20.1 "The sections of Report"
Delete	Delete reports. ➤ see Section 8.20.4 "Delete reports".
Print	Print reports. ➤ see Section 8.20.2 "Printout reports as hardcopy"
Save	Save Reports. ➤ see Section 8.20.3 "Save reports"

Table 8-48 Buttons for DAKS Reports

8.20.1 The sections of Report

DAKS reports are divided into the following sections:

- Basic information (header area)
- Events
- Individual Broadcast Results/Individual Conference Results

Parameters	Description
Basic parameters - Overview	
Consecutive number	To each report, DAKS assigns a consecutive or running number.
Activated broadcast	Only for the report types B and B/C: The name of broadcast ('Name'@'Broadcasts') and its identifier ('ID'@'Broadcasts').
Activated conference	Only for the reports of the types B/C and C: The name of the activated conference ('Name'@'Conferences') and the ID of the conference ('ID'@'Conferences').
Initiated via	Telephone, contact, GMD medallion, data interface, MAI.
Trigger	Info on the initiator: – Telephone = Calling number, calling name – Contact = „Digital-In-“+Contact number, Letter+contact number (USB contacts) – GMD medallion = Calling number, calling name – Data interface = ESPA-X, serial interface – MAI = Unique identifier of the MASI alarm condition
Basic information - applies only to reports of the types B and B/C	
About	Details on the information that was transmitted.
Send results e-mail to	The e-mail address where the results e-mail with the report was sent.
Total broadcast targets	The number of subscribers who are assigned to this broadcast.
Overall result	The final evaluation of the broadcast.
Positive results	The number of total subscribers who were reached or who confirmed positive.
Negative results	The number of total subscribers who were not reached or who confirmed negative.
E-mails sent	The number of total subscribers that received an e-mail.
Not processed	The number of total subscribers for whom no final results are available.
Events	
Date/time	The start, activation, and end of a broadcast or conference, in this format: Date: DD.MM.YY (e.g. 29.03.12) Time: hh:mm:ss (e.g. 10:40:35)
Event	"Started" The start of the broadcast or conference process. "Active" The moment starting from which two subscribers were connected. "Conversation" The moment of time during the conference, starting from which at least one conference master and one additional subscriber are connected in the conference. "Ended" The end of the broadcast and/or conference.

Table 8-49 Report sections

Parameters	Description
Individual Results - General	
Date/time	The date and time of the individual results, shown in this format: Date: DD.MM.YY (e.g. 29.03.12) Time: hh:mm:ss (e.g. 10:40:35)
Individual Broadcast Results, applies only to the reports types B and B/C, divided into these segments: • **Positive**: Broadcast targets who were reached by DAKS or who confirmed positive. • **Negative**: Broadcast targets who were rot reached by DAKS or who confirmed negative. • **Not processes**: Broadcast targets for whom no final results are available. • **E-mail Service**: Broadcast targets who were reached by DAKS via the E-mail Service.	
For each segment, the system logs the following parameters:	
Name	The name of the broadcast member.
Function	The function of the broadcast member.
Broadcast target	The phone number of the communication device (broadcast target).
Connection type	The connection type of the communication device (broadcast target).
Details	The type of confirmation by the broadcast target.
Individual Conference Results - applies only to the reports types B/C and C:	
Subscribers	The phone number of the individual conferees, incl. the prepended consecutive number. DAKS reserves and prepends the number '1:' always to the phone number of the initiator of the broadcast with automatic entry into a conference or, alternatively, to the phone number of the subscriber who started the conference over the phone using the Start ID, for example: – 1:6011 = The initiator who launched, over the phone, the broadcast with automatic entry into a conference. – 2:4711, Müller, Pit = The broadcast member called by DAKS. – 3:9211, Meier, Ralf = The broadcast member called by DAKS.
Target type	Conferee type – Start ID = This subscriber started the conference over the phone. – Entry ID = This subscriber dialled into the conference over the phone. – Initiator = This subscriber launched, over the phone, the broadcast with automatic entry into a conference. – Broadcast member = The broadcast member was reached by DAKS and switched into the conference.
Details	Activity of the subscriber: - Entry - Exit

Table 8-49 Report sections

8.20.1.1 Example of a Broadcast Report

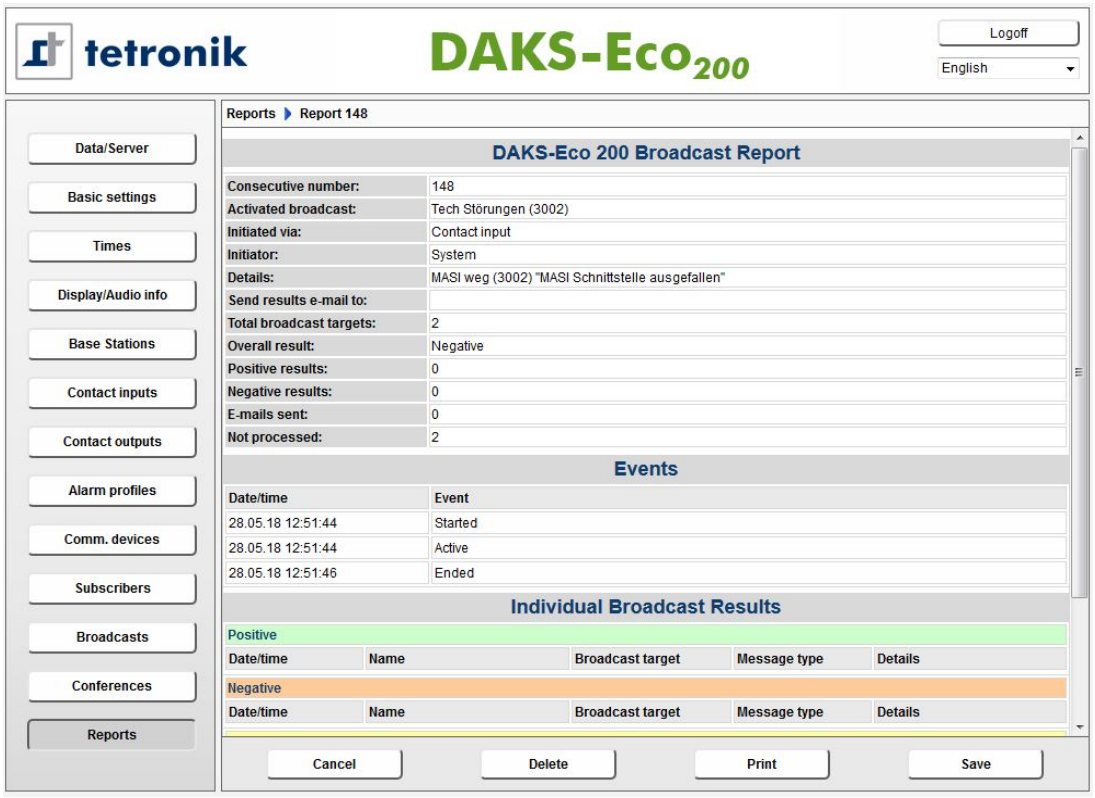


Image 8-67 Example: DAKS Broadcast Report

8.20.1.2 Example of a Conference Report

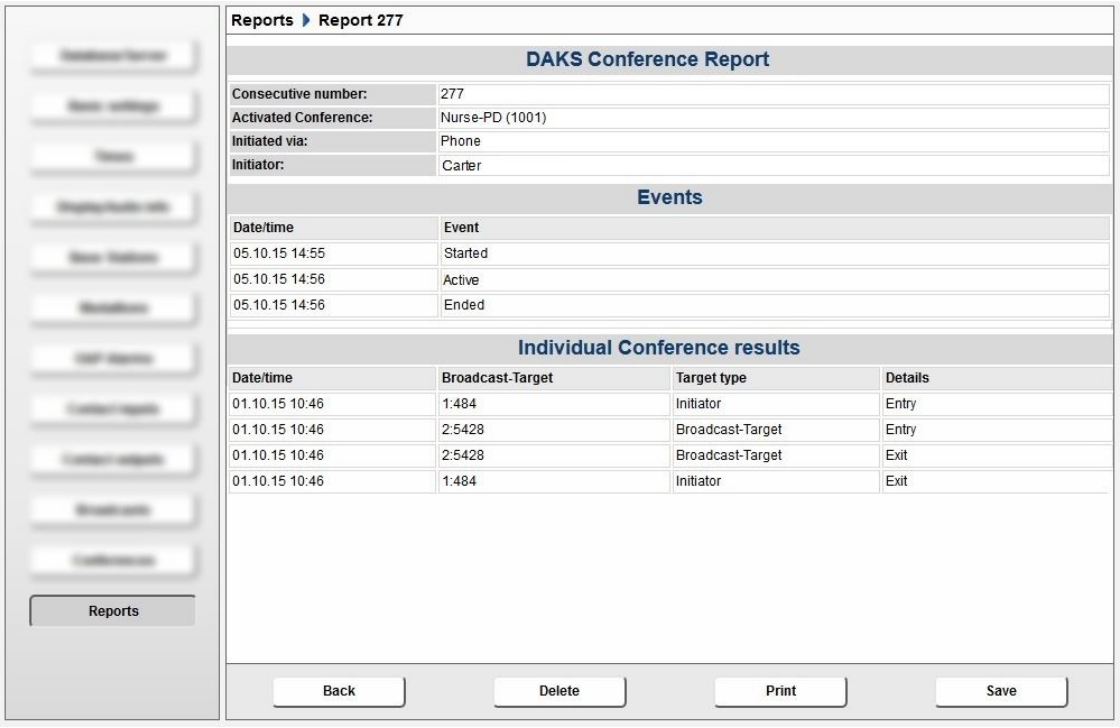


Image 8-68 Example: DAKS Conference Report

8.20.1.3 Example of a Broadcast-Conference Report

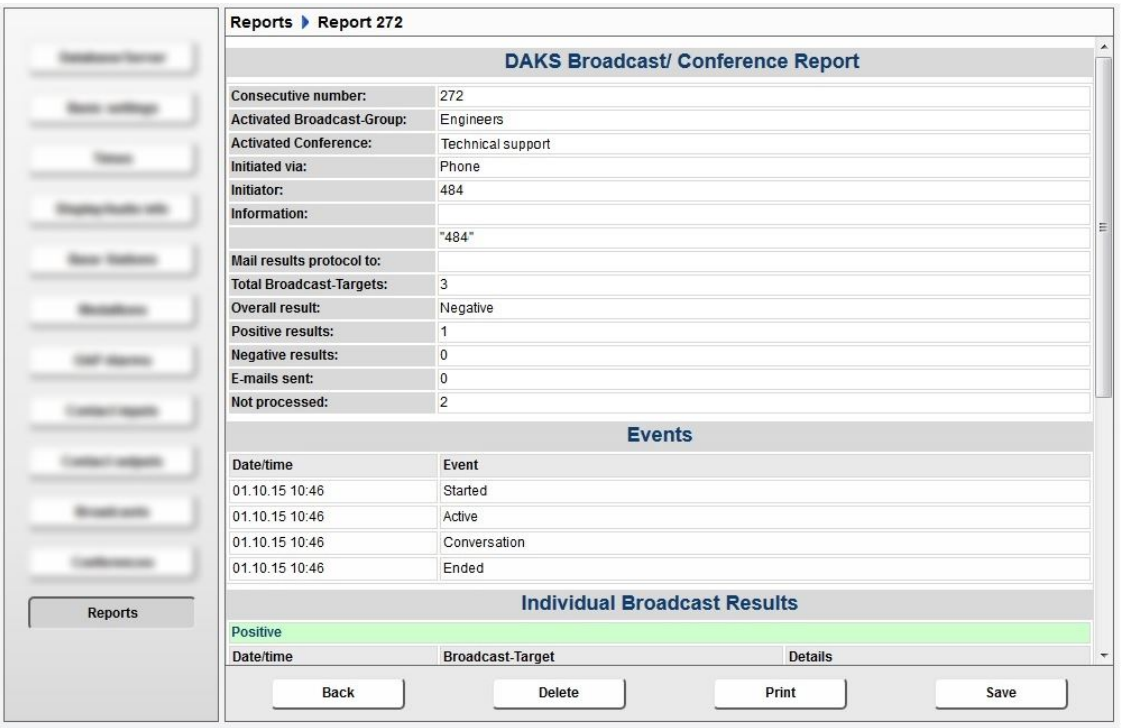


Image 8-69 Example: DAKS Broadcast-Conference Report

8.20.2 Printout reports as hardcopy

Buttons:

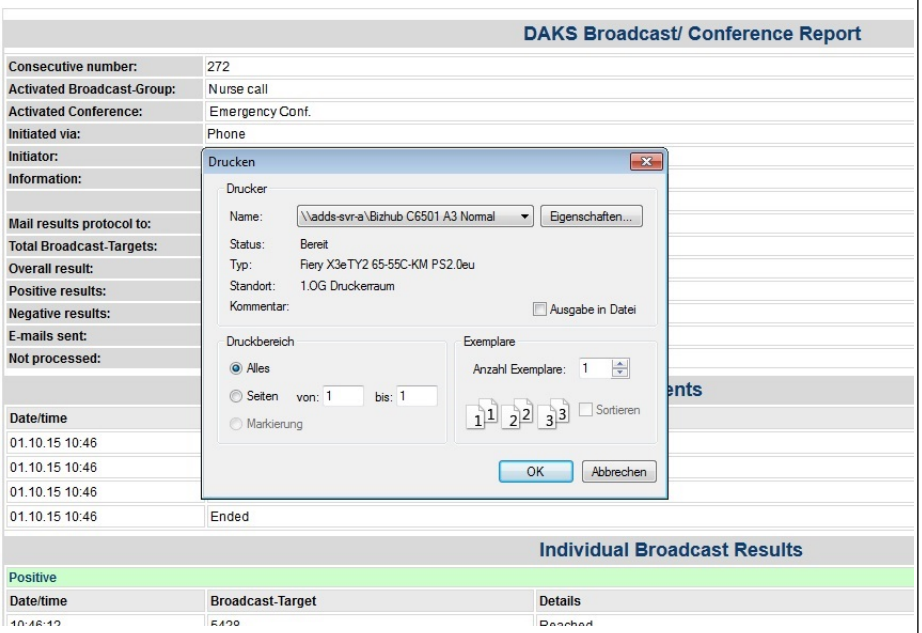
Button	Description
Print	Print report After you click **Print**, the following window will pop up with the report you selected. If needed, the system also opens a user window to start the printout (depends on the browser you are using).  **Note:** If you do not want to printout the file but save it instead, close the printout dialog, open your browser's pull down menu 'File' and use 'Save'.

Table 8-50 Printout reports - Buttons of DAKS reports

8.20.3 Save reports

Mark the report you want to save, or open it.

Click **Save**.

In the next step, the report is shown in a separate browser window from where it can be saved.

In this window, enter the location where you want to save the report.

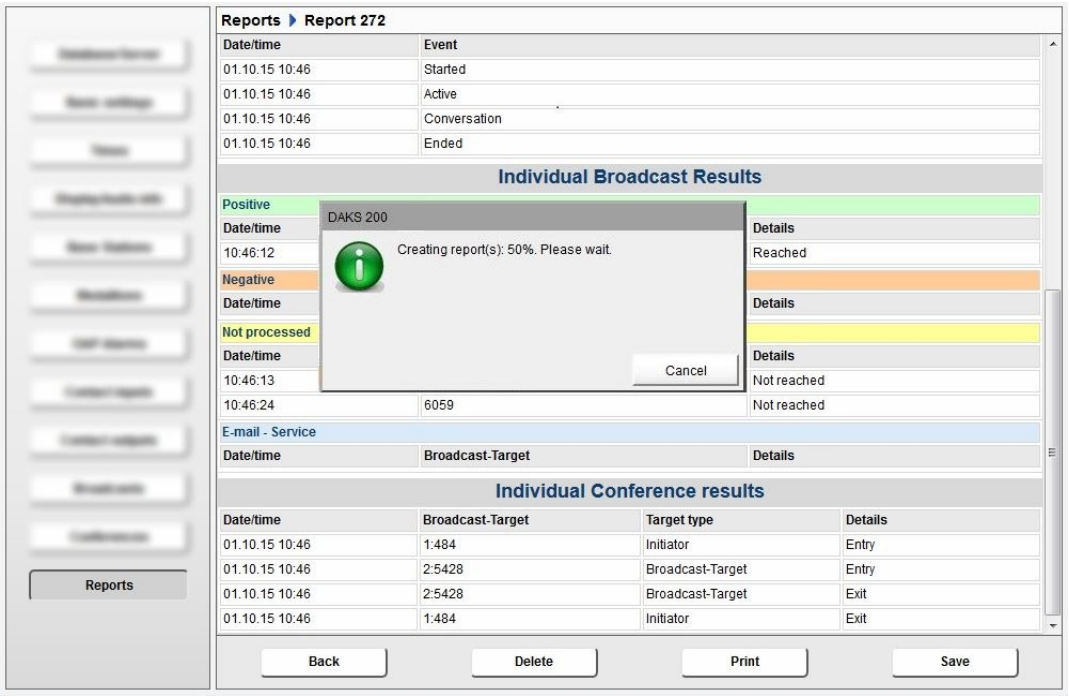


Image 8-70 Save reports

8.20.4 Delete reports

Mark the report you want to delete, or open it.

Next, click **Delete**.

Confirm the prompt with **Yes**.

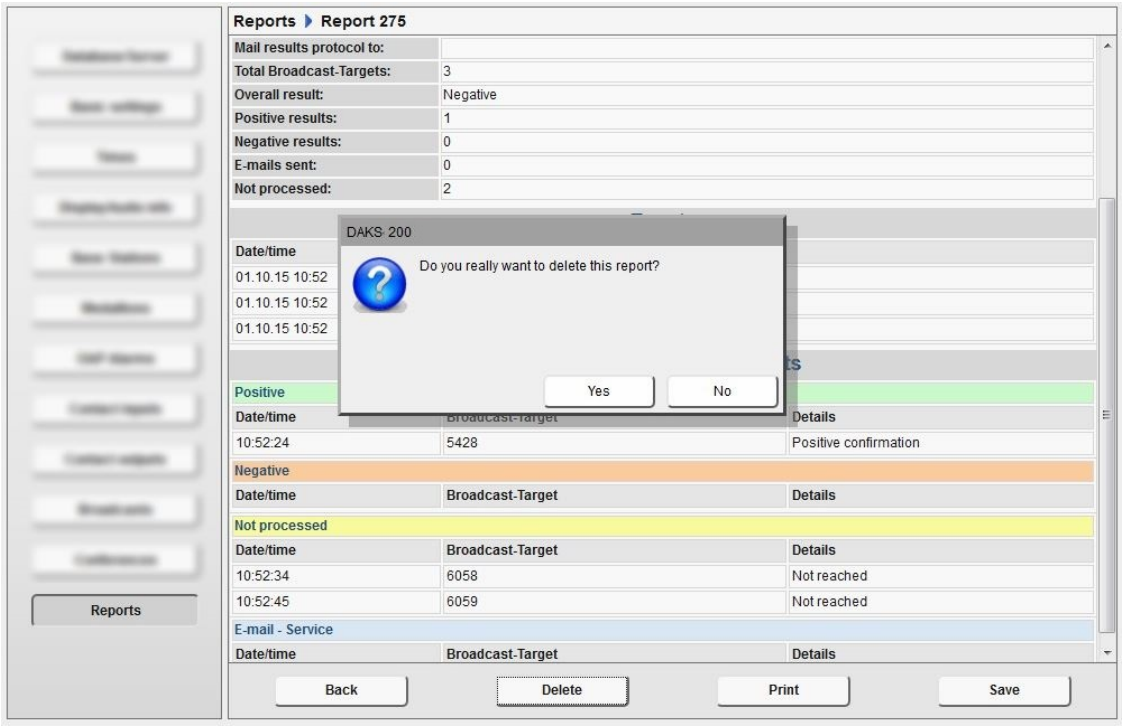


Image 8-71 Delete reports

9 DAKSmed Medical Care Organizer (MCO)

Overview

This chapter covers the Medical Care Organizer (MCO) of DAKS, abbreviated hereinafter with MCO.

Contents

9.1 General details
9.2 Login to DAKS
9.3 The MCO user interface
9.4 The area: Beds
9.4.1 User window to display beds
9.4.2 Move beds to 'defined places'
9.4.3 Activate/deactivate "alarm pause" for beds
9.5 The area: Subscribers
9.5.1 Assign nurses to patient beds
9.5.2 Delete all/individual assignments and log in/log off nurses
9.6 The area: Status bar

9.1 General details

To assign nurses to beds/patients and to visualize beds and alarm states, MCO of DAKSmed offers an intuitive browser interface in the languages German, English and Dutch.

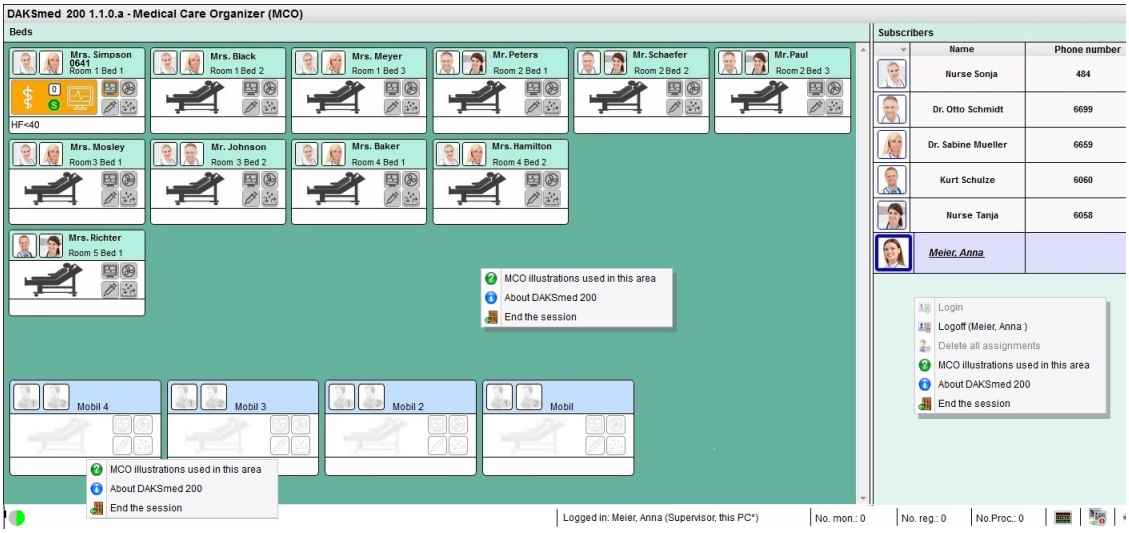


Image 9-1 DAKSmed - Browser-based user interface

For best output and functionality of the DAKSmed user interface you need one of the below-listed browsers:

- Mozilla Firefox Version 52 and up
- Microsoft Internet Explorer Version 11 and up

The MCO user interfaces can be simultaneously active five times.

Caution!
Please bear in mind that the DAKSmed functionality can only be ensured with the above-mentioned browsers.

Caution!
To output the DAKSmed user interface, make sure you activate JavaScript in your browser (default setting of the above-mentioned browsers).

Caution!
To be able to see all beds or states in the browser, make sure the setting 'Zoom' is set to 'Normal' in the browser.

When the 'Zoom' setting is in the enlarged area, it might happen that not all beds or states can be properly shown.

9.2 Login to DAKS

Start the browser and enter the following URL:

- if you are using HTTPS:
  https://<Host>:<Port>
- if you are using HTTP:
  http://<Host>:<Port>
- <Host> — The name or IP address of DAKS
  Default settings ex works: IP address 192.168.20.200.
- <Port> — The IP ports of DAKS are freely adjustable,
  ➤ see Section 7.21 "Parameters of the Web interface"
  If you decide to use the default port, please note that you can omit both the port and the opening colon.
  Default settings ex works: IP port HTTP: 80; IP port: HTTPS 443

This will open the login window of DAKSmed:

Login as Operator (with selection of the MCO-view you want to use). Enter your user name and password.

➤ see Section 8.6.5 "Routing"

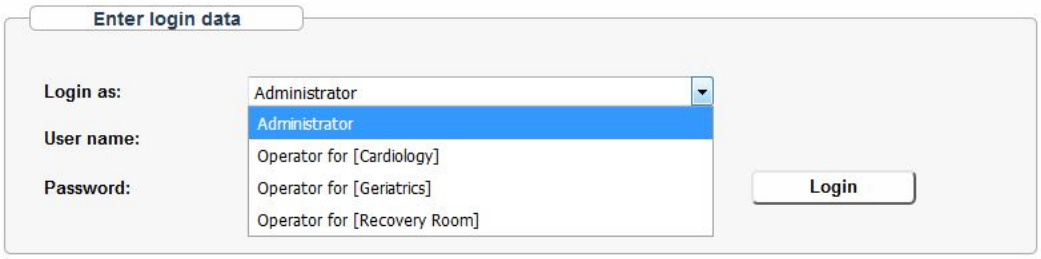


Image 9-2 Login window of DAKSmed

9.3 The MCO user interface

The below picture shows the different areas of the MCO user interface. The individual areas of the MCO user interface have these functions:

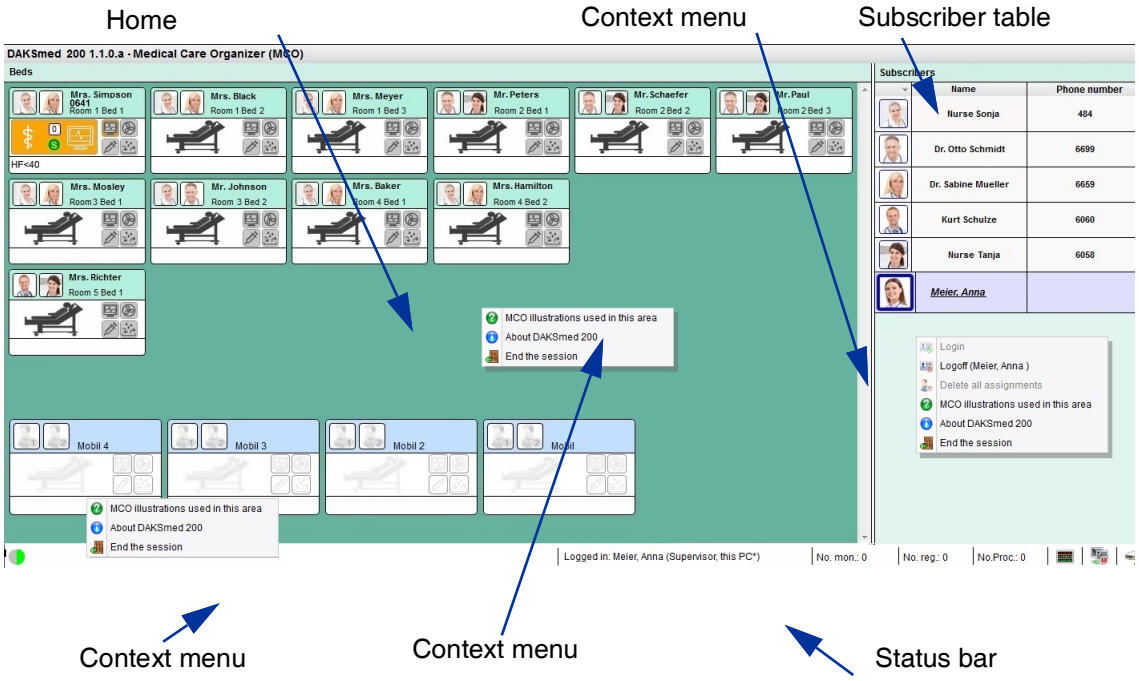


Image 9-3 MCO user interface - Structure

Home

The MCO home window covers:

- the stationary beds that are administrated (green header section).
- the administrated beds that can be moved manually (light blue header section).
- the administrated defined places (dark blue header section).
- the possible and the active medical device functions.
- the nurses.
- the present alarm conditions.

Subscriber table

This table visualizes the subscribers (nurses) with the following five different background colors:

- red = These are subscribers who have raised an alarm call (deliberate/automatic)
- yellow = These are monitored subscribers to whom there is currently no connection
- green = These are monitored subscribers who are in normal state
- blue = These are subscribers who are logged in (on-duty)
- gray = These are subscribers who are not logged in (off duty)

Status bar

The status bar covers:

- a circle icon that changes with every second to indicate that the browser is not frozen.
- where needed, the logged in subscriber with the information indicating if he/she is a nurse or a supervisor.
- where needed, error messages on non-administrated or non-licensed beds.
- the number of monitored and registered subscribers.
- the status to the MASI server (connected or not connected).
- the server status (active, yellow alert or red alert).

Context menu

Make a right mouse click to invoke a context menu that will offer different functions, depending on the window area in which the mouse is currently moving.

Description of the menu items:

Field	Description
MCO objects in this area	The objects used in this MCO area.
About DAKSmed 200	General information on DAKSmed.
End the session	The MCO is closed.
Exclusively in the area 'Subscribers':	
Login	➤ see Section 9.5.2 "Delete all/individual assignments and log in/log off nurses"
Logoff	➤ see Section 9.5.2 "Delete all/individual assignments and log in/log off nurses"
Assign comm. device	Assign a communication device to this subscriber.
Release comm. device	Delete the assignment of the communication device to this subscriber.
Delete all assignments	➤ see Section 9.5.2 "Delete all/individual assignments and log in/log off nurses"
Exclusively in the area 'Beds':	
Enable defined place	Delete the assignment of the bed to this defined place.
Switch alarm pause on/off	Opens a dialog for temporarily switching an alarm pause on or off for the selected bed.

Table 9-1 MCO user interface - Context menu

9.4 The area: Beds

9.4.1 User window to display beds

This section covers the different MCO objects that are used to visualize the states of patient beds, the data of patients, the assignment of nurses, and the alarm states.

Note:
The colors used to visualize the individual alarm priorities depend on the parameter 'Color scheme'@'MCO-views'->'Settings'.
➤ see Section 8.17.1 "Add and edit MCO-views"
The below explanations are based on the color scheme 'red-orange-yellow'.

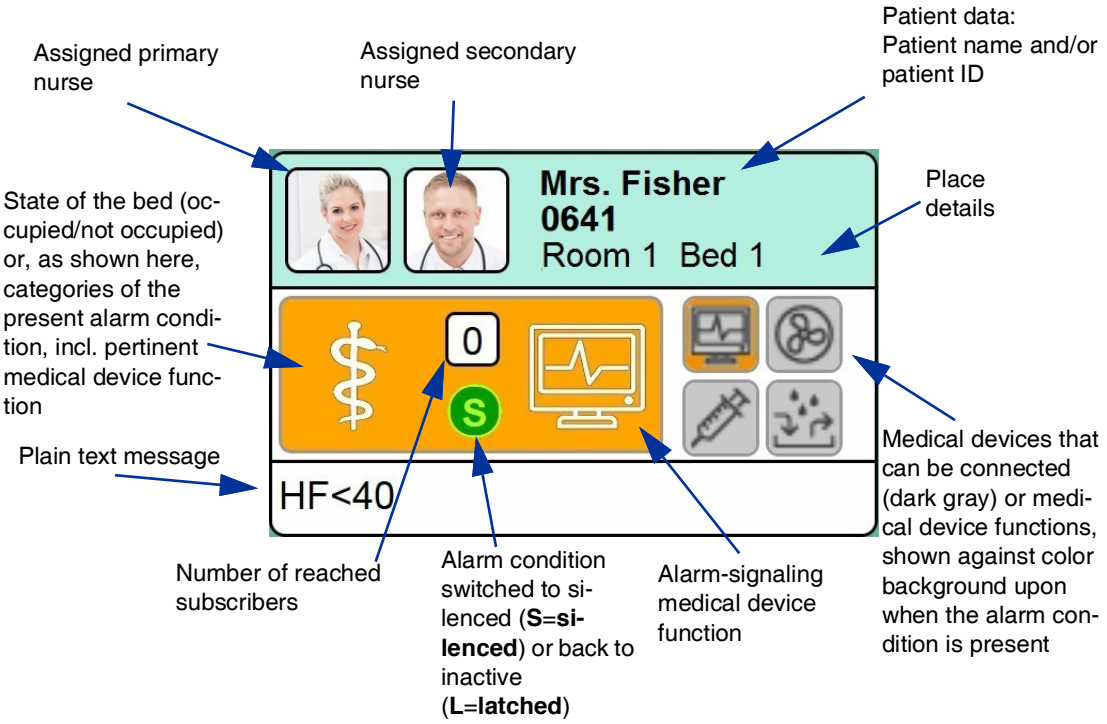


Image 9-4 Example: MCO objects for bed states/alarm conditions

Graphic rendition/ Alarm state	Description
MCO objects: "Beds"	
User window to display beds - Header	
	Placeholder for two assignable nurses.
	Visualization of an assigned nurse.

Table 9-2 MCO objects: Beds and alarm states DAKSmed

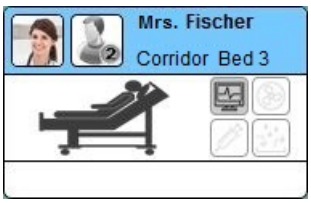
Graphic rendition/ Alarm state	Description
	**With a green border:** Visualization of the assigned nurse when this nurse has confirmed positive in the alarm situation.
	**With a red border:** Visualization of the assigned nurse when the nurse confirmed negative in the alarm situation.
Colors used to visualize the beds	
	**Green:** Stationary bed.
	**Light blue:** Bed that can be moved manually.
	**Dark blue:** Defined place to which a bed is assigned here.
User window to display beds - Home window	
	Visualization of an unoccupied bed.
	Visualization of an occupied bed with no active alarm state.

Table 9-2 MCO objects: Beds and alarm states DAKSmed

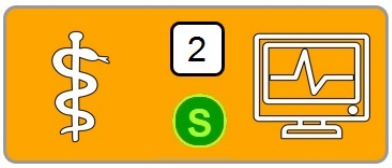
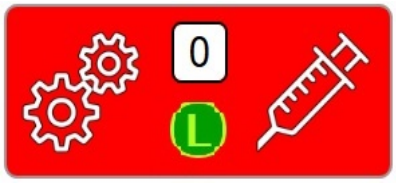
Graphic rendition/ Alarm state	Description
	Symbol for the bed status "Alarm pause", which is displayed on the bed icon. The remaining time in minutes is displayed in the upper left corner of the icon.
 	In an alarm situation, not the bed is shown but the following alarm information: • Icon for a physiological alarm (Rod of Aesculapius) or technical alarm (cogwheels) • Number of subscribers reached • S = silenced or L = latched) • Colors used to visualize the alarm priorities: – **yellow** = low priority – **orange** = medium priority – **red** = high priority • Icon used of the pertinent medical device functions
	The following icons are used to visualize the different medical device functions: • **Monitor:** Patient monitoring function • **Ventilator:** Ventilation/respiration function • **Syringe:** Infusion function • **Drop-Arrow:** Dialysis function
Examples	
	**Green:** Stationary bed is not occupied.
	**Green:** Stationary bed is occupied. Nurses 1 and 2 are properly assigned. Four medical device functions are presently active. No alarm is raised.

Table 9-2 MCO objects: Beds and alarm states DAKSmed

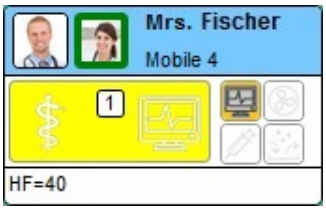
Graphic rendition/ Alarm state	Description
	**Light blue:** Bed that can be moved manually is not occupied.
	**Dark blue:** Bed that can be moved manually and that is moved to a defined place. Primary nurse (nurse 1) is assigned. One medical device function is presently active.
	**Dark blue:** The bed that can be moved manually and that is moved to a defined place is occupied. Nurses 1 and 2 are properly assigned. One medical device function is presently active. A physiological, low-priority (yellow) alarm condition from patient monitoring is present. Nurse 2 has confirmed the alarm positive.
	Display of a bed that is still in alarm pause for 30 minutes. No nurse is assigned. Four medical device functions are active. A physiological, high-priority (red) alarm condition from patient monitoring is present.

Table 9-2 MCO objects: Beds and alarm states DAKSmed

9.4.2 Move beds to 'defined places'

This section shows you how to use the mouse to move beds to so-called 'defined places'.

Caution!
Note that in this process, the nurses that may have already been assigned to this bed are not copied along!

Note:
To be able to place a bed that can be moved manually to a 'defined placed' in the MCO-view, administrate:

- **a bed that can be moved manually** with these settings:
  - MCO bed position type = normal bed
  - Bed can be moved manually = yes
- **a bed at a defined place** with these settings:
  - MCO bed position type = defined place

➤ see Section 8.12 "Beds"

Description / Visualization
Real-life example how to automatically assign a bed that can be moved manually: • Patient Meier was automatically assigned to bed position 'Mobile 3'. • Two nurses are assigned to this bed. • The medical device function 'Patient monitoring' is presently active.

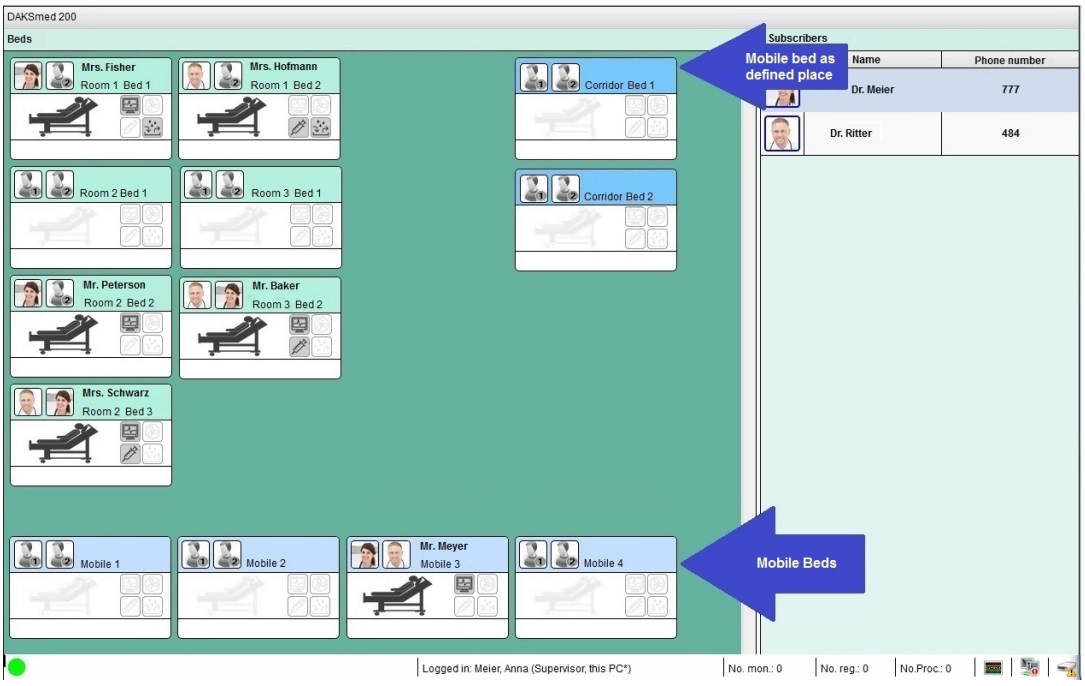


Table 9-3 Example: Assignment of a bed that can be moved manually

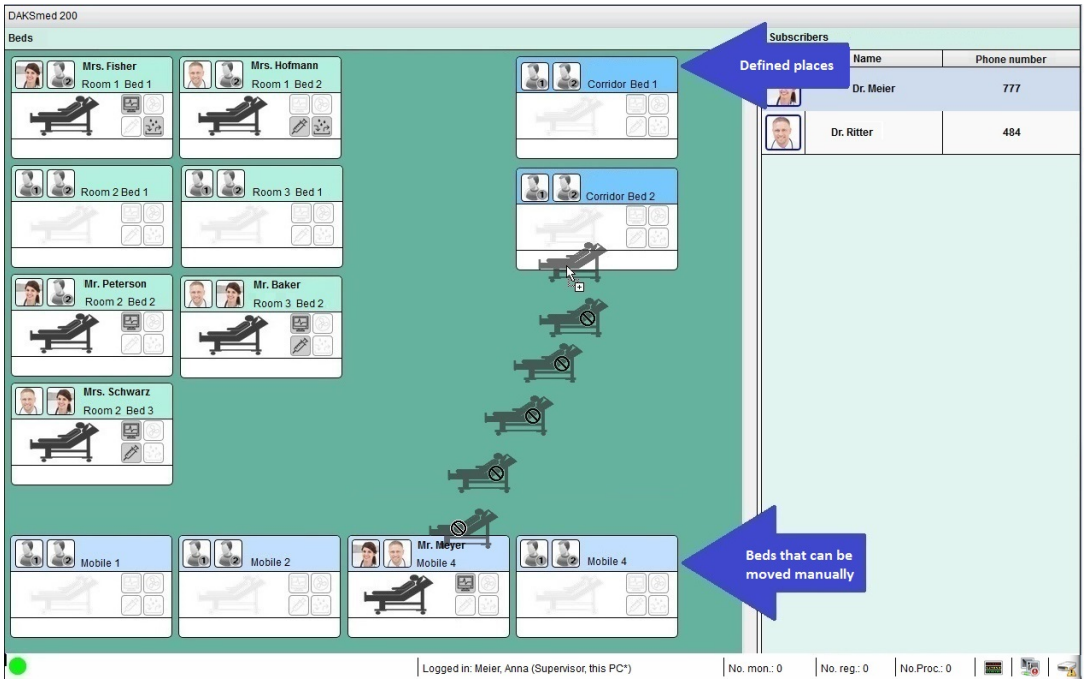
Description / Visualization
Real-life example how to manually assign a bed that can be moved manually: • Patient Meier is moved with drag&drop, from the automatically assigned bed position 'Mobile 3' to the bed at the defined place 'Corridor Bed 1'. • Note that in this process, the assignment of the two nurses is not copied along. 

Table 9-3 Example: Assignment of a bed that can be moved manually

9.4.3 Activate/deactivate "alarm pause" for beds

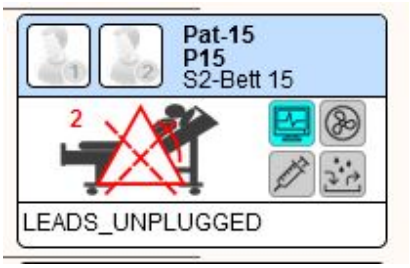
This section describes how to enable/disable an "alarm pause" for beds.

For beds in the "alarm pause" state, no alarms are signalled via

- Phone,
- Communicator,
- Speaker
- corridor display.

The display of pending alarm conditions is still possible via

- the text output of the most important alarm condition in the bottom line,
- the alarm signaling medical devices including the color of the alarm priority.



Caution!
Activating the "Alarm Pause" state has the following effect on already running alarm outputs and alarm processes:

- Display outputs are stopped immediately.
- Speaker outputs are terminated immediately.
- Active broadcast processes are interrupted; new activations (including escalations) do not occur.

Note:
The "Alarm Pause" state cannot be activated if

- the logged-in user does not have the 'Authorized to activate alarm pauses' permission.
- the bed is configured as a 'defined location'.
- the parameters 'Care Unit' and 'Bed Reference' are not configured for a bed.

Open the dialog for configuring an alarm pause for a bed either by

- Double-click on the corresponding bed, or
- selecting the 'Activate / Deactivate alarm pause' entry in the context menu. This opens by clicking the right mouse button on the bed logo.

The following dialog opens:

Bild 9-5 Activate/deactivate "alarm pause"

Parameter	Wertebereich	Beschreibung
Patient-Name:	Infofeld	Name of the patient.
Patient-ID	Infofeld	ID of the patient.
Bed name	Infofeld	Name (numbering) of the bed.
Time left in minutes	Infofeld	Time left of the alarm pause.
Switch on alarm	on/off	End of a previously activated alarm pause.
Alarmpause für	2 Minuten, 15 Minuten, 30 Minuten, 1 Stunde, 2 Stunden, 3 Minuten	Activates the alarm pause for this bed position for the selected number of minutes.

Tabelle 9-4 Activate/deactivate "alarm pause"

9.5 The area: Subscribers

This section covers the different MCO objects that are used to visualize the subscribers.

It also covers the way in which nurses are assigned to beds as primary or secondary nurse in MCO.

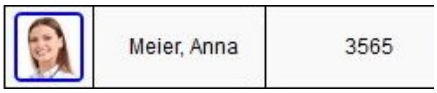
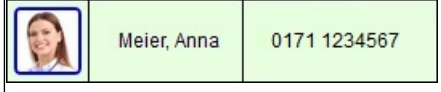
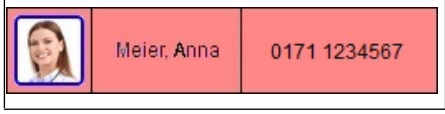
Graphic	Description
MCO objects: 'Subscribers"	
	Visualization of a nurse when this nurse: • **is not selected** and • is **not assigned to any** broadcast that is started when an alarm conditions is active.
	Visualization of a nurse when this nurse: • **is selected** and • is **not assigned to any** broadcast that is started when an alarm conditions is active.
	Visualization of a nurse when this nurse: • **is not selected** and • is **assigned to at last one** broadcast that is started when an alarm conditions is active.
	Visualization of a nurse when this nurse: • **is selected** and • is **assigned to at last one** broadcast that is started when an alarm conditions is active.
Note: The name and the phone number of a nurse or supervisor logged in to MCO is shown in *italics*, **bold print** and is underlined. When a communication device is assigned manually or automatically (or a DMC is assigned by entering the credentials), the phone number of this communication device is shown in brackets (where applicable, in addition to the administrated phone number).	
	**Gray:** Visualization of a nurse when this nurse is not logged in.
	**Blue:** Visualization of a nurse when this nurse is logged in and connected.
	**Green:** Visualization of a nurse when this nurse is connected and monitored.
	**Red:** Visualization of a nurse when this nurse raised an alarm.

Table 9-5 MCO user interface - Area Subscribers

Graphic	Description
	**Yellow:** Visualization of a nurse when this nurse was logged in and/or monitored, and the connection was lost.

Table 9-5 MCO user interface - Area Subscribers

9.5.1 Assign nurses to patient beds

When a nurse is assigned to a bed, his/her prioritization changes with regard to the dialing process for the broadcast that shall be started.

➤ see Section 3.3.3 "The processing of Broadcast targets"

Caution!
When a nurse is assigned to a bed but not administrated in the broadcast group that shall be launched, this nurse will NOT be alerted!

To assign a nurse to a patient's bed, proceed as follows:

- In the right-hand area of the table, click and keep clicked the picture of the nurse you want to assign, and drag&drop this picture to the placeholder for the bed's first or second nurse (primary or secondary nurse).
- Select the wanted nurse and then click the placeholder for the bed's first or second nurse (primary or secondary nurse).

Note:
When a nurse was assigned fixed to a bed through the administration (as first ro second nurse), this assignment cannot be changed in MCO.

9.5.2 Delete all/individual assignments and log in/log off nurses

Make a right mouse click in the area Subscribers to open the context menu.

The following user window will pop up:

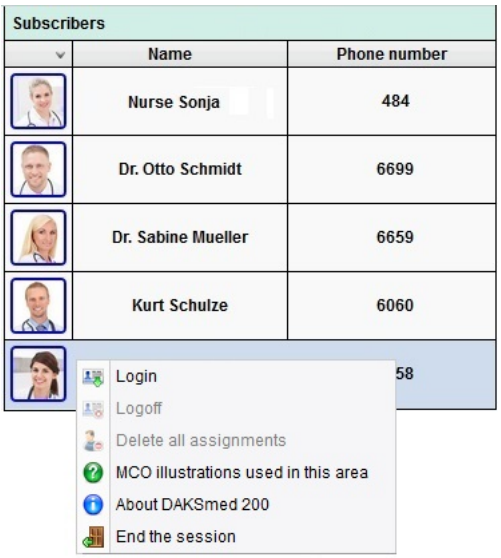


Image 9-6 Edit/assign nurses

Field	Description
Login	The nurse logs in. This login window will pop up for the login of the nurse:  Enter the nurse's login data. • User name • Password / PIN When a nurse logs in, she is immediately selected. Additional subscribers **can not** be selected. When a subscriber logs in, this supervisor is immediately selected. Additional subscribers **can** be selected. **Note:** The login details must be administrated with the subscriber. ➤ see Section 8.16 "Subscribers"
Logoff	The nurse logs off. **Note:** Also see the parameter 'Timeout for nurse assignment'.
Delete all assignments	All assignments of the nurse are deleted.

Table 9-6 Parameter of the context menu Edit nurse/subscriber

9.6 The area: Status bar

This table covers the different MCO objects that are used to visualize the status bar.

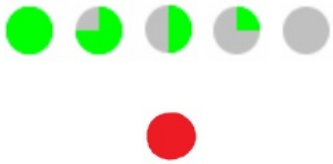
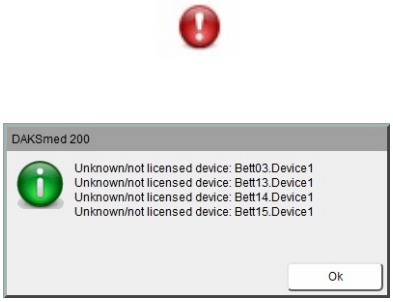
Graphic	Description
MCO objects: "Status bar"	
	The circles change with every second to indicate that the browser's connection to DAKSmed is active and that the browser is not frozen. A red circle indicates that the browser's connection to DAKSmed is interrupted.
	This icon is used to indicate that errors have been reported. Doubleclick this icon to see the present errors.
Logged in: Meier, Anna (Supervisor, this PC*)	The following data is shown for the logged in subscriber: • Last name / First name • if nurse and/or supervisor • whether this PC • whether other PC
No. mon.: 0	Number of currently monitored subscribers in total.
No. reg.: 0	Number of currently registered subscribers in total.
	**Green:** This icon is used to indicate active connections to the first and/or second MASI server.
	**Gray:** This icon indicates that there are **no** active connections to the first and/or second MASI server.
	This icon indicates the server status "Ready to operate".
	This icon indicates the server status "Not ready to operate".

Table 9-7 MCO user interface - Status bar

Graphic	Description
	This icon indicates the server status "Yellow alert".
	This icon indicates the server status "Red alert".
	This icon indicates that all configured corridor displays are functioning properly.
	This icon indicates that not all configured corridor displays are functioning properly or that there are configuration problems.

Table 9-7 MCO user interface - Status bar

10 The Service and Configuration Tool VCON

Overview

This chapter shows you how to use the service tool VCON for the configuration of DAKS as well as for the service functions.

Contents

This chapter consists of the following sub-sections:

10.1 Introduction
- 10.1.1 General information
- 10.1.2 Access authorization
- 10.1.3 Change password
- 10.1.4 Logging

10.2 Start VCON
- 10.2.1 Configure and edit a VCON connection
- 10.2.2 Connect with DAKS

10.3 Main view
- 10.3.1 The menu bar, toolbar and keyboard shortcuts
- 10.3.2 About VCON
- 10.3.3 Status bar

10.4 Data backup functions
- 10.4.1 Upload installation files, license files or a backup
- 10.4.2 Create a complete DAKS backup
- 10.4.3 Save the DAKS configuration
- 10.4.4 Upload a previously saved DAKS-configuration

10.5 VCON settings
- 10.5.1 The tab 'Terminal'
- 10.5.2 The tab: 'Paths'

10.6 List of Processes
- 10.6.1 General information
- 10.6.2 Output in the DAKS Process list
- 10.6.3 Properties and settings
- 10.6.4 Export a DAKS configuration

10.7 Monitoring
- 10.7.1 Manual monitoring
- 10.7.2 Active monitoring
- 10.7.3 Configure startup monitoring

10.8 The Terminal window
- 10.8.1 General information
- 10.8.2 Logging
- 10.8.3 Search for a word or text in the Terminal window
- 10.8.4 Save

10.9 The System logging window
- 10.9.1 General information
- 10.9.2 Browse the System logging window for a word

10.10 Filter system messages
- 10.10.1 General information
- 10.10.2 Use the word search
- 10.10.3 Apply Global filters
- 10.10.4 Filter list
- 10.10.5 Edit filter settings
- 10.10.6 Edit the argument of a filter

10.11 The Ethernet Tracer
10.12 Install VCON
10.13 Uninstall VCON

10.1 Introduction

10.1.1 General information

VCON is a tool that is used for the configuration and maintenance of DAKS. The connection between DAKS and VCON is established with TCP/IP via LAN, or for the basic configuration of DAKS via USB .

With VCON you can:

- **Upload installation files**
  The installation of software and updates is carried out through files that are uploaded to DAKS via VCON.
  ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
- **Upload License files**
  New license information is imported in form of a file that is uploaded to DAKS via VCON.
  ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
- **Carry out Traces (error tracing)**
  For the tracing of DAKS processes, you can activate/deactivate monitor outputs. These outputs are shown in the Terminal windows of the individual processes and, where applicable, also in the System logging window, with various options for user-friendly evaluation.
  ➤ see Section 10.8 "The Terminal window"
  ➤ see Section 10.9 "The System logging window"
  ➤ see Section 10.11 "The Ethernet Tracer"
- **Configure DAKS application(s)**
  The configuration of DAKS, including where needed the DAKS application(s), is carried out in configuration trees with parameter lists.
  ➤ see Section 10.5 "VCON settings"
  ➤ see Section 10.6 "List of Processes"



Caution!
Changes made to the green VCON parameters do not require a reboot of DAKS and take effect after you save them.
In contrast, changes of VCON parameters that are **not** green, i.e. all parameters that are not shown against a green background, always require a restart of DAKS to take effect.

- **Install and uninstall VCON:**
  ➤ see Section 10.12 "Install VCON"
  ➤ see Section 10.13 "Uninstall VCON"

10.1.2 Access authorization



Caution!
The access authorization for VCON is defined in the IP parameters of µDAKS.
This also includes the option to block the IP access for VCON altogether.
➤ see Section 7.1 "Initial startup functions using the USB terminal access"

To logon to VCON you can use the following users, each with different authorizations:

- **User**
  - Login:
    - Login name: "user"
    - Initial password: "user"
  - Authorizations:
    - Read permission for all outputs in the Terminal window and in the System logging window
    - Read permission for all settings of the Components
    - Read permission for all trace settings
- **Service**
  - Login:
    - Login name: "service"
    - Initial password: "service"
  - Authorizations:
    - Read permission for all outputs in the Terminal window and in the System logging window
    - Read and write permission for all settings of the Components
    - Read and write permission for all trace settings
- **Support**
  Only the tetronik Support Team is authorized to log in as "Support".



Caution!
Bear in mind that the default passwords of the above-mentioned users 'User' and 'Service' must be changed after the initial login.
➤ see Section 10.4.1 "Upload installation files, license files or a backup"

10.1.3 Change password

To change a password, open this window:

- via the menu bar: Host ➤ Change password...

The user who is currently logged in can use this window to change his/her own password.

He/she cannot, however, change the passwords of other users.

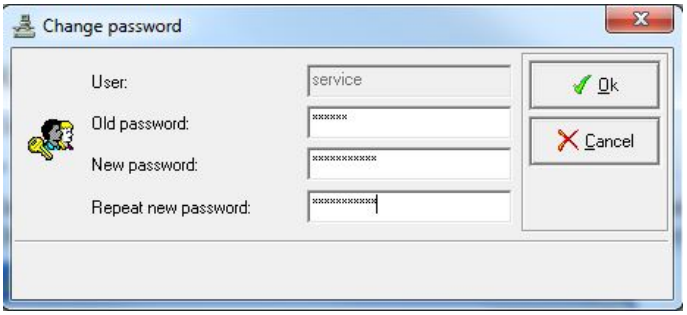


Image 10-1 Change own password

Summary of the fields in the window 'Change password':

Menu bar/ button	Description
User	The user name (cannot be edited) is output as read-only.
Old password	Here the logged-on user must enter his old password as authentication, to ensure that no unauthorized user can change the password of another user.
New password	In the next step, enter the new password and repeat (confirm) it to avoid erroneous entries that would lead to the loss of the password.
Repeat new password	

Table 10-1 Change own password

10.1.4 Logging

In DAKS outputs are logged in two different ways:

- **Logging in the Terminal window**
  Every DAKS process owns a proprietary Terminal window for the output of system messages, error messages and trace messages, all of which are shown unfiltered and are, where applicable, written into files.
  ➤ see Section 10.8 "The Terminal window"
- **Logging in the System logging window**
  Messages that appear in a specific format are also registered and shown in the System logging window, and automatically saved in log files.
  ➤ see Section 10.9 "The System logging window"

10.2 Start VCON

10.2.1 Configure and edit a VCON connection

Before you can establish a VCON connection to DAKS you need to configure a VCON connection via TCP/IP.

In addition, you can also configure a serial connection to DAKS (TCP/IP+COM) if you want the USB terminal access also to be carried out via VCON.

How to configure a DAKS connection, step by step:

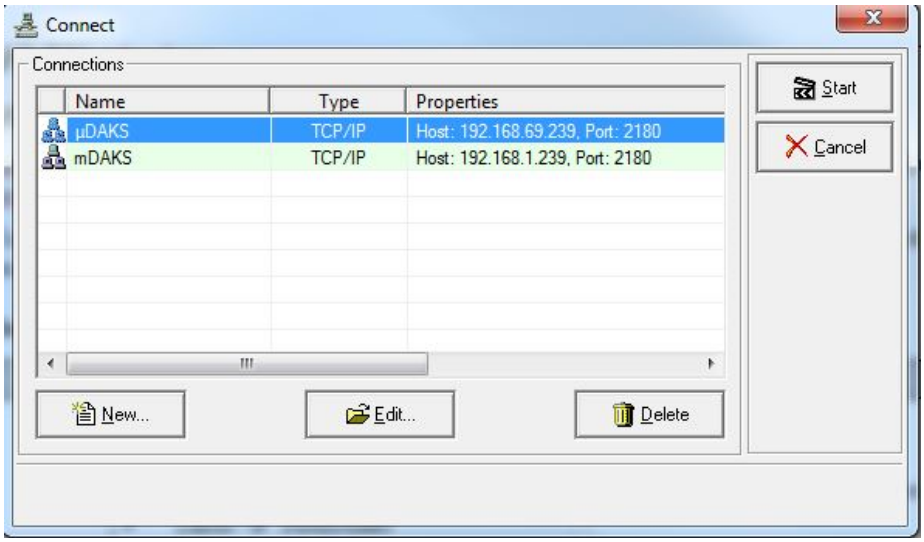
No.	Task
1.	Start the program 'VCON.exe' from the desktop via: • *Start ➤ Program files ➤ tetronik ➤ VCON* or open the user dialog to connect with DAKS via the menu: • *File ➤ Connect*
2.	 This will open the user dialog to administrate the connections to DAKS: • Button **New** Use this button to add a new connection: ➤ continue with Step 3. • Button **Edit** Use this button to edit a connection: ➤ continue with Step 3. • Button **Delete** Use this button to delete a connection, with a security prompt: ➤ continue with Step 2. • Button **Start** Login to DAKS: ➤ see Section 10.2.2 "Connect with DAKS" • Button **Cancel** End program

Table 10-2 Configure a VCON connection

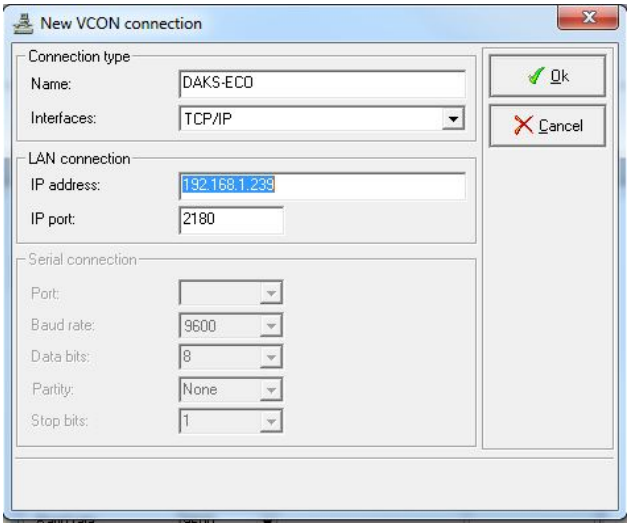
No.	Task
3.	 Enter the following parameters to configure the TCP/IP connection: • **Description** The name with which this connection appears in the selection list of the login window. ➤ see Step 1. • **Interface** Select the connection type via which you want to connect to DAKS: ➤ Start VCON with serial terminal window: TCP/IP+COM ➤ Start VCON without serial terminal window: TCP/IP • **IP address** The IP address of DAKS for the VCON connection. – ex works: 192.168.20.100 • **IP port** The IP port of DAKS for the VCON connection. – default: 2180 Confirm with **Ok**. **Note:** Ex works, the DAKS has the IP address: 192.168.20.100 and listens at the IP port: 2180. ➤see Section 7.1 "Initial startup functions using the USB terminal access"

Table 10-2 Configure a VCON connection

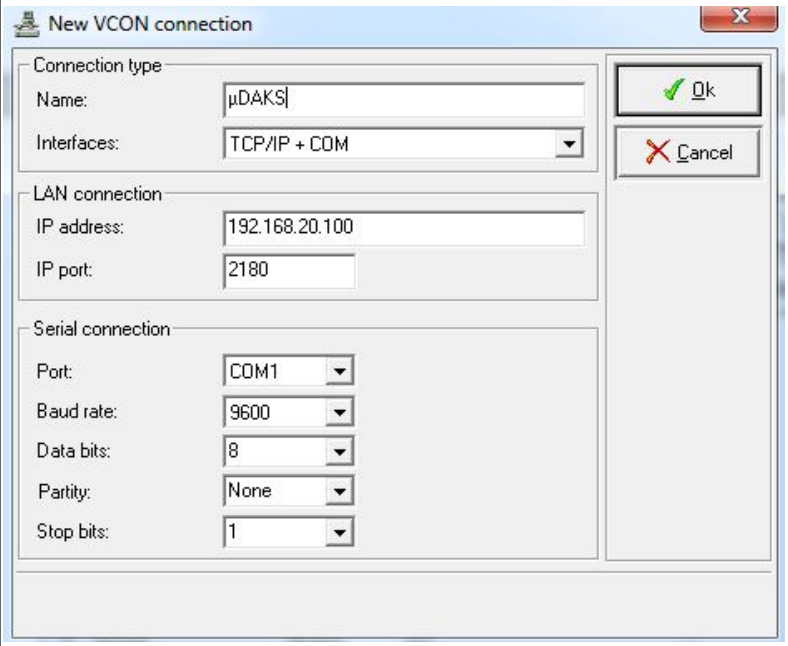
No.	Task
4.	 If you want to additionally configure a serial TCP/IP+COM connection, also enter the following parameters: • **Port** Select the serial interface you want to use. – default: COM1 • **Baud rate** Select the baud rate that shall be applied. – Default: 9600 • **Data bits** Select the number of data bits that shall be used. – default: 8 • **Parity** Select the wanted parity. – default: none • **Stop bits** Select the number of stop bits. – default: 1 Confirm with **Ok**.

Table 10-2 Configure a VCON connection

10.2.2 Connect with DAKS

How to se tup a connection between VCON and DAKS, step by step:

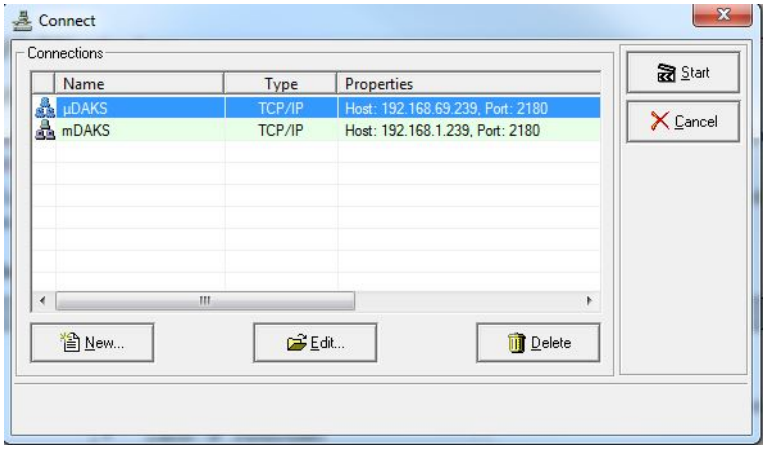
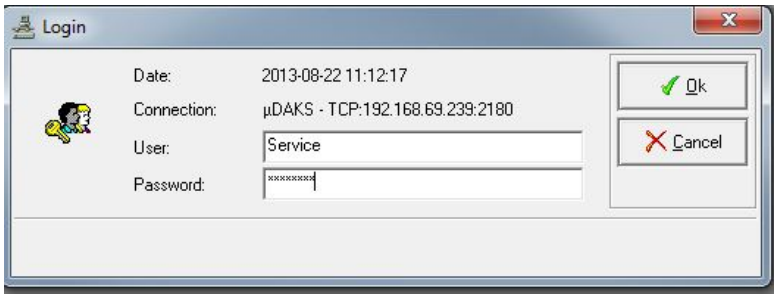
No.	Task
1.	Start the program 'VCON.exe' from the desktop via: • **Start ➤ Program files ➤ tetronik ➤ VCON** Or open the user dialog to connect with DAKS via the menu: • **File ➤ Connect**
2.	 Choose the connection you want to use. Click **Start**. **Note:** For more information how to configure or edit connection data: ➤ see Section 10.2.1 "Configure and edit a VCON connection"
3.	 Enter your user details: • User • Password Confirm with **Ok**.

Table 10-3 Configure a connection between VCON and DAKS

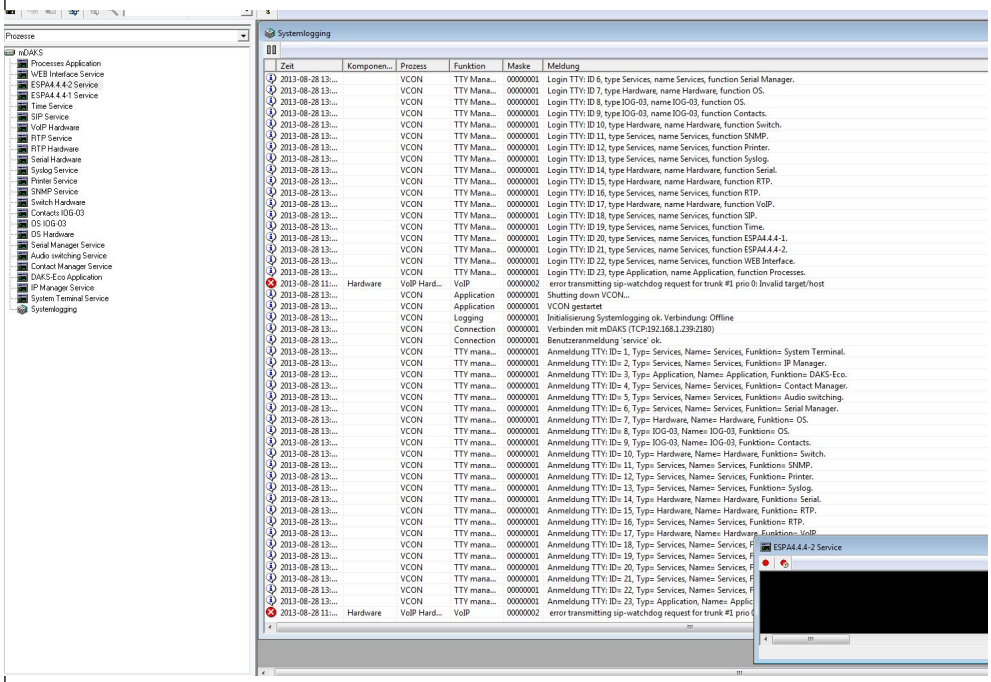
No.	Task
4.	 This will open the main VCON window.

Table 10-3 Configure a connection between VCON and DAKS

10.3 Main view

The main view, or root level, consists of the following areas:

➤ see Image 10-2 VCON main view

- **Menu bar**
  ➤ see Section 10.3.1 "The menu bar, toolbar and keyboard shortcuts"
- **Toolbar**
  ➤ see Section 10.3.1 "The menu bar, toolbar and keyboard shortcuts"
- **List of Processes**
  ➤ see Section 10.6 "List of Processes"
- **Window area**
  ➤ see Section 10.8 "The Terminal window"
  ➤ see Section 10.9 "The System logging window"

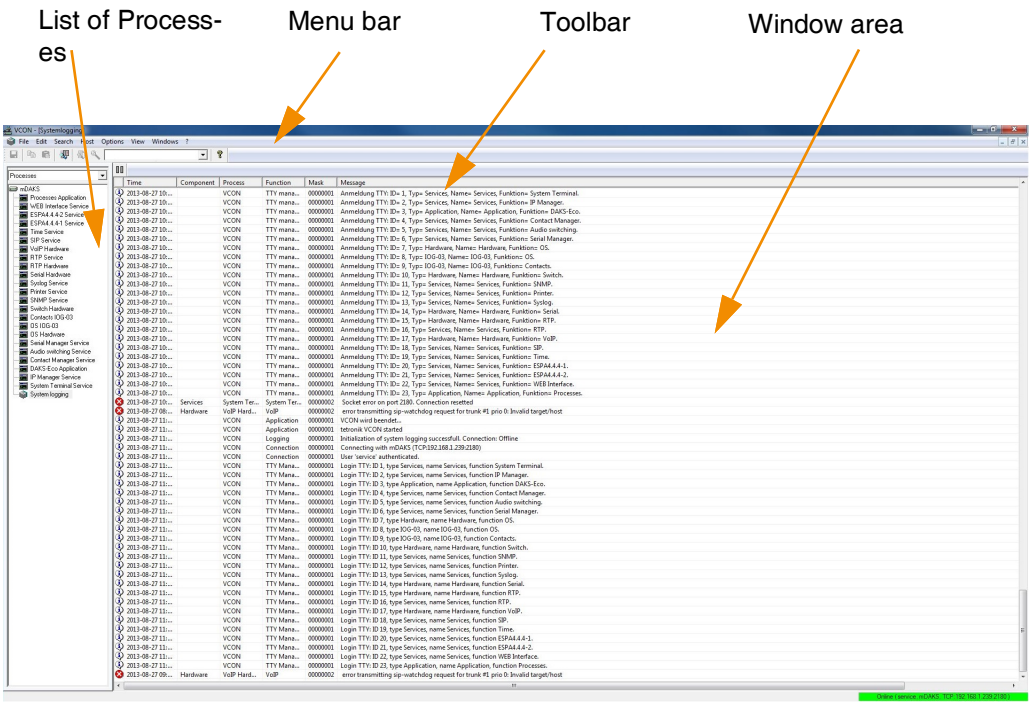


Image 10-2 VCON main view

10.3.1 The menu bar, toolbar and keyboard shortcuts

The below list gives you a full overview of all functions that can be reached through the menu bar, the toolbar, and via keyboard shortcuts.

Menu item	Terminal window	Sys. log. window	Description
Summary of the pull-down menu "*File"*			
Connect...	X	X	Configure a connection between VCON and DAKS. ➤ see Section 10.2.2 "Connect with DAKS"
Auto login	X	X	Select this item if, in the event of a connection error, you want VCON to automatically setup a new connection to DAKS. When such an event occurs, VCON will use the most recent connection data, including the last login name and password.
Save content... 	X		Save the contents of a Terminal window. ➤ see Section 10.8.4 "Save"
End `Alt+F4`	X	X	Click this menu entry to close the program.
Summary of the pull-down menu "*Edit"*			
Copy `Ctrl+C` 		X	Copy contents of the System logging window or other marked texts (does not include the Terminal window), and paste them to the clipboard.
Copy `Shift+Ctrl+C` 	X		Copy contents of the Terminal window and paste them to the clipboard.
Paste `Shift+Ctrl+V` 	X		Paste from the clipboard to the Terminal window and insert at the cursor position, or copy to a dialog box.
Pause `Ctrl+P` 		X	This menu item ends the output in the System logging window. When you press the pause button again, all messages that have arrived in the meantime are automatically output. ➤ see Section 10.9.1 "General information"

Table 10-4 The menu items, icons and buttons of VCON

Menu item	Terminal window	Sys. log. window	Description
Summary of the pull-down menu '*Search*'			
Find marked text `Ctrl+F3`	X		Use this menu item to browse the Terminal window for the text that is currently marked. ➤ see Section 10.8.3 "Search for a word or text in the Terminal window" Use this menu item to browse the System logging window for the text that is currently marked. ➤ see Section 10.9.1 "General information"
Search for a marked text in the System logging window `Shift+Ctrl+F3`	X		Use this menu item to browse the System logging window for a particular text that is currently marked in the Terminal window. ➤ see Section 10.8.3 "Search for a word or text in the Terminal window"
Find next similar message `Ctrl+F3`		X	Browse the System logging window for similar messages, i.e. for messages of the same type. ➤ see Section 10.9.1 "General information"
Find message in the matching terminal `Shift+Ctrl+F3`		X	Use this menu item to browse the System logging window for a particular text that is currently marked in the Terminal window. ➤ see Section 10.9.1 "General information"
Filters... 		X	Filter the system logging entries. ➤ see Section 10.10 "Filter system messages"
Summary of the pull-down menu '*Process*'			
Properties/settings... (Doubleclick the List of Processes)	X		Use this menu item to show process properties and configure process, provided the process has parameters that can be configured. ➤ see Section 10.6.2 "Output in the DAKS Process list"
Active monitoring...	X		Use this menu item to configure the monitoring outputs in the Terminal window and/or the System logging window, to trace the processes in detail. Note that the outputs that are activated here will be lost at the next system start. ➤ see Section 10.7.2 "Active monitoring"
Configure startup monitoring....	X		Use this menu item for permanent monitor outputs in the Terminal and/or System logging window, for a detailed tracing of process cycles. Bear in mind that the monitoring outputs that are activated here will **not** be lost at the next system start. ➤ see Section 10.7.3 "Configure startup monitoring"
Log terminal output temporarily	X		Use this menu item to log terminal outputs temporarily in a log file. As soon as VCON is rebooted, the terminal outputs are no longer written to the log file. ➤ see Section 10.8.2 "Logging"

Table 10-4 The menu items, icons and buttons of VCON

Menu item	Terminal window	Sys. log. window	Description
Log terminal output permanently	X		Use this menu item to log terminal outputs permanently in a log file These settings are also retained when VCON is started again (rebooted). ➤ see Section 10.8.2 "Logging"
Process configuration report...	X		Use this menu item to show the configuration details of a process. ➤ see Section 10.6.4 "Export a DAKS configuration"
Server configuration report...	X		Use this menu item to open the window "Complete configuration" with the configuration details of the entire server. ➤ see Section 10.6.4 "Export a DAKS configuration"
Summary of the pull-down menu "*Host"*			
Upload VCON transfer file...	X	X	Use this menu item to upload installation, update or license files to DAKS. ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
Create system backup...	X	X	Use this menu item to save the entire internal memory card in a backup. ➤ see Section 10.4.2 "Create a complete DAKS backup"
Save configuration...	X	X	Use this menu item to save the DAKS configuration in a backup file. ➤ see Section 10.4.3 "Save the DAKS configuration"
Upload configuration...	X	X	Use this menu item to upload a previously saved DAKS-configuration. ➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration"
Enter activation code...	X	X	Reserved for future server function Hardware Upgrade.
Change password...	X	X	Use this menu item to change the login data of the user who is currently logged in. ➤ see Section 10.4.1 "Upload installation files, license files or a backup"
Summary of the pull-down menu 'Options'			
Settings...	X	X	VCON settings. ➤ see Section 10.5 "VCON settings"
Languages	X	X	Select a language (German, English, Dutch).
Summary of the pull-down menu "*View"*			
List of Processes `Shift+Ctrl+Z`	X	X	Use this menu item to show/hide the list of all processes.
Summary of the pull-down menu "*Windows"*			
Cascade	X	X	Use this menu item to cascade all windows
Tile horizontally	X	X	Tile all windows.

Table 10-4 The menu items, icons and buttons of VCON

Menu item	Terminal window	Sys. log. window	Description
Summary of the pull-down menu "*?*"			
About tetronik VCON... 	X	X	Click this icon to open the 'About VCON' window with the VCON version number, copyright information, the tetronik contact details and additional information on VCON. ➤ see Section 10.3.2 "About VCON"
Search and filter functions			
	X	X	Use this icon to browse all saved system logging files for the search text that is entered, or to search for this text in the Terminal- and System logging window that is currently open. ➤ see Section 10.8.3 "Search for a word or text in the Terminal window" ➤ see Section 10.9.2 "Browse the System logging window for a word"
 Word search in the System logging window	X	X	Use this menu item to search the System logging window for specific terms and to output the filter results in a separate System logging window, with an entry in the List of Processes under *System logging.* ➤ see Section 10.10.2 "Use the word search"
 *Filter search in the System logging window*	X	X	Use this menu item to search the System logging window for relevant datasets or text, and to output the filter results in a separate System logging window, incl. an entry in the Process list under *System logging*. ➤ see Section 10.10.2 "Use the word search"
Summary of the pull-down menu 'Ethernet Tracer' Only becomes visible for '*IP Manager Service'* and only shown for *3rd-Level-Support*.			
Start trace (System-specific data traffic)	X		Use this menu item to have a trace file written to the Service PC, in the format `.pcap` and exclusively for the data traffic to and from the Ethernet interface of DAKS. ➤ see Section 10.11 "The Ethernet Tracer"
Start trace (all traffic)	X		Use this menu item to have a trace file written to the Service PC in the format `.pcap`, for all data traffic along the Ethernet interface of DAKS. ➤ see Section 10.11 "The Ethernet Tracer"
Stop trace	X		Use this menu item to end the trace function.

Table 10-4 The menu items, icons and buttons of VCON

10.3.2 About VCON

You can open the window 'About VCON' with details on VCON:

- via the menu bar: ? ➤ About tetronik VCON...

The following details are output:

- Product name
- Version number
- Contact details of the producer: tetronik GmbH
- Copyright information and Copyright notice
- Disclaimer

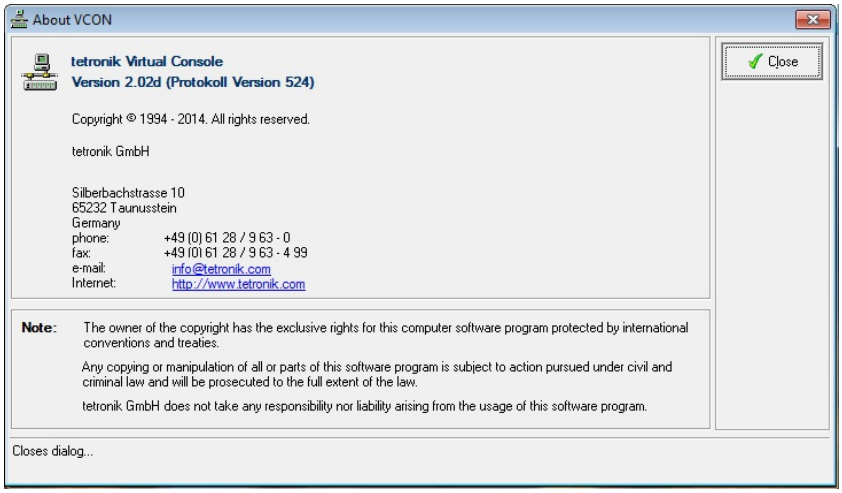


Image 10-3 About VCON

10.3.3 Status bar

The status bar signals the connection status between VCON and DAKS:

Online

VCON and DAKS are connected and all VCON functions are fully available.



Image 10-4 Connection status between VCON and DAKS: Online

Offline

With this status VCON and DAKS are not connected but the VCON function to filter and browse system messages is available and can be used nonetheless. If messages have already been received in any of the different Terminal windows, the search functions can also be applied to these windows.



Image 10-5 Connection status between VCON and DAKS: Offline

The messages in the status bar consist of the following elements:

- `<connection status>(<user name>, <connection status>, <connection type>:<connection parameters>)`

The different elements stand for:

• `<connection state>`	The state of the connection between VCON and DAKS ➤ see above
• `<user name>`	The name of the user ➤ see Section 10.1.2 "Access authorization"
• `<connection name>`	The name of the connection to DAKS ➤ see Section 10.2.1 "Configure and edit a VCON connection"
• `<connection type>`	The type of the connection: TCP ➤ see Section 10.2.1 "Configure and edit a VCON connection"
• `<connection parameter>`	The parameters of the connection: IP address and IP port ➤ see Section 10.2.1 "Configure and edit a VCON connection"

10.4 Data backup functions

10.4.1 Upload installation files, license files or a backup

VCON can be used to transfer installation-, license- or backup files to DAKS, using the so-called VCON transfer files (*.vtf). Every VCON transfer file contains the following data:

- The version of the file(s) you want to upload
- The payload of the file(s) you want to upload
- The type of the file(s) you want to upload
  - **License file**
    Every license file contains the performance features of DAKS and of the respective application(s), e.g. the number of enabled channels, the functions that have been activated etc.
  - **Installation file**
    Every installation file contains the files for the application(s), the operating system, and the drivers that are used.
  - **Backup of the CompactFlash card**
    A backup contains a complete backup of the internal CompactFlash card, with the entire operating system data, program data, and process- and license data, but without the boot area and the repair system. Before an installation file is imported, VCON automatically runs a backup of the CompactFlash card, respectively.

For more information on the upload of backup files with the help of the Repair System:

➤ see Section 7.2 "Activate the DAKS repair system"

How to upload a VCON transfer file, step by step:

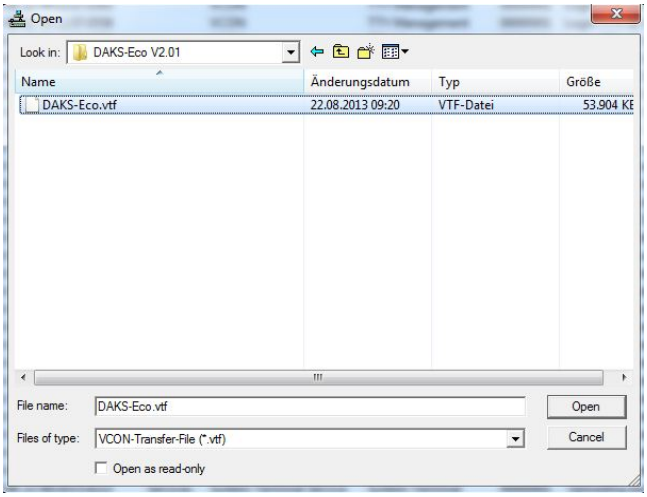
No.	Task
1.	Click the menu item: • **Host ➤ Upload VCON transfer file...**
2.	 Select the VCON transfer file you want to upload to DAKS. Click **Open**.

Table 10-5 Upload a VCON transfer file

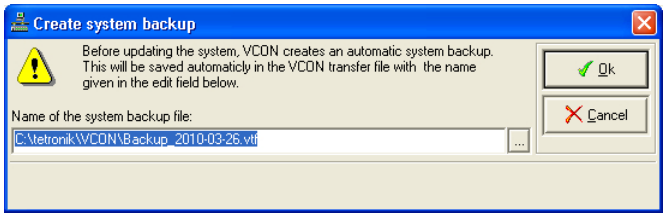
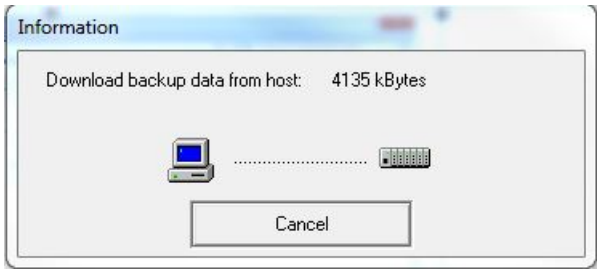
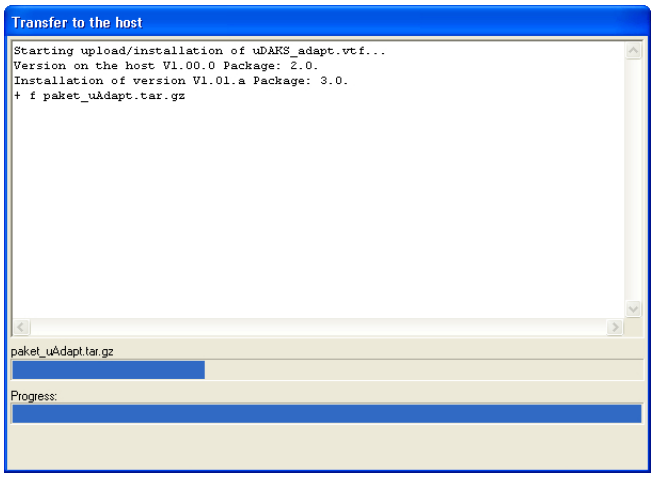
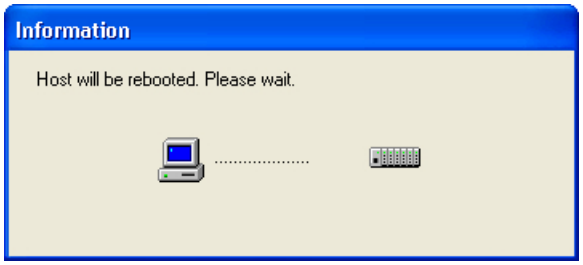
No.	Task
3.	 In the first step, VCON runs a backup of the CompactFlash card. For this select the file name. Confirm with **Ok**.
4.	 During the backup, the progress is shown in form of an activity bar.
5.	 The upload progress for the VCON transfer file is shown in form of a progress bar.
6.	 Next, DAKS will reboot. Please wait.

Table 10-5 Upload a VCON transfer file

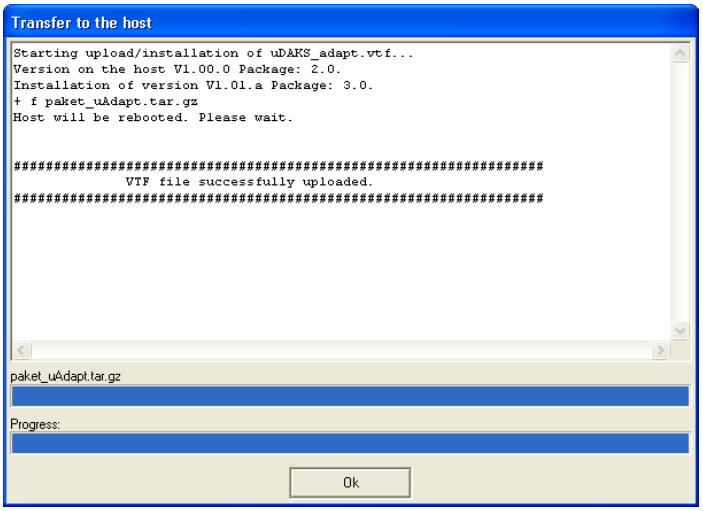
No.	Task
7.	 This message will pop up when the upload of the VCON transfer file is completed. Confirm with **Ok**. The VCON transfer file has been successfully imported.

Table 10-5 Upload a VCON transfer file

10.4.2 Create a complete DAKS backup

Use this function to create a complete system backup (menu item in VCON: 'Create system back-up') of the CompactFlash card (for mDAKS).

To do so, VCON will create a VCON transfer file that can be imported later as installation file.

➤ see Section 10.4.1 "Upload installation files, license files or a backup"

How to create a complete backup (in VCON: "System Backup"), step by step:

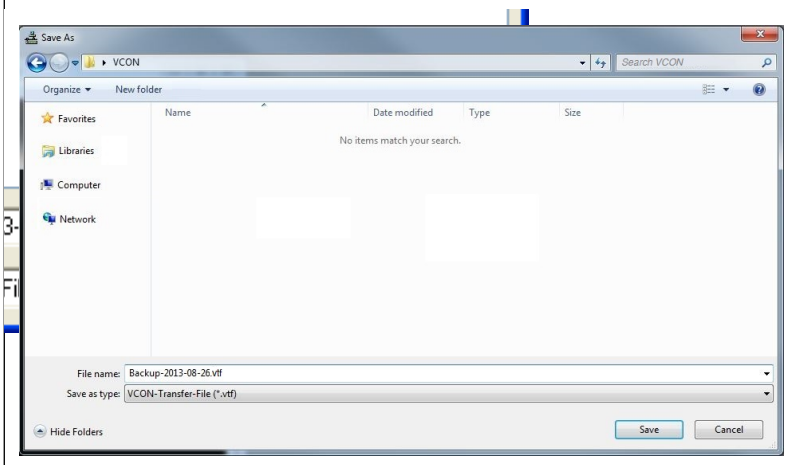
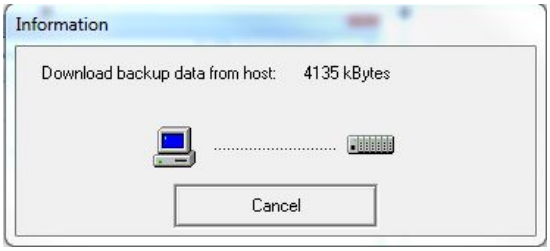
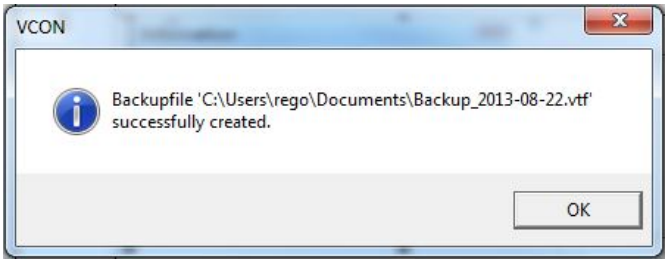
No.	Task
1.	Click the menu item: • **Host ➤ Create system backup...**
2.	 Assign a name to the backup file. Click **Save**.
3.	 During the saving process, the progress is shown in form of a progress bar. Please wait. This process may take a few minutes.
4.	 This message appears after the backup file has been successfully saved. Confirm with **OK**.

Table 10-6 Create a complete backup with VCON (in VCON: System backup)

10.4.3 Save the DAKS configuration

This function makes it possible to use VCON in order to save the entire DAKS configuration data as a backup in an XML file that can be uploaded into DAKS whenever needed to restore a specific system configuration.

➤ see Section 10.4.4 "Upload a previously saved DAKS-configuration"

How to save the configuration, step by step:

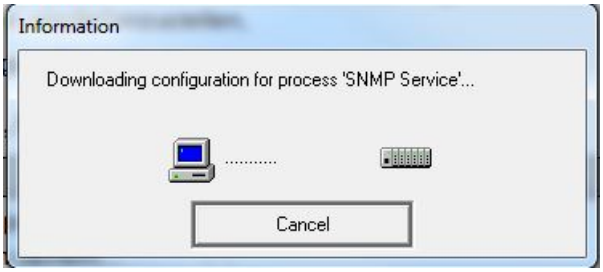
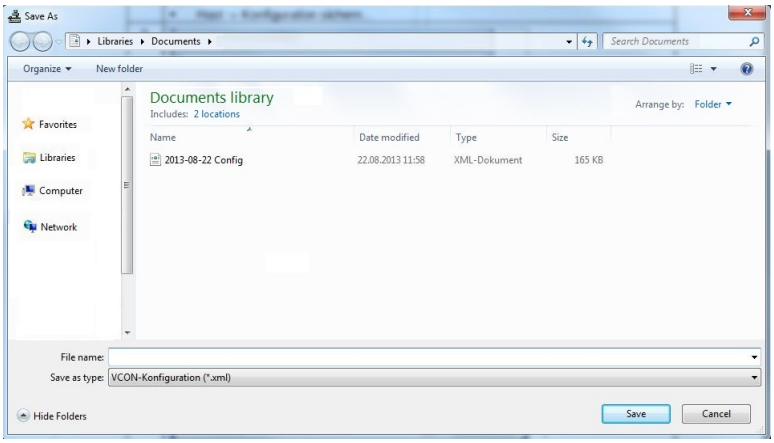
No.	Task
1.	Click the menu item: • **Host ➤ Save configuration...**
2.	 VCON queries the configuration data of the individual processes in DAKS. Please wait.
3.	 Assign a name to the backup file. Click **Save**. The backup file will now be saved under this name.

Table 10-7 Use VCON to save the DAKS configuration

10.4.4 Upload a previously saved DAKS-configuration

This function makes it possible to upload a previously saved configuration to DAKS. In this way, you can restore a previously defined system configuration whenever needed.

How to upload a saved DAKS-configuration, step by step:

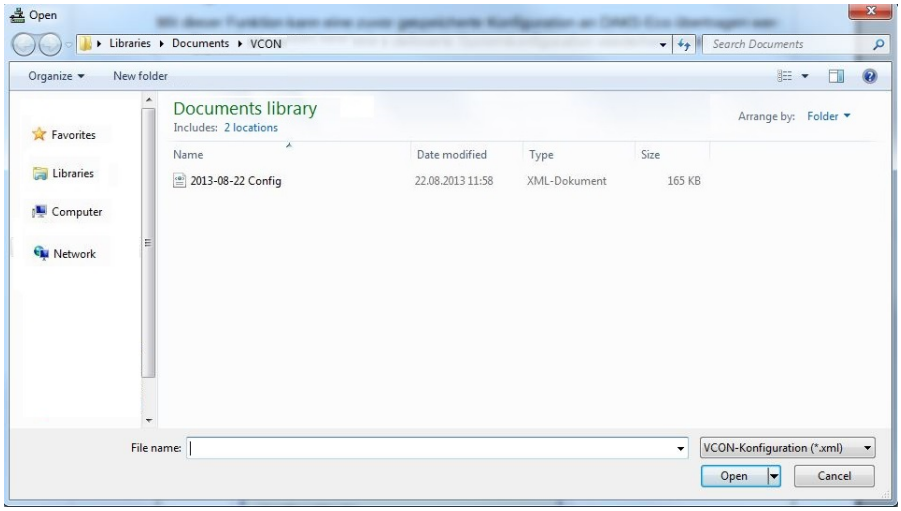
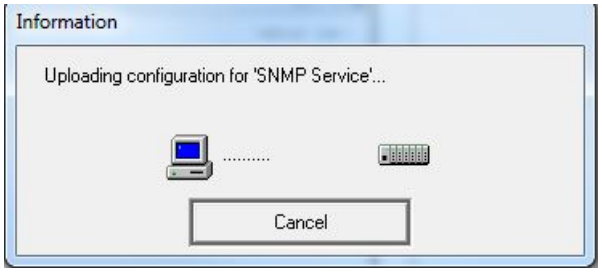
No.	Task
1.	Click the menu item: • **Host ➤ Upload configuration...**
2.	 Choose the name of the backup file that you want to upload to the system. Next, click **Open**.
3.	 During the upload of the system configuration, the progress is shown in form of a progress bar. Please wait.

Table 10-8 Upload previously saved DAKS-configuration

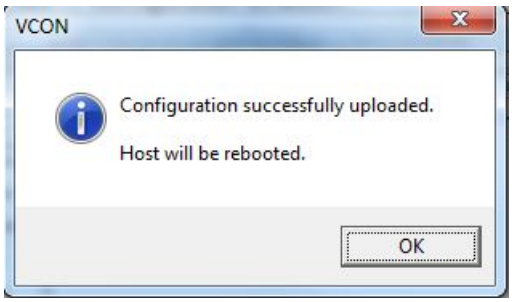
No.	Task
4.	 The DAKS-configuration data was uploaded successfully. **Note:** For the DAKS-configuration to be applied and become effective, reboot DAKS. For µDAKS, pull the Ethernet cable cord (PoE) and wait for a few seconds before you plug it back in. If you are working with mDAKS you can press the Reset button.

Table 10-8 Upload previously saved DAKS-configuration

10.5 VCON settings

Open the user window to edit the VCON settings:

- via the menu bar: Options ➤ Settings...

The user window 'Settings' consists of two tabs:

- the tab 'Terminal'
  ➤ see Section 10.5.1 "The tab 'Terminal'"
- the tab 'Paths'
  ➤ see Section 10.5.2 "The tab: 'Paths'"

10.5.1 The tab 'Terminal'

The settings in the tab 'Terminal' relate to the view of the Terminal window of VCON.

➤ see Section 10.8 "The Terminal window"

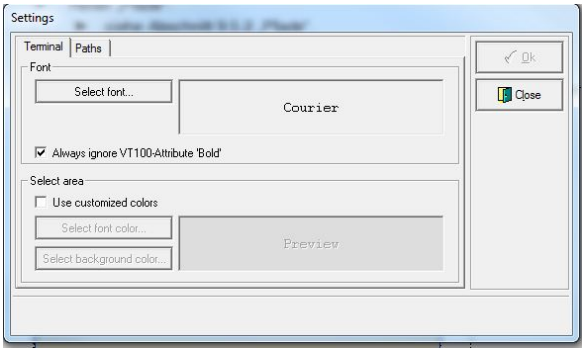


Image 10-6 VCON user window 'Settings' - Tab 'Terminal'

Summary of the fields in the window 'Settings', tab 'Terminal':

Menu bar/ button	Description
Font	
Select font...	This will open the Windows standard window to select a font (not shown here).
Always ignore VT100-Attribute 'Bold'	If the VT100 attribute 'Bold' is ignored, characters will no longer be output in bold print in the Terminal window. Whenever characters are output in bold print, the messages automatically have, even though the number of characters has not been increased, a greater width and appear wider. Default: [*yes*]
Selection	
Use customized colors	• **yes** When this box is ticked, the colors that are chosen here will be used for texts that are marked in the Terminal window. • **no** When this box is ticked, the font color of texts that are marked in the Terminal window will be black against a light gray background. • Default: [*no*]
Select font color... Select background color...	Click either of these buttons to open the standard Windows user dialog, and select a color (not shown here).

Table 10-9 VCON user window 'Settings' - Tab 'Terminal'

10.5.2 The tab: 'Paths'

The settings in the tab 'Paths' relate to the place where the Terminal and the System logging is stored.

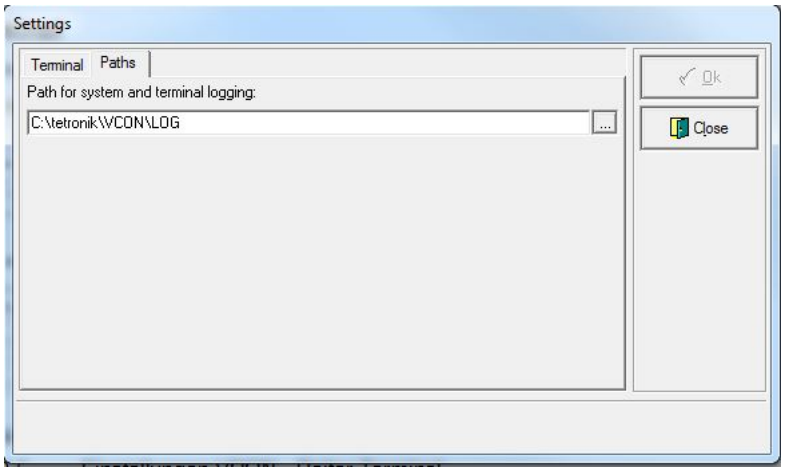


Image 10-7 VCON user window 'Settings', tab 'Paths'

Summary of the fields in the window 'Settings', tab 'Paths':

Menu bar/ button	Description
Path for system and terminal logging	The path to which all files are written which contain outputs of the Terminal and the System logging window. • Default: [*<Installation path>\LOG*]

Table 10-10 VCON user window 'Settings', tab 'Paths'

10.6 List of Processes

10.6.1 General information

This section covers the way DAKS processes are shown in the VCON tree structure.

All processes that run in DAKS are characterized by the components and their specific functions.

- **Component**
  A component constitutes a logically or also a physically delimited area in DAKS.
  DAKS supports the following components:
  – Services — The services and basic functions of DAKS
  – Hardware — The hardware components of DAKS
  – Application — The applications of DAKS
  – IOG-03 — Contact module (only for DAKS-200)
- **Function**
  The function of a process always describes its task. This includes but is not restricted to the DAKS application(s) and serial interface(s).
- **Process**
  A process is precisely one instance of a particular function. It is determined by the function and the component.

10.6.2 Output in the DAKS Process list

The following criteria can be used to sort the DAKS Processes list:

- **Processes**
  All processes are itemized in a list.
- **Components**
  The top hierarchy node lists all components. The next level then lists all processes that run in and are assigned to these components.
- **Functions**
  The top hierarchy node indicates the respective function, all of which are listed in alphabetical order. The processes that share these functions can be found on the next lower node.

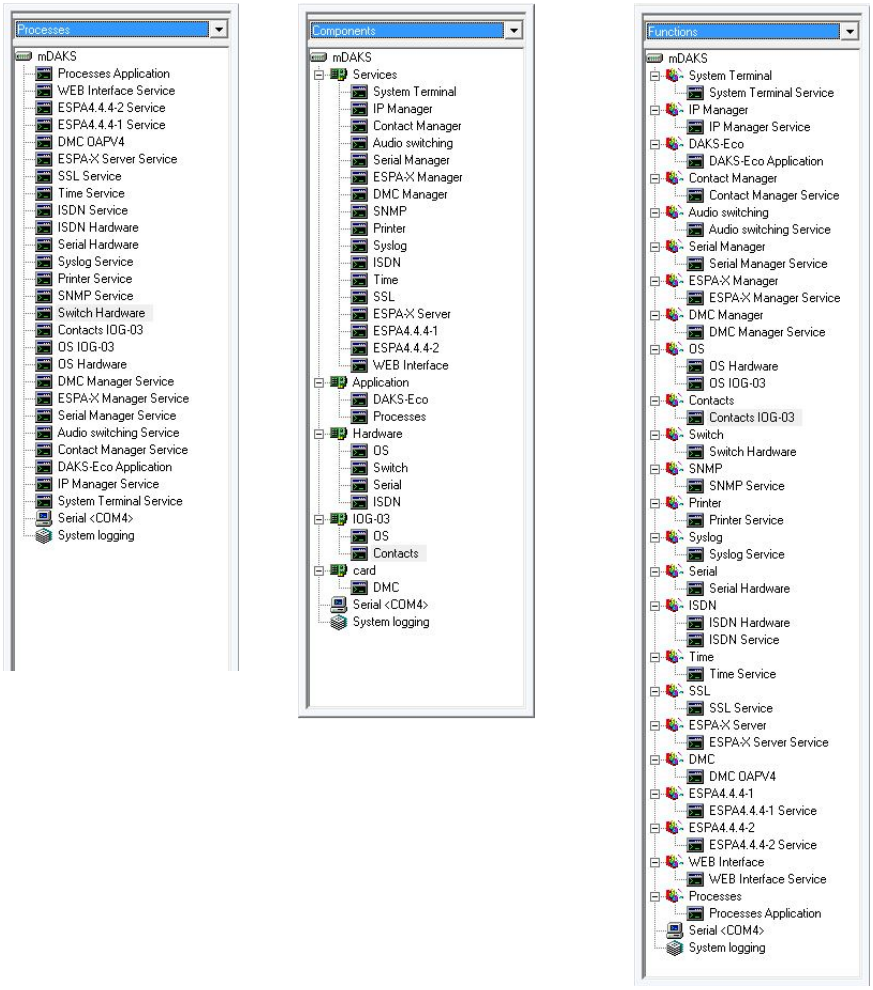


Image 10-8 The structure of the DAKS Process list: Processes, Components, Functions

10.6.3 Properties and settings

The user window with the properties and settings of a process can be opened:

- via the menu bar: Process ➤ Properties/settings...
- via the context menu: Properties/settings...
- or with a direct double click on the process in the List of Processes

Either of these commands will open a user window that contains the attributes and properties of the process.

➤ see Image 10-9 Properties of a process, here for: mDAKS

The dialog can also be used to add changes.

➤ see Image 10-12 Settings of a process, here for: mDAKS

For a complete list covering all parameters and their matching value ranges, plus a description thereof:

➤ see Section 7.3 "Configuration via VCON and LAN interface".

Properties

- Function identifies the function of the process
- Component name identifies the name of the component
- Component type identifies the type of the component

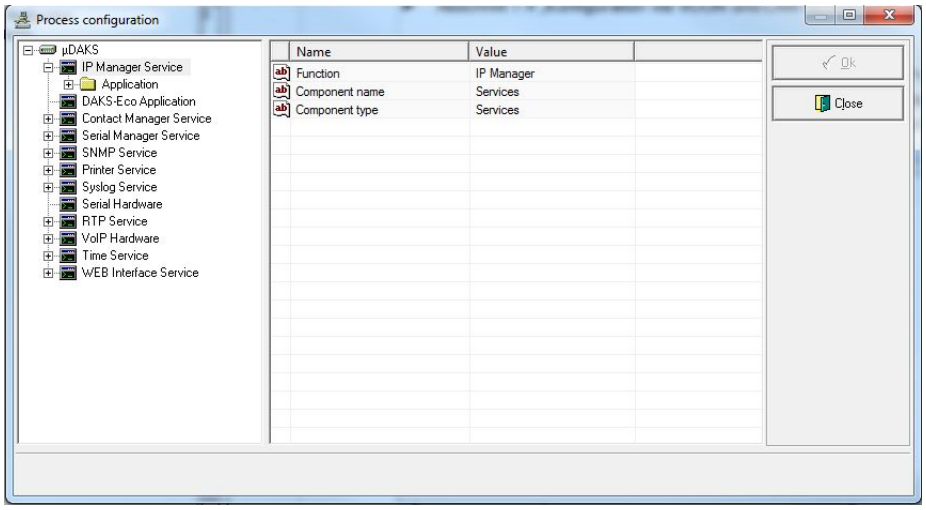


Image 10-9 Properties of a process, here for: mDAKS

Settings

Not all processes can be parameterized. If parameters can be edited they are output in an edit window where they are shown in form of a tree structure.

➤ see Image 10-12 Settings of a process, here for: mDAKS

Depending on the data type of the respective parameter, the user window will display the following edit fields:

- **Input field**
  The edit fields are used for alphanumeric entries. The entries that are made in these fields are verified by the system once the user has proceeded to the next area.
  If the system detects that a supported value range of an edit field has been exceeded, it will automatically send a warning and the entry can be corrected.
  Example: "ESPA-X client name" in the ESPA-X configuration

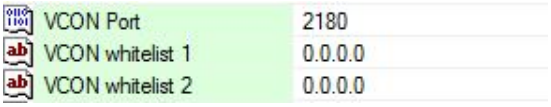


Image 10-10 Summary of the Input field VCON

- **Selection field**
  Selection fields have a drop-down combobox from which you can choose the settings that are available.
  Example: "detect short circuits" in the configuration of the Digital inputs



Image 10-11 Selection field in VCON

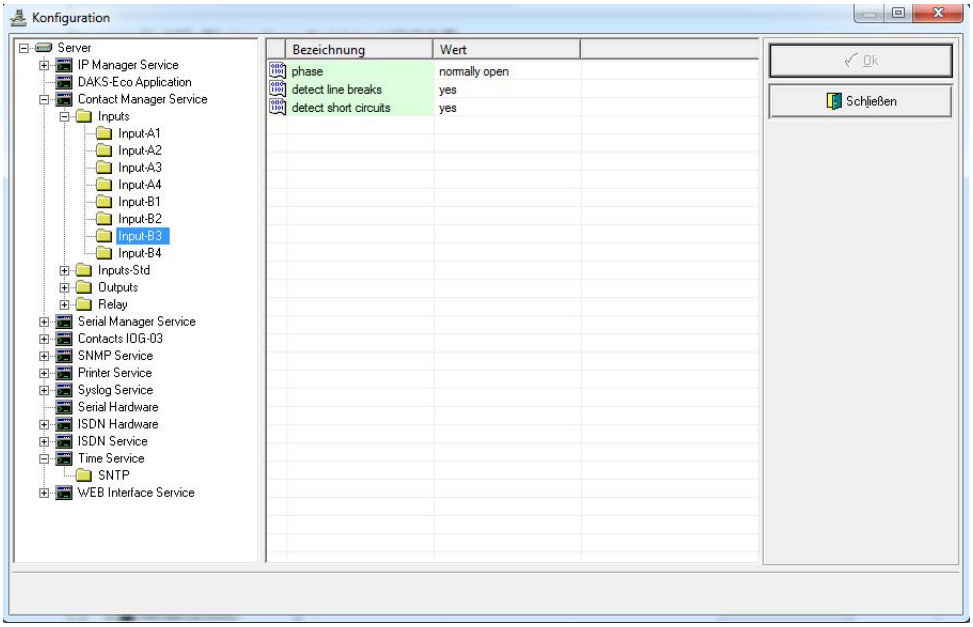


Image 10-12 Settings of a process, here for: mDAKS

10.6.4 Export a DAKS configuration

This function makes it possible to export the DAKS configuration, or individual modules, for documentation purposes.

Here, the information is saved in a text format and written to a file. The data is formatted in form of a tree and can be easily further processed for documentation.

To save the configuration proceed as follows:

- via the menu bar: *Process* ➤ *Process configuration report...* (for the data of the process)
- via the menu bar: *Process* ➤ *Server configuration report...* (for the data of all processes)

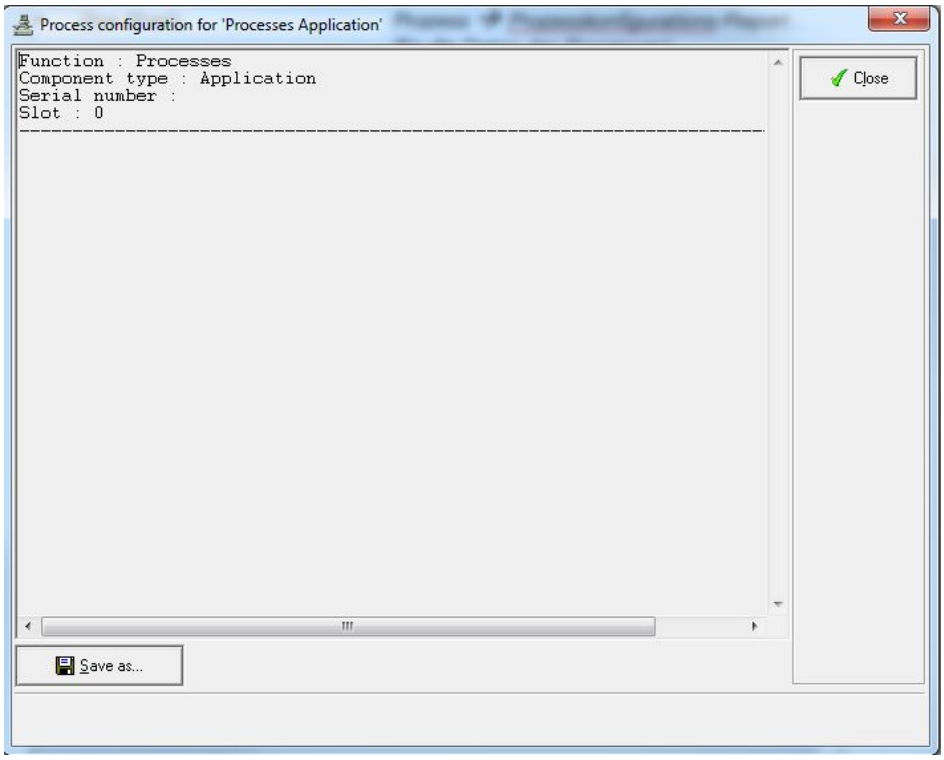


Image 10-13 Example of a Process configuration

This outputs the configuration of the selected process, or of the entire DAKS, in a tree.

➤ see Section 7.3 "Configuration via VCON and LAN interface"

Click **Save as...** to save.

This will open the standard Windows user dialog (not shown here) to save a file.

Enter the path where you want to save the file, and confirm you entry with **OK**.

10.7 Monitoring

The monitoring outputs in the respective Terminal window and/or System logging window enable you to trace the various process cycles in detail. Here, the user can specify which outputs shall be shown by DAKS. This includes the option to activate the monitor outputs on a temporary or on a permanent basis.



Note:
Note that the outputs that are activated on a temporary basis only will be lost at the next system start. In contrast, outputs that are activated on a permanent basis will be automatically re-activated by DAKS after the next system start.

10.7.1 Manual monitoring

In the Terminal window, enter by hand the command `mon` and press <enter> to list all monitor items of an individual process, including its name and identifier, and to see which monitor items are currently active (`cur. mask: 0x... , <--`).

```
mon
                                                INFO: 0x00000001 <--
                                               ERROR: 0x00000002 <--
                                              inputs: 0x00000004
                                             outputs: 0x00000008
                                               DEBUG: 0x80000000
  cur. mask: 0x00000003
```

To start the monitor items you want to activate, enter the command `mon`, followed by the identifier of the logic disjunction "OR" of the individual monitor items (hexadecimal), and press <enter>, for example:

```
mon 0xC
                                                INFO: 0x00000001 <--
                                               ERROR: 0x00000002 <--
                                              inputs: 0x00000004 <--
                                             outputs: 0x00000008 <--
                                               DEBUG: 0x80000000
  cur. mask: 0x000000F
```

Enter `mon 0` to deactivate all monitor items.



Note:
The monitor items 0x1 (INFO) and 0x2 (ERROR) cannot be deactivated in the Terminal window.



Caution!
The monitoring settings that are made in this user window will not be lost with the next restart of DAKS.
For more information on how to activate permanent monitoring outputs go to:
➤ see Section 10.7.3 "Configure startup monitoring"

10.7.2 Active monitoring

Open the user window to read and edit the active monitoring of a process:

- via the menu bar: Process ➤ Active monitoring...
- or via the context menu: Active monitoring...

Either of these options will open a user dialog in which you can configure **temporary monitoring settings** for traces.

The monitoring outputs appear in the matching Terminal windows of the processes and/or in the System logging window.

➤ see Section 10.8 "The Terminal window"
➤ see Section 10.9 "The System logging window"

Caution!
The monitoring settings that are made in this user window will not be lost with the next restart of DAKS.
For more information on how to activate permanent monitoring outputs go to:
➤ see Section 10.7.3 "Configure startup monitoring"

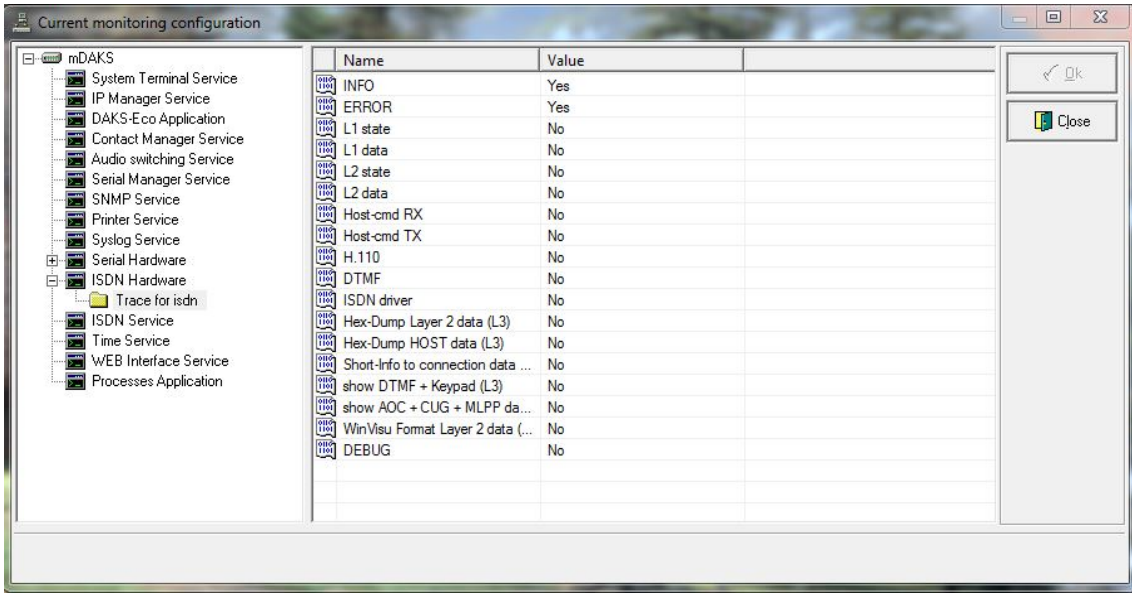


Image 10-14 Example of an active monitoring

The individual monitoring outputs can be activated ("**Yes**") or deactivated ("**No**") with a selection list.

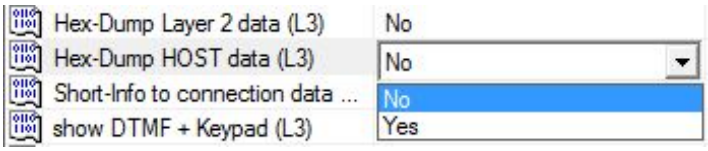


Image 10-15 Active monitoring Yes/No

10.7.3 Configure startup monitoring

Open the user window to edit the start configuration for the monitoring of a process:

- via the menu bar: Process ➤ Configure startup monitoring...
- or via the context menu: Configure startup monitoring...

Either of these commands will open a user window with the option to enter permanent monitoring settings for tracing.

➤ see Image 10-14 Example of an active monitoring

The monitoring outputs appear in the matching Terminal windows of the processes and/or in the System logging window.

➤ see Section 10.8 "The Terminal window"

➤ see Section 10.9 "The System logging window"



Caution!
The monitoring settings made in this user window will not be lost at the next restart of DAKS. Please bear in mind that large amounts of data may be added to the hard disc drive when you save data via the Terminal and/or the System logging window.

For more information on how to edit the settings:

The only difference in this user window is the name, which reads: 'Start-up monitoring configuration'.

➤ see Section 10.7.2 "Active monitoring"



Note:
The monitor items 0x1 (INFO) and 0x2 (ERROR) cannot be deactivated in the Terminal window.

10.8 The Terminal window

10.8.1 General information

The individual DAKS processes write their process- and error messages as well as their monitoring outputs to the Terminal windows.

System outputs are additionally output in the System logging window.

➤ see Section 10.9 "The System logging window"



Caution!
The logging in the System logging windows may only be carried out in consultation with Support, as the activation of certain monitor items may restrict the performance of DAKS and is apt to also generate very large amounts of data under certain circumstances.

10.8.2 Logging

The outputs in the Terminal windows can be written into files. The logging of Terminal outputs in files can either be carried out on a temporary basis, or permanently:

- **Activate temporary logging**
  If the logging is activated on a temporary basis, all terminal outputs are written in a log file for as long as VCON is active. After a new new start of VCON, however, the Terminal outputs will no longer be written to the log file.
  Activate/deactivate the temporary logging:
  – via the menu bar: Process ➤ Log terminal output temporarily
  – via the context menu: Log terminal output temporarily
  – Toolbar: 
- **Activate permanent logging**
  If the logging is activated on a permanent basis, all terminal outputs will also be logged after a reboot of VCON.
  Activate/deactivate the permanent logging:
  – via the menu bar: Process ➤ Log terminal output permanently
  – via the context menu: Log terminal output permanently
  – Toolbar: 

For each process, VCON creates an separate subdirectory with the name of the respective process, and adds it to a directory that can be freely determined by the user.

It is here that the system will then add one new log file per day, with the file name written in this format:

Format log file name: yyyy-mm-dd.log

- yyyy year, 4 digits
- mm month, 2 digits
- dd day, 2 digits

➤ see Section 10.5.2 "The tab: 'Paths'"

The following table gives you an example of a log file.

Here, the activation of the logging process by VCON after a system reboot is earmarked separately.

```
2010-02-17 13:54:27.6760
************************************************
2010-02-17 13:54:27.6760 * tetronik GmbH
2010-02-17 13:54:27.6760 * Digital-IO
2010-02-17 13:54:27.6760 * Version:  1.00
2010-02-17 13:54:27.6760 * Compiled: Feb 12 2010
2010-02-17 13:54:27.6760 * Copyright (c) 1994 - 2010 All
rights
2010-02-17 13:54:27.6760
************************************************
2010-02-17 13:54:27.7360 16 licenses for inputs.
2010-02-17 13:54:27.7360 8 licenses for outputs.
2010-02-17 13:54:27.7360 1 licenses for relay.
=> Logging started: 2010-02-17 14:03:46.0327

2010-02-17 14:56:25.1880 [00000004]: input #16: 0 -> 2
2010-02-17 14:56:25.3240 [80000000]: rec: cmd 'cO' len 8
2010-02-17 14:56:25.3240 [00000008]: output #7: 1
2010-02-17 14:56:28.8920 [00000004]: input #8: 0 -> 1
2010-02-17 14:56:28.3800 [80000000]: rec: cmd 'cO' len 8
2010-02-17 14:56:28.3800 [00000008]: output #6: 1
2010-02-17 14:56:30.8680 [00000004]: input #2: 0 -> 1
2010-02-17 14:56:33.3000 [00000004]: input #5: 0 -> 2
2010-02-17 14:56:36.7960 [00000004]: input #12: 0 -> 3
2010-02-17 14:56:39.6440 [00000004]: input #10: 0 -> 1
2010-02-17 14:56:42.8280 [00000004]: input #16: 2 -> 0
2010-02-17 14:56:42.0480 [80000000]: rec: cmd 'cO' len 8
2010-02-17 14:56:42.0480 [00000008]: output #7: 0
2010-02-17 14:56:44.0120 [00000004]: input #8: 1 -> 3
2010-02-17 14:56:46.7800 [00000004]: input #8: 3 -> 1
2010-02-17 14:56:48.1720 [00000004]: input #5: 2 -> 0
2010-02-17 14:56:53.0600 [00000004]: input #16: 0 -> 2
2010-02-17 14:56:53.2640 [80000000]: rec: cmd 'cO' len 8
2010-02-17 14:56:56.3840 [00000004]: input #16: 2 -> 0
2010-02-17 14:56:56.5240 [80000000]: rec: cmd 'cO' len 8
2010-02-17 14:56:56.5240 [00000008]: output #7: 0 2010-
02-17 14:57:00.4400 [00000004]: input #16: 0 -> 2 2010-
02-17 14:57:00.6040 [80000000]: rec: cmd 'cO' len 8 2010-
02-17 14:57:00.6040 [00000008]: output #7: 1 2010-02-17
14:57:05.8080 [00000004]: input #16: 2 -> 0
```

VCON new start

Image 10-16 Example of a log file of the Terminal window

10.8.3 Search for a word or text in the Terminal window

VCON enables you to browse outputs in Terminal windows for specific texts. When the wanted word is found, the system will highlight it in the presented results.

The search begins with the first character in the buffer of the Terminal window. To go to the next finding of the search term, simply repeat the search functions as described below.

In addition, you can also browse the System logging window for a text or for words (terms) that are marked in the Terminal window.

How to browse the Terminal window for a text or term, step by step:

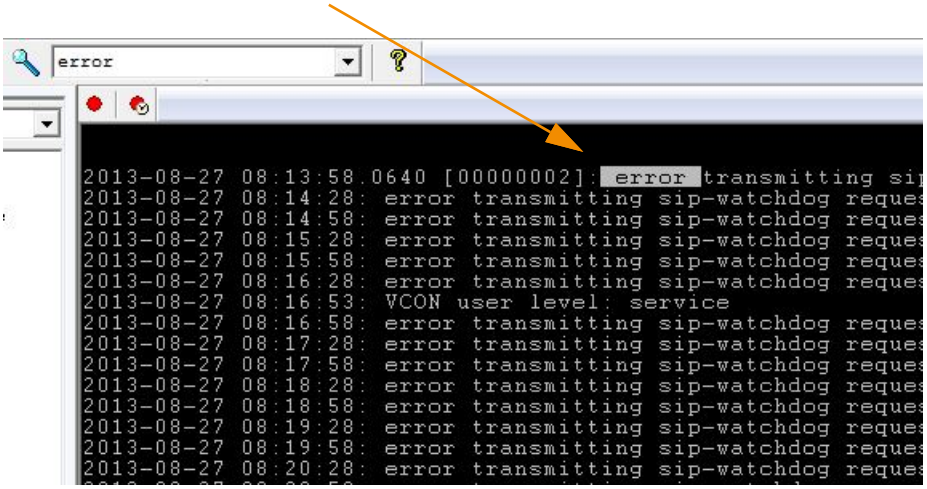
No.	Task
1.	Give the Terminal window in which you want to carry out the search the focus in either of these two ways: • Make a left mouse click in the Terminal window. • Go to the List of Processes. • There, click the process that is part of the Terminal window.
2.	 Enter the search key (a term or word) you are looking for in the search box of the toolbar. Click the **magnifying glass** in the toolbar. **Note:** Bear in mind that the search terms are case sensitive.
3.	Search results  VCON will highlight the search results in the Terminal window.
4.	You can continue searching for more findings of the term or text you entered. To do so, just continue clicking the **magnifying glass**. ➤ see Step 3.

Table 10-11 Search the Terminal window for a text

How to browse the Terminal window for a marked text, step by step

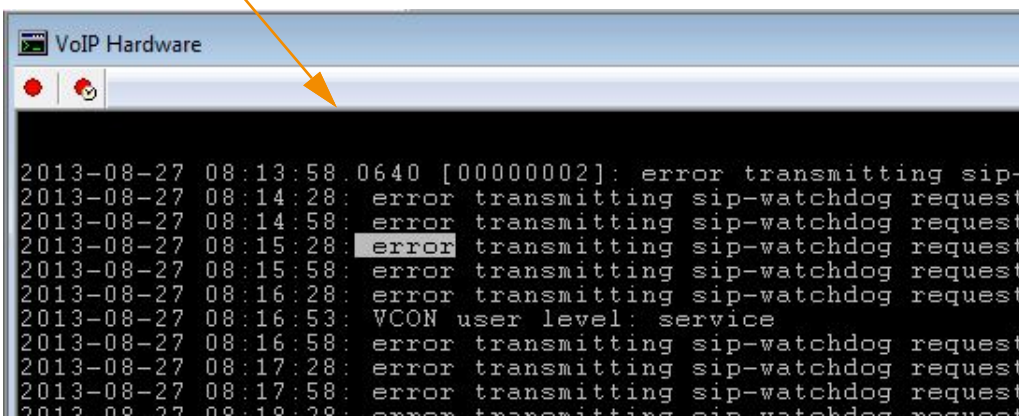
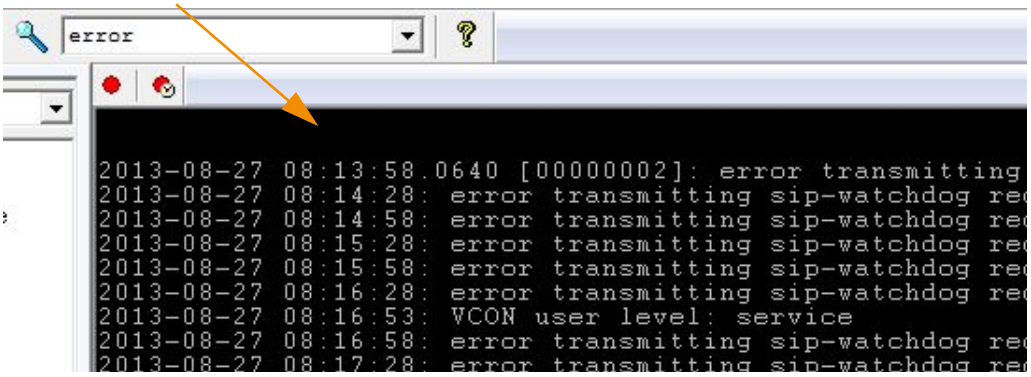
No.	Task
1.	Search key  In the Terminal window, select the wanted text.
2.	Now start the search in either of these ways: • via the menu bar: *Search ➤ Find marked text* • via the context menu: *Find marked text* • via the keyboard shortcut: `Ctrl + F3`
3.	Search results  VCON will highlight the search results in the Terminal window.
4.	You can continue searching for more findings of the term or text you entered. To do so, continue activating the search. ➤ see Step 2.

Table 10-12 Browse the Terminal window for a marked text

How to browse the System logging window for a marked text (term), step by step:

This search function makes it possible to create a direct shortcut between the Terminal window and the System logging window and, by doing so, to browse the System logging window for a message from the Terminal window.

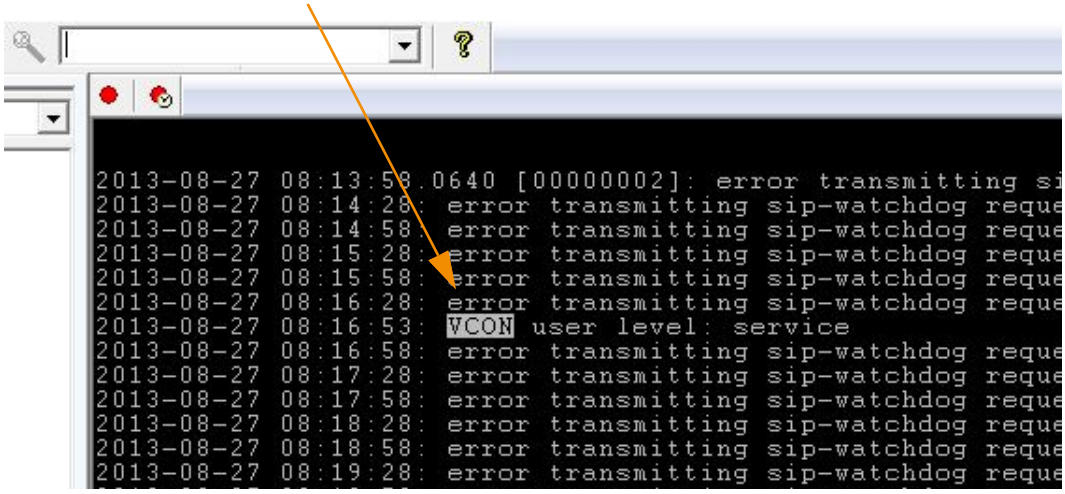
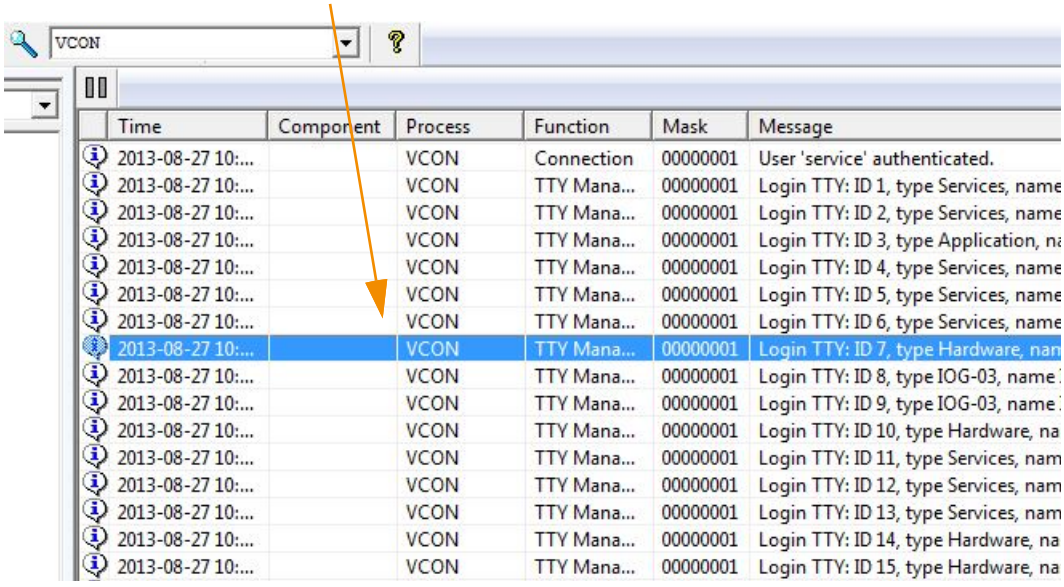
No.	Task
1.	Search key  In the Terminal window, select the wanted text.
2.	Now start the search in either of these ways: • via the menu bar: *Search ➤ Find selected text in system logging window* • via the context menu: *Find selected text in System logging window* • Shortcut: `Shift + Ctrl + F3` • Toolbar: 
3.	Search results  VCON will highlight the search results in the System logging window.

Table 10-13 Search for a marked text in the System logging window

10.8.4 Save

Open the user dialog to save the contents of Terminal windows:

- via the menu bar: File ➤ Save content
- or via the toolbar: 

Note:
In addition to logging Terminal outputs permanently or temporarily in a file, you can also save the contents of Terminal windows spontaneously, i.e. ad hoc.

The following contents can be saved:

- **Save entire window content**
  If no text is marked in the window, VCON will automatically save the entire content of the Terminal window in a text file, including the areas that only become visible when scrolling the window.
- **Save marked text only**
  If a text is marked in the window, the text will be saved in a text file.

The standard Windows dialog "Save as..." will pop up. Use this window to select the location where and the file name under which you want to save the text file.

➤ see Image 10-17 Save the contents of a Terminal window

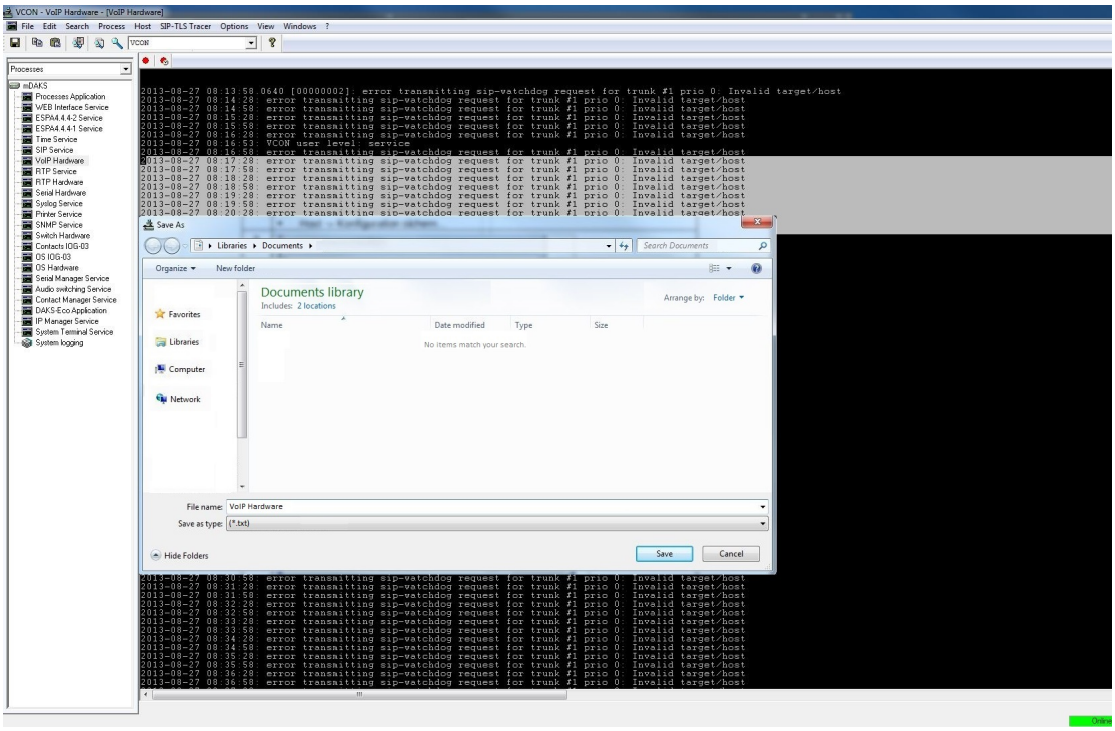


Image 10-17 Save the contents of a Terminal window

10.9 The System logging window

10.9.1 General information

The System logging window outputs the following messages in one list:

VCON system messages

The VCON system messages include, for example:

- Activation messages
- messages on the connection status between DAKS and VCON

Process messages

The various processes first send their messages to their assigned Terminal window. VCON then filters all messages that have the below format, outputs these messages also in the System logging window and saves them in log files:

yyyy-mm-dd HH:MM:SS.µµµµ [xxxxxxxx]: <text>

–	yyyy	the year
–	mm	the month
–	dd	the day
–	HH	the hour
–	MM	the minute
–	SS	the second
–	µµµµ	the 100 µ seconds
–	xxxxxxxx	the code of the monitor point (bit encoding)
–	<text>	the message in plaintext

The process messages include, for example:

- **Info messages**
  Information generated from within the process
- **Error messages**
  Generated in the event of errors or malfunctions
- **Trace messages**
  Generated to indicate the activation/deactivation of trace messages:
  ➤ see Section 10.8 "The Terminal window" or Section 10.7 "Monitoring"

Due to the large amount of messages that are received, especially if the monitoring of outputs is activated, the analysis of the relevant information can be rather time consuming.

For this reason, VCON offers the option to search for system messages both in the window that is currently open and throughout all log files that are stored on the hard disc drive, and to filter these messages.

➤ see Section 10.10 "Filter system messages"

The below image shows the System logging window (here for: DAKS-200):

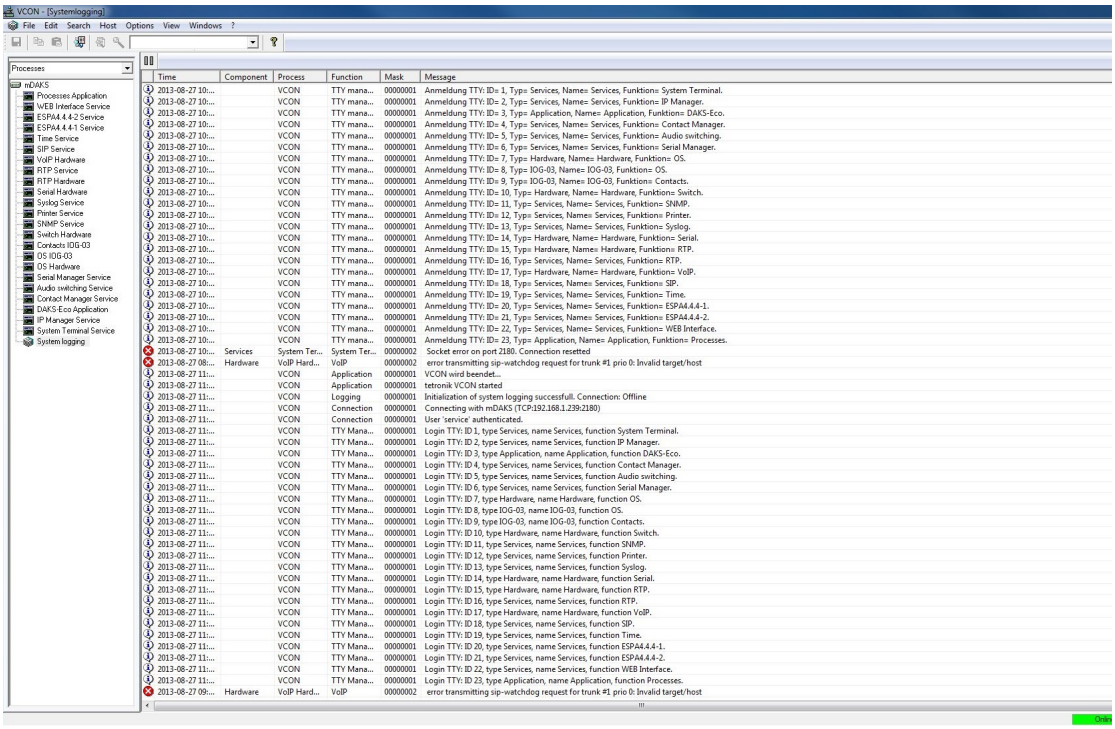


Image 10-18 The System logging window (here for: DAKS-200)

Summary of the columns and functions in the System logging window:

Menu bar/ button	Description
Icon	• Process information • Problem report • Trace message • Debug message
Time	The date and time when the message was generated in DAKS (time stamp is assigned automatically, by the process).
Component	The component that generated the message.
Process	The process that generated the message.
Function	The function in which the message was generated.
Mask	The monitoring mask of trace messages. ➤ see Section 10.6 "List of Processes"
Message	The message in plaintext
	Activate/deactivate the pause mode. During the pause mode, no further outputs will be shown in the System logging window. Nonetheless, the system will continue to write all messages into the log file. After the end of the pause mode, all messages that have meanwhile arrived will be displayed.

Table 10-14 The System logging window

Note:
System messages can only be sorted by column during the pause mode.
To sort by column, simply make a left mouse click on the column header.

10.9.2 Browse the System logging window for a word

You can browse the System logging window for search terms or similar messages.

Also, the system offers the option to track a message that is shown in the System logging window also in the Terminal window, in which it originally appeared.

The search starts at the beginning of the list.

To go to the next finding of the search term, simply repeat the search functions as described below.

How to browse the System logging window for a text, step by step:

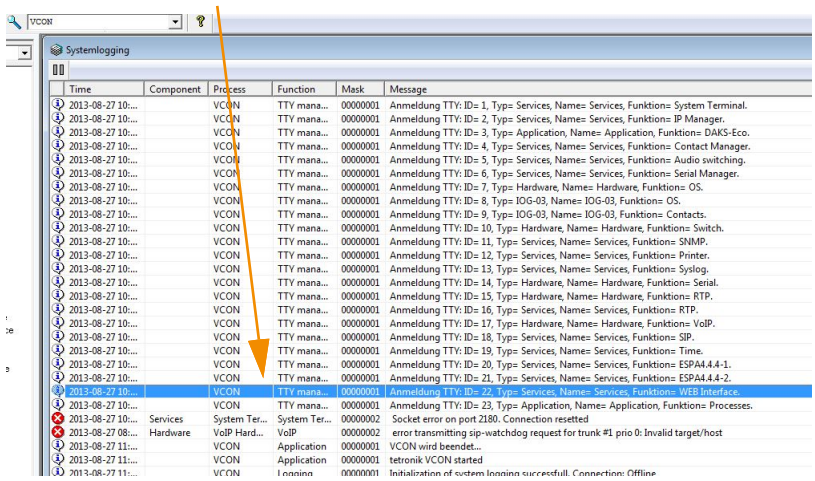
No.	Task
1.	Place the focus on the System logging window in either of these ways: • Make a left mouse click in the System logging window. • Go to the List of Processes. • There, click the entry '**System logging**'.
2.	 Enter the search key (a term or word) you are looking for in the search box of the toolbar. Click the **magnifying glass** in the toolbar. **Note:** Bear in mind that the search terms are case sensitive.
3.	Search results:  VCON will highlight the search results in the System logging window. Here, the system always highlights the entire column in which the search term was found.

Table 10-15 Browse the System logging window for a word

No.	Task
4.	You can continue searching for more findings of the term or text you entered. To do so, just continue clicking the **magnifying glass**. ➤ see Step 3.

Table 10-15 Browse the System logging window for a word

How to find the next similar message, step by step:

With this search function, VCON uses the text of the message as the search criterion.

Other search criteria, e.g. the time, process or monitor mask, are not taken into account.

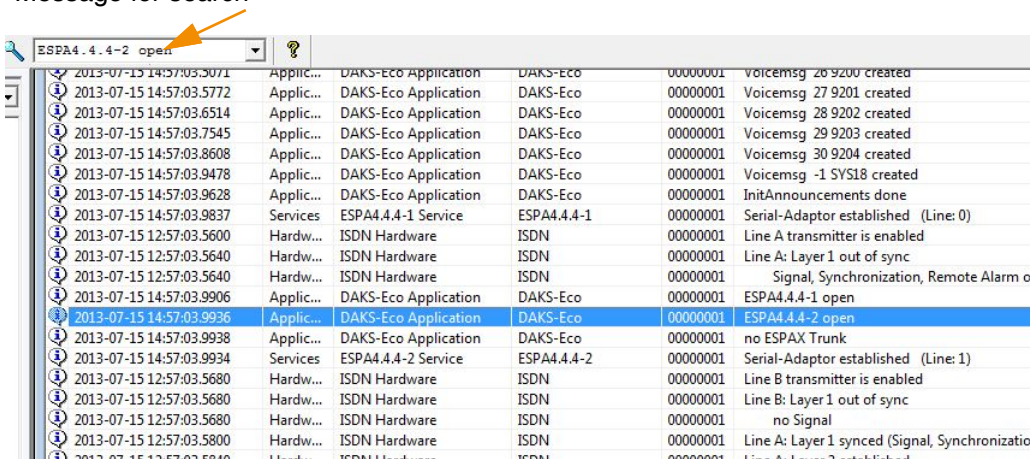
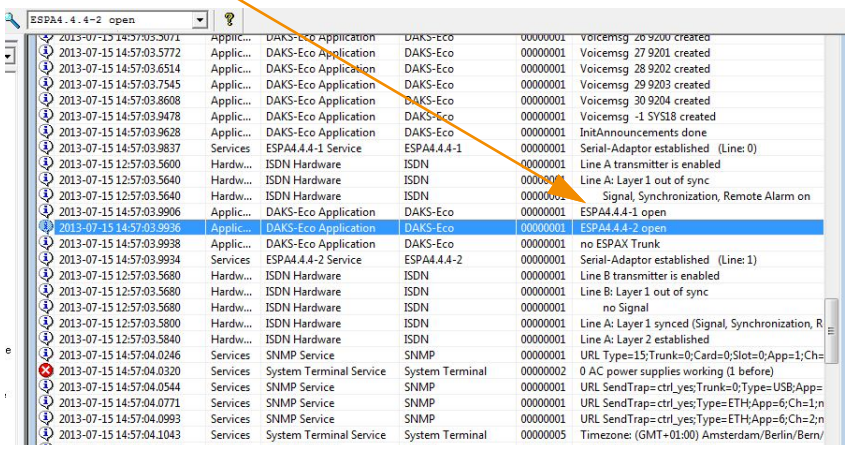
No.	Task
1.	Message for search  Mark the message you are looking for in the System logging window.
2.	Now start the search in either of these ways: • via the menu bar: *Search ➤ Find next similar message* • via the context menu: *Find next similar message* • via the keyboard shortcut: `Ctrl + F3`
3.	Search results  VCON will highlight the search results in the System logging window.

Table 10-16 Browse the System logging window for a next similar message

No.	Task
4.	You can continue searching for more findings of the term or text you entered. To do so, continue activating the search. ➤ see Step 2.

Table 10-16 Browse the System logging window for a next similar message

How to also browse the Terminal window for a message, step by step:

Use this function to create a direct link between the Terminal window and the System logging window.

Every message that is shown in the System logging window has a related and matching message in a Terminal window.

These related and corresponding outputs can be found quickly and effectively.

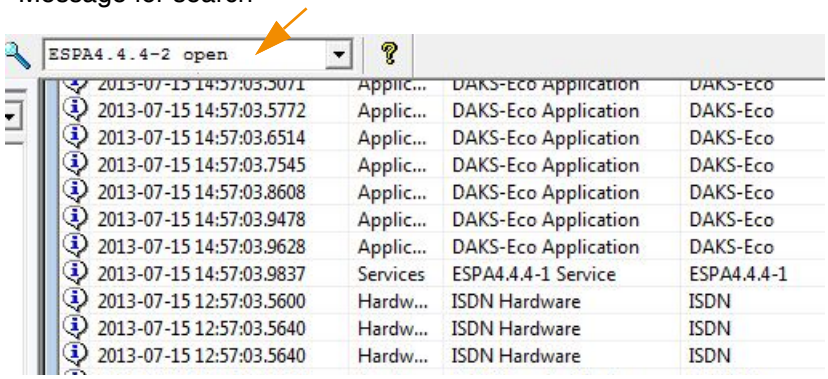
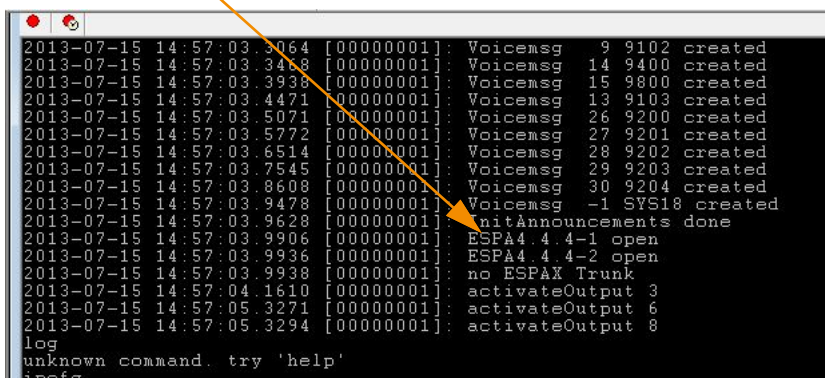
No.	Task
1.	Message for search  Mark the message you are looking for in the System logging window.
2.	Now start the search in either of these ways: • via the menu bar: *Search ➤ Find message in the matching Terminal window* • Context menu: *Find message in the matching Terminal window* • Shortcut: `Shift + Ctrl + F3`
3.	Search results  VCON will highlight the search results in the Terminal window.

Table 10-17 Find a message of the System logging window also in the Terminal window

10.10 Filter system messages

10.10.1 General information

The filter tool is a convenient and easy way to browse for relevant datasets in the system logging details.

The filter is applied to all messages that are output in the current System logging window as well as to all previous messages that have already been saved in the system logging files.

After a filter has been applied, the system will open a new System logging window with the filtered messages.



Note:

The filter continues its operation even while new messages arrive. When the search criterion applies to one of the new messages, that message is automatically added to the filter window.

The output of new messages can be deactivated with the pause mode.

➤ see Section 10.9.1 "General information"

After the pause mode ends, all system messages will be shown that have arrived in the meantime, and that match the filter criterion.



Caution!

Please bear in mind that when system logging information is saved on the hard disc drive over a longer period of time, the time response when using a filter can be rather long because of the large amount of data that must be filtered.

For long calculation periods the system uses a progress bar and offers the option to interrupt the filter process.

10.10.2 Use the word search

An easy way of filtering is to search the System logging window for a specific word or text, and to have the search results output in form of a list.

How to apply the word search in the System logging window, step by step:

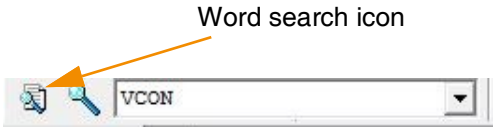
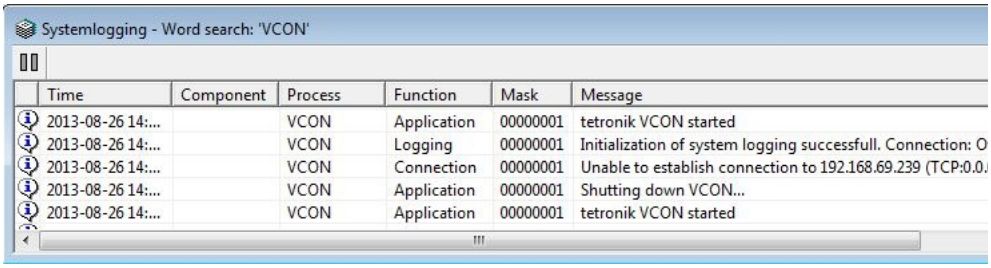
No.	Task
1.	 Enter the search key (a term or word) you are looking for in the search box of the toolbar. Go to the toolbar and click the **word search icon**. **Note:** Bear in mind that the search terms are case sensitive.
2.	 VCON adds a separate System logging window with the filtered search results and adds the results to the List of Processes, and here as a child node to 'System logging'. Click this entry in the List of Processes to bring the window to the front.

Table 10-18 Use a word search in the System logging window

10.10.3 Apply Global filters

Global filters provide complex filtering options that go beyond simple word searches.

With global filters, it is possible to apply search criteria such as specific time periods, but also process types or logic connections (AND, OR, NOT).

How to use a global filter in the System logging window, step by step:

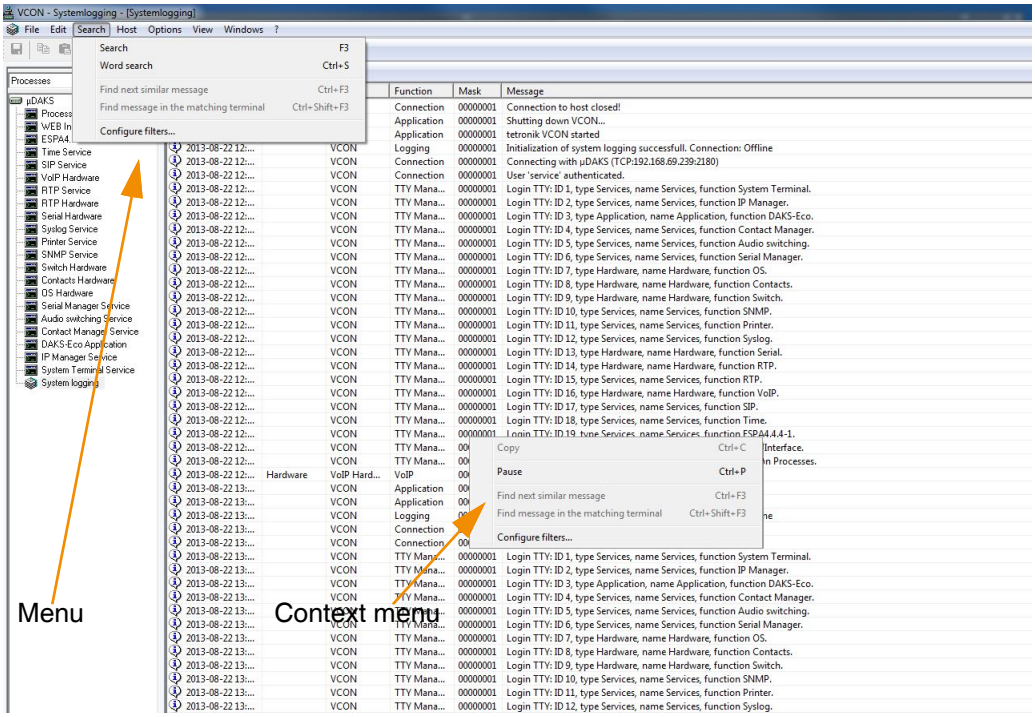
No.	Task
1.	Place the focus on the System logging window in either of these ways: • Make a left mouse click in the System logging window. • Go to the List of Processes. • There, click the entry '**System logging**'.
2.	 Open the filter list: • via the menu bar: Search ➤ Configure filters... • via the context menu: Configure filters... • Toolbar:  ➤ see Section 10.10.4 "Filter list"

Table 10-19 Global filter in System logging window (here: DAKS-Eco 200)

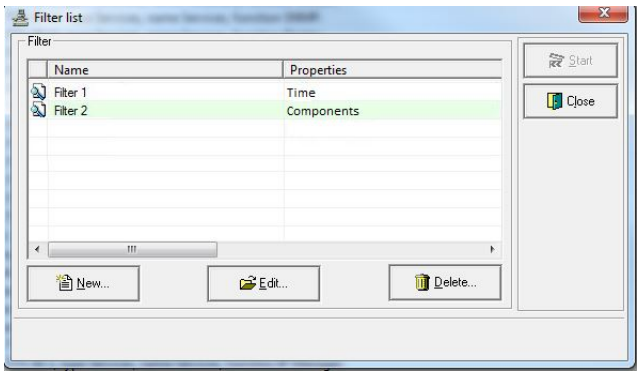
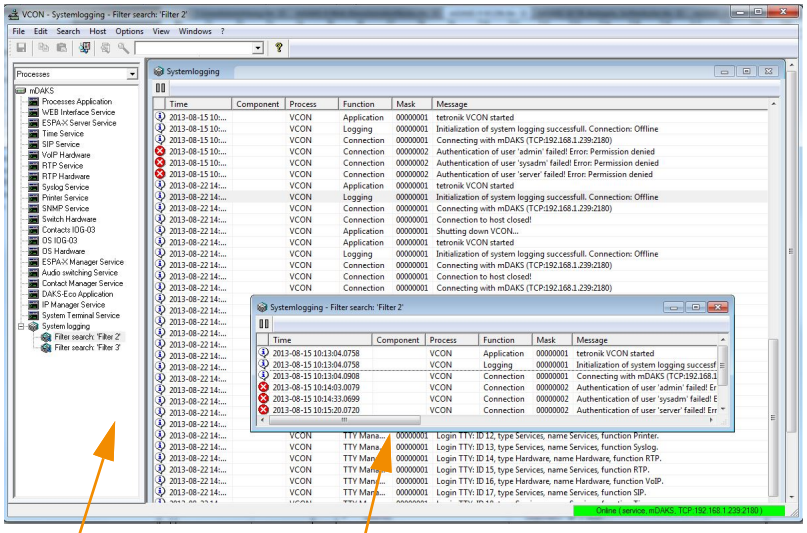
No.	Task
3.	 Mark the filter that you want to apply to the list of system messages. Click **Start**.
4.	 Filter window in the List of Processes System logging window with filter results This will open the System logging window with filtered results. To make the navigation as easy as possible, VCON creates an individual entry in the List of Processes for every activated filter, and adds these as child nodes to 'System logging'.

Table 10-19 Global filter in System logging window (here: DAKS-Eco 200)

10.10.4 Filter list

Open the filter list:

- via the menu bar: Search ➤ Configure filters...
- via the context menu: Configure filters...
- or via the toolbar: 

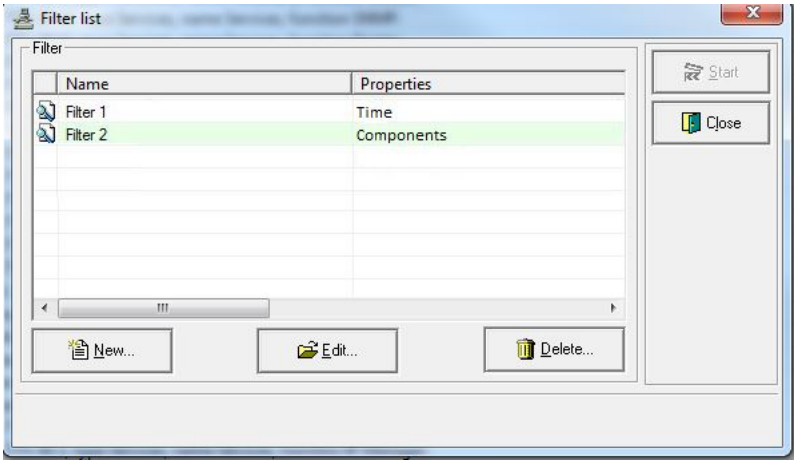


Image 10-19 Filter list

Summary of the fields in the window 'Filter list':

Menu bar/ button	Description
New...	Add a new filter to the list. ➤ see Section 10.10.5 "Edit filter settings"
Edit...	Edit the settings of the filter you selected in the filter list. ➤ see Section 10.10.5 "Edit filter settings"
Delete...	Delete the selected filter from the filter list.
Start	Activate the selected filter.
Close	Use this menu item to close the dialog.

Table 10-20 Filter list

10.10.5 Edit filter settings

Open the user window to edit the filter settings:

- via the user window Filter List: New.../Edit...

➤ see Section 10.10.4 "Filter list"

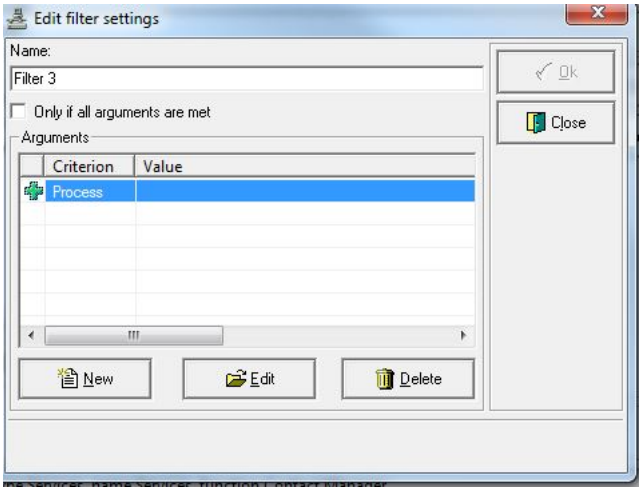


Image 10-20 Edit filter settings

Summary of the fields in the window 'Edit filter settings':

Menu bar/ button	Description
Description	The name with which this filter is shown in the filter list.
Only if all arguments are met	• **yes** This option corresponds to the logic conjunction "AND" of the below argument list. • **no** This option corresponds to the logic disjunction "OR" of the below argument list.
Arguments	
Criterion/Value	List of all arguments that must be considered when this filter is applied.
New	Create a new argument. ➤ see Section 10.10.6 "Edit the argument of a filter"
Edit	Edit a selected argument. ➤ see Section 10.10.6 "Edit the argument of a filter"
Delete	Delete a selected argument.
OK	Save the filter settings.
Close	Close the window.

Table 10-21 Edit filter settings

10.10.6 Edit the argument of a filter

Open the user window to edit the filter criterion or argument:

- via the user window 'Edit filter settings': New.../Edit...

➤ see Section 10.10.5 "Edit filter settings"

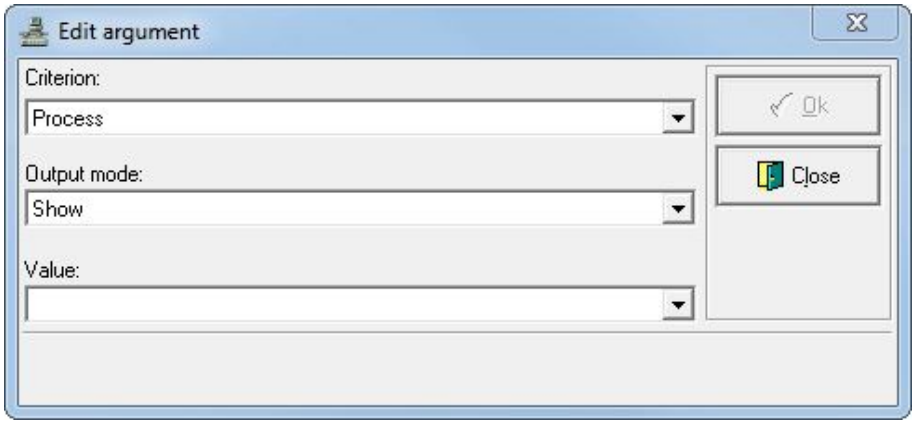


Image 10-21 Edit argument

Summary of the fields in the window 'Edit argument':

Menu bar/ button	Description
Criterion	Enter here the criterion that is applied in the search in combination with the value specified below.
Output mode	• **Show** With this option, the system will output the log entry that was found. • **Hide** With this option, the system will hide the entry that was found. This is equivalent to a negation of the argument itself.
Value	List of all conditions that the system must consider when it applies this filter, e.g. 'Value' or 'from..to..'.
OK	Save the argument settings.
Cancel	Close the window.

Table 10-22 Edit argument

10.11 The Ethernet Tracer

VCON offers the option to trace the data traffic at the Ethernet interface of DAKS, and to save the trace to the Service PC in a trace file with the format `.pcap`.

The Ethernet Tracer offers the option to trace exclusively the data traffic to and from the Ethernet interface of the DAKS (*System-traffic only),* or the entire data traffic at that interface (*all traffic*).

How to start and end the Ethernet Tracer, step by step:

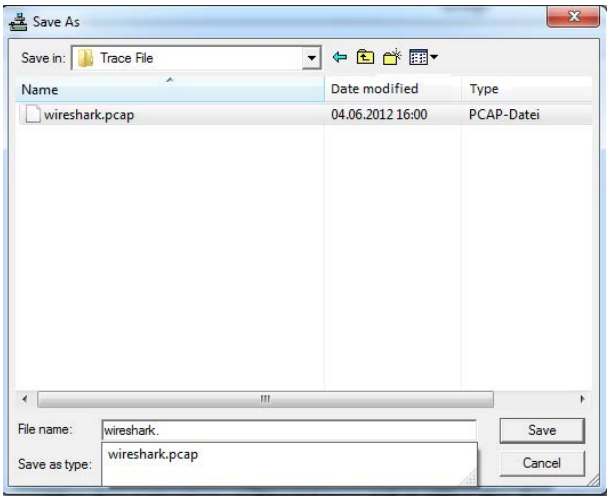
No.	Task
1.	Go to the tree view and open 'IP Manager Service'. Next, go to the menu bar and select the menu item: • **Ethernet Tracer ➤ Start trace (system-traffic only), or** • **Ethernet Tracer ➤ Start trace (*all traffic*)**
2.	 Specify the path where you want the system to save the `.pcap` file. Click **Save**.
3.	After you activate 'Start trace (system-traffic only)', the Terminal window will read: • `Ethernet Trace started....` After the successful activation of 'Start trace (all traffic)', the Terminal window will read: • `Ethernet Trace started (promiscuous)....` After the Tracer has been stopped with Stop trace the Terminal window will read: • `Ethernet Trace stopped ...` If the process is aborted by the user, the Terminal window will read: • `Command/Action not executed...` In the event the process is ended because of an error, the following output will appear in the Terminal window, e.g. if VCON was ended after the start of the Trace function and the user forgot to stop the Ethernet Tracer beforehand: • `Unspecifiable error detected...`
4.	To end the Trace function select: • `Ethernet Tracer -> Stop trace`

Table 10-23 Ethernet Tracer

10.12 Install VCON

How to install the VCON service and configuration tool, step by step:

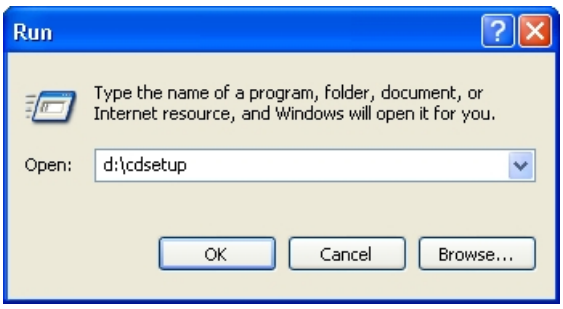
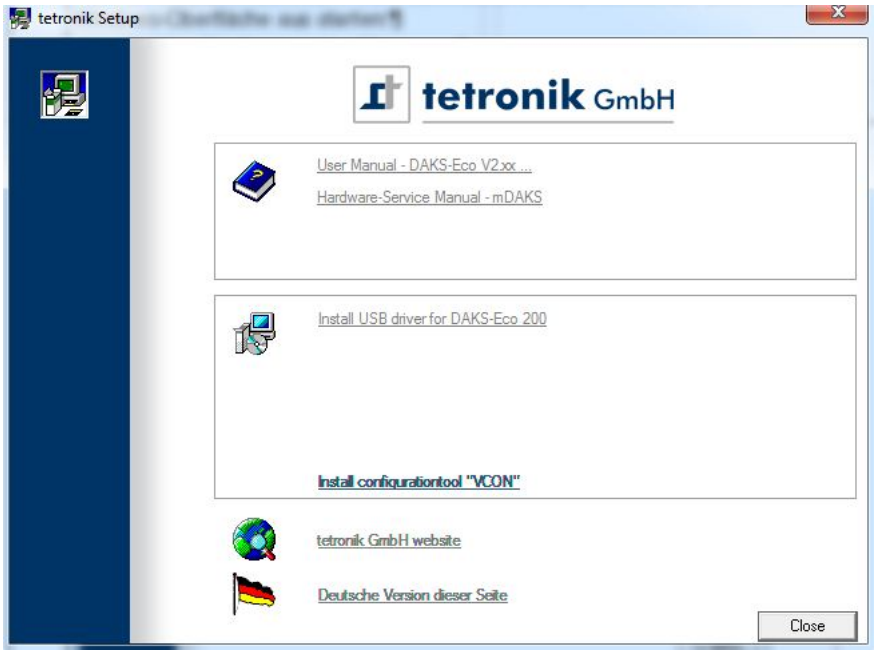
No.	Task
1.	 Place the Installation CD in the CD-ROM drive of the PC. If the installation software fails to start automatically, you can also start the installation manually in Windows: • Select **Start ➤ Run...** • Enter: *<CD-ROM drive>*:\CDsetup> • Confirm with **Ok**.
2.	 In the window "tetronik Setup" choose the menu item: • **Install configuration tool "VCON"**

Table 10-24 Install VCON

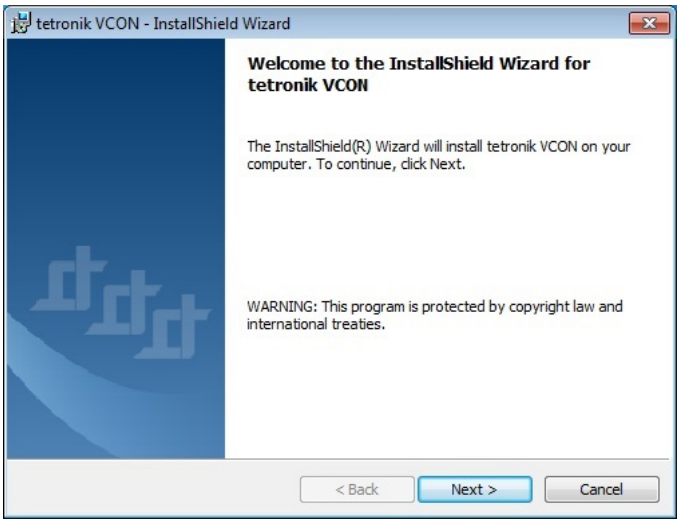
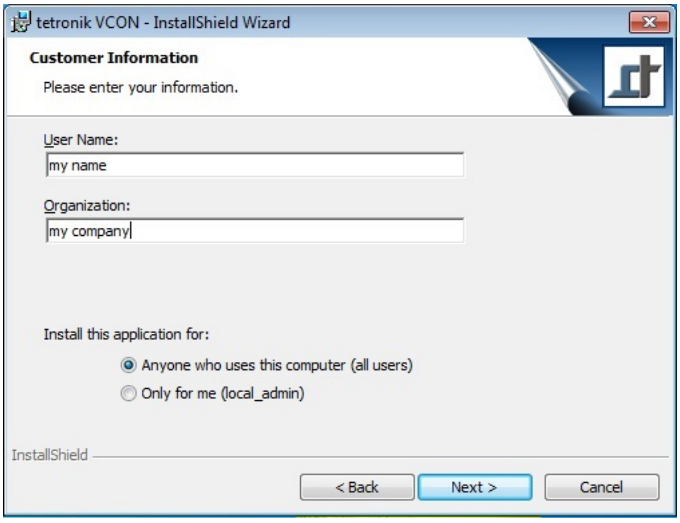
No.	Task
3.	Select the setup language. 
4.	 You can now begin with the installation. Click **Next**.
5.	 Enter the user name and the name of the organization or company. Specify if you want the software to be installed for all users of this PC, or only for you. Click **Next**.

Table 10-24 Install VCON

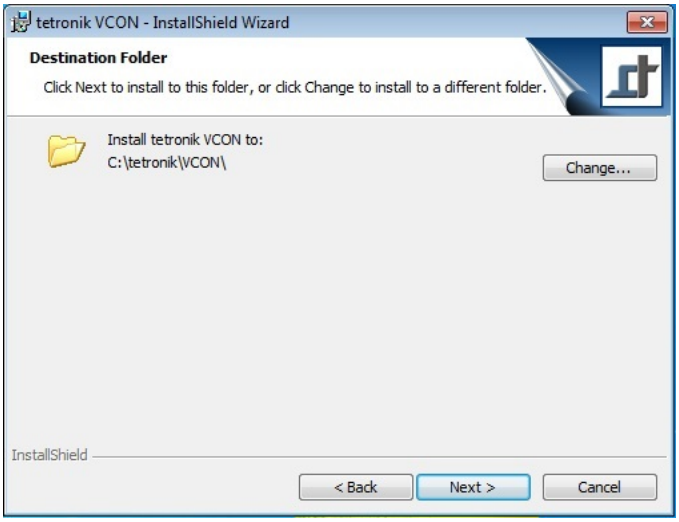
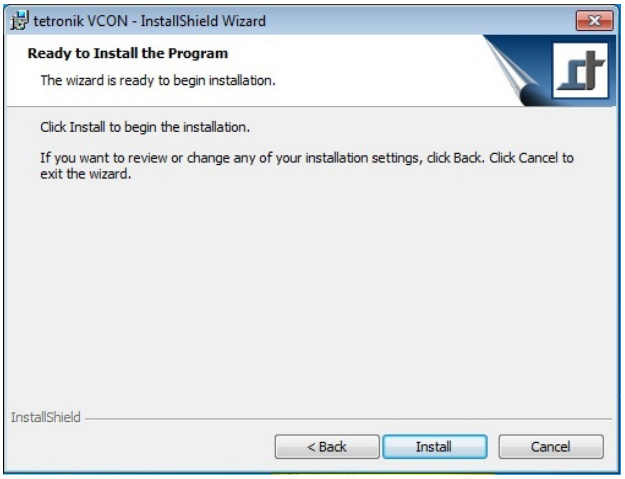
No.	Task
6.	 Click **Change...** to change the installation path. Select the new path in the user window that will open next (not shown here). Click **Next**.
7.	 The installation settings have been successfully entered. You can now start with the installation. Click **Install**.

Table 10-24 Install VCON

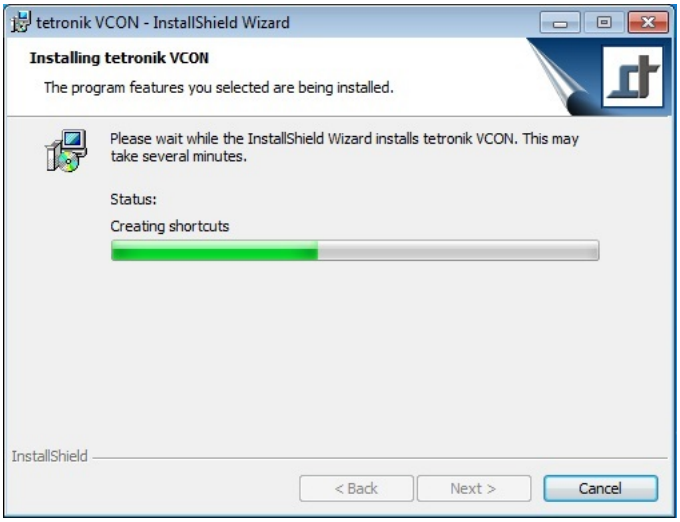
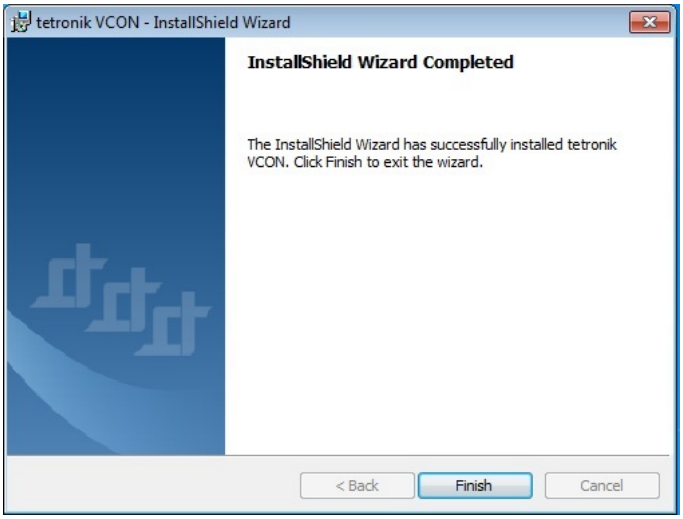
No.	Task
8.	 The installation will now be carried out. Please wait.
9.	 The installation has been completed with success. Now click **Finish.** The installation of VCON is now fully completed. VCON is now ready for operation.

Table 10-24 Install VCON

10.13 Uninstall VCON

How to uninstall the VCON service and configuration tool, step by step:

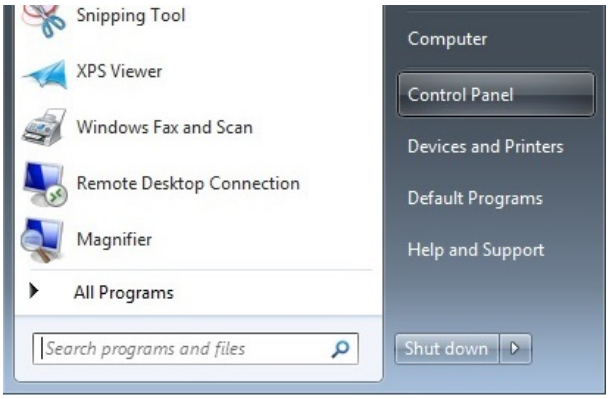
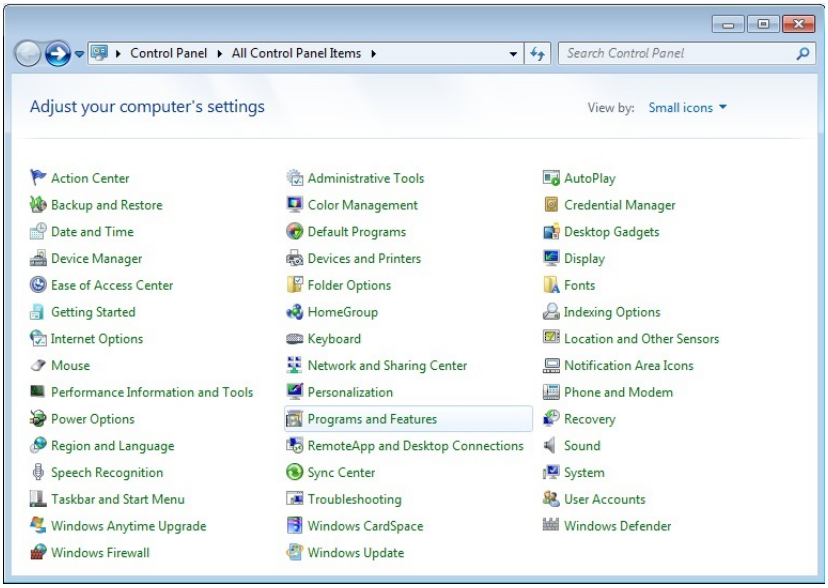
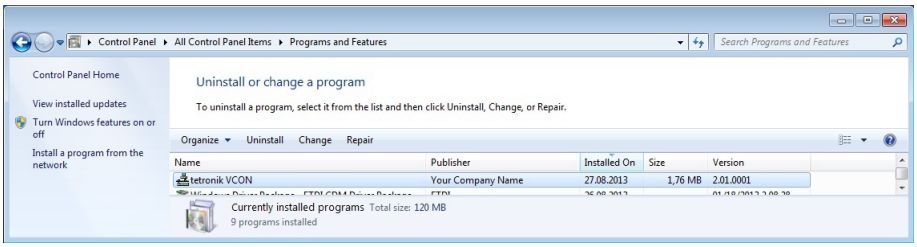
No.	Task
1.	 Open the Windows Control Panel.
2.	 Click **Programs and Features**.
3.	 Select the entry 'tetronik VCON'. Click **Uninstall**.

Table 10-25 Remove VCON service and configuration tool

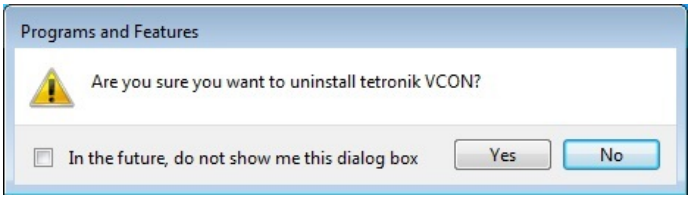
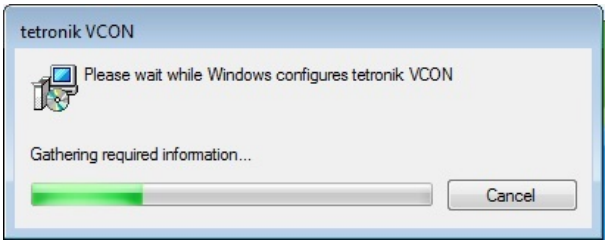
No.	Task	
4.	 You can now begin with the removal of the tool. Click **Next**.	
5.	 The software will now be removed. Please wait.	

Table 10-25 Remove VCON service and configuration tool

11 Coupling to PBX Systems and Softswitches

Overview

This chapter covers in brief the coupling of DAKS to the PBX network or convergent voice/data networks, as well as the trunk connections. It also refers to the configuration instructions for the respective interface(s).

DAKS couplings

The coupling to the PBX system or to the PBX network is carried out via a trunk connection with a code and with direct inward dialing (DDI), so that DAKS can be seen, from the network's side, like an additional network node, i.e. like a subsystem with its own numbering plan.

The coupling of DAKS-110 to the PBX network or to the convergent voice/data network, respectively, is carried out with up to 10 channels:

- via VoIP using the LAN interface (SIP or SIP-Q), with VoIP trunking.

The coupling of DAKS-200 (mDAKS) to the PBX network or to the convergent voice/data network, respectively, is carried out with up to 30 channels:

- via ISDN through up to four ISDN-S_0 digital trunks or through one S_{2M}/E1 or T1 digital trunk(QSIG, CorNet-NQ, DSS1, NI2)
- via VoIP using the LAN interface (SIP or SIP-Q), with VoIP trunking.



Note:
This is therefore **not** a CSTA-coupling (as e.g. ACL or CAP for PBX systems by Unify).



Note:
Please be aware that the configuration of the interface(s) between DAKS and the various PBX systems or soft switches is not part of this document.
For documentation of the configuration of the PBX interfaces:

- either on the Installation CD under "Documentation",
  Caution! This information may have already become obsolete!
- or at: ftp://ftp.tetronik.com/Documentation



Caution!
For access via the Extranet, you must be a service technician fully trained on DAKS and properly registered with tetronik. If you have already received your personal access data for the FTP download, you can use your login data also to access this area.

12 Administration of certificates via VCON and TLS/mTLS

Overview

This chapter covers the general application of the Transport Layer Security (TLS) and the management of the certificates through the service tool VCON.

Contents

This chapter covers the following sections:

12.1 General information
- 12.1.1 Signaling data (SIP/SIP-Q)
- 12.1.2 Voice data (RTP and RTCP data streams)

12.2 Administration of certificates via VCON
- 12.2.1 Import, configure and administrate certificates
  - 12.2.1.1 "Trusted certificates"
  - 12.2.1.2 "Self-signed certificate"
  - 12.2.1.3 "Certificate signing request"
  - 12.2.1.4 "Save currently used own certificate"
- 12.2.2 Administrate certificates in VCON

12.3 Mutual Transport Layer Security (MTLS)

12.1 General information

12.1.1 Signaling data (SIP/SIP-Q)

To transmit signaling data (SIP/SIP-Q) safely and securely between the DAKS server and the PBX system or communication device, the DAKS server utilizes the protocol Transport Layer Security, short: TLS.

Here, all signaling data is transmitted in encrypted form from one point to another (end-to-end signaling security), and both parties verify the identify of the other partner on the basis of certificates, i.e. through mutual authentication (= Mutual Transport Layer Security, mTLS).

Optionally, DAKS can also operate without authentication (TLS).

The transfer of data through the TLS protocol with authentication requires valid certificates of the communication partners.

The encryption algorithm used for TLS is negotiated during the connection build up. Here, the Advanced Encryption Standard (AES) with a code length of 256 bit is applied.

12.1.2 Voice data (RTP and RTCP data streams)

To transmit voice data (RTP and RTCP data streams) safely and securely between DAKS and the communications partner, e.g. PBX systems, telephones and other communication devices, the DAKS server utilizes the Framework Secure Real-Time Transport Protocol (SRTP).

In this process, the Advanced Encryption Standard (AES) with the code-exchange procedure SDES for data encryption is applied.

The code length (master key length) is 128 bit.

The message authentication is effected through HMAC-SHA1 (Hash Message Authentication Code-Secure Hash Algorithm).

12.2 Administration of certificates via VCON

General details

VCON can be used for the administration of certificates, with the following listed functions:

- Upload certificates to the so-called memory of trusted certificates
- Generate a self-signed certificate
- Create a certificate signing request (CSR) for signing by a certificate authority, e.g. by VeriSign
- Export a DAKS machine and CA certificate (machine certificate or CA certificate)

➤ see Section 7.18 "Parameter of SSL"

Note:
The DAKS server exclusively supports PEM (Base64)-encoded X.509 certificates.

12.2.1 Import, configure and administrate certificates

12.2.1.1 "Trusted certificates"

Use the menu item "Trusted certificates" to upload a certificate to the DAKS server through VCON, e.g. the certificate of a BPX system.

The system will automatically add the imported certificate to the memory of trusted certificates.

How to import certificates, step by step:

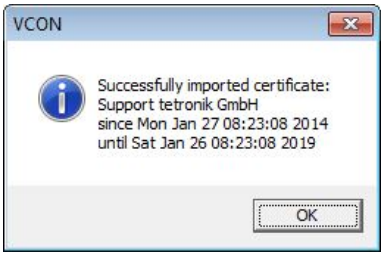
No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**"
2.	Click the menu item: • **Trusted certificates ➤ Import certificate...**
3.	Next, select the certificate you want to import. Confirm with **OK**.
4.	The selected certificate is imported to the DAKS server and added to the memory of trusted certificates, where it is added to the folder "Trusted Certificates". ➤ see Section 7.18 "Parameter of SSL" The following message will pop up:  Click **OK**.

Table 12-1 Import certificates via VCON

12.2.1.2 "Self-signed certificate"

Use the menu item "Self-signed certificate" to:

- create a tetronik-CA signed certificate.
- export a tetronik-CA certificate.

How to create a tetronik-CA signed certificate, step by step:

A self-signed certificate is, for example, always needed when the IP address of the DAKS servers is changed and the PBX system must verify this IP address in the DAKS server's certificate.

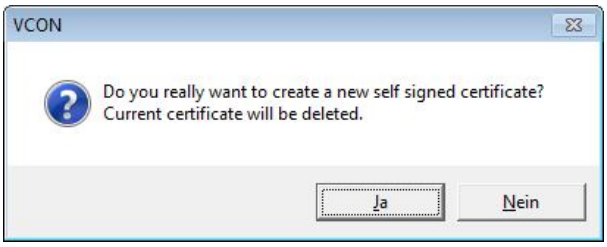
No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**".
2.	Click the menu item: • **Self-signed certificate ➤ Create tetronik-CA signed certificate...**
3.	The following message will pop up.  Confirm with **Yes**.
4.	A new self-signed certificate is generated and stored in the DAKS server, where it is added to the folder "Machine Certificate". ➤ see Section 7.18 "Parameter of SSL"

Table 12-2 Create tetronik-CA signed certificate

How to export a tetronik CA certificate, step by step:

Use this menu item to export the tetronik-CA certificate in order to upload it to the PBX system, so that the DAKS server is able authenticate itself to that PBX system.

No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**".
2.	Click the menu item: • **Self-signed certificate ➤ Export tetronik-CA...**
3.	This will open the following window to enter the name of the certificate. Next, click **Save**.

Table 12-3 Export tetronik-CA certificate

12.2.1.3 "Certificate signing request"

Use the menu item "Certificate signing request" to:

- create a certificate signing request (CSR) and
- upload a certificate created by a certificate authority (CA).

How to create a certificate signing request (CSR), step by step:

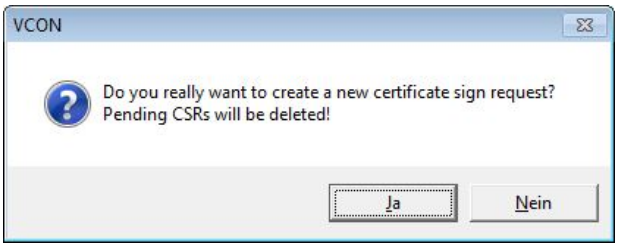
No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**".
2.	Click the menu item: • **Certificate signing request ➤ Create certificate signing request (CSR)...**
3.	The following message will pop up:  Confirm with **Yes.**
4.	This will open a user window to enter the wanted name of the certificate signing request (CSR). Finally, click "**Delete**".

Table 12-4 Create certificate signing request (CSR)

How to import signed certificates, step by step:

No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**".
2.	Click the menu item: • **Certificate signing request ➤ Import signed certificate...**
3.	Choose the signed certificate you want to import an confirm with **Yes**.

Table 12-5 Import signed certificates

12.2.1.4 "Save currently used own certificate"

Use the menu item "Save currently used own certificate" to export your own certificate which you are currently using, in order to upload it to the PBX system so that the PBX system is able to authenticate the DAKS server.

How to save your own certificate that are currently using, step by step:

No.	Task
1.	Give the focus to the Terminal window "SSL". • To do so, go to the List of Processes. • Click the process "**SSL**".
2.	Click the menu item: • **Currently used own certificate ➤ Save currently used own certificate...**
3.	This will open a user window to enter a the wanted name of the certificate. Next, click **Save**.

Table 12-6 Save currently used own certificate

12.2.2 Administrate certificates in VCON

VCON shows you all the certificates that are available in the DAKS server, including their contents. This makes it possible to verify their details whenever needed, e.g. their validity, CA and organization.

➤ see Section 7.18 "Parameter of SSL"

12.3 Mutual Transport Layer Security (MTLS)

Make sure the below requirements are met to enable the communication between DAKS and a PBX system via mTLS:

- **Certificates**
  Make sure that both the DAKS Server and the PBX system have valid certificates and that both parties are able to authenticate one another.
  To do so, the certificate of the PBX system is usually imported to the DAKS Server and vice versa.
- **Configuration**
  Configure the DAKS Server and the PBX system for the operation with MTLS. While you do so, please be mind that other ports and PBX peer addresses are utilized for the communication via TLS.

13 IP Port List of the DAKS Services (Firewall-Scenario)

This table covers the IP ports of the various Services of DAKSeco and DAKSmed:

Standard Port(s)	Service	Protocol	configu-rable	from	to	Description
80	HTTP	TCP	yes	Web Browser	DAKS	IP port used by the Web browser (= TCP-Clients) to communicate with DAKS (= TCP-Server) via HTTP
8090	HTTP	TCP	yes	Provi-sioning	DAKS	IP port used to configure DAKS Communicator (= TCP clients) with DAKS (= TCP server) via HTTP
443	HTTPS	TCP-TLS	yes	Web browser	DAKS	IP port used by the Web browser (= TCP-Clients) to communicate with DAKS (= TCP-Server) via HTTPS
9443	HTTPS	TCP-TLS	yes	Provi-sioning	DAKS	IP port used to configure DAKS Communicator (= TCP clients) with DAKS (= TCP server) via HTTPS
2180	VCON	TCP	yes	VCON service tool	DAKS	IP port used by VCON (= TCP-Client) and DAKS (= TCP-Server) to communi-cate RC4-encrypted for service requests
2181	VCON	TCP	yes	DAKS	VCON service tool	IP port used by DAKS (= TCP-Client) to send sys-tem backups encrypted to VCON (= TCP-Server)
514	SYSLOG	UDP	yes	DAKS	SYSLOG server	IP port used by DAKS to send SYSLOG messages to the SYSLOG server
123	NTP	UDP	no	DAKS	NTP serv-er	IP port used by DAKS to request and receive date and time information from the NTP server via UDP
1322	OAPv4	TCP	yes	DAKS	WSG/IMS server	IP port used by DAKS to send OAPv4 messages to the WSG/IMS server
1333	OAPv4	TCP	yes	WSG/ IMS server	DAKS	IP port used by DAKS to receive OAPv4 messages from the WSG/IMS server
12621	OM-AXI	TCP	yes	DAKS	OM-AXI server	IP port used by DAKS to communicate with the OM-AXI server through the OM-AXI protocol
161	SNMP	UDP	no	SNMP Manager	DAKS	IP port used by the SNMP Manager to send SNMP messages to DAKS

Table 13-1 IP Port list of the services of DAKSeco and DAKSmed

Standard Port(s)	Service	Protocol	configu-rable	from	to	Description
162	SNMP	UDP	no	DAKSe-co	SNMP Manager	IP port used by DAKS to send SNMP traps to the SNMP Manager
5060	SIP	UDP or TCP	yes	DAKS	PBX sys-tem(s) or VoIP/SIP communi-cation de-vices	IP port used by DAKS and PBX system(s) or VoIP/ SIP communication devic-es to communicate unen-crypted via SIP, SIP-Q or SIP-T. For TCP, the PBX and DAKS are either TCP-Server or TCP-Client. As a rule, communication de-vices are always TCP-Cli-ents.
5061	SIP	TCP-TLS	yes	DAKS	PBX sys-tem(s) or VoIP/SIP communi-cation de-vices	IP port used by DAKS and the PBX system(s) or VoIP/SIP communication devices for their encrypted communication via SIP, SIP-Q or SIP-T. For TCP, the PBX and DAKS are either TCP-Server or TCP-Client. As a rule, communication de-vices are always TCP-Cli-ents.
16384-17344	RTP-RTCP	UDP	yes	PBX sys-tem(s) or VoIP/SIP commu-nication devices	DAKS	Area of the IP port for the bidirectional transmission of the data stream be-tween DAKS and the PBX system(s) or communica-tion devices
9100	Printer	TCP	yes	DAKS	LAN print-er	IP port used by DAKS (= TCP-Client) to send unen-crypted print commands to the printer (= TCP-Server)
2023	ESPA-X	TCP	yes	ESPA-X client	DAKS	IP port used by the ESPA-X-Clients (= TCP-Clients) to communicate unen-crypted with DAKS (= TCP-Server and ESPA-X-Server)
2024	ESPA-X	TCP-TLS	yes	ESPA-X client	DAKS	IP port used by the ESPA-X-Clients (= TCP-Clients) to communicate encrypt-ed with DAKS (= TCP-Server and ESPA-X-Serv-er)

Table 13-1 IP Port list of the services of DAKSeco and DAKSmed

Standard Port(s)	Service	Protocol	configu-rable	from	to	Description
25	SMTP	TCP	yes	DAKS	SMTP server	IP port used by DAKS (= TCP-Client) to send SMTP messages to the SMTP server (= TCP-Server)
53	DNS	UDP	no	DAKS	DNS server	IP port used by DAKS to request and receive DNS information unencrypted from the DNS server
2222	MASI	TCP	yes	MAI	DAKS	IP port used by an MAI (= Medical Alarm Integrator as TCP-Client) to communicate unencrypted with DAKS
2223	MASI	TCP-TLS	yes	MAI	DAKS	IP port used by an MAI (= Medical Alarm Integrator as TCP-Client) to communicate encrypted with DAKS
8080	DMC	TCP	yes	DMC-Client	DAKS	IP port used by the DMC-Clients (= TCP-Clients) to communicate unencrypted with DAKS (= TCP-Server)
8443	DMC	TCP-TLS	yes	DMC-Client	DAKS	IP port used by the DMC-Clients (= TCP-Clients) to communicate encrypted with DAKS (= TCP-Server)
445	SMB	TCP	no	DAKS	Windows-PC	IP port through which DAKS (= client) sends SMB messages unencrypted to the SMB-server (= Windows-server).
80	Spectra-link	TCP	yes	DAKS	Spectra-link-Server	IP port through which DAKS (=TCP client) sends XML-RPC messages to the Spectralink-server (KWS 2500/6500/8000) without encryption.

Table 13-1 IP Port list of the services of DAKSeco and DAKSmed

14 License Terms

tetronik GmbH (hereinafter tetronik) develops and distributes software, the licensing of which is defined in our general terms and conditions, as well as in our framework agreements and individual contracts. Individual parts of the delivered software are, however, protected by separate copyright and therefore fall under different license terms and regulations:

- µCLinux is part of the GPLv2
  - ➤ see www.gnu.org/licenses/gpl-2.0.html, license files by Linux Distribution
- At their request tetronik makes available to the respective contracting partners all µCLinux source texts that are used in tetronik products, as well as the make files, scripts and other tools that are needed to create executable programs.
- tetronik releases all board support packages, drivers, kernel modules that have been modified and newly created as well as the universal boot loader (UBoot) under GPLv2.
- At their request tetronik makes available to its respective contracting partners all source texts as well as the required make files, scripts and other tools that are needed to create executable programs.
- BusyBox is part of the GPLv2
  - ➤ see www.gnu.org/licenses/gpl-2.0.html, www.busybox.net, license files by BusyBox Distribution
- At their request tetronik makes available to its respective contracting partners all BusyBox source texts that are used in tetronik products, as well as the make files, scripts and other tools that are needed to create executable programs.
- libxml is part of the MIT license
  - ➤ see www.xmlsoft.org, http://www.opensource.org/licenses/mit-license.php)
- At their request tetronik makes available to its respective contracting partners the source texts that are used, including the copyright, as well as the disclaimer and exclusions of liability and warranty of the creator.
- SQLite is part of the Public Domain
  - ➤ see www.sqlite.org
- The source texts of SQLite can be found on the SQLite homepage for download.
  Conditions:
  - As defined in GPLv2, tetronik makes available to each contracting partner the source texts for a maximum time period of 3 years following the delivery of the software.
  - Requests can be mailed electronically (send to: info@tetronik.com) or sent by regular mail (send to: tetronik GmbH, Silberbachstrasse 10, 65232 Taunusstein, Germany).
- tetronik provides a CD with all source texts, make files and other tools at a price of 9.99 €, packaging and shipping excluded.

15 Decommission the DAKS Server

Overview

This chapter covers the steps that need to be taken when decommissioning the DAKS server.

Contents

The chapter covers the following sections:

15.1 What to observe when decommissioning the DAKS Sever
15.2 Information on the disposal of the DAKS server



Warning!
When decommissioning the DAKS server, be careful to never shut down DAKSmed while it is still being active in patient monitoring processes!

15.1 What to observe when decommissioning the DAKS Sever

When decommission the DAKS server make sure all necessary steps are taken to ensure that no data is lost and that no DAKS-dependent services or systems are impaired.

For more information how to save data:

➤ see Chapter 5, "DAKS Data Backup, Problem Solving and Hardware Replacement"

If you need to continue using the functionalities provided by the DAKS server, make sure you have a replacement system in place. If you want to shut down the DAKS server without a replacement, make sure you inform all users/subscribers properly.

In addition, you need to identify both the systems that will be affected by the shutdown of the DAKS server and the interdependencies that exist within all systems that are affected by this move. The configuration of the DAKS server is stored in the CompactFlash card. Therefore, to delete this data all you need to do is use appropriate delete functions to overwrite the Compact-Flash card.

15.2 Information on the disposal of the DAKS server

The icon with a crossed-out refuse container on the device means that this device is an electric or electronic device that may not be treated as household waste.

The disposal of electric and electronic products at the end of their lifetime is through special waste disposal facilities.

To protect the environment we urge all our customers to dispose any of these products and devices properly.

For more information contact your installer and your local authorities.

Information on the disposal of the DAKS server

www.tetronik.com

The information in this document is designed to offer a general overview and to describe the overall performance features of this product, the details of which may differ in their final form in the actual application, or become subject to modification as a result of the further development to which our products are constantly subjected. The trademarks used in this document are property of tetronik GmbH and its legal owners.

Copyright © 2026 by

tetronik GmbH
65232 Taunusstein
Germany
www.tetronik.com