BOSCH

PRAESENSA

Public Address and Voice Alarm System

en   Configuration manual

Table of contents

1   General information

The purpose of this configuration manual is to provide all required information needed for the configuration/programming of the Bosch PRAESENSA products. It will guide new users step-by-step and serves as a reference for experienced users.

–   Unless required for the configuration of the products, this manual does not describe hardware installation instructions. Refer to *Related documentation, page 7*.

–   This manual, or an update, in pdf format is available as download from www.boschsecurity.com > PRAESENSA product section. Refer to *Related documentation, page 7*.

Manual content

Refer to the following sections before and during configuration of your system:

–   **Section 1**: *General information, page 6*- gives information on the intended audience, training, available documentation, explains how to use this manual and provides a high-level introduction description of the PRAESENSA Public Address and Voice Alarm System.

–   **Section 2**: *Product overview, page 10* - gives an PRAESENSA product overview.

–   **Section 3**: *Getting started, page 11* - describes software installation instructions and important procedures which have to take into account before, and during, configuration.

–   **Section 4**: *Logon the application, page 30* - describes how to logon the PRAESENSA webserver webpages and important procedures which have to take into account before, and during, configuration logon.

–   **Section 5**: *Configure the system, page 32*- describes everything what you have to know about the configuration of a PRAESENSA system.

–   **Section 6**: *Diagnose, page 95* - describes configuration, amplifier loads and battery impedance diagnostics.

–   **Section 7**: *Security, page 101* - describes how to change security credentials, reconnect lost and disconnected devices and Open Interface client certificate connections.

–   **Section 8**: *Print configuration, page 104* - describes how to print device and/or system configuration settings.

–   **Section 9**: *About, page 105* - describes how to view certificates and (Open Source Software) licenses.

–   **Section 10**: *Introduction to make an announcement, page 106* - describes what, and how, to setup announcement content, priority and routing.

–   **Section 11-16**: Describes how to use different (3th party) applications with PRAESENSA.

–   **Section 17**: *Troubleshooting, page 121* - describes PRAESENSA troubleshoot options.

–   **Section 18**: *Event messages, page 122* - provides information about (general and fault) events which could generated by the PRAESENSA system.

–   **Section 19**: - *Tones, page 141* - provides information of tones (messages) to be used with PRAESENSA.

1.1   Intended audience

This configuration manual is intended for everyone who is authorized to do the configuration of PRAESENSA and related products.

1.2   How to use this manual

It is advised to follow the manual from start to finish if you're new to PRAESENSA and/or start configuration of a new PRAESENSA system.

1.3   Related documentation

The Bosch PRAESENSA technical documentation is set up in a modular way addressing different stakeholders.

	Installer	System integrator	Operator
Quick installation guide (QIG). Basic step-by-step installations instructions.	X	-	-
Installation manual. Detailed system and product descriptions and installation instructions.	X	X	-
Configuration manual. Detailed instructions for configuration, diagnosis and operation.	X	X	X

Notice!
Retain all documentation supplied with the products for future reference.
Visit www.boschsecurity.com > PRAESENSA product section.

1.3.1   Other related documentation
–   Commercial brochures
–   Architects' & Engineers' specifications (included in the product datasheet)
–   Release notes
–   Datasheets
–   Application notes
–   Other PRAESENSA hardware and software related documentation.
Visit www.boschsecurity.com > PRAESENSA product section > System overview > Documents tab.

1.4   Training

Participation in the Bosch PRAESENSA product and system training is highly recommended before installing and configuring a PRAESENSA system. The Bosch Security Academy offers classroom training sessions as well as online tutorials on www.boschsecurity.com > Support > Training.

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1.8   Document history

Release date	Documentation version	Reason
2019.11	V1.00	1st edition

1.9   System introduction

For a detailed product and system description/specification, refer to the PRAESENSA product datasheets and installation manual. See *Related documentation, page 7*

Introduction to PRAESENSA

With PRAESENSA, Bosch has set a new standard in Public Address and Voice Alarm systems. With all system elements being IP-connected and using state-of-the-art technologies, this system combines cost efficiency and audio quality with ease of installation, integration and use. IP-connectivity and amplifier power partitioning enable new levels of scalability and adaptability, and combined with local backup power facilities this makes PRAESENSA equally suited to both centralized and decentralized topologies. PRAESENSA uses only a few different but very flexible system devices, each with unique capabilities, to create sound systems of all sizes for an extremely wide range of applications. PRAESENSA fits to an office with background music in the reception area and some occasional calls, as well as to an international airport with many simultaneous (automated) announcements for flight information, and carefully selected music programs in lounges, restaurants and bars. In all cases, it can be installed to operate also as a certified voice alarm system for mass notification and evacuation. System functions are defined and configured in software and system capabilities can be enhanced via software upgrades. PRAESENSA: one system, endless options.

Introduction to OMNEO

PRAESENSA uses OMNEO network technology. OMNEO is an architectural approach to connecting devices that need to exchange information such as audio content or device control. Built upon multiple technologies, including IP and open public standards, OMNEO supports the technologies of today such as Audinate's Dante while adopting the standards of tomorrow, such as AES67 and AES70. OMNEO offers a professional-grade media networking solution that provides interoperability, unique features for easier installation, better performance and greater scalability than any other IP offering on the market.

Using standard Ethernet networking, media products that integrate OMNEO can be assembled into small, medium and large networks that exchange studio-quality synchronized multichannel audio and share common control systems. OMNEO's media transport technology is based on Audinate's Dante, a high performance standards-based, routable IP-media transport system. OMNEO's system control technology is AES70, also known as Open Control Architecture (OCA), an open public standard for control and monitoring of professional media network environments. OMNEO devices are fully compatible with AES67 and AES70, without losing any functionality.

2   Product overview

For a detailed product and system description/specification, refer to the PRAESENSA product datasheets and installation manual. See *Related documentation, page 7*
The PRAESENSA product family consists of the following products.

Product view	Order number Product name	Product view	Order number Product name
	PRA-SCL System controller		PRA-CSLD Desktop LCD call station
	PRA-AD604 Amplifier, 600W 4-channel		PRA-CSLW Wallmount LCD call station
	PRA-AD608 Amplifier, 600W 8-channel		PRA-CSE Call station extension
	PRA-MPS3 Multifunction power supply, large		PRA-EOL End-of-line device

3 Getting started

Configuration of PRAESENSA will be done by the graphical user interface (GUI) which is provided by the webserver of the system controller and can be accessed via a web browser.

– You should have a working knowledge of your computer operating system and (PRAESENSA) Ethernet network.

Before starting configuration and operating of the PRAESENSA system, it is advised to do the following:

1. *Check the hardware, page 11*
2. *Install the system software, page 12*
3. *Check network and web browser settings, page 25*
4. *Configuration do's and don'ts, page 28*
5. *Logon the application, page 30*

3.1 Check the hardware

Make sure that:

1. You have the **hostnames and MAC-addresses** of the 19" devices (see the product label) before mounting them in a 19"-rack. For configuration, you need to know the hostnames:
   – After mounting, access to the product labels with this information might be difficult, especially for devices that have their labels on the side.
2. The **products** are mechanical correctly installed and connections are done as specified in the PRAESENSA installation manual.
3. An **Ethernet connection** between the PRAESENSA system and the building Ethernet network is **disconnected**. It is not recommended to connect the PRAESENSA system (controller) permanently to an Ethernet network that is also used for other purposes, like a computer network:
   – This to avoid that **non** PRAESENSA system related network devices become visible in the PRAESENSA configuration web browser pages. And an excess of data on the network (e.g. a so-called data storm of multicast messages) might overload the system.
   – Notice that setup of the building Ethernet network is not part of this manual. If needed, contact your local IT representative in case of connecting PRAESENSA to the building Ethernet network.
4. An **Ethernet network connection** cable (shielded CAT5e or better) between the configuration computer / (Wi-Fi) router and the PRAESENSA system (controller) is **established**:
   – Although any port can be used, it is advised to use port 5 for the connection to a PC for configuration, especially if this connection is permanent. This port can also be connected to a Wi-Fi router to enable configuration and system setup from a mobile device, using its browser. In this way, zone volume and equalizer settings can be configured conveniently in the zone itself by immediate audible monitoring. This requires Wi-Fi coverage in the zones.

3.2   Install the system software

The PRAESENSA system software installation procedure consists of the following steps:
1.   Check if the computer fulfills the minimum requirements to install and run the PRAESENSA (related) software. See *PC requirements, page 12*.
2.   Installation of the (mandatory) software package on the configuration computer. See *(Mandatory) software, page 13*.
3.   Installation of the firmware on the system controller and other PRAESENSA network devices. See *Check/Upload the devices firmware, page 16*.
4.   *Check network and web browser settings, page 25*.
5.   *Optional: Install the Logging Server, page 18*
6.   *Optional: Install the Logging Viewer, page 19*
7.   *Optional: Install OMNEO Control, page 20*
8.   *Optional: Install (OMNEO) Network Docent, page 21*
9.   *Optional: Install Dante Controller, page 22*
10. *Optional: Install the Open Interface, page 24*
11. *Logon the application, page 30*

3.2.1   PC requirements

The PRAESENSA software and applications can run on any PC that meets the following minimum requirements:

Item	Minimum requirement
Operating system	Microsoft® Windows 7, Windows 8.1 or Windows 10 Professional; 32-bit or 64-bit. – Keep the PC updated with the latest Windows updates. This makes sure that the PC contains the most recent version and service packs of the Microsoft® Jet 4.0 database, which is used by the *Logging Server*. See also http://support.microsoft.com/common/international.aspx
Processor	X86 or X64. Dual core 2.4 GHz
Network connection	Ethernet 100 base-T
Internal memory (RAM)	4 GB
Free disk space	Depends on the amount of events that must be stored, but it is recommended to have at least 10 GB of free disk space.
Screen resolution	1366 × 768 pixels. 16-bit or 32-bit color depth

3.2.2   (Mandatory) software

The following software is essential to configure and operate PRAESENSA and **must be installed** on the computer which will be used to configure and operate the PRAESENSA system. It will be made online available (www.boschsecurity.com > PRAESENSA product section), as follows:

–   A *.zip file named: PRAESENSA Installation Package x.xx.zip
     (where x.xx is the version release number and will be changed at updates).
     The installers directory of the *.zip includes the following files:
     –   Redist > dotnetfx45_full_x86_x64.exe and vc_redist140.x86.exe
     –   BoschPRAESENSAFirmware.exe
     –   *: Bosch PRAESENSA Logging Server.exe
     –   *: Bosch PRAESENSA Logging Viewer.exe
     –   *: Bosch.OpenInterface-Net-installer.exe
–   A SetupOMNEOFirmwareUploadToolBundle(64).exe (two versions 32-bit and 64-bit):
     –   The Firmware Upload Tool (FWUT) is used for uploading device firmware and Domain Name System Service Discovery (DNS-SD). It is required to install the FWUT on the PRAESENSA configuration PC, then automatically also the Bosch DNS-SD Service is installed. This service is needed to access PRAESENSA devices via their hostname instead of the IP-address.

> **Notice!**
> The files with the * character in front are part of the *.zip file and can optionally be installed.

Optional (software)

–   *Tones, page 141*
     –   PRAESENSA pre-defined tones (*.wav).
–   **: *Optional: Install OMNEO Control, page 20*:
     –   The OMNEO Control software enables users to configure audio devices, and to route audio all over the network.
–   **: *Optional: Install (OMNEO) Network Docent, page 21*:
     –   The software scans and visualizes the network environment, giving insight into all devices and cable-connections. Docent is able to identify and provide guidance on solving common and simple network errors.
–   **: *Optional: Install Dante Controller, page 22*:
     –   Dante Controller is a software application provided by Audinate, which allows users to configure and route audio around Dante networks.
–   *:*Optional: Install the Open Interface, page 24*:
     –   For 3th party applications the Open Interface needs to be installed on your PRAESENSA configuration computer.

> **Notice!**
> The optional software files indicated above with the ** character in front are NOT part of the .zip file and can be downloaded from www.boschsecurity.com > PRAESENSA product section and/or as indicated within their installation chapters. * Can be optional installed.

Install the software

All PRAESENSA software is only made available online. Here you could find also updates and new releases. Please read the online PRAESENSA release notes before you download, or update, software. Release notes contain last minute changes and remarks. See *Related documentation, page 7*, if required.

If the software will be installed for the first time, proceed as follows:

1. If not already done, **turn-on the power** of the PRAESENSA system:
   – All network devices boot and the 19"-devices show the (yellow *device fault*) LED on.
   – A call stations shows *connecting* on the display.
   – See also *Device options, page 38*
2. **Ensure** you are logged on to your computer as an administrator.
   – **You need** (Windows) administrator rights to install/save.
   – **Check** if you use a Windows 32-bit or 64-bit operating system. Notice that some (optional) software could be possible only made available for a 64-bit operating system.
3. **Go to** www.boschsecurity.com > *Product Catalog* > Choose your region and country:
   – **Type** PRAESENSA in the *search* text box >
   – **Select and click** the PRAESENSA product page of the System controller >
   – **Select and click** S*oftware & Support* tab on the product page >
   – **Select** PRAESENSA Installation Package x.xx.zip and SetupOMNEOFirmwareUploadToolBundle(64).exe (select 32 or 64-bit *.exe) and other (optional) files, if required.
4. **Save** PRAESENSA Installation Package x.xx.zip and SetupOMNEOFirmwareUploadToolBundle(64).exe and other (optional) files to a safe location on your computer's hard drive.
5. **Browse to**, **and unzip**, the PRAESENSA Installation Package x.xx.zip file on your computer's hard drive.
6. **Browse to** the other (optional) files on your computer's hard drive, if required.
7. **Browse to**, **and run**, **all .exe** (without * character in front) of the unzipped PRAESENSA Installation Package x.xx.zip file including SetupOMNEOFirmwareUploadToolBundle(64).exe (32 or 64-bit *.exe version) and run other (optional) files, if required:
   – Follow the onscreen instructions.
8. In the following order, see also:
   – *Check/Upload the devices firmware, page 16*
   – *Optional: Install the Logging Server, page 18*
   – *Optional: Install the Logging Viewer, page 19*
   – *Logon the application, page 30*

Update the software

Important is to check the PRAESENSA Installation Package x.xx.zip and SetupOMNEOFirmwareUploadToolBundle(64).exe for new releases on a regular base. To do so:

1. **Go to** www.boschsecurity.com > *Product Catalog* > Choose your region and country:
    –   **Type** PRAESENSA in the *search* text box >
    –   **Select and click** the PRAESENSA product page of the System controller >
    –   **Select and click** *Documents* tab on the product page >
    –   **Select** the latest available *Release note*. **Follow** the *release note* guideline on how to proceed.
2. **Select and click** the PRAESENSA product page of the System controller >
    –   **Select and click** S*oftware & Support* tab on the product page > **Check** the release version (x.xx) and date of:
        PRAESENSA Installation Package x.xx.zip and SetupOMNEOFirmwareUploadToolBundle(64).exe (select 32 or 64-bit *.exe) and other (optional) files, if required.
3. **If** the online (PRAESENSA Installation Package x.xx.zip and SetupOMNEOFirmwareUploadToolBundle(64).exe (select 32 or 64-bit *.exe)) release version is of a **newer date** than the installed one on your computer, **install** (overwrite) the newly released versions.
    –   To install, see the previous topic: *Install the software*

3.2.3   Check/Upload the devices firmware

All (new) PRAESENSA network devices are delivered with firmware. Initial, the network devices are delivered with factory firmware and need to be upgraded. All devises need to be upgraded to the latest available online version.

The device firmware is incorporated in the *.zip file as described in *(Mandatory) software, page 13*.

– The following procedure is valid for installing updates and new releases of the network device firmware. See the online PRAESENSA *release notes* for updates and new releases. See *Related documentation, page 7*.

> **Caution!**
> Do not connect the configuration PC to a port of any other device on the same network, such as the (Advantech) PRA-ES8P2S Ethernet switch or any other Ethernet switch.

You have two firmware upload possibilities:

1. **1ˢᵗ time firmware upload** (without a secured connection):
   – **Only valid** in case of 1ˢᵗ time / initial firmware upload.
   – **No (logon) configuration** web pages present, yet.
2. **Secure firmware upload** (with a secured connection).
   – **Only possible after** 1ˢᵗ time / initial firmware upload **and** 1ˢᵗ time configuration logon.
   – **(Logon) configuration** web pages are available.

1. 1ˢᵗ time firmware upload

At 1ˢᵗ time / initial use of PRAESENSA, the devices firmware must be uploaded. Not to do so results in **NO configuration (logon) access**.

Upload process:

1. **Check and/or download** the latest available software (firmware) version release:
   – See *(Mandatory) software, page 13*.
2. On your PRAESENSA configuration computer **browse** to, and run "SetupOMNEOFirmware UploadTool(64).exe": (select the 32-bit or 64-bit version)
   – Follow the onscreen instructions.
3. **Click** the *Yes* button or the *NO* button if you do not want to proceed.
   – *Yes* opens the screen where all connected network *device types* are visible (see the selection tabs on the top of the screen).
   – The Firmware Upload Tool (FWUT) addresses the devices via their *device hostname*. See *Logon the application, page 30*.
4. **Select** a tab and then **select** one or more (for all rows on the screen > Windows > ctrl A >) device rows and **click** the *Upload* button.
   – The screen *Select Firmware for upload* becomes visible.
   – The *model name* (the commercial type number) of the selected device type is/are listed.
5. **Select** the (latest) *Firmware version* to upload.
6. **Click** the *Start* button or the *Cancel* button if you do not want to proceed.
   – *Start* will continue the firmware upload process.
   – The *State* column will show *active* or *finish*.
   – The *Progress* column will show the upload progress (green color bar).
   – The error LED on the 19" device front panel is on (yellow) as long the upload process of the device runs.

- The call station display indicates the *upload process* as long the upload process of the device runs.

7. **Repeat** the previous steps 4-6 for all other connected network devices:
   - The firmware upload is successfully if no fault messages are generated.
8. **Continue** with *Logon the application, page 30*.
9. If the **upload was not successfully** completed (the *State* column indicates "Failed" with a red color bar) and/or fault messages are generated, proceed as follows:
   - First check the current network device and downloaded firmware versions (see the online release notes). Be aware that the network device firmware is not downwards compatible and could cause a fault message. In the *diagnose* section, see *Version, page 97*.
   - View the message(s) of the device(s) from which the firmware upload failed and start the uploading process again.
     If the upload still fails, do the following:
   - Power off/on the failed network device and start uploading again. And/or:
   - Restart the system controller.
10. If the **error(s)** still appears, contact your Bosch (service) representative. If required, see *Troubleshooting, page 121*.

2- Secure firmware upload
A *secure firmware upload* means that the data communication and connection between the firmware upload tool / computer and the PRAESENSA system (controller) configuration is secured against visibility and using of the firmware by unauthorized people and/or devices:

- The *secure firmware upload* process is similar to the *1*st *time firmware upload*, with the exception of some extra firmware upload tool settings and configuration logon credentials as described following.

To do so:
1. **Execute** the steps 1 up to 3 of the *1*st *time firmware upload*.
2. **Select and click** > *File > Options*
   - A new screen *Firmware Upload Tool Options* appears
3. **Enable** (checkmark) checkbox *Use secure connection*.
4. **Select** a *user name* from the dropdown list **or enter** a new *user name* (**click** the > *Manage security user* button and > **click** the *Add* button):
   - A new screen, *Security use*r appears.
5. **Enter** the OMNEO *User name*, *Passphrase and Confirm Passphrase* in the appropriate text box and **click** > *OK*:
   - **IMPORTANT**: Retrieve your OMNEO *security username* and *passphrase* from the PRAESENSA configuration. See *Logon the application, page 30* and/or *System security, page 102*.
   - **IMPORTANT: Only after** the 1st time / initial firmware upload **and** 1st time / initial configuration logon a OMNEO *security username* and *passphrase* are available. Both credentials are automatically generated during the configuration logon process.
   - Now the firmware upload process will use a secured data connection with the PRAESENSA configuration.
6. **Proceed** with the steps 4 up to 8 (and when required the steps 9 and 10) of the *1- 1*st *time firmware upload* procedure previously described in this section.

3.2.4   Optional: Install the Logging Server

The PRAESENSA *Logging server* application software is part of the PRAESENSA (mandatory) software package (*.zip). If you want to view the events logged, it needs to be installed on your computer. It is not required to install the *Logging server* on the same computer which will be used for configuration of PRAESENSA. See also *PC requirements, page 12*, if required. With the PRAESENSA *Logging server*, the events generated by a system can be logged. Typically, the *Logging server* runs on a computer that is connected to all systems of which the events are logged. The *Logging server* stores the events in a database.

To install, proceed as follows:

1. **Browse to, and click**, the file named Bosch PRAESENSA Logging Server.exe to start the setup program of the *Logging server*:
   – **IMPORTANT**: Only install and use the PRAESENSA *Logging server* when connected to PRAESENSA systems. E.g. the PRAESIDEO *Logging server* does not work with PRAESENSA.
   – Follow the on screen instructions.
2. The interface for the *Logging server* is available in different languages. During installation a number of language file folders have been installed in:
   – *\Program Files (x86)\Bosch\PRAESENSA Logging Server*. **Check** this folder to see if your language is available:
   – The language file folders have names according to the international 2-letter language code (ISO 639), for example; 'en' for English, 'ru' for Russian.
   – If a language folder exists for the language of the installed Windows operating system, then that is the language of the *Logging server*. If a different language is needed and a language folder exists for that language, proceed as follows:
3. **Add** a language parameter to the logging server program. The parameter is the 2-letter language abbreviation, e.g. " fi", i.e. a space followed by the language code.
   – For the *Logging server*, go to the startup folder to add the parameter: *ProgramData > Microsoft > Windows> Start Menu > Programs > Startup > PRAESENSA Logging Server*.
4. **Right click** on the *Logging server*, select properties and select the tab shortcut.
5. **Add** the " fi" parameter to the target description that ends with .exe", so after the double quote.
6. If the *Logging server* has not been installed for automatic startup and is not in the startup folder, then **create** a shortcut for the program file, **right click** on the shortcut (can be on the desktop too), click properties and select the tab shortcut.
7. **Add** the " fi" parameter to the target description that ends with .exe", so after the double quote. Use the shortcut to start up the program. Of course, replace " fi" with the language abbreviation of your choice.
8. A **notification** is displayed when the installation is finished.
9. **Continue** with: *Optional: Install the Logging Viewer, page 19*:
   – **IMPORTANT**: Go to *Optional: Using the Logging Server, page 108* after the installation process of both the *Logging server* and *Logging viewer*.

3.2.5   Optional: Install the Logging Viewer

The *Logging Viewer* application software is part of the PRAESENSA (mandatory) software (*.zip). If you want to *view* the events logged, it needs to be installed on your computer. It is not required to install the *Logging viewer* on the same computer which will be used for configuration of PRAESENSA.

With the *Logging Viewer*, the events logged by the *Logging Server* in a database, can be viewed. Typically, the *Logging Viewer* runs on a computer that is connected to the computer on which the *Logging Server* runs. The database is located at the same computer as the *Logging Server*.

To install, proceed as follows:
1. **Browse to, and click**, the file Bosch PRAESENSA Logging Viewer.exe to start the setup program of the *Logging viewer*.
   – **IMPORTANT**: Only install and use the PRAESENSA *Logging viewer* when connected to PRAESENSA systems. E.g. the PRAESIDEO *Logging viewer* does not work with PRAESENSA.
   – Follow the onscreen instructions:
2. The *Logging Viewer* is able to show its user interface and the logging events in different languages. During installation of the *Logging Viewer* a number of language file folders have been installed in:
   – *\Program Files (x86)\Bosch\PRAESENSA Logging Viewer*
   – The language file folders have names according to the international 2-letter language code (ISO 639), e.g. 'en' for English, 'ru' for Russian. Check this folder to see if your language is available.
   – If a language folder exists for the language of the installed Windows operating system, then the *Logging Viewer* is in that language.
   – If a different language is needed and a language folder exists for that language, proceed as follows:
3. **Add** a language parameter to the *Logging Viewer* program. The parameter is the 2-letter language abbreviation, e.g. " fi", i.e. a space followed by the language code.
4. For the Logging Viewer **create** a shortcut for the program file, then **right click** on the short cut (can be on the desktop too), **click** properties and **select** the tab short cut.
5. **Add** the " fi" parameter to the target description that ended with .exe", so after the double quote.
   – Use the short cut to start up the program. Of course, replace " fi" with the language abbreviation of your choice.
6. A notification is displayed when the installation is finished.
7. **Go to** *Optional: Using the Logging Viewer, page 113* after the installation process of both the *Logging Server* and *Logging Viewer*.
8. **Continue** with: *Logon the application, page 30*

3.2.6   Optional: Install OMNEO Control

The OMNEO Control software enables users to configure audio devices, and to route audio all over the network. With a single mouse click, users can create and remove audio connections between all OMNEO devices in a single- or multi-subnet network.

Dante Controller and OMNEO Control

As an alternative to Dante Controller, OMNEO Control could also be used to set up these audio connection paths. But OMNEO Control creates dynamic audio connections that are not automatically re-established by the devices themselves after a reset or power down. OMNEO Control can restore these connections instead, but only when the PC running OMNEO Control remains connected. For that reason it is preferred to use Dante Controller to set up connections to Dante or AES67 devices.

Although OMNEO Control and Dante Controller may be used simultaneously in the same network, this is not recommended as it may lead to confusion. An audio connection made in Dante Controller becomes also visible in OMNEO Control, where it shows up as a Dante connection. OMNEO Control can remove Dante connections and replace them for OMNEO connections. But to set them back to Dante connections, Dante Controller must be used.

See also: *Optional: Using OMNEO Control, page 117*

Key features of OMNEO Control

–   Detection and display of OMNEO and Dante devices.
–   Controlling audio connections on a PC.
–   Support for single- and multi subnets.
–   Automatic selection of unicast and multicast.
–   Store and reload scenario presets.
–   Device configuration for OMNEO devices.

OMNEO Control supports OMNEO and Dante devices. OMNEO couples Audinate's Dante Audio Transport Protocol with OCA, a proven system control protocol for unprecedented reliability and dependability in digital audio. OCA was developed by the OCA Alliance and has been standardized by the AES (Audio Engineering Society) as AES70.

Notice!

This notice states an important difference between OMNEO Control and Dante Controller and persistence. Persistence implicates that connections are automatically restored after a power failure. Unicast and multicast connections made with OMNEO Control are persistent only if OMNEO Control is set in Lock mode. Unicast and multicast connections made with Dante Controller are persistent, even after the Dante Controller application is closed.

OMNEO Control software installation

The OMNEO Control software is optional PRAESENSA software. See *(Mandatory) software, page 13* and/or can be downloaded from the Bosch download area: https://licensing.boschsecurity.com/software/.

The OMNEO Control software is available for the Windows operating system.

– Download the software file as follows:

1. The installation process is described in a separate manual, called:
   – OMNEO_Control_Manual.pdf.
   – See also *Related documentation, page 7*.
2. The download is a zip file archive. Zip file archives have a .zip file name extension.
3. Please make sure to download the right version for your system; 32 or 64 bits:
   – Pressing the hotkey Windows+Pause will open a window with information about your system.
4. Save the .zip file to a folder on your Windows computer.
5. Windows will unpack the downloaded .zip file archive when you right click on the file name and select **Extract**.

3.2.7 Optional: Install (OMNEO) Network Docent

Network Docent is developed to help AV operators in their daily job. The software scans and visualizes the network environment, giving insight into all devices and cable-connections of a network-based AV system. Network Docent is able to identify and provide guidance on solving common and simple network errors that cause disruption or improper operation of the AV system. As a result, Network Docent will reduce time and effort, when installing or operating a network-based AV system.

Features

– Detection and visualization of OMNEO devices connected to the (PRAESENSA) local network.
– Detection and visualization of Ethernet switches with LLDP (Link-Layer Discovery Protocol).
– SNMP (Simple Network Management Protocol) support.
– Configuration and communication error detection.
– Error and event log.
– Troubleshooting knowledge base.
– List of connected endpoints and alerts.

Installation

The Network Docent software is PRAESENSA optional software. See *(Mandatory) software, page 13* and/or can be downloaded from the Bosch download area: https://licensing.boschsecurity.com/software/.

– The installation process is described in a separate manual, called:
   – Docent_manual.pdf.
   – See also *Related documentation, page 7*.

3.2.8   Optional: Install Dante Controller

Dante Controller is a software application provided by Audinate which allows users to configure and route audio around Dante networks. It is available for Windows and OS X.

The PRAESENSA system controller is able to receive multiple Dante or AES67 audio streams from other devices, such as for background music from a music server. Dante and AES67 use static audio connections between devices, while PRAESENSA devices use more efficient dynamic OMNEO channels to be able to switch dynamically between multiple audio streams. For that reason, Dante or AES67 streams must be converted into dynamic OMNEO streams that are under control of the system controller. This conversion is done by the system controller, including encryption to secure the first eight channels.

Dante Controller is used to set up these static audio channels to the system controller. These audio channels must be permanent because the PRAESENSA system controller cannot control unknown Dante devices, or re-establish lost connections to such devices. Dante Controller can set up permanent (static) label-based connections, but only between devices that are in the **same subnet**. This means that the audio connection paths may include Ethernet switches, but no routers. Because Dante/AES67 connections are permanent, the PC with Dante Controller can be removed after configuration.

⚠	**Caution!** The multicast address selection for Dante audio (239.255.x.x) between Dante and system controllers can potentially cause disruption in the audio. To avoid unexpected behavior, make sure that only unicast connections will be used.

Dante Controller and OMNEO Control

As an alternative to Dante Controller, OMNEO Control could also be used to set up these audio connection paths. But OMNEO Control creates dynamic audio connections that are not automatically re-established by the devices themselves after a reset or power down. OMNEO Control can restore these connections instead, but only when the PC running OMNEO Control remains connected. For that reason it is preferred to use Dante Controller to set up connections to Dante or AES67 devices.

Although OMNEO Control and Dante Controller may be used simultaneously in the same network, this is not recommended as it may lead to confusion. An audio connection made in Dante Controller becomes also visible in OMNEO Control, where it shows up as a Dante connection. OMNEO Control can remove Dante connections and replace them for OMNEO connections. But to set them back to Dante connections, Dante Controller must be used.

See also: *Optional: Using Dante Controller, page 119*.

Dante Controller features

Once you install Dante Controller on your PC or Mac and connect it to a network, you can use Dante Controller to:

– View all Dante-enabled audio devices and their channels on the network.
– View Dante-enabled device clock and network settings.
– Route audio on these devices, and view the state of existing audio routes.
– Change the labels of audio channels from numbers to names that suit you.
– Customize the receive latency (latency before play out).
– Save audio routing presets.
– Apply previously saved presets.
– Edit presets offline, and apply as configurations for new network deployments.
– View and set per device configuration options.
– View network status information, including multicast bandwidth across the network and transmit and receive bandwidth for each device.
– View device performance information, including latency statistics and packet errors.
– View clock status information for each device, including frequency offset history and clock event logs.

Installing or updating Dante Controller

Go to www.Audinate.com > Dante Controller, where the latest version of the Dante Controller can be downloaded. For compliancy to the Audinate license agreement the Dante Controller program itself is not online on www.boschsecurity.com. This program is used for configuration and routing of the OMNEO and/or Dante audio channels.

Installation

To install Dante Controller you will need to be logged on with administrator privileges. You do not need to uninstall a previous version before installing an update. For device discovery by Dante Controller for Windows, the Audinate 'Dante Discovery' service is used. Dante Discovery is installed automatically with Dante Controller for Windows.

To install Dante Controller:

1. **Ensure** you are logged on to your computer as an administrator.
2. **Navigate to and double-click** the downloaded *Dante Controller installer file*.
3. **Read** the license agreement:
   – If you agree to the terms, select the 'I agree' checkbox and click *Install*.
   – If you do not agree to the terms, click *Close*.
4. **Confirm / acknowledge** any Windows security prompts that are displayed.
5. **After installation** the computer (PC) needs to reboot.
   – A notification is displayed when the installation is finished.
6. **See**: *Optional: Using Dante Controller, page 119*
   – **IMPORTANT**: Go to *Optional: Using Dante Controller, page 119* after the PRAESENSA configuration process has been finalized or when the configuration process is asking for it.
7. **Continue** with: *Logon the application, page 30*

3.2.9 Optional: Install the Open Interface

The *Open Interface* application software is part of the PRAESENSA optional software. See *(Mandatory) software, page 13* (*.zip). If you want to use the *Open Interface* with third party applications, it needs to be installed on your PRAESENSA configuration computer.

To install, proceed as follows:

1. **Browse to, and run**, the file named: Bosch.OpenInterface-Net-installer.exe
    –   The setup program *Open Interface* starts.
    –   Follow the onscreen instructions.
2. A notification is displayed when the installation is finished.
3. **Go to** *Open interface, page 103* and *Optional: Using the Open Interface, page 120*
4. **Continue** with: *Logon the application, page 30*

3.3   Check network and web browser settings

In order to make sure that the network connection is successfully between the PRAESENSA system controller and the configuration PC, the settings described in the following chapters must be checked/done.

3.3.1   Ethernet adapter settings

If PRAESENSA is being used as a standalone system, it uses the so-called dynamic link-local addresses. This means that the TCP/IPv4 setting of the configuration computer need to be set to "*Obtain an IP address automatically*". Normally, these settings are default and therefore do not require PC network configuration settings.

IMPORTANT: Without this setting, your PRAESENSA configuration computer has not automatically assigned an IP-address and hence is not able to operate in the PRAESENSA network. To check/set (Windows 10):

1.   **Right click** the *Windows Start* button and **click** *Network connections*. A new screen appears:
2.   **Click** > *Change adapter options* > **Select** > *Ethernet* > **click** *Properties*. A new screen appears:
3.   **Click** *Internet Protocol Version 4 (TCP/IPv4)* > **click** *Propertie*s. A new screen appears:
4.   **Enable** (checkmark) > *Obtain an IP-address automatically*, and **enable** (checkmark) > *Obtain DNS-server address automatically*, and then **click** > *OK*.

In case more functionally is required, for example, internet access, the dynamic link-local addresses cannot be used. In this case PRAESENSA devices and PCs need to be connected to a DHCP-server and gateway to provide internet access.

–   If the PRAESENSA system will become part of a locally present network, **contact your local IT department** for how to set up the network:
   –   The DHCP-server has to comply with RFC 4676 and must be able to handle 500 requests per 30 seconds. A consumer grade DHCP-server as is used in most home router/wireless access points is not able to comply with this requirement and will cause unexpected and unrequested behavior.
   –   The DHCP-server functionality of Windows server 2012 R2 and Windows server 2016 server does comply with these requirements.
   –   The PRAESENSA system service uses ports **9401** (is used for non-secure connections) and **9403** (is used for secure connections) with the **Open Interface** and ports **9451** and **9452** with e.g. **PC call station** applications for communication. Please make sure that these ports are not used by any other applications on the PRAESENSA configuration computer.

Notice!

When a DHCP-server is *added* to an existing PRAESENSA network in which the devices already have a Link-Local IP-address, then these devices will query a new IP-address from the DHCP-server and get a new address assigned. This results in temporary network disconnects. When a DHCP-server is *removed* from an existing PRAESENSA network, initially all devices will continue to work with their assigned IP-addresses. However, when the lease time expires, they will revert back to a Link-Local IP-address. Since every device will do this at a different moment, this will lead to system instability for a prolonged time. It is better to switch off the power to the system, remove the DHCP-server and switch the system on again.

Caution!

When part of a PRAESENSA system is powered down, including the DHCP-server, while the rest of the system remains in operation, then, upon restart of the DHCP-server, some DHCP-servers may assign an IP-address to a restarting PRAESENSA device that is already in use by one of the devices in operation. This will result in unexpected behavior of the system and requires a power cycle of the whole system, to renew all IP-addresses. Also the DHCP-server function of the PRA-ES8P2S switch is suffering from this behavior; therefore this function is disabled by default and it is advised not to enable and use it.

Rapid Spanning Tree Protocol (RSTP) support

The PRAESENSA system supports redundant network cabling when Rapid Spanning Tree Protocol (RSTP) is **enabled**. **By default** RSTP is **enabled** in the PRAESENSA configuration because it will standard not connected to an external/building Ethernet network.

Notice!

How to set up PRAESENSA in an Ethernet network is outside the scope of this manual. To prevent network failures in both PRAESENSA and in a Ethernet network where RSTP is not supported or allowed, contact your local IT representative in case PRAESENSA needs to be part of the external/building Ethernet network.

3.3.2 LAN settings

The Local Area Network (LAN) settings can influence the ability to fully access the PRAESENSA system. Because of security considerations PRAESENSA only accepts one connection at the same time. When a Proxy server is used, it cannot be guaranteed that always the same connection will be used.

To do so:

1. If not already done, **Run** the "SetupOMNEOFirmwareUploadToolBundle(64).exe" software which will install the Domain Name System Service Discovery (DNS-SD) service automatically on the configuration PC.
    – See *(Mandatory) software, page 13*.
2. **Before** the DNS-SD is activated, make sure that the LAN-setting of the configuration PC is set to "Automatically detect settings". To do so:
    – **Windows** version **< 10**. *Windows Start > Control Panel > Internet Options > Connections > LAN Settings >* check "Automatically detect settings".
    – **Windows** version **10**: *Windows Start > Control Panel > Network and Internet > Internet Options > Connections > LAN Settings >* check "Automatically detect settings".

3.3.3	Web browser settings

The configuration of the PRAESENSA system controller can be accessed via a web browser. The system controller webserver is compatible with, and optimized for, the latest version of the following web browsers:
- Firefox (from version 52 onwards).
- Internet Explorer (from version 11 onwards).
- Edge (from version 40 onwards).
- Chrome (from version 78 onwards).

Proxy settings

To use a web browser with PRAESENSA, make sure that **NO** proxy is used. To disable proxy e.g. at Firefox:
1. **Open** the (Firefox) web browser on the configuration PC.
2. **Select** > *Tools* from the menu > **click** > *Options*.
3. **Select** > *Network Settings* > **click** > *Settings*.
4. **Select** > *No proxy* in "Configure Proxy Access to the Internet" > **click** *OK*.
5. **Close** > *Tools* menu.

Security settings

Several web browser settings are relevant to the proper functioning of the configuration web pages of the PRAESENSA system. The most important one is *security* settings.
- Note that these kind of settings can also be modified or limited by the network administrator, who is responsible for the network and/or computer that is used for the configuration of the PRAESENSA system.

Security settings can prevent, for example, the execution of the Scalable Vector Graphics (SVG) viewer in Internet Explorer, which is needed to display the equalizer response on the web page. The preferable solution is to add the PRAESENSA system to the list of the trusted sites, by entering the *control hostname* of its system controller. As an example the PRA-SCL system controller *control hostname*: PRASCL-xxxxxx-ctrl.local. See for more details the product label and *Logon the application, page 30*.
- **In Windows** (Here, you can also lower the protection level for these trusted sites. The protection level for non-listed sites is not affected.), this list can be found via:
  - **Windows** version **< 10**: *Windows Start > Control Panel > Internet Options > Security > Trusted sites > Sites >* Enter the *control hostname*.
  - **Windows** version **10**: *Windows Start > Control Panel > Network and Internet > Internet Options > Security > Trusted sites > Sites >* Enter the *control hostname*.
- **Other** possible sources of problems are virus checkers, popup blockers, anti-spyware software and firewalls:
  - Configure it in such a way that it accepts the PRAESENSA system as a **trusted site**.

3.4 Configuration do's and don'ts

The do's and don'ts described within this section are general valid for the PRAESENSA system configuration.

3.4.1 Use of characters

All **Unicode** characters can be used when entering names for devices, inputs, outputs, zones, zone groups, etc.

3.4.2 Use unique names

When entering names for devices, inputs, outputs, messages, zones, zone groups, etc., make sure that:

– All entered names are unique. It is not allowed to use a name for more than one item.
– The name must not only be unique within a group of items (e.g. device names), but also within the complete system configuration (e.g. zone groups must have different names than zones).
– **TIP**: When create a so called "Call definition", add to the name also the priority number of the announcement. With this priority number description, the call definition importance is immediately visible and it e.g. prevents (long) searching for and/or selecting the (wrong) call definition. See *Call definitions, page 72*, if required.

IMPORTANT: Names that are not unique cause inconsistencies in the configuration database. In turn, these inconsistencies can result in unpredictable system behavior.

3.4.3 Initial values

<None>: When the value of a parameter of a configuration item is <None>, the parameter has no value yet. For example, when the *Action definition* page of a *Call definition* is opened for the first time, the value in the *Call definition* field is <None>.

<Unknown>: When the value of a parameter of a configuration item is <Unknown>, the correct parameter has to be selected before it is set. For example, when a device is added to the system composition, the value in the *Hostname* is <Unknown>.

<Default>: When the value of a parameter of a configuration item is <Default>, the parameter is set to its default value. For example, if the audio input of a *Call definition* is <Default>, the configured audio input is the microphone of the call station that started the *Call definition*.

3.4.4 Enable/Disable items (checkbox)

Configuration items can be enabled or disabled by using a checkbox.

– **Enable**: If a configuration item is enabled (checkmark/on), the system is for example able to generate a fault event when a fault occurs.
– **Disable**: If a configuration item is disabled (unchecked/off), the system cannot for example generate a fault event when a fault occurs.

The webserver puts disabled configuration items between ( ) in selection lists. For example, the disabled configuration item AudioIn01 is displayed as (AudioIn01) in selection lists.

3.4.5 Undo changes

Most pages of the *Configure* section contain a *Cancel* button. By clicking the *Cancel* button, any changes made on the pages are cancelled and not stored.

3.4.6 Deleting items

When a configuration item is deleted, all configuration items that are related to the deleted configuration item are also deleted.

– For example, when an amplifier is deleted from the *System composition*:
  – All audio outputs of the amplifier are also no longer part of the configuration.

3.4.7   Audio inputs and outputs

It is not allowed to use audio inputs and audio outputs for more than one purpose, since this can cause inconsistencies in the configuration database. In turn, these inconsistencies can result in unpredictable system behavior. For example:

–   If an audio input is already part of a *Call definition*, it is not allowed to use the audio input in a background music (BGM) channel.
–   Audio outputs of amplifiers cannot be assigned to more than one (loudspeaker) zone.

3.4.8   Use the submit button

Most of the web browser pages in the *Configure* section of the webserver contains a *Submit* button. Always click this button after making changes, otherwise the changes are lost. Clicking the *Submit* button, however, does not mean that the changes are saved. See *Save configuration, page 92*.

4   Logon the application

After the (mandatory) software has been installed on the configuration computer, it must establish a secured data connection with the PRAESENSA system (controller) to be able to transfer system data to and from the system (controller) and other network devices in the PRAESENSA system.

i	**Notice!**
	The logon and configuration time-out is about 10 minutes. Submit your changes before the time-out exceeds, otherwise your changes are lost.

Proceed as follows:

1. If not already done, **turn-on the power** of the PRAESENSA system:
   – All network devices boot and the 19"-devices show the yellow *device fault* LED on.
   – LCD Call stations show a *fault status message* on the display.
2. **Find** the two MAC-addresses and two hostnames indicated on a **product label** of the *system controller*:
   – The *device hostname* is unique for each PRAESENSA network device and is used **to identify the device** within system. For example; the *device hostname* of a *system controller* becomes visible as: PRASCx-yyyyyy. The *device hostname* is derived from its commercial type number (CTN) and MAC-address: PRASCx-yyyyyy, with PRASC being the commercial type number (without a dash between PRA and SCx), x being the system controller version type and yyyyyy being the last 6 hexadecimal digits of the device MAC-address.
   – The *control hostname* is also unique and is used to **get access to the webserver** of the system controller. The *control hostname* is derived from the *device hostname* with a postfix -ctrl (not from the MAC-address!). The address (PRASCx-yyyyyy-ctrl.local) is used as **URL** (Uniform Resource Locator) to logon PRAESENSA.
   – **Notice**: the *control hostname* URL address is also used for the **Open Interface**.
   – **Remark**: The configuration web browser pages show *device hostnames* without .local domain extension. It does not show *control hostnames*, neither the one of its own webserver, nor from other system controllers.
3. **Open** the web browser on your computer and **enter** the appropriate *control hostname* URL (Uniform Resource Locator): *https://PRASCx-yyyyyy-ctrl.local* in the address bar.
   – **IMPORTANT:** PRAESENSA uses default a secured data connection (https with SSL self-signed security certificate) which could result in blocking the logon process including a warning message similar to the following: *Continue to this website (not recommended), despite it is not recommended*. To continue the logon process, with a secured data connection, the address can be best added first to the secure/trusted websites of your used web browser. If required, see also *Check network and web browser settings, page 25*.
4. An *Initial (administrator) setup* logon screen appears with the device *Hostname* and *Device name* of the system controller requesting a *(New) administrator username* and *password*.
   – **Notice** that the *Initial (administrator) setup* login screen is only visible at logon the system for the first time as *administrator* **or** when the saved configuration file of the system controller has been erased.
5. **Enter** the (existing) *username* (minimum **five** (5) and maximum **sixteen** (16) characters) and (existing) *password* (minimum **eight** (8) and maximum **sixteen** (16) characters):
   – PRAESENSA is default set for using a **secured connection** between the system controller and other network devices.

- An initial user account automatically gets the **secured** configuration *administrator* rights.
- Deleting the *Initial (administrator) setup* user account can only be done by adding a new user account with *administrator* rights and then delete the initial one. See *User accounts, page 33*.
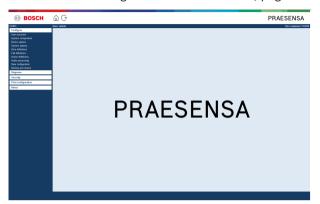
6. **Only at 1ˢᵗ / initial logon** > a OMNEO *security username* and OMNEO *passphrase* is **automatically generated** by the system controller:
   - You need this *security username* and *passphrase* for a *secure firmware upload*.
   - If required, see *Change user name and passphrase, page 102*.

7. **Click** the *Create* button > A web browser page appears, **showing** the following elements:
   - **On top** of the web browser page, from left to right: the *name of the device* (system controller), **your** *username* and the *software release* number. See *(Mandatory) software, page 13*).
   - **The name of**, and link to, **the system controller**.
   - **Configure** - A button that opens the *configuration* items selection.
   - **Diagnose** - A button that opens the *diagnostics* items selection.
   - **Security** - A button that opens the system *Security* and *Open Interface* item selection (e.g. download certificate).
   - **Print configuration** - A button that opens the configuration printing utility.
   - **About** - A button that opens the *Open source licenses*.
   - **Main frame** - A frame that displays the selected PRAESENSA web browser page.
   - **Home** - A button that returns to the *Home* web browser page where you could select: - The (new) *language* and the *continue* button.
   - **Logout** - A button which returns you to the *logon* webpage. You have to logon the configuration again, if required.

8. **Click** the *Home* button to select/change a *language* for the webserver GUI and web browser pages and **click** the *continue* button to access the web browser pages in the selected language.

9. **Select and click** the *system controller* name/link:
   - **On default** the system controller *device hostname* is selected and fixed. If not, **select** the system controller *device hostname* from the *Host name* dropdown list.

10. **Click** the *Submit* button:
    - Notice that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

11. **Proceed** with: *Configure the system, page 32*.

5   Configure the system

Using the *Configure* section, the PRAESENSA devices / system functionality can be defined.
IMPORTANT: Only PRAESENSA administrator and installer user accounts have access to the
Configure section. See *User accounts, page 33*.

–   The order of the *configure* menu items in this section, which is opened when the
     Configure button is clicked, represents the recommended workflow for the configuration
     of a PRAESENSA system.

–   See also: *Configuration do's and don'ts, page 28*

Configure (menu items)		
1	*User accounts, page 33*	The user accounts that provide access to the PRAESENSA webserver can be managed.
2	*System composition, page 35*	The network devices of which the system must consists can be added or removed.
3	*Device options, page 38*	Each network device that has been added using the *System composition* pages can be defined.
4	*System options, page 61*	A number of general system settings can be defined.
5	*Zone definitions, page 66*	The routing of zones, zone group, BGM, audio inputs and audio outputs of the amplifiers can be defined.
6	*Call definitions, page 72*	The announcement options (call definitions) can be defined.
7	*Action definitions, page 75*	The buttons of the call station (extension) and the control inputs can be defined.
8	*Audio processing, page 88*	The audio processing parameters (equalizer + volume) of the call station audio inputs and the amplifier audio outputs that can be set.
9	*Save configuration, page 92*	The current configuration can be saved.
10	*Backup and restore, page 93*	A saved configuration can be backup and/or restored.

Notice!

The logon and configuration time-out is about 10 minutes. Submit your changes before the
time-out exceeds, otherwise your changes are lost.

5.1   User accounts

To access the configuration web pages of the webserver, Open Interface and Logging server, an account is needed. An account consists of a *username*, a *password* and an *authorization* level. The *authorization* level defines to which part of the webserver access is granted. Notice: Initially you have already created an *Administrator user account*. See *Logon the application, page 30*.

The webserver provides the following authorization levels:
–   **Administrators**: Administrators have access to all parts of the webserver including the *User accounts* part, *Firmware upload*, *Open Interface*, *Logging Server* and *Logging Viewer*.
–   **Installers**: With the exception of the *User accounts* and *Backup and restore* parts, installers have access to all parts of the webserver, *Logging Viewer* and *Open Interface*.
–   **Operators**: Operators have access to the *Diagnose > version* and *About* sections of the webserver, *Logging Viewer and Open Interface*.

Using the *User accounts* **pages, it is possible to:**
–   *Add a user account, page 33*
–   *Delete a user account, page 34*

Refer to
–   *Logon the application, page 30*

5.1.1   Add a user account

Only *Administrators* can create new *User accounts*.
Proceed as follows to add a new user (i.e. create a new account):
1.   **Click** the *Add* button.
2.   **Enter** the *username* for the new user in the *UserID* text box:
     –   At least **five** (5) characters (maximum 16) need to be entered.
3.   **Select** the authorization level / function of the user account for the new user in the *Group* column:
     –   The authorization level defines to which part of the PRAESENSA webserver access is granted.
4.   **Enter** the password for the new user in the *Password* text box.
     –   **Administrator**: At least **eight** (8) characters (maximum 16) need to be entered.
     –   **Operator** and **Installer**: At least **four** (4) characters (maximum 16) need to be entered.
     –   It is **important** that a password is not easy to guess, since it safeguards unauthorized access to the system that could result in unsafe system configuration.
5.   **Click** the *Add* button to activate the new user account:
     –   The new user account is listed on the overview.

5.1.2 Delete a user account

For security reasons, it is advisable to create first a new *Administrator* account and then delete the initial PRAESENSA *Administrator* account.

– Only *Administrators* can delete existing accounts.
– A logged in account cannot be deleted.

Proceed as follows to *delete* a *user account*:

1. **Select** the row of the *user account* that must be deleted.
   – The selected row will be highlighted.
2. **Click** the *Delete* button to delete the *user account* **or** the *Cancel* button to keep the *user account*.
   – A *deleting* row will appear.
3. **Click** the *Delete* button:
   – The selected *user account* is removed from the *user account* overview.

5.2   System composition

On the *System composition* page you will add (or remove) network devices one by one. This is a mandatory configuration step.

All network devices will be listed on the *system composition* page as soon they are connected, discovered and added to the PRAESENSA Ethernet network. In this way you have a complete overview of the total used network devices within the system.

Initially, only the first added network device (most likely; the system controller) is listed on the *system composition* page automatically. See *Logon the application, page 30*.

Using the *System composition* page, it is possible to *(Re)discover*, *Add and Delete* network devices and change network device credentials as described following:

Name	The free chosen name of the network device.
Device type	The commercial type number (CTN) name of the connected network device. The *Device type* (e.g. PRA-AD608 is part of the *Amplifier* category.) is fixed and cannot be changed.
Host name	The unique network *device hostname*. Each *device hostname* is fixed and cannot be changed. It uniquely identifies each network device in the system. See *Logon the application, page 30*.
Location	Free text. E.g. the name of the physical location of the network device.
Show identification	Visualize identification of the selected network device.

Proceed with:
– *Rediscover devices, page 35* and
– *Add a device, page 36*.

5.2.1   Rediscover devices

Using the (re)discover function, the connected system controller finds all new and/or removed connected network devices and (un)list them. This rediscover process is an internal system controller process and not visible. Meaning that you have to add, select or change each (new) found network device to the *system composition* manually.

To do so:
1. **Click** the *Rediscover* button to find (new) network connected devices, or to view (changed) network device credentials.
    – All (connected and removed) network devices will be discovered by the system controller.
2. **Proceed** with: *Add a device, page 36*

5.2.2   Add a device

With the exception of the initial added network device (system controller), no other connected network devices are listed on the *system composition* page after using the *rediscover* function. This means that you have to add and set each network device to the *system composition* first. Only then the network device could be recognized, listed and configured in the system. See *Logon the application, page 30*, if required.

To do so:
1. **Click** the *Add* button:
   – An *Adding* row appears.
2. **Enter** the device *Name* in the text box:
   – The name may consist of up to 32 characters.
3. **Select** the *Device type* from the dropdown list:
   – The *Device type* name (e.g. PRA-AD608 is part of the *Amplifier* category) is fixed and cannot be changed by the user.
4. **Click** the *Add* button below the row, or **click** the *Cancel* button to return:
   – By using the *Add* button, the device, including the unique *Device hostname*, will be added to the *System composition*.
   – When *Add* a *System client* device, you will be asked to **enter** the *IP-address*.
5. **Select** an **unused** *device hostname* from the *Host name* dropdown list:
   – The *device hostname* consists of an extraction of the commercial type number name and the last 6-digits of the MAC-address. The *device hostname* is fixed and cannot be changed by the user. Refer to the label on the device. See *Logon the application, page 30*, if required.
   – When you **select** an already used *device hostname*, a prompted message will ask you to **select** another (unused) one, as soon you **click** the *Submit* button.
   – When you **select** *unknown* no device (type) will be linked because the correct *hostname* is not selected.
   – If not already done, select the *device hostname* of the initially added network device (system controller) from the *Host name* dropdown list.
6. **Optional enter** the *Location* (free text) name in the text box:
   – This could be e.g. the name of the physical location of the network device.
7. **Click** the *Submit* button:
   – Notice that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.
8. **Only** after *Save configuration and restart system*, the function of *Show identification* checkbox can be activated. **Enable** (checkmark/on) the checkbox or **disable** (off) the *Show identification* checkbox if you (not) want to visualize identification of the **selected** network device:
   – **By enabling**, the LEDs of the network device front/top (and rear) panel will be immediately switching intermittent on and off as long *Show identification* is enabled.
   – **Disable** the checkbox to stop the network device (LED) identification.

> **Notice!**
> If an added device is disconnected from the PRAESENSA network afterwards, the *Hostname* will be colored "light grey" only after using the *Rediscover* function and upon entering the web page. Besides that a lost device fault event messages is generated.

5.2.3   **Delete a device**

By using the *Delete* button, the network device, including the unique *device hostname*, will be deleted from the *system composition* and will also be removed from the configuration pages everywhere it is used.

To do so:

1.   **Click** the row to select the network device to be deleted:
    –   The row will be highlighted.
2.   **Click** the *Delete* button:
    –   A *Deleting* row appears.
3.   **Click** the *Delete* button below the row, or **click** the *Cancel* button to return:
    –   Using *Delete*, the selected network device is permanently deleted from the system.
4.   **Click** the *Submit* button:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

5.3   Device options

Each network device that has been added to the *System composition* can be functional configured by using its own *Device options* page. A connected network device is automatically recognized by its *device hostname* and added to the *Device type* category where it belongs to (e.g. Amplifier). The *Device type* category is manufacturer pre-defined and cannot be changed. The following *Device type* categories are pre-defined. **Click** on a link below to go to *Device options* of the:

– *System controller, page 38*
– *Amplifier, page 43*
– *Multifunction power supply, page 47*
– *Call station, page 53*
– *System client, page 60*

5.3.1   System controller

1. **Below** *Device options*, **click** *System controller*:
   – A new screen appears listed the connected system controller(s).
   – Notice that a *system controller* is only listed when it is added to the *System composition*.
   – See also *Logon the application, page 30*, if required.
2. **Select and click** the *System controller* name to configure.
   – A new screen appears to configure *General*, *Virtual control inputs*, *Virtual audio inputs/ outputs (Dante/AES67) and Unencrypted virtual audio inputs (Dante/AES67)* functionality:

General

1. **Select and click** the + of the *General* category row:
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Supervision		
Power supply input A Power supply input B	Enable / Disable	**Enable:** 24-48 Vdc power supply A and B input. Power supply faults and/or power losses will be indicated on the system controller front/rear panel (see indicators tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*. **Disable:** results in a system that does not detect power supply input failures of the system controller of the disabled input.
Network redundancy The network cabling supports a closed loop, which allows redundancy to be achieved.		
Single network (ports 1-5)	Selection	**Select** this option if only PRAESENSA network devices are used and the network is star and/or redundant (daisy-chain) topology connected. The system controller supports Rapid Spanning Tree Protocol (RSTP) to enable the use of multiple connections simultaneously

Item	Value	Description
		for cable redundancy, e.g. to daisy-chain devices in a loop, with a maximum of 20 devices in a loop. RSTP can be disabled in case a (corporate) network does not allow this. See *System settings, page 62* Ports 1-5 could be each daisy-chain connected to network devices in the system. **Notice** that **port 5** is possible already dedicated used for connection of the configuration computer.
Dual network (primary: ports 1-4 / secondary: port 5)	Selection	**Select** this option for Voice Alarm systems using ports 1-4 for (redundant) connections to the Voice Alarm network part, including all other PRAESENSA devices. Use port 5 for auxiliary connections, not related to the Voice Alarm function, like to a background music server. PRAESENSA can be set up to work on two completely separate networks simultaneously for fail-over redundancy, supporting **glitch-free*** audio switching between both networks for continuous and uninterrupted audio distribution in case of a network failure of one of the networks. In this mode, use ports 1-4 for the primary network (with RSTP) and port 5 for the secondary network. **Notice** that **port 5** is possible already dedicated used for connection of the configuration computer.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

–   * A glitch is in this case a short-lived audio fault in the systems network audio path, such as very short audio disturbance, distortion, drops. **By selecting** this option a possible glitch could be avoided, reduced and/or not noticed **only** when the network is physical redundant connected to port 5.

–   * External (non) PRAESENSA network devices must support glitch free and it must be enabled in their configuration.

Virtual control inputs

Virtual control inputs (VCI's) are *control inputs* that can be activated from the *Open Interfa*ce, to accommodate external applications via a simple interface. These *Virtual control inputs* do not exist as hardware inputs, but behave in a similar way. They can be activated and deactivated by *Open Interface* messages, causing the associated *call definition* to be started and stopped. In this way the external application does not need to be configured for all parameters of an announcement because the configuration has already been done as part of the *call definition*.

–   A *virtual control input* (VCI) can **added** (or **deleted**) here.
    –   To do so:
1.   **Enter** a VCI name in the *Add* text field:
    –   Its name can be freely chosen with a minimum of 1 and a maximum of 32 characters, but must be unique within the set of VCIs.
2.   **Click** the *Add* button:
    –   The number of *virtual control inputs* that can be assigned to a system controller is more than 100, but values more than 100 are not recommended because it slows down the performance of the configuration web pages.
    –   A VCI is enabled by default.
3.   **Enable** (checkmark) or **disable** the *Add* checkbox.
    –   Enable makes the VCI available to be used in the system.
4.   **Select** the *Function*:
    –   **Make announcement:** which activates and deactivates an announcement, or select:
    –   **Make phased announcement** (an announcement): With this behavior several VCIs can use the same *call definition* to contribute (add/remove) *zones* to an existing announcement, not restricted by the maximum number of simultaneous announcements.
5.   **Repeat** the previous steps to *add* a new VCI.
6.   **To delete** a VCI, click the *Delete* button:
    –   A warning message will appear > **Click** the *OK* or *Cancel* button.
7.   **Click** the *Submit* button to store the settings:
    –   Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Introduction to virtual audio inputs/outputs (Dante/AES67)
–   In total 128 audio channels can be routed by the PRAESENSA system controller:
    –   The audio channels *01 up to 08* are for PRAESENSA internal use only.
    –   The audio channels *09 up to16* are encrypted and switchable between *audio input* or *audio output* for e.g. Dante/AES67.
    –   The audio channels *17 up to 128* are unencrypted audio inputs for e.g. Dante/AES67.
–   The inputs *09-128* can be mapped on Dante/AES67 audio channels. In this way you can, for example, use a 3rd party Dante/AES67 audio source device (e.g. BGM) as input for the PRAESENSA system.
–   Dante/AES67 audio channels are default not connected to the PRAESENSA network, have a static routing, are not encrypted but can route on the same PRAESENSA OMNEO network.
–   The audio channel mapping can be done by using i.e. Dante Controller. See *Optional: Install Dante Controller, page 22*.
The following two chapters describe the mapping of the*Virtual audio inputs/outputs (Dante/ AES67) and Unencrypted virtual audio inputs (Dante/AES67).*

Virtual audio inputs/outputs (Dante/AES67)

Valid for audio channels *09 up to 16*.

See also *Optional: Install Dante Controller, page 22*.

– As soon a *virtual audio input* or *output (Dante/AES67)* 09-16 is mapped, it can be configured to route encrypted analog audio to or from the PRAESENSA system.
    – To do so:

1. **Select and click** the + of the *Virtual audio input/output (Dante/AES67)* category row:
    – The *system controller* audio channels (*09) up to (*16) become visible.
2. **Select** *input* or *output* from the *Audio* dropdown list:
    – If *input* (or *output*) is selected, it cannot be used as *output* (or *input*) anymore.
3. **Enable** (checkmark) **or disable** the *system controller (*nn)* checkbox.
    – This makes the audio channel (un)available to be used in the PRAESENSA system.
4. **Repeat** the previous steps to connect / disconnect each of the *encrypted* audio channels.
5. **Click** the *Submit* button to store the settings:
    – Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Unencrypted virtual audio inputs (Dante/AES67)

Valid for unencrypted audio channels 17 up to 128.

See also *Optional: Install Dante Controller, page 22*.

– As soon a *Unencrypted virtual audio input (Dante/AES67)* 17-128 is mapped, it can be configured to route unencrypted analog audio to the PRAESENSA system.
    – To do so:

1. **Select and click** the + of the *Unencrypted virtual audio inputs (Dante/AES67)* category row:
    – The *system controller* unencrypted audio input channels (*17) up to (*128) become visible.
2. **Enable** (checkmark) **or disable** the *system controller (*nn-*nnn)* checkbox.
    – This makes the audio input channel (un)available to be used in the PRAESENSA system.
3. **Repeat** the previous steps to connect / disconnect each of the *unencrypted* audio input channels.
4. **Click** the *Submit* button to store the settings:
    – Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Front panel indicators

The front panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.

Front panel indicators

⚠	Device fault present	Yellow	⏻	Power on	Green
🔗	Network link of backup system controller to duty system controller present Network link lost Standby for redundancy	Green Yellow Blue *		Identification mode / Indicator test	All LEDs blink

* Availability to be announced.

Rear panel indicators and controls

The rear panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.

Rear panel indicators and controls

⊘	SD card busy; do not remove	Green	⬚	100 Mbps network 1 Gbps network	Yellow Green
⚠	Device fault present	Yellow	⏻	Power on	Green
↺	Device reset (to factory default)	Button		Identification mode / Indicator test	All LEDs blink

Refer to

– *Logon the application, page 30*
– *Optional: Install Dante Controller, page 22*

5.3.2   **Amplifier**

1. **Below** *Device options*, **clic**k *Amplifier*:
   - A new screen appears listed the connected amplifier(s).
   - Notice that an *amplifier* is only listed when it is added to the *System composition*.
2. **Select and click** the amplifier *name* to configure:
   - A new screen appears to configure *General* and *Audio outputs* functionality.

General

1. **Select and click** the + of the *General* category row:
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Supervision (per amplifier) Supervision of the amplifier power supply, ground connection and lifeline**.**		
Power supply	Enable / Disable	**Enable:** 48 Vdc amplifier power supply (1-3) input. The amplifier front/rear panel indicator will indicate faults and/or power loss (see indicators tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113* **Disable:** (unchecked), results in a system that does not detect *Power supply input* failures of the amplifier disabled input.
Ground leakage	Enable / Disable	**Enable:** ground shorts will be indicated by the amplifier front/rear panel indicator(s) (see indicator tables following), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113* **Disable** (unchecked), results in a system that does not detect *Ground Leakage* failures of the amplifier.
Lifeline supply input	Enable / Disable	**Enable:** lifeline power supply loss will be reported. See *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Audio outputs
1.   **Click** the + of the *Audio outputs* category row:
      –   All available amplifier audio outputs are listed.
2.   **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Amplifier [#01-#nn]	Enable / Disable	**Unique name** for each audio output channel. Each output can be enabled or disabled using the checkbox. **Disable** results in no audio routing via the disabled output channel.
Supervision (per amplifier channel) Supervision of the *amplifier channel, loudspeaker line and overload*.		
Amplifier channel	Enable / Disable	**Enable:** amplifier channel faults and output signal losses will be indicated by the amplifier front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*
Loudspeaker line	Enable / Disable	**Enabled** plus an EOL device (PRA-EOL) connected, a disconnection of the loudspeaker line (including loudspeaker and connections) will be indicated by the amplifier front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*
Overload	Enable / Disable	**Enable:** an amplifier output channel overload will be indicated by the amplifier front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*
Load connection	Selection (by default Single)	**Single (A only)**: Select when only output A is connected with loudspeaker load. **Dual (A and B)**: Select when both output A and B are connected with loudspeaker load (A/B wiring). When supervision is enabled the first fault on output A or B will be detected. Secondary faults will be ignored. **Loop (A to B)**: Select when output A and B are redundant connected with loudspeaker load. In this case a loudspeaker will be fed from the other side when e.g. a cable is broken (Class-A). When supervision is enabled the first fault on output A or B will be

Item	Value	Description
		detected. Secondary faults will be ignored **General**: for End-of-Line (connection); refer to the PRAESENSA installation manual.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Front panel indicators

The front panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.

Figure 5.1: PRA-AD604

Figure 5.2: PRA-AD608

	Spare channel substitute 1-4	White		Signal present 1-4 Fault present 1-4	Green Yellow
	Ground fault present	Yellow		Device fault present	Yellow
	Audio lifeline substitute	White		Network link to system controller present Network link lost	Green Yellow
	Power on	Green		Identification mode / Indicator test	All LEDs blink

Notice that 1-4 is valid for the PRA-AD604 amplifier. For the PRA-AD608 read 1-8.

Rear panel indicators and control

The rear panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.

Figure 5.3: PRA-AD604

Figure 5.4: PRA-AD608

	100 Mbps network 1 Gbps network	Yellow Green		Device fault present	Yellow
	Power on	Green		Device reset (to factory default)	Button
	Identification mode / Indicator test	All LEDs blink			

Refer to

– *, page 46*

5.3.3   Multifunction power supply

1.   **Below** *Device options*, **click** *Multifunction power supply*:
     –   A new screen appears listed the network connected multifunction power supplies.
     –   Notice that a *Multifunction power supply* (Mps) is only listed when it is added to the *System composistion*.
2.   **Select and click** the Mps name to configure:
     –   A new screen appears to configure the *General*, *Control inputs* and *Control outputs* functionality.

General

1.   **Select and click** the + of the *General* category to configure the general settings of the Mps.
2.   **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Supervision		
Mains	Enable / Disable	**Enable**: a mains supply disconnection will be reported by the Mps front/rear panel indicator(s) only when a back-up battery is connected (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*. **Disable:** results in a system that does not indicate and report a mains failure.
Battery	Enable / Disable	**Enable**: a connected battery disconnection will be reported by the Mps front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*. **Disable:** results in a system that does not indicate and report battery failures. **IMPORTANT**: Battery protection is always active when a battery is connected. When supervision is **disabled** the following faults are suppressed: – Battery missing fault. – Battery RI fault. – Backup available for each power supply. The diagnostics page *battery impedance* is **only** available when *battery supervision* is **enabled**.
Battery capacity [Ah]	Number	**Enter** the number of the connected battery capacity value (between 100 and 250 Ah) which is used for the impedance measurement. A disconnection and fault will be reported by the Mps front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*.

Item	Value	Description
		IMPORTANT: Mains and battery supervision enabled or disabled does not influence the impedance measurement.
Amplifier 48 V power supply (1, 2, 3)	Enable (default) / Disable	**IMPORTANT**: **Disable** will stop supplying 48 Vdc power supply to the amplifier and does not indicate and report DC power supply output failure of the connected amplifier 1, 2 and/or 3. **Enable:** 48 Vdc faults and/or power loss will be indicated by the Mps front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*.
Amplifier lifeline audio supervision (1, 2, 3)	Enable (default) / Disable	**Enable:** lifeline analog audio, power supply and/or data signal loss will be indicated by the Mps front/rear panel indicator(s) (see indicator tables at the end of this section), *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*. **Disable:** results in a system that does not indicate and report amplifier (1, 2 and/or 3) (analog) lifeline failures.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*.

Control inputs

Control inputs can be used to receive signals from third party equipment that must trigger actions in the PRAESENSA network.

Control inputs can be configured to act on *contact make* or on *contact break*. It is also possible to supervise the connected cables for short-circuits and open connections. Whether a control input is actually supervised or not is defined here in the configuration.

– Multiple calls can be started or stopped from a single *control input* or call station extension *button*.
  – This applies to *Make announcement* control inputs/buttons, *Start phased announcement* control inputs/buttons and *Stop phased announcement* control inputs/buttons. And:
  – Up to five announcements can be started/stopped by a single action, e.g. an evacuation message on one floor and alert messages on lower and higher floors. See *Actions (1-5)* in the following table.
  – The sub-calls can have different priorities and *zones /zone groups*, but have the same activation behavior.

For *connection* options, see the PRAESENSA installation manual. For an *actions type* overview, see *Action definitions, page 75*.

– The multifunction power supply has eight control inputs which could be individual configured. To do so:

1. **Click** the +*Control inputs* category to configure the functionality of the control inputs of the selected mps.
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description	Added functionality at selected function
MPSn-[#01]-[#08]	Enable / Disable	**Unique name** for the control input. The control input must be **enabled** or **disabled** (deactivate). MPSn is an example. See *Add a device, page 36* for the naming. **Enable**: makes the control input active within the system.	N.a.
Function Sets the *function* of the *control input*. See also *Call definitions, page 72*.			
Make announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this control input if it is a *Make announcement* action.
Start phased announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this control input if it is a *Start* action
Stop phased announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this control input if it is a *Stop* action.
External fault	Selection	See *Action definitions, page 75*	N.a.
External zone fault	Selection	See *Action definitions, page 75*	N.a.
Mains supply fault: External.	Selection	See *Action definitions, page 75*	N.a
Acknowledge and/ or reset	Selection	See *Action definitions, page 75*	N.a.
Switch control output	Selection	See *Action definitions, page 75*	N.a.
Local BGM source	Selection	See *Action definitions, page 75*	N.a.
Local BGM on/off	Selection	See *Action definitions, page 75*	N.a.

Item	Value	Description	Added functionality at selected function
Local BGM volume control	Selection	See *Action definitions, page 75*	N.a.
Activation (Act on contact) Sets the open or closed contact action of the *control input*.			
Contact make	Selection	**The action** will be started or stopped at contact close.	N.a.
Contact break	Selection	**The action** will be started or stopped at contact open.	N.a.
Supervision	Enable / Disable (by default enabled)	**Switches** supervision of the *control input* on (**Enabl**e) or off (**Disable**). See the PRAESENSA installation manual for supervision connection options.	N.a.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*	N.a.

Control outputs

Control outputs can be used to send signals to third party equipment to trigger actions. Each *control output* connection has three pins.

For *connection* options, see the PRAESENSA installation manual. For a *functions* overview, see *Action definitions, page 75*.

– The *multifunction power supply* has **eight** *control outputs* which could be individual configured.

1. **Click** the + of the *Control outputs* category to configure each individual *control output* of the selected MPS.
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
MPSn-[#01]-[#08]	Enable / Disable	**Enabled** on default. Unique name for the *control output*. To deactivate, a *control output* must be disabled. See *Add a device, page 36* for the naming of the MPSn.
Function Sets the functionality of the *control output*. See also *Call definitions, page 72*.		
Switch output	Selection	**Selected** on default. The *control output* is activated by a *Switch control output* control input and/or call station extension *button*.

Item	Value	Description
Zone activity	Selection	The *control output* is activated when there is an active announcement in the associated *zone activated by a control input* and/or call station *button*.
Fault alarm buzzer	Selection	The *control output* activates a *fault alarm buzzer* (e.g. a connected buzzer) each time a fault is detected in the system. It can only be deactivated by *acknowledging* all faults using a *control input* and/or call station *button*. **Notice**: Fault: relay contact *open*. No fault: relay contact *closed*.
Fault alarm indicator	Selection	The *control output* activates a visual fault indicator (e.g. a LED/lamp) each time a fault is detected in the system. It can only be deactivated by *resetting* all faults using a *control input* and/or call station *button*. **Notice**: Fault: relay contact *open*. No fault: relay contact *closed*.
Emergency alarm buzzer	Selection	The *control output* activates an *emergency alarm buzzer* (e.g. a connected buzzer) each time a call with priority 223 or higher is started (i.e. an emergency announcement). It can only be deactivated by *acknowledging* the emergency state using a *control input* and/or call station *button*. **Notice**: Fault: relay contact *open*. No fault: relay contact *closed*.
Emergency alarm indicator	Selection	The *control output* activates a visual emergency indicator (e.g. a LED/lamp) each time an announcement with priority 223 or higher is started (i.e. an emergency announcement). It can only be deactivated by *resetting* the emergency state using a *control input* and/or call station *button*. **Notice**: Fault: relay contact *open*. No fault: relay contact *closed*.
System fault indicator	Selection	The *control output* activates a visual fault indicator (e.g. a LED/lamp); each time a *system fault* is detected in the system. System faults are a special category of faults, a subset of all possible faults. See also *Event messages, page 122* **Notice**: Fault: relay contact *open*. No fault: relay contact *closed*.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Front panel indicators

The front panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.
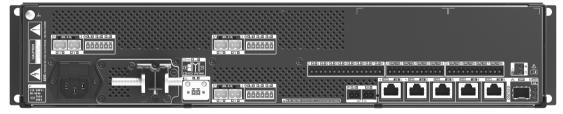
⊳	48 VDC amplifier power supply A-B (1-3) Power on Fault	Green Yellow	⊕	24 VDC auxiliary power supply A-B Power on Fault	Green Yellow
⚠	Device fault present	Yellow	🔗	Network link to system controller present Network link lost	Green Yellow
🔋	Battery status Full (float charging) Charging (bulk or absorption charging) Fault	Green Green blinking Yellow	🔌	Mains present Mains fault	Green Yellow
	Identification mode / Indicator test	All LEDs blink			

Rear panel indicators and controls

The rear panel indicators indicate correct functionality and faults. The table following indicates the active state.

To make device identification visible, see *System composition, page 35*.

🖧	100 Mbps network 1 Gbps network	Yellow Green	⚠	Device fault present	Yellow
⏻	Power on	Green	↺	Device reset (to factory default)	Button
	Identification mode / Indicator test	All LEDs blink			

5.3.4   **Call station**
1. **Below** *Device options*, **click** *Call station*:
   – A new screen appears listed the network connected call stations.
   – Notice that a *Call station* is only listed when it is added to the *System composition*.
2. **Select and click** the *call station* name to configure:
3. A new screen appears with the following functionality to configure:
   – **Genera**l
   – **Functions**
   – **Audio inputs**
   – **Extension** (Default not visible, unless you select 1-4 in the *General* section)
   – **Recorded messages**
   – **Alert messages**

General
1. **Click** the +of the *General* category tab to configure the general settings of the call station.
2. **Select** each of the following items:

Item	Value	Description
Class	Normal Emergency	**Select** *Class* **Normal** when the call station is used for commercial purposes. *Functions* can be controlled by the LCD menu item selection. Availability of *Functions* for the operator can be selected in the configuration web page (see *Assigning a function, page 76*) When *Class* is **Emergency**, the call station act as a real emergency call station. The call station LCD is static, which means that only emergency (fault) indications are listed on the LCD where no menu item and/or *Function* can be selected in the configuration web page. **IMPORTANT**: At an emergency the internal call station loudspeaker will generate a tone which could be stopped by using a button/ control input with the *Acknowledgement and/ or reset* function.
Extensions	Selection (0-4)	**Select** the number of *call stations extensions* (maximum 4) connected to the selected *call station*. Deviation in hardware will trigger a fault. **IMPORTANT**: Assigning zones to a standalone call station is not possible. You need at least **one** call station **extension** connected and selected.
Expected PoE inputs	Selection (0-2)	**Select** the call station network connections of the selected call station using Power over Ethernet. Deviation in hardware will trigger a fault.

Item	Value	Description
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Functions

1. **Only valid** when *Class* Normal is selected > **Click** the + of the *Functions* category to set the functionality of the call station selected.
2. **Enable/disable** each of the following items to **activate/deactivate** the function and to make the item **visible/not visibl**e as a (menu item) tile on the call station touch-screen LCD:

Item (LCD menu)	Value	Description
Voice	Enable (default)	**Enable**: *Voice* is enabled by default. The function makes the *Voice tile* available on the start screen of the call station display. The *Voice tile* is for the call station operator who will touch the *Voice tile* to start with the procedure for announcements with live speech in the selected areas. For area/zone selection, the call station must have at least one call station extension connected and configured. See also *Call definitions, page 72*.
Music *	Enable / Disable	**Enable**: When *Music* is enabled a *Music tile* will be available on the start screen of the call station display. The *Music tile* is for the call station operator who will touch the *Music tile* to start with the procedure for music control in the selected areas/zones. For area/zone selection the call station must have at least one call station extension connected and configured. For music control an area/zone must be configured for BGM channel selection. See also *Call definitions, page 72*.
Recorded messages *	Enable / Disable	**Enable**: When *Recorded messages* is enabled a *Message tile* will be available on the start screen of the call station display. The *Message tile* is for the call station operator who will touch the *Message tile* to start with the procedure to send recorded messages to the selected areas/zones. For area/zone selection the call station must have at least one call station extension connected and configured.

Item (LCD menu)	Value	Description
		Each area/zone can have its individual set of available messages. See also the Recorded messages section further in this chapter.
Alert messages *	Enable / Disable	**Enable**: The *Alert messages* are separated from *Recorded messages* to avoid the accidental start of an evacuation. When *Alert messages* is enabled an *Alert tile* will be available on the start screen of the call station display. The operator will touch the *Alert tile* to start with the procedure to send *Alert messages*. The intended operator of this function is for example the receptionist and not the fire fighter. In case of an emergency the operator is not authorized and cannot decide which alert messages goes to which areas. Therefore a fixed assignment of the *Alert message* to the areas/zones must be preconfigured. See also the Alert messages section further in this chapter.
Fault log *	Enable / Disable	**Enable**: When *Fault log* is enabled a *Fault Log tile* will be available on the start screen of the call station display. The *Fault Log tile* is for the call station operator who will touch the *Fault Log tile* to see an overview of logged device and system faults.
Local volume *	Enable / Disable	**Enable**: When *Local volume* is enabled, a *Volume tile* will be available behind the *Settings tile* on the start screen of the call station display. The operator will touch the *Settings tile* first to access the *Volume tile* and will touch the *Volume tile* to start with the procedure to adjust and set the audio output level of the call station monitor loudspeaker.
Information	Enable / Disable	**Enable**: When *Information* is enabled an *Information tile* will be available behind the *Settings tile* on the start screen of the call station display. The operator will touch the *Settings tile* first to access the *Information tile*. This function is to visualize e.g. the hardware and software versions of the call station and connected call station extension(s). Use this information when contacting technical support (e.g. Service).

Item (LCD menu)	Value	Description
Submit	Button	**Clic**k the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Note: Items indicated with an * are most likely selected for a call station (only) used by a system administrator and/or specific authorized users.

Note: The *Settings tile* on the start screen of the call station display is automatically generated when *Local volume* and/or *Information* is enabled.

Audio inputs
1.   **Click** the + *Audio Inputs* category to configure the audio inputs of the call station:
2.   **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Microphone / Line	Enable / Disable (Line is by default disabled)	**Unique name** for the microphone or line input. **Enable**: the line audio input will be made active and can be **selected** in *Call definitions, page 72*. **Microphone** is implicit by <default>.
Supervision	Enable / Disable	**Enable**: the microphone, including the capsule and wiring, will be supervised.
Input gain	Selection (-10 to 10 dB)	**Sets** the input gain of the microphone input. As a rule-of-thumb select 0 dB by default.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Extension
To communicate with the PRAESENSA network/system, the *call station extension* is always interconnected with a PRAESENSA *call station*.
1.   **Click** each *Extension* category to configure the call station extension buttons functionality of each individual *call station extension* connected.
2.   **Select**, **enable** or **disable** each of the following items:

Item	Value	Description	Additional function
Name CSTx [#01-#12]	Enable / Disable	**Unique name** for each call station extension button. **Enable**: makes the button active within the system.	N.a.
Function Sets the function of the buttons**.** See also *Call definitions, page 72*.			
Select zone(s)	Selection	See *Action definitions, page 75*	N.a.

Item	Value	Description	Additional function
Make announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this button if it is a *Make announcement* action.
Start phased announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this button if it is a *Start* action.
Stop phased announcement	Selection	See *Action definitions, page 75*	**Actions (1-5)**: **Selects** the number of actions for this button if it is a *Stop* action.
Silence zone(s)	Selection	See *Action definitions, page 75*	N.a.
Acknowledge and/or reset	Selection	See *Action definitions, page 75*	N.a.
Indicator test	Selection	See *Action definitions, page 75*	N.a.
Switch control output	Selection	See *Action definitions, page 75*	N.a.
Submit	Button	**Click** the *Submit* button to store the settings. Notice that you always have to *Save* the configuration. See *Save configuration, page 92*	N.a.

Recorded messages

Here you could add (or rename) a free chosen name for the *Recorded messages* tile used by the selected call station. It becomes a label as shown in the call station display *Recorded messages* tile.

To do so:

1. **Click** the + *Recorded messages* category.
2. **Enter** (or rename) a *name* for the (new) recorded message tile in the (empty) text box:
   - It may consist of up to 16 characters, maximum.
3. **Enable** the checkbox and **click** the *Add* button:
   - The (new) recorded message *name* is added to the *Recorded message*s category.
   - See also *Call definitions, page 72*.
4. **To delete** a recorded message *name*, **click** the *Delete* button and **confirm** with *Yes*.

Alert messages

Here you could add (or rename) a free chosen name for the *Alert messages* tile used by the selected call station. It becomes a label as shown in the call station display *Alert messages* tile.

To do so:

1. See the *Recorded messages* chapter as previously described. The naming procedure is similar.

Call station top- and bottom-side indicators

The top-side indicators and LCD indicate correct functionality and faults.

To put the call station in identification mode (LEDs blinking), see *System composition, page 35*.

PRA-CSLD   PRA-CSLW

⏻	Power on Device in identification mode	Green Green blinking	⚠	System fault present	Yellow
🎤	PRA-CSLD Status business call Microphone active Chime/message active Status emergency call Microphone active Alarm tone/message active	 Green Green blinking Red Red blinking	📱	4.3" full-color capacitive touch screen	LCD
🔊	PRA-CSLW Status business call Microphone active Chime/message active Status emergency call Microphone active Alarm tone/message active	 Green Green blinking Red Red blinking		Identification mode / Indicator test	All LED's blink
🔲	100 Mbps network 1-2 1 Gbps network1-2	Yellow Green	↻	Device reset (to factory default)	Button

Call station extension top-side indicators

The top-side indicators indicate correct functionality and faults.

▭	Selection button LED ring (1-12) Selected	White	🔊	Active (1-12) Evacuation call Business call Music	Red Blue Green
⚠	Zone fault present (1-12)	Yellow			

Refer to

– *Call station, page 85*

5.3.5   System client

1. **Below** *Device options*, **Click** *System client*:
    – A new screen appears with a *General* category tab.
    – Notice that a *System client* is only listed when it is added to the *System composition, page 35*.
2. **Select and click** the + of the *General* category tab to configure the general settings of the *System client*:
3. **Enable** (checkmark) the *supervision* checkbox:
    – The connection with the IP-address will be supervised.
4. **Click** the *Submit* button to store the settings:
    – Notice that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

5.4   System options

On the *System options* pages, a number of general, system wide settings can be configured, such as:
–   *Recorded messages, page 61*
–   *System settings, page 62*
–   *Time settings, page 64*
–   *Network supervision, page 64*

5.4.1   Recorded messages

On the *Recorded messages* page, audio files (.WAV), to be used with an announcement, can be uploaded to the internal memory of the system controller. A *Recorded message* could be an audio tone (e.g. attention, alarm, and test audio signal) and pre-recorded (spoken) message.

WAV	Specification
Recording format	48 kHz / 16 bit or 48 kHz / 24 bit > mono.
Message/tone storage capacity	90 min.
Announcement	With tone, eight .WAV files played at the same time.

Add a recorded message
Refer to *Tones, page 141* for pre-defined PRAESENSA tones.
1.   **Below** the *System options* page, **click** *Recorded messages*:
2.   **Click** the *Add* button
      –   An *import file* screen appears.
3.   On your computer, **browse to** the .WAV file to be uploaded to the internal memory of the system controller.
4.   **Select** the *file* and **click** the *Open* button:
      –   The imported file will be listed, including the *filename*.
5.   **Enter or change** the name in the *Name* text field:
      –   **Notice**: To avoid mistakes, it is advised to name it exactly the same as the name of the .WAV file (including upper- and lowercase characters. The **,** character is not allowed).
      –   It may consist of up to 64 characters maximum.
6.   **Click** the *Submit* button. See also *Save configuration, page 92*

Delete a recorded message
1.   **Select** the row (.WAV) to be deleted:
      –   The row will by highlighted.
      –   The *Delete* button appears.
2.   **Click** the *Delete* button:
      –   A deleting row appears.
3.   **Click** the *Deleted* button **or** *Cancel* button to cancel the delete action:
      –   The *file* will be deleted from the system and *Recorded messages* page.
      –   **Notice** that only the .WAV file will be removed from the system configuration after restarting the system controller.
4.   **Click** the *Submit* button. See also *Save configuration, page 92*

Refer to
–   *Tones, page 141*

5.4.2   System settings

1. **Below** the *System options* page, **click** *System settings*:
   – A number of general, system wide parameters can be defined using the *System settings* page.
2. **Select and set** each of the following items:

Item	Value	Description
Rapid Spanning Tree Protocol (RSTP)	Enable / Disable	**Specifies** whether the PRAESENSA network forms a redundant ring (**Enable**) or not (**Disable**). If *Enabled*, network cable breaks are reported. By default RSTP is enabled. See also *Ethernet adapter settings, page 25*, if required.
Multicast address range	Selection (IP-address)	Select the IP-address range from the dropdown list. Use when you want **to share** networks with other equipment that uses multicast. Or when you want to choose, for a 2nd PRAESENSA, system, a non-conflicting IP-address range.
Allow access by non-configured system clients	Enable / Disable (Enabled by default)	**Specifies** whether defined *System clients* that are part of the *system composition* can access the system (**Enable**) or not (**Disable**).
Call station display timeout	Enable / Time selection (1-10 minutes)	**Enabled** and after the *Time selection*, the call station LCD goes to black and the selection that was made is automatically cancelled if the selection has not been executed. **IMPORTANT**: If a call station is not yet configured, the LCD goes to black after 10 minutes.
Call station operator language	Language Selection	**Specifies** the *call station* display user language for **all** LCD call stations used in the system.
Amplifier output voltage	70 V / 100 V	**Specifies** the amplifier output channel voltage (70 V **or** 100 V) of **all** PRAESENSA amplifier outputs used in the system. **IMPORTANT**: After changing the output voltage, save the configuration and restart the system before doing a load measurement on the amplifier outputs. Results of previous measurements are wrong when the output voltage selection has changed. See also *Amplifier loads, page 98*.
Emergency mode		

Item	Value	Description
Disable calls below priority level	Selection (prio. 0-224)	**Announcements** with a priority lower than the **selected** priority are aborted when running and not started when started if the system is in the *emergency mode*. The system is automatically set to *emergency mode* when an emergency announcement is started.
Backup power mode		
Disable calls below priority level	Selection (prio. 0-255)	**BGM and announcements** with a priority lower than the **selected** priority are aborted when running and not started when started if the system is in the *Backup power mode*. Use the *Backup power mode* action to put the complete system in the *backup power mode*. Individual amplifiers go to *backup power mode* if the power supply of that device disappears. Then BGM and announcements with a priority lower than the specified priority are only routed to amplifiers (zones) that are not in *backup power mode*.
Report mains supply fault	Enable / Disable	**Enable**: Reports the external mains failure that comes from the control input of the MPS ("Mains supply fault: External"). See *Multifunction power supply, page 47*, *Optional: Using the Logging Viewer, page 113* and/or *Event messages, page 122*. In some cases the *Backup power mode* is enforced, for instance by a *control input* action, to save power and not because of a fault. The fault reporting can be **disabled** here.
Fault mode		
Reactivate silenced fault alarm buzzer	Selection Off / 1 h-24 h (by default 4 h)	A timeout period can be **set** after which a fault alarm buzzer is reactivated when the faults have been *acknowledged* but not yet resolved and *reset*.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

5.4.3   Time settings

A number of general, system wide parameters can be set using the *System options* page.

1. **Below** the *System options* page, **click** *Time settings*:
2. **Select**, **enable**, **disable** or **enter** the values of each of the following items:

Item	Value	Description
Location	Selection	**Select** the local time zone from the dropdown list.
Set time automatically (NTP)	Enable / Disable	**Enable**: Network Time Protocol (NTP) for automatically clock synchronization of PRAESENSA with your connected computer (network).
NTP server (Status synced)	Enter text	Enter the URL of the NTP server.
Set Date Time	Enter number	**Enter** current time and date manually. If *set time automatically* is enabled, it's taking the time from the NTP server.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

5.4.4   Network supervision

A number of system wide network supervision parameters can be set using the *Network supervision* page.

1. **Below** the *System Options* page, **click** *Network supervision*:
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Network supervision	Enable / Disable	**Enable**: the system network will be supervised. E.g. network cable breaks and lost/added devices will be reported. See *Diagnose, page 95* and *Optional: Using the Logging Viewer, page 113*. Select **Enable** after a network snapshot is taken. When successful enabled a removal/addition of any network device will result in a fault.
Network snapshot	Button	The Network snapshot takes an image of the redundant network links. When Network supervision is **enabled** a failing link will be detected as a fault. The snapshot is only taken for redundant links. The links to devices with only one network connection such as Call stations for commercial purposes or temporary connected devices (config PC) are ignored. **Disable** first *Network supervision* and then click the button. To do so all connected

Item	Value	Description
		PRAESENSA network devices will be stored for using network supervision. Then *Network supervision* must be **enabled**, submit and save and restarted. See submit.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*. It is advised to do this also as soon all network devices are configured.

5.5   Zone definitions

On the *Zone definitions* pages, the amplifier output channels and zone routing can be defined.
It is possible to configure:
– *Zone options, page 66*
– *Zone grouping, page 68*
– *BGM routing, page 70*

5.5.1   Zone options

On the *Zone options* page, zones can be created. A *zone* is a group of audio outputs that, for
example, go to the same geographical area.

Configuration example

As an example, amplifiers that are part of a PRAESENSA system on an airport:
– Audio outputs of amplifier 1 and amplifier 2 go to departure hall 1.
– Audio outputs of amplifier 1 and amplifier 2 go to departure hall 2

Then, a *zone* can be created called Departure 1 to group the loudspeaker lines that go to
departure hall 1 and a *zone* called Departure 2 to group the loudspeaker lines that go to
departure hall 2.
– **Notice** that an *audio output* cannot be part of more than one *zone*. After an *audio output*
  has been assigned to a *zone*, it is not allowed to assign the *audio output* to another *zone*.

Zone options page

1. **Below** *Zone definitions*, **click** *Zone options*:
2. **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Audio outputs	Selection	**Shows** the available audio outputs to select.
> and <	Buttons	**Using** the > and < buttons, selected outputs can be added (>) to, or removed (<) from, assigned outputs
Name	Selection	**Shows** the name of the *zone* by a dropdown list selection. See *Add a zone* topic in this section. When using an multifunction power supply *Lifeline* is default available to select.
Volume settings	Selection	**Opens** the *Volume setting* category to configure the volume settings of the zone. See the *Volume settings* topic in this section.
Add	Button	**A new** *zone* can be *added* to the system configuration. See *Add a zone* topic in this section.
Rename	Button	**An existing** *zone* can be *renamed*. Automatically this name is replaced everywhere in the configuration this *zone* is used.
Delete	Button	**An existing** *zone* can be *deleted* from the system configuration. See *Delete a zone* topic in this section.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Add a zone

Proceed as follows to create a new *zone*:

1. **Click** the *Add* button and **ente**r a *name* for the new *zone* in the *Name* text field:
    –   For example: Departure 2
    –   It may consist of up to 16 characters, maximum.
2. **Click** the *Add* button or *Cancel* button if you want to cancel:
    –   The new *zone* is added to the *Name* selection menu.
3. (Multiple) **Select** each *Audio output* (left box area) that must be added to the *zone*.
4. **Double click** the selected *Audio output* or **click** the > button to add the output to the *zone* area (right box area).
5. **Repeat** the previous steps 1-4 to add a new *zone*.
6. **Click** the +*Volume settings* category to set the *announcement* and *background music (BGM)* volume:
    –   **See** the *Volume settings* topic in this section.
7. **Click** the *Submit* button:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

Delete a zone

Proceed as follows to *delete* a *zone*:

1. **From** the *Name* dropdown list > **selec**t the *zone* that must be deleted.
2. **Click** the *Delete* button to delete the zone:
    –   A pop-up window asks to **confirm** this choice (OK / Cancel).
3. **To delete** the zone, **click** the *OK* button to confirm.
    –   The deleted *zone* is no longer available in the *Name* dropdown list. It will also be removed from all occasions where it is used in the configuration.
4. **Click** the *Submit* button:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

Rename a zone

Proceed as follows to rename a *zone*:

1. **From** the *Name* dropdown list > **select** the *zone* that must be renamed.
2. **Click** the *Rename* button to rename that *zone*.
    –   A new row appears.
3. **Change** the *name* in the text box:
    –   The *name* may consist of up to 16 characters, maximum.
    –   The *name* of the *zone* will be changed on all occasions where it is used in the configuration.
4. **Click** the *Rename* button.
5. **Click** the *Submit* button:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

Volume settings

1.   **By selecting** the +*Volume settings* category of the *zone configuration* page, a screen appears listed the following items to **configure** the volume levels of announcements and background music (BGM):

2.   **Select**, **enable** or **disable** each of the following items:

Item	Value	Description
Maximum BGM volume	Selection (0 dB - -96 dB)	**Sets** the maximum BGM volume level. It is not possible to adjust the BGM volume, for example from a call station (extension), to a higher level than the maximum BGM volume setting.
Initial BGM volume	Selection (0 dB - -96 dB)	**Sets** the initial, start-up BGM volume level.
Scheduled BGM volume adjustment (1) and (2)	Enable / Disable / Selection (0 dB - -96 dB)	**Used** to automatically decrease the BGM volume during certain periods of time (for example, in the evening). During the periods of time that both functions are active, the attenuations add-up. **Enable/disable** the function, **select** the volume output level (0 dB -96 dB) and enter **on and off** time.
Scheduled call volume adjustment	Enable / Disable / Selection (0 dB - -96 dB)	The announcement volume level can be automatically decreased during a certain period of time (for example, in the evening). **Enable/disable** the function, **select** the output volume level and **enter** on and off time.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*.

5.5.2   Zone grouping

On the *Zone grouping* page, zone groups can be created. A zone group is a group of zones that, for example, go to the same geographical area.

Configuration example

A small airport with four *zones*: Departure 1, Departure 2, Arrival 1 and Arrival 2:

–   The *zones* Departure 1 and Departure 2 contain loudspeaker lines that go to departure hall 1 and departure hall 2 respectively.

–   The *zones* Arrival 1 and Arrival 2 contain loudspeaker lines that go to arrival hall 1 and arrival hall 2 respectively.

Then, a *zone group* can be created called "Departure Halls" to group the *zones* that go to the departure halls and a *zone group* called "Arrival Halls" to group the *zones* that go to the arrival halls.

Zone grouping configuration page

Below *Zone definitions*, **click** *Zone grouping*:
– A screen appears listed the following items:
1. **Select** each of the following items:

Item	Value	Description
Zones	Selection	**Shows** the available audio *zones* (left box area). *Zones* can be created in *Zone options, page 66*
Name	Selection	**Shows** the name of the *zone group* (dropdown list selection). See *Add a zone group* topic in this section.
> and <	Buttons	**Using** the > and < buttons, selected *zones* can be added to, or removed from, *zone groups*.
Zone group	Selection	**Shows** the *zones* that have been assigned to the *zone group* (right box area). See *Add a zone group* topic in this section.
Add	Button	**A new** *zone group* can be added. See *Add a zone group* topic in this section.
Rename	Button	**An existing** *zone group* can be renamed. Automatically this name is replaced everywhere in the configuration where this *zone group* is used. See *Rename a zone group* topic in this section.
Delete	Button	**An existing** *zone group* can be deleted from the system configuration. Automatically this *zone group* is deleted everywhere in the configuration where this *zone group* is used. See *Delete a zone group* topic in this section.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Add a zone group
1. **Enter** a *name* for the *zone group* in the *Name* text box.
2. **Click** the *Add* button. The procedure for creating a *zone group* is **similar** to the procedure for *Add a zone*. See *Zone options, page 66*.

Rename a zone group
The procedure for renaming a *zone group* is **simila**r to the procedure for *Rename a zone*. See *Zone options, page 66*.

Delete a zone group
The procedure for deleting a *zone group* is **similar** to the procedure for *Delete a zone*. See *Zone options, page 66*.

5.5.3   BGM routing

At the *BGM routing* page, background music (BGM) routing can be defined. A BGM routing refers to an *audio input* in the system. Optionally, default *zones* and or default *zone groups* can be connected to the routing. When the system is switched on, then the specified BGM is routed to the connected *zones* and *zone groups*.

BGM routing configuration page

1.   **Below** the *Zone definitions* page, **click** *BGM routing*:
      – A screen appears listed the following items:
2.   **Select**, **enabl**e or **disable** each of the following items:

Item	Value	Description
Name	Selection	**Shows** the name of the *BGM routing* (dropdown list selection). See *Add BGM routing* topic in this section.
Type	Selection	**Selection** between *zones* and *zone groups* as available routing.
Zones / Zone groups	Selection	The left box area **shows** the available *zones* and *zone groups*. *Zones* (groups) are created in *Zone options, page 66* and *Zone grouping, page 68*
> and <	Buttons	**Using** the > and < buttons, selected *zones* and *zone groups* can be added to, or removed from, *Routing* (the right area box).
Audio input	Selection	**Select** the *Audio input* that provides the background music. **Notice** that the inputs 9 up to 16 are **secured** (Dante/OMNEO channels) to the amplifier. The same *Audio input* may not be assigned to different *BGM routing*. Each *BGM routing* must have a **unique** *audio input*.
Limit routing	Enable / Disable	**Enable:** The center box area shows the *zones* and *zone groups* that are allowed to receive the *BGM routing*. This center box area is not visible if the *Limit routing* checkbox is disabled. **Using** the > and < buttons, selected *zones* and *zone groups* (left area box) can be added to, or removed from *Limit Routing* (the middle area box). **See** also the *Limit routing* topic in this chapter.
Routing	Selection	The right box area **shows** the *zones* and *zone groups* that are assigned to the selected *BGM routing* at system start-up. **Using** the > and < buttons, selected *zones* and *zone groups* (the left or middle area box) can be added to, or removed from *Routing* (right area box).

Item	Value	Description
Add	Button	**A new** *BGM routing* can be added. See *Add BGM routing* topic in this section.
Rename	Button	**An existing** *BGM routing* can be renamed. Automatically this name is replaced everywhere in the configuration this *BGM routing* is used. See *Rename BGM routing* topic in this section.
Delete	Button	**An existing** *BGM routing* can be deleted. Automatically this *BGM routing* will be removed everywhere in the configuration this *BGM routing* is used. See *Delete BGM routing* topic in this section.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Add BGM routing

1.   **Enter** a *name* for the *BGM* in the *Name* text box.
2.   **Click** the *Add* button. The procedure for *Add BGM routing* is **similar** to the procedure for *Add a zone*. See *Zone options, page 66*.

Rename BGM routing

The procedure for renaming *BGM routing* is **similar** to the procedure for *Rename a zone*. See *Zone options, page 66*.

Delete BGM routing

The procedure for delete *BGM routing* is **simila**r to the procedure for *Delete a zone*. See *Zone options, page 66*.

Limit routing

You can specify a routing limit to *BGM routing*. To do so:

1.   **If** the *Limit routing* checkbox is *disabled*, all available *zones* or *zone groups* can be made part of the default routing for the *BGM routing*.
2.   **With** *Limit routing* checkbox *enabled*, you can make a sub-set of available *zones* and *zone groups* and the *BGM routing* cannot be used outside this sub-set:
     –   This function can be used for routing of e.g. a licensed *BGM routing* to specific subscribers. In this case the default *zones* for this *BGM routing* at power on is again a sub-set of the specified routing limit.
     –   Also, *zones* and *zone groups* that are not part of the routing limit cannot be added to the *BGM routing* selection via *call station extension* buttons.
3.   **Click** the *Submit* button to store the settings:
     –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

5.6   Call definitions

Using the *Call definition* page, *call definitions* can be defined.

Call definitions are used to make announcements, are custom made, and could contain several characteristics as shown in the table following. To do so:

1.   **Click** the *Call definitions* page:
      –   A *call definition* screen appears with the items as listed in the following table.
2.   **Select**, **enable**, **disable** or **enter** (text in) each of the following items of the *call definition*:

Item	Value	Description
Name	Selection	**Shows** the name of the available *call definition* (dropdown list). When no *call definition* can be selected, create one by using the *Add* button.
Priority	Selection (32-255)	**Select** the call/announcement priority of the *call definition* from the list (255 highest priority). See *Priority and announcement type, page 106*, if required.
Maximum call duration	Selection (10, 20 and 40 s. 1, 2, 5, 10, and 20 min and Unlimited (default)).	**Selection** of a *Maximum call duration* avoids blocking of *zones* by a high priority call/announcement that was started but not stopped, either by accident or because it contains e.g. infinitely looping messages.
Start tone	Selection	If the call/announcement must use a start tone, **select** a tone from the *Start tone* dropdown list. See *Recorded messages, page 61* and *Tones, page 141* for an overview of pre-defined .WAV audio files.
Attenuation	Selection (0 dB-20 dB)	**Adjust** the attenuation to **set** the volume level of the *Start tone*.
Messages	Selection	If the announcement must contain a specific named *Message*, **select** it in the left area box and click the > button to add it to the *Messages* box of the *call definition*. This *Message* name can also be **selected** on the call station display, if this *Message* function is configured. See also *Call station, page 53* > *Recorded/Alert Messages*.
Attenuation	Selection (0 dB-20 dB)	**Adjust** the attenuation to **set** the volume level of the selected *Messages*.
Repetitions	Selection (0-10/Infinite)	**Use** the *Repetitions* box to **specify** how many times the selected *Messages* must be repeated. 0 = play once, 1 = repeat once (play message twice).

Item	Value	Description
Live speech	Selection Yes / No	If the announcement must contain live speech, **set** the *Live speech* option to *Yes*. If the announcement does not contain *live speech*, **set** it to *No*. If *No* is **selected** a *Schedule* announcement could be **selected** (see *Schedule* following).
Attenuation	Selection (0 dB-20 dB)	**Adjust** the attenuation to **set** the volume level of the *live speech*.
End tone	Selection	If the announcement must use an end tone, **select** a tone from the *End tone* dropdown list. See *Recorded messages, page 61* and *Tones, page 141* for an overview of pre-defined .WAV audio files.
Attenuation	Selection (0 dB-20 dB)	**Adjus**t the attenuation to **set** the volume level of the *End tone*.
Continue call	Selection No / After interruption	**No** stops the announcement immediately if it was overruled by another announcement. **After interruption** continues or restarts the announcement if it was overruled by another announcement and/or not completed.
Audio input	Selection <Default> / input	If *Live speech* is **set** to *Yes*, use the *Audio input* list to specify the input that must be used. Notice that the inputs 9 up to 16 are **secured** (Dante/AES67) channels to the amplifier. **Select** *<Default >* if the *Live speech* is originating from a *call station* (microphone).
Schedule	Selection Enable / Disable	If *Live speech* is **set** to No, the schedule could be set. **Enable:** will **enable** announcement scheduling and will remove the *maximum call duration*. **Enter** the start time of the first announcement in the *Start time* text box.
Start time	Enter hh/mm/ Enable/Disable day	**Enter** the *start time* of the first announcement in the *Start time* text box and *Enable* the days on which the announcement *schedule* is active.
End time	Enter hh/mm	**Enter** the time to end the *schedule* announcement on the enabled day(s). After the *End time*, the announcement will not be repeated.
Interval	Enter hh/mm	**Ente**r the interval time period in the *Interval* text box.

Item	Value	Description
Add	Button	**A new** *call definition* can be added and defined.
Rename	Button	**An existing** *call definition* can be **renamed**. Automatically this name is replaced everywhere in the configuration where this *call definition* is used.
Delete	Button	**An existing** *call definition* can be **deleted** from the system configuration.
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*.

Add (create) a call definition
1. **Click** the *Add* button to add/create a new *call definition*.
2. **Enter** the name of the new *call definition* in the *Name* text box:
    –   It may consist of up to 16 characters, maximum.
3. **Click** the *OK* button to *add* the *call definition* to the list of *call definitions* in the system.
4. **Select**, **enable** or **disable** each of the items (see previous table) to define the *call definition*:
5. **Click** the *Submit* button to store the changes:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

Delete a call definition
Proceed as follows to *delete* a *call definition*:
1. **Select** the *call definition* that has to be deleted from the *Name* dropdown list.
2. **Click** the *Delete* button to delete the *call definition*.
    –   A pop-up window asks to confirm this choice.
3. **Click** the *OK* button to confirm that the *call definition* must be deleted:
    –   The deleted *call definition* is no longer available from the *Name* dropdown list.
4. **Click** the *Submit* button to store the changes:
    –   Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 92*.

5.7   Action definitions

On the *Action definitions* pages specific device functionality can be configured, e.g. the *buttons* of the call station (extension), *control inputs* of the *multifunction power supply* and the *virtual control inputs* of the *system controller*.

The process of configuring an *action* to a *button* or *control input* consists of two steps:

1. *Assigning an operation, page 75*
2. *Assigning a function, page 76*

See the following sections to configure the actions per *device type* category:

– *System controller, page 83*
– *Multifunction power supply, page 84*
– *Call station, page 85*

5.7.1   Assigning an operation

The *operation* specifies how the *control input* deals with incoming signals or how the *button* reacts when it is pressed and released. An *operation* is always linked to a *function* (see *Assigning a function, page 76*).

Type of operations

The available type of *operations* are represented in the following table:

Operation type	Description
Momentary - abort on release	**The action** coupled to the *control input* or *button* is active during the time the external contact is closed. When the external contact is opened, the action is immediately aborted.
Momentary - finish on release	**The action** coupled to the *control input* or *button* is active during the time the external contact is closed. When the external contact is opened, the action is stopped after the completion of the current phase.
	When the external contact is closed again while the action is still running, the action is immediately aborted.
Toggle - abort on switch off	**The action** coupled to the *control input* or *button* is started when the external contact closes and immediately aborted when the external contact closes again.
Toggle - finish on switch off	**The action** coupled to the *control input* or *button* is started when the external contact closes. When the external contact closes again, the action is stopped after the completion of the current phase.
	When the external is closed a third time while the action is still running, the action is immediately aborted.
Do once	**The action** is started when the external contact closes. **The action** can be stopped with an *Abort phased announcement* or *Finish phased announcement*. **Usually**, the Abort/*Finish phased announcement* operation

Operation type	Description
	is used for triggering events (for example, to cancel a selection) and actions with a significant duration (for example, an announcement).
Abort phased announcement	**The action** is stopped when the external contact closes. This type of **operation** is used for stopping actions that were started with a *Do once* operation.
Finish phased announcement	**The action** is stopped when the external contact closes. This type of **operation** is used for stopping actions that were started with a *Do once* operation.
Make phased announcement	**The action** coupled to a *virtual control input* of the *system controller* is started/stopped/aborted depending of the trigger by the Open Interface.

Refer to
–   *Assigning a function, page 76*

5.7.2   Assigning a function

The *function* determines which *function* is triggered if the *control input* or *button* becomes active. The *operation* that can be assigned to a *control input* or *button*, depends on the *function*. A *function* is always linked to an *operation*. See *Assigning an operation, page 75*.
The available type of *functions*, and with which device functions are used, are represented in the following tables:

Device	Device abbreviation (in next "Function" table)
Call station	**CS**
Call station extension	**CSE**
System controller	**SC**
Multifunction power supply	**MPS**

Functions and operations

The meaning and functionality of the *functions* in the following table are described in the next section. The numbers in the following two tables are referring to the *operations* in relation with the *functions*: For *control inputs* each *function* has the possibility to configure the activation with options: *Contact make* or *Contact break*.

Operation number (in next table)	Operation description
1	Momentary - abort on release
2	Momentary - finish on release
3	Toggle - abort on switch off
4	Toggle - finish on switch off
5	Do once
6	Abort phased announcement
7	Finish phased announcement

Function Used with device	Input I=Input option		Operation (number) D=Default | O=Optional | -=Not applicable							
	CSE Button	**Control input**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**-**
Press-to-Talk (PTT) button CS	-	-	-	D	-	O	-	-	-	-
Make announcement CSE, SC (VCI), MPS	I	I	D	O	O	O	O	-	-	-
Select zone(s) CSE	I	-	-	-	D	-	-	-	-	-
Start phased announcement CSE, MPS	I	I	D	-	O	-	O	-	-	-
Stop phased announcement CSE, MPS	I	I	-	-	-	-	-	D	O	-
Silence zone(s) CSE	I	-	D	-	O	-	-	-	-	-
Acknowledge and/ or reset CSE, MPS	I	I	-	-	-	-	D	-	-	-
Indicator test CSE	I	-	D	-	-	-	-	-	-	-

Function Used with device	Input I=Input option		Operation (number) D=Default | O=Optional | -=Not applicable							
	CSE Button	Control input	1	2	3	4	5	6	7	-
External fault MPS	-	I	D	-	O	-	-	-	-	-
External zone fault MPS	-	I	D	-	O	-	-	-	-	-
Mains supply fault: external MPS	-	I	D	-	O	-	-	-	-	-
Switch control output MPS	I	I	D	-	O	-	-	-	-	-
Local BGM source MPS	-	I	D	-	O	-	-	-	-	-
Local BGM on/off MPS	-	I	D	-	O	-	-	-	-	-
Local BGM volume control MPS	-	I	D	-	O	-	-	-	-	-

Refer to
–   *Assigning an operation, page 75*

5.7.3 Function description

The following topics describe the meaning of the available *functions* which could be selected. Besides of the *operation*, and depending of the chosen *function*, other credentials could be selected or entered per *function* as described following. For *control inputs* each *function* has the possibility to configure the activation with options: *Contact make* or *Contact break*.

Press-to-Talk (PTT) > (CS)

This *function* can be assigned to PTT *buttons*.

Using the *Press-to-Talk* (PTT) *function*, an announcement with a predefined priority based on a *call definition* can be started in one or more **selected** *zones* or *zone groups*. When the activator of a *PTT function* is released, the announcement is stopped after completion of the running phase of the announcement.

– Configuring a *PTT function* is similar to configuring a *Make announcement* function. The PTT button of call stations is linked to the status LCD and LEDs.
– **Select**: Operation.

Make announcement > (CSE, SC (VCI), MPS)

This *function* can be assigned to *buttons* and/or *(virtual) control inputs*.

Using the *Make announcement* function, an announcement with a predefined priority based on a *call definition* can be started in one or more selected *zones* or *zone groups*. When the activator of a *Make announcement* function is released, the announcement is aborted or stopped depending on the selected *operation*.

– If more than one action (up to a maximum of 5) is configured for a *Make announcement*, then also multiple sets of *call definition*, *priority* and *zones* can be configured here.
– **Select**: Operation, Call definition, Priority, Zone/Zone groups.
– **Add/remove** (><): Zone(s) / Zone groups.
  – Zone selection is done via two table boxes, the left one showing the *available zones*, the right one the *selected zones*.

Select zone(s) > (CSE)

This *function* can be assigned to *buttons*. The *button* is used to activate and route audio to the selected *Zone(s)/Zone groups*.

Using a *Zone selection* button, one or more *zones* and/or one or more *zone groups* can be selected.

– **Select**: Operation, Call definition, Zone/Zone groups.
– **Add/remove** (><): Zone(s) / Zone groups.
  – Zone selection is done via two table boxes, the left one showing the *available zones*, the right one the *selected zones*.
– **Enable/disable** BGM channel selection. Selects which BGM channel could be selected to run on this zone/zone group selected via the call station display BGM tile.

Start phased announcement > (CSE, MPS)

This *function* can be assigned to *buttons* and/or *control inputs*.

The *Start phased announcement* function is intended for making emergency announcements for phased evacuation. The *Start phased announcement* function starts an announcement, based on a *call definition*, in a pre-defined *zone* or *zone group*. The priority of the announcement is the same as the priority of the *call definition* and cannot be changed.

- If more than one action (up to a maximum of 5) is configured for a *button* or *control input*, then also multiple sets of *call definition* and *zones* can be configured here.
- Typically, there will be multiple *Start phased announcement* functions that use the same *call definition*, but address other *zones* or *zone groups*. In case of a phased evacuation, the different *Start phased announcement* functions then can be used to expand the area in which the announcement is running.
- Depending of the *operation* selected: When the activator of a *Start phased announcement* function is released, the running announcement is stopped in the *zones* or *zone groups* that are associated to the function. In case of a phased evacuation, releasing the different *Start phased announcement* functions can be used to reduce the area in which the announcement is running.
- **Select**: Operation, Call definition, Zone/Zone groups.
- **Add/remove** (><): Zone(s) / Zone groups.
    - Zone selection is done via two table boxes, the left one showing the *available zones*, the right one the *selected zones*.

Stop phased announcement > (CSE, MPS)

This *function* can be assigned to *buttons* and/or *control inputs*.

The *Stop phased announcement* function is intended for aborting emergency announcements for phased evacuation. The *Stop phased announcement* function aborts all announcements that are based on the defined *call definition*.

- If more than one action (up to a maximum of 5) is configured for a *Stop phased announcement button* or *control input*, then also multiple *call definitions* can be configured here.
- **Select**: Operation and Call definition.

Silence zone(s) > (CSE)

This *function* can be assigned to *buttons*.

Using a *silence* button, mutes selected *zones* when **activated**.

- **Select**: Operation.

Acknowledge and/or reset > (CSE, MPS)

This *function* can be assigned to *buttons* and/or *control input*s.

Using the *Acknowledge and/or reset* function, faults or emergency state can be acknowledged and reset.

It is possible to select *fault* or *emergency* status for this function, and to select whether the function should acknowledge, reset, or simultaneously acknowledge and reset (Ack/reset) this status.

- **Select**: Operation, Type (*Fault* or *Emergency*) and Ack/reset.

In case of *Fault* selection, the following settings are available:

- **Acknowledge**: If the button/control input is set to *Acknowledge*, then the indicator functions as fault beeper.
- **Reset**: If the button/control input is set to *Reset*, then the indicator functions as fault indicator.

In case of *Emergency* selection, an additional setting becomes available: *Reset aborts active emergency calls*:

- **No:** The default setting is *No*. This way, the emergency state cannot be *reset* as long as emergency announcements are still ongoing; this is the preferred way of operation and is even mandatory for EN54-16 and other standards.

- – **Yes**: The setting *Yes* is more a kind of engineers *reset* in technical rooms to force a *reset* after a building has been evacuated and the system must be silenced.
- – **Acknowledge**: If the button/control input is set to *Acknowledge*, then the indicator functions as *emergency* beeper.
- – **Reset**: If the button/control input is set to *Reset*, then the indicator functions as *emergenc*y indicator.

Indicator test > (CSE)

The *Indicator test function* can be configured for a *button* of a *call station extension*. When activated; all indicators on the *call station* and all its connected *call station extensions* are switched intermittent on and off to visually check the condition of the indicators.
- – Bi-color indicators could alternate between colors.

External fault > (MPS)

This *function* can be assigned to *control inputs*.
Using the *External fault* function, a customized message can be logged and the system is put in the fault state.
- – **Select**: Operation.
- – **Enter:** A free chosen text/name**.** The text/name could be viewed on the *Logging Viewer* pages.

External zone fault > (MPS)

This *function* can be assigned to *control inputs*.
The *External zone fault* action generates an external line fault. This fault is similar to an amplifier loudspeaker line failure, which is detected by the amplifier itself.
- – It is advised to give the *control input* for this function a proper name, such as the name of the *zone-loop* that is supervised.
- – In the configuration multiple *zone* names can be coupled to *External zone fault*, just to be capable of combining multiple fault contacts for different loops on a single *control input*. These *zone* names will show up in the fault log in case of a fault.
- – Preferably only a single *zone* should be configured for each *External zone fault* control input.
- – **Select**: Operation.
- – **Add/remove** (><): Zone(s) / Zone groups.
  - – Zone selection is done via two table boxes, the left box showing the *available zones*, the right box the *selected zones*.

Mains supply fault: external > (MPS)

This *function* can be assigned to *control inputs*.
The *Mains supply fault: external* function is used to put the system in the *backup power mode* in case the 48 Vdc of an amplifier is low and/or disconnected (blue colored LED on amplifier). In this mode, all calls/announcements below a specified *priority* are aborted.
- – **Select**: Operation.

Switch control output > (CSE, MPS)

The *Switch control output function* is intended for activating *Switch output control outputs* or *Switch output* call station extension *buttons*.

- The *Switch control output function* is intended for *control outputs* and *call station extensions buttons*:
  - The *button* itself is not used by this *function*; only the indicator/output attached to the *button* is activated.
- **Select**: Operation, Priority (32-255).
- **Add/remove** (><): Control outputs (1-8).

Local BGM > (MPS)

This *function* can be assigned to *control inputs*.

The *Local BGM* function is used to step through all available *BGM sources* in the assigned *zone (groups)* including an inserted *Local BGM off* position.

- **Select**: Operation.

Local BGM on/off > (MPS)

This *function* can be assigned to *control inputs*.

The *Local BGM on/off* function is used to turn background music on or off in predefined *zone (groups)*.

Select: Operation.

Local BGM volume control > (MPS)

This *function* can be assigned to *control inputs*.

The *Local BGM volume control* function is used to control the volume of the BGM in the assigned *zone (groups)*. It can be changed in steps of 3 dB between -96 dB and 0 dB.

Select: Operation.

5.7.4   System controller

On the *Action definitions* page of the *system controller*, the *virtual control inputs* could be defined, which could be used by the Open Interface.

1. **Below** the *Action definitions* configuration page, **click** *system controller*:
    –   A screen appears with an overview of the connected *system controller(s)*.
2. **Select and click** the *name* of the *system controller* to be configured.
    –   A row called *virtual control inputs* appears.
3. **Click** the + of the *virtual control* inputs row:
    –   A screen appears listed the VCIs each with the following items:

Item	Value	Description
VCI (n)	Static text	**Shows** the name of *virtual control input* which is **entered** in section *System controller, page 38* > VCI paragraph.
Function name	Static text	**Shows** the name of the *Function* which is **selected** in section *System controller, page 38* > VCI paragraph.
Call definition	Selection	**Select** the *call definition* which is **created** in section *Call definitions, page 72*
Zone / Zone groups	Selection	**Select** the *zone* or *zone group* which is **created** in section *Zone definitions, page 66*
> and <	Buttons	**Using** the > and < buttons, a **selected** *zone* or *zone group* (left area box) can be **added** to, or **removed** from the assigned *zone* or *zone groups* (right area box).
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Configure a virtual control input action

See *Assigning a function, page 76* for *Function (action)* and *Assigning an operation, page 75* for *operations* available for the *system controller*.

Each created *virtual control input* (VCI) for the *system controller* is listed and can be individual selected and configured. To do so:

1. **Select** the *call definition* from the dropdown list.
2. **Select** *zone* or *zone groups* from the dropdown list.
3. **Select and move** the *zone* or *zone groups* from the left area box to the right area box by using the > button.
    –   Removing a *zone* and *zone groups* will be done in the reversed order by using the < button.
4. **Click** the *Submit* button to store the settings. See also *Save configuration, page 92*.

5.7.5 Multifunction power supply

On the *Action definitions* page of the *Multifunction power supply* the *Control inputs* and *control outputs* could be defined.

1. **Below** the *Action definitions* configuration page, **click** *Multifunction power supply* (Mps):
    –   A screen appears with on overview of the connected Mps(s).
2. **Select and click** the *name* of the *Mps* to be configured.
    –   A row called *Control inputs* appears.
    –   A row called *Control outputs* appears.
3. **Click** the + of the *Control inputs* row:
    –   A screen appears listed the eight *Control Inputs* each with the following items:

Item	Value	Description
Name [#0n]	Static text	**Shows** the name of *control input* which is **entered** in section *Multifunction power supply, page 47*
Function	Static text	**Shows** the name of the *function* which is **selected** in section *Multifunction power supply, page 47* > *control inputs* chapter
Operation	Selection	**Select** the *operation* of the *function* which is **selected** in section *Multifunction power supply, page 47*. See also *Assigning an operation, page 75*.
Call definition	Selection	**Select** the *call definition* which is created in section *Call definitions, page 72*
Depending of the selected Function, different parameters could be selected, entered, added/removed. See *Assigning a function, page 76* for descriptions.		
Submit	Button	**Click** the *Submit* button to store the settings: Notice that you always have to *Save* the configuration. See *Save configuration, page 92*

Configure control inputs

See *Assigning a function, page 76* for *functions* and *Assigning an operation, page 75* for *operations* available for the *Mps*.

Each of the eight *control inputs* listed can be individual configured. To do so:

1. **Select** the *operation* (and *Call definition*) from the dropdown list.
2. **Select**, **enter** and/or **add/remove** the parameters belonging to the selected *function*.
3. **Click** the *Submit* button to store the settings. See also *Save configuration, page 92*.

Configure control outputs

1. **Click** the + of the *Control outputs* row:
    –   A screen appears listed the eight *control outputs*.
2. With the exception of *Zone activity*, the *Name* and the *function* of the *control outputs* are static and can only be changed in the section *Multifunction power supply, page 47*.
    –   Notice that the *Zone activity* function requires: Priority range selection (Higher and lower priority) between 0 and 255 and *zone* selection.
    –   Notice that if the *function* text is called *Disabled*, the *control output* is disabled in the section *Multifunction power supply, page 47*.

5.7.6   **Call station**

On the *Action definitions* page of the *call station*, *call station* and *call station extension* actions could be defined.

Functions and operations

See *Assigning a function, page 76* for *functions* and *Assigning an operation, page 75* for *operations* (behaviors) available for the *call station and call station extension*.

Configure a call station action

In the *General* section, the properties of the press-to-talk (PTT) button of the *call station* can be defined. This button has default the PTT action. To do so:

1. **Below** the *Action definitions* configuration page, **click** *call station*:
    – A screen appears with an overview of the connected call station(s).
2. **Select and click** the *name* of the *call station* to be configured:
    – A *General* section row and, if one or more *call station extension(s)* connected, *call station extension* section rows appearing.
    – A *Submit* button appears.
3. **Click** the + of the *General* row:
    – A screen appears listed the following items:
4. **Select** the following items to configure the actions of the *Call station Press to talk* button.

Item	Value	Description
Press to talk	Static text	**Shows** the name *Press to talk* (PTT) of the PTT button of the *call station* **selected** and cannot be changed.
Operation	Selection	**Selec**t the *operation* of the *function* to be **used** from the dropdown list. See *Assigning an operation, page 75*.
Call definition	Selection	**Select** the *Call definition* to be **used** from the dropdown list. See *Call definitions, page 72*
Depending of the selected Function, different parameters could be selected, entered, added/removed. See *Assigning a function, page 76* **for descriptions.**		
Submit	Button	**Click** the *Submit* button to store the changes. Note that the changes are not permanent and active until the configuration is saved. See *Save configuration, page 92*.

Configure call station extension button action

In the *Call station extension* section, the properties of the *buttons* of the *call station extension* can be defined. To do so:

1. **Click** the + of the (*call station*) *Extension* row:
   – A screen appears listed the following items.
2. **Select** the items to configure the actions of the *Call station extension*

Item	Value	Description
1 xxx [#01]	Static text	**Shows** the number and name of each of the buttons of the *call station extension* selected and cannot be changed.
Operation	Selection	**Select** the *Operation* of the *Function* which is **selected** in section *Call station, page 53*. See also *Assigning an operation, page 75*.
BGM channel selection	Enable / Disable	BGM channel selection is **only available** when the *Function Select zone(s)* is selected. **Enable**: Selection of the BGM channel(s) which is/are created in the section *BGM routing, page 70*. The configured BGM routing can be used on the call station *Music* screen for these specific selected Zone(s).
> and **<**	Buttons	**Using** the > and < buttons, a *BGM routing* channel can be selected (left area box) and added or removed from the assigned *BGM routing* channel (right area box).
Depending of the selected Function, different parameters could be selected, entered, added/removed. See *Assigning a function, page 76* for descriptions.		
Submit	Button	**Click** the *Submit* button to store the changes. Note that the changes are not permanent and active until the configuration is saved. See *Save configuration, page 92*.

Configure buttons

See *Assigning a function, page 76* for *functions* and *Assigning an operation, page 75* for *operations* available for the *call station (extension) buttons*.

Each of the *buttons* listed and can be individual configured. To do so:

1. **Select** the *Operation* from the dropdown list.
2. **Select**, **enter** and/or **add/remove** the parameters belonging to the selected *Function*.
3. **Click** the *Submit* button to store the settings. See also *Save configuration, page 92*.

Recorded messages

Recorded messages selection is only visible/possible if this **function** is enabled in *Call station, page 53*.

1. **Click** the + of the Recorded messages row.
2. **Select** the *call definition*:
   – **Note**: Do not select *call definition* with *Live speech* set to "**Yes**".
3. **Click** the *Submit* button to store the settings. See also *Save configuration, page 92*.

Alert messages

Alert messages selection is only visible/possible if this **function** is enabled in *Call station, page 53*.

1. **Click** the + of the Alert messages row.
2. **Select** the *call definition*:
    –   **Note**: Do not select *call definition* with *Live speech* set to "**Yes**".
3. **Select** (add/remove) the *zone/zone group* with the > < buttons.
4. **Click** the *Submit* button to store the settings. See also *Save configuration, page 92*.

Refer to

–   *Action definitions, page 75*
–   *Zone definitions, page 66*

5.8   Audio processing

On the *Audio processing* pages, the audio processing parameters of an *audio input* of a call
station and/or *audio outputs* of an amplifier in the PRAESENSA system can be set: See:
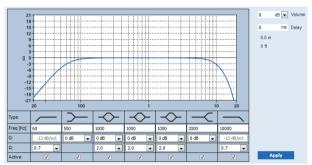–   *Amplifier, page 88*
–   *Call station, page 90*

5.8.1   Amplifier

On the *Audio processing* page of the *Amplifier*, the audio processing parameters of the selected
amplifier *outputs* can be set.
–   For each *audio output* of the amplifier, a *parametric equalizer*, an *audio delay* option and a
     volume level selection button is available to set the *audio output* signal.
1.   **Below** the *Audio processing* page, **click** *Amplifier*:
     –   A new screen appears listed the connected Amplifier(s).
2.   **Select and click** the *Amplifier* name to configure.
     –   A new screen appears listed the *Amplifier outputs*.
3.   **Select and click** the + of the *Amplifier output* category row:
     –   The audio processing / parametric equalizer overview appears.
4.   **Select** each of the following items, if required.

F: Frequency, **G:** Gain, **Q:** Quality factor

Item	Filter	Value	Description
High-pass filter		Enter F Select Q	**Default:** Frequency 60 Hz, Quality factor 0.7 (selectable 0.2 - 2.0). **Fixed**: Gain -12 dB/oct.
Shelving filter (for low frequencies)		Enter F Select G	**Default:** Frequency 500 Hz, Gain 0 dB (selectable: -infinite - +12 dB).
Full parametric sections (3)		Enter F Select Q, G	**Default:** Frequency 1000 Hz, Quality factor 20.0 (selectable 0.4 - 20.0), Gains 0 dB (selectable: -infinite - +12 dB)
Shelving filter (for high frequencies)		Enter F Select G	**Default:** Frequency 2000 Hz, Gain 0 dB (selectable: -infinite - +12 dB).
Low-pass filter		Enter F Select Q	**Default:** Frequency 10000 Hz, Quality factor 0.7 (selectable 0.2 - 2.0). **Fixed**: Gain -12 dB/oct.

Set a filter and output

Proceeds as follows to set the *filter*s of **each** *output* separately.

1. **Make sure** that all loudspeakers are connected to each amplifier output, set at the correct power level, are aimed (if necessary) and are working.
2. The frequencies, gain and quality factors of each output are already set to the default values as indicated in the previous table:
    –   **IMPORTANT**: The correct output setting depends on the environment to where the audio output signal is routed to, and possible needs to be adjusted in the zone(s) locally.
3. **Enable** (checkmark) the *Active* box of each filter for each output to enable it and to make it active in the system.
4. **Select** the output volume level from the *Volume* dropdown list (default 0 dB):
    –   **Adjust** the nominal output level of the audio output in the *zone* to the level required to have the correct speech intelligibility at maximum ambient noise level. It ranges from 0 dB to -60 dB in steps of 1 dB and Mute.
5. **If required, Enter** the delay time in ms in the *Delay* text box (default 0 ms):
    –   Make sure that the audio delay setting of each applicable amplifier output is set to a correct value. Very long delay settings (> 2 seconds), e.g. for tunnel applications, may cause wrong calibration results.
    –   By entering the delay time the distance in meter/feet will be calculated and displayed.
6. **Click** the *Apply* button:
    –   **Be aware** that the changes are immediately applied to the *audio output* and could cause unexpected high-level audio output in the loudspeaker zone(s).
7. Click the *Submit* button to submit the changes.
    –   **Notice** that audio processing parameters are changed immediately when also the *Submit* button is clicked. Although the changes are audible, it is important to realize that they are not automatically saved. If the changes are not saved they will be lost when the system controller resets. See *Save configuration, page 92*.

Spare amplifier output channel

The integrated spare amplifier audio output channel automatically replaces a failing *audio output* channel, with due regard of the actual sound processing settings. Meaning that the spare amplifier *audio output* channel does not provide volume and equalizer settings for the *audio output* channel. These settings are automatically set to the same position as the failing *audio output* channel that is replaced by the spare *audio output* channel. **No** separate *audio options* settings for the spare amplifier output channel are required.
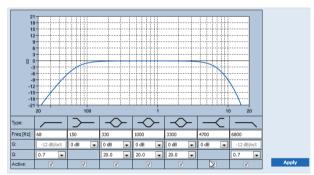
Lifeline audio input

Each amplifier incorporate a (backup) **analog** *lifeline audio input* driving the spare amplifier *audio output* channel to serve all connected loudspeaker *zone*s in case the network connections, or the amplifier network interface, would fail. The *lifeline* is automatically added as a *zone* when adding a multifunction power supply (mps) in *System composition, page 35* and *Zone definitions, page 66*. **No** separate *audio options* settings for the *lifeline* are available and required.

5.8.2 Call station

On the *Audio processing* page of the *call station*, the audio processing parameters of the selected *call station input* can be set.

– For the *microphone* of the *call station*, a *parametric equalizer* is available to set the *audio output* signal. The correct setting depends on the environment to where the signal is routed to, and possible needs to be adjusted:

– It is advised to **adjust** the microphone characteristics in the room where the *call station* is located.

1. **Below** the *Audio processing* page, **click** *Call station*:
   – A new screen appears listed the connected call station(s).
2. **Select and click** the *Call station name* to configure.
   – A new screen appears listed the *Call station input*.
3. **Select and click** the + of the *Call station input* category row:
   – The audio processing / parametric equalizer overview appears.
4. **Select** each of the following items, if required:

F: Frequency, **G:** Gain, **Q:** Quality factor

Item	Filter	Value	Description
High-pass filter		Enter F Select Q	**Default:** Frequency 50 Hz, Quality factor 0.7 (selectable 0.2 - 2.0). **Fixed**: Gain -12 dB/oct.
Shelving filter (for low frequencies)		Enter F Select G	**Default:** Frequency 500 Hz , Gain 0 dB (selectable:-20 dB - +12 dB).
Full parametric sections (3)		Enter F Select Q, G	**Default:** Frequency 1000 Hz, Quality factor 20.0 (selectable 0.4 - 20.0), Gains 0 dB (selectable: -infinite - +12 dB).
Shelving filter (for high frequencies)		Enter F Select G	**Default:** Frequency 2000 Hz , Gain 0 dB (selectable: -infinite - +12 dB).
Low-pass filter		Enter F Select Q	**Default:** Frequency 10000 Hz, Quality factor 0.7 (selectable 0.2 - 2.0). **Fixed**: Gain -12 dB/oct.

Set a filter and output

Proceeds as follows to set the *filter*s of **each** *output* separately.

1. **Make sure** that all loudspeakers are connected to each amplifier output, set at the correct power level, are aimed (if necessary) and are working.
2. The frequencies, gain and quality factors of each output are already set to the default values as indicated in the previous table:
    –   **IMPORTANT**: The correct output setting depends on the environment to where the audio output signal is routed to, and possible needs to be adjusted in the zone(s) locally.
3. **Enable** (checkmark) the *Active* box of each filter for each output to enable it and to make it active in the system.
4. **Click** the *Apply* button:
    –   **Be aware** that the changes are immediately applied to the *audio output* and could cause unexpected high-level audio output in the loudspeaker zone(s).
5. Click the *Submit* button to submit the changes.
    –   **Notice** that audio processing parameters are changed immediately when also the *Submit* button is clicked. Although the changes are audible, it is important to realize that they are not automatically saved. If the changes are not saved they will be lost when the system controller resets. See *Save configuration, page 92*.

5.9   Save configuration

Most of the pages in the *Configure* section of the webserver contains a *Submit* button. Always click this button after making changes, otherwise the changes are lost. Click the *Submit* button, however, does not mean that the changes are saved. Therefore, you always have to save the configuration on the system controller.

To do so:

1. **Click** the *Save configuration* page *button*:
   – A (limited) confidence check on the configuration is executed automatically. When your computer is connected to the system (controller), and there are no issues found, the configuration is correctly done, and the following three buttons and one checkbox are displayed to enable you to:
     1 - **Save configuration** (button)
     2 - **Restart system** (button)
     3 - Save configuration and restart system (button)
     Clear event logging on restart (checkbox)
2. When there are issues found, a message is displayed indicating there are configuration issues to be resolved first. Still it is possible to ignore the errors and save the configuration anyway to continue the configuration at a later time.
   – Only one button is displayed: *Ignore errors and save configuration*.
3. **Click** the *Ignore errors and save configuration* button:
   – The errors will be ignored and the configuration will be saved.

1 - Save configuration

By clicking the *Save configuration* button, and no issues (errors) are found, the configuration file is *saved* on the *system controller*. To reload and activate the saved configuration, restart the system controller.

2 - Restart system

Click the *Restart system* button to restart the system (controller) **without** saving the current configuration. In this case the existing, and already saved, configuration file will be reloaded. Notice that possible changes in the current configuration will be overwritten at reloading.

3 - Save configuration and restart system

By clicking the *Save configuration and restart system* button, and no issues (errors) are found, the configuration file is *saved* on the *system controller*, and the system (controller) will be restarted and reloading, plus activating, the just saved configuration.

Clear event logging on restart

By enabling (checkmark) the *Clear event logging on restart* checkbox, all events logged on the system controller will be erased after the system has been restarted.

– Note that the events are still visible in the Logging Viewer. See *Optional: Using the Logging Viewer, page 113*.

Refer to

– *Logon the application, page 30*
– *Backup and restore, page 93*

5.10   Backup and restore

On the *Backup and Restore* pages, the configuration parameters could be backup/restored on a externally (PC) location you prefer. To do so, see:

–   *Backup, page 93*
–   *Restore, page 94*

5.10.1   Backup

To be sure that your *configuration* is not lost if it becomes e.g. corrupt, or when your *system controller* is replaced, it is advisable to make a *backup* so it can be restored afterwards.

–   **IMPORTANT:** Notice that *recorded messages* are **not** part of the backup configuration .zip file:
     –   Be sure that the used *recorded messages* are stored on a safe place and that they **possible** need to be uploaded again after restoring the configuration file. This step is only needed in case the *system controller* is/was **reset** to default and/or **replaced**. See also *Recorded messages, page 61*.

Backup your configuration file

See *Logon the application, page 30*.

Proceed as follows:

1.   **Below** the *Backup and restore* configuration page, **click** *Backup*:
      –   A screen appears with the following items, to:
2.   **Enable** (checkmark) the *Configuration settings* checkbox:
      –   All current configuration settings will be selected to *backup* to a location on your connected configuration computer.
3.   **Enable** (checkmark) *User credentials* and *certificates*:
      –   All user credentials, such as *username* and *password* will be selected to *backup*, but also *certificates* will be done.
4.   **Enter** your (configuration logon) *Password* in the text field:
      –   Only a user who has the configuration *Administrator* logon rights/password could *backup* and *overwrite* the previous *backup* version.
5.   **Click** the *Create* button:
      –   A file selection screen will appear.
      –   **Enter** a name for the *backup file* in the file name text box **or select** an existing *backup file* to overwrite.
6.   **Browse** to the file location where you want **to store** the *backup file* and **click** the *OK* button:
      –   The configuration and credentials selected will be stored on the location you selected.
7.   If required, see *Restore, page 94*.

Refer to

–   *Recorded messages, page 61*

5.10.2   Restore

If the configuration file on your system controller becomes e.g. corrupt or configuration items are lost or changed by accident, and/or when your system controller is replaced, it can be restored **only** when you have made a *backup*. See *Backup, page 93*.

– **IMPORTANT:** Notice that *recorded messages* are **not** part of the backup configuration .zip file:
  – Be sure that the used *recorded messages* are stored on a safe place and that they **possible** need to be uploaded again after restoring the configuration file. This step is only needed in case the *system controller* is/was **reset** to default and/or **replaced**. See also *Recorded messages, page 61*.

Restore your configuration file

Proceed as follows:

1. **Below** the *Backup and restore* configuration page, **click** *Restore*:
   – A screen appears with the following items:
2. **Click** the *Browse* button:
   – A file selection screen appears.
3. **Browse** to the restored *Backup* .zip file:
   – Notice that more and different backup configuration files could be stored.
4. **Select** the backup .zip file and **click** the *OK* button.
5. **Enter** your (configuration logon) *Password* in the text box below *Provide password when backup contains user credential and certificates*:
   – Only a user who has the *Administrator* logon rights/password could *restore* and overwrite the previous configuration file version.
6. **Click** the *Restore* button:
   – The selected configuration and credentials file will restore your system configuration.
7. **Upload** the messages, if required. See *Recorded messages, page 61*.
   – **IMPORTANT**: After restore, the used *recorded messages* need to be uploaded to the system controller, again. This step is only needed in case the *system controller* is **reset** to default and/or replaced.
8. **Upload/Activate** the *certificate(s)*, if required. See *Open interface, page 103*.
   – **IMPORTANT**: This step is only needed in case the *system controller* is **reset** to default and/or replaced.
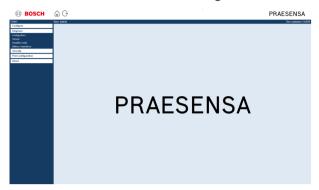9. If required, see *Backup, page 93*.

Refer to

– *Recorded messages, page 61*

6   Diagnose

On the *Diagnose* pages of the webserver, the system (installation) can be diagnosed.
IMPORTANT: With the exception of *Version*, only PRAESENSA administrator and installer user accounts have full access to the *Diagnose* section. See *User accounts, page 33*.

To do so:

Click *Diagnose* to see the following *diagnos*e menu items:

Diagnose (menu items)		
1	*Configuration, page 96*	Can be used to check the system (controller) configuration for inconsistencies.
2	*Version, page 97*	Can be used to check the hardware version of the connected network devices, their firmware version and other relevant information.
3	*Amplifier loads, page 98*	Can be used to calculate the amplifier load (in Watt) per amplifier output channel.
4	*Battery impedance, page 100*	Can be used to check the condition of the connected 12 Vdc (back-up) battery to the Multifunction power supply (Mps).

6.1 Configuration

The *Configuration* page in the *Diagnose* section is used to check the system (controller) configuration for inconsistencies. Inconsistencies can cause strange or unexpected system behavior. This check is similar to saving the configuration, but on this diagnose configuration page more detailed information will be explore.

The webserver of the system controller prevents most inconsistencies from occurring by refusing to accept incorrect user data during configuration, but some inconsistencies can still occur.

– **Important**: The *Configuration* page will display but not solve any remaining inconsistencies. The user should modify the configuration manually to solve.

Configuration diagnostics

By clicking the button *Configuration*, a configuration confidence check is executed automatically. When no errors found, the configuration is correctly done and the message "*No consistency errors found in configurati*on" appears and stays visible as long no error occurs.

Configuration error messages

The *Configuration* page could **show** the following errors:

– Outputs assigned to more than one *zone*.
– Inputs assigned to multiple *BGM routings*.
– *Zones* and *zone groups* assigned to multiple *BGM routings*.
– *Control outputs*, other than configured as *switch control outputs*, assigned to a *PTT* input, *Make announcement* input or a *Start phased announcement* input.
– *Control outputs*, other than configured as *Zone activity* outputs, assigned to a *zone*.

6.2   Version

The *Version* page in the *Diagnose* section is used to check the *hardware version* of the
connected network devices, their *firmware version* and other *relevant information.*
For devices with a LCD (e.g. a Call station), most of this information is also available from the
LCD, but for devices without LCD this *Version* page provides the relevant information.
–   The following information is presented on the *Version* overview page:

Item	Description
Name	**Shows** the *name* of the device. See *System composition, page 35*
Device type	The factory *default name* of the device. The *device type* description is fixed and cannot be changed. See *System composition, page 35*
Hostname	**The unique** *hostname* of the device. The *hostname* consists of the commercial type number (CTN) and a part of the MAC address. See the product label on the device and *System composition, page 35*.
Serial number	**The unique** *serial number* of the device. See the product label on the device. The serial number is fixed and cannot be changed.
Hardware	**The unique** *hardware version* of the device. See the product label on the device. The hardware version description is fixed and cannot be changed. **Click** *Details* to see more detailed information of the *hardwar*e used, e.g PCB type/revision version number.
Firmware	**The unique** *firmware version* of the device. With the **exception** of uploading other firmware, the firmware version description is fixed and cannot be changed. **Click** *Details* to see more detailed information of the *firmware* used, e.g. processor version numbers.
Print	**Click** the *Print* button to produce and save a PDF file of the version overview page.

> **Notice!**
> Have the version info available when contact technical support.

6.3   Amplifier loads

The *Amplifier loads* page in the *Diagnose* section can be used to measure the amplifier load (in Watt) per amplifier output channel. An amplifier load uses an amount of Watt, whereas an amplifier provides a number of Watts.

> **Notice!**
> When it is needed to change the output voltage; save the configuration and restart the system before doing a load measurement on the amplifier outputs. Results of previous measurements are wrong when the output voltage selection has changed. See also *System settings, page 62*.

The following information is presented on the *Amplifier loads* page:

Item	Description
Measure	**For each** *amplifier* a *Start* button is presented to start the load measuring of the *amplifier* selected.
Name	**Shows** the *name* of the amplifier and each amplifier *output channel*. See *Add a device, page 36*.
Topology (@ 70 / 100 V)	**Select and click** *Channels* below *Topology* to see which output (A and/ or B) is selected/connected. See *Amplifier, page 43*.
Overload	**Select and click** *Channels* **below** *Topology* to see the amplifier *Output* overload xxxW@yyyHz, if any. Where xxx is the measured overload in Watt at yyy frequency in Hz. The measured result is visible after using the *Start* button or if another measurement was done before. See the "Start measuring output load" section in this chapter. **Notice** that no (overload) message is shown if the load is equal or less than the total amount of load +20% (Watt) provided by the amplifier. An overload will be shown as follows at: Channel 1: > 720 W (100 V) of 600 W. > 510 W (70 V) of 425 W. Channels 2-4/8 > 360 W of 300 W.
Protection	**Shows** -12 dB (decreased output level) in case the amplifier is in amplifier protection state at an overload or if another measurement was done before. The column field is empty in case of no overload is measured (before). **Notice** that the result is visible after using the *Start* button and when another measurement is done before. See the "Start measuring output load" section in this chapter.
Status	**A status** message will show the overall measuring result of both the amplifier and channels. When no error is noticed, the text will show; OK. See also the status table following. The status is only visible after using the *Start* button See the "Start measuring output load" section in this chapter. See also *Troubleshooting, page 121*.

Status messages				
Amplifier overload	NO	YES	NO	YES
Channel overload	NO	NO	YES	YES
Amplifier status	OK	Amplifier overload	Channel overload on A + B	Amplifier overload
Channel status	OK	-	Channel overload	Channel overload on A + B
Amplifier protection	-	-12 dB	-	-12 dB

Start measuring output load

1. **Click** the *Start* button of the selected *amplifier*:
    –   **IMPORTANT**: The test signal is audible in all amplifier output channels/zones of the amplifier selected. Possible you have to schedule this test after working hours, when less/no people are in the test environment.
    –   As soon the *Start* button is **clicked**, the system generates an audio signal to measure the load connected to each amplifier output channel.
2. **Click** *Channels* (**below** Topology) as soon the measurement has been finished:
    –   Only the overload power (in Watt) connected to the A and/or B output is indicated in the *Overload* column. See *Amplifier, page 43*.

6.4   Battery impedance

The *Battery impedance* page in the *Diagnose* section can be used to check the condition of the connected 12 Vdc (back-up) battery. See also *Multifunction power supply, page 47*.
The following information is presented on the *Battery impedance* page:

Item	Description
Measure	A *Start* **button** is presented to start the battery impedance calculation of the connected battery.
Name	**Shows** the name of the Mps to where the battery is connected. See *Multifunction power supply, page 47*.
Capacity [Ah]	**Shows** the configured capacity (in Ah) of the connected battery. See *Multifunction power supply, page 47*.
Fault threshold [mOhm]	Result of the measurement and depends on the connected battery capacity.
Impedance [mOhm]	Result of the measurement and depends on the connected battery capacity. **IMPORTANT**: The diagnostics page battery impedance is only available when battery supervision is enabled. See *Multifunction power supply, page 47*.
Result	One of the following measurement results will be shown (No error messages will be shown): – **Busy:** the measurement is currently in progress. – **Unknown:** possible no battery connected and/or no measurement was/is started. – **Preliminary:** measurement results known but measured while the battery was not fully loaded. – **Stable:** measurement results known while the battery was fully loaded.
Fault warning	Battery related fault messages will be shown here. See *Multifunction power supply (MPS), page 135* and/or *Troubleshooting, page 121*

Notice that the system continuously do measurements on the background and report the results. On the diagnostics (Battery impedance) page, the measurements could be start manually.
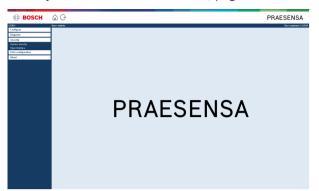
Start measuring battery impedance
1.   **Check** the battery connections and settings as defined in *Multifunction power supply, page 47*.
       –   When OK:
2.   **Click** the *Start* button:
       –   As soon the *Start* button is **clicked**, the system will measure the connected battery capacity and will generate the results for each item as described in the previous table.

7 Security

Below the *Security* page, secured system connections can be viewed and/or defined.
IMPORTANT: Only PRAESENSA administrator and installer user accounts have access to the
Security section. See *User accounts, page 33*.

To do so:

Click *Security* to see the following *security* menu items:

Security (menu items)		
1	*System security, page 102*	Is used to create a secured configuration connection between the configuration computer and the PRAESENSA network devices.
2	*Open interface, page 103*	Is used to download the PRAESENSA Open Interface certificate.

Refer to

– *User accounts, page 33*

7.1 System security

1. **Below** the *Security* page, **click** *System security*:
   – A new screen OMNEO *system security* appears where the:
   – OMNEO *security username*, and the
   – OMNEO *passphrase* can be viewed. These are both automatically created at 1st time / initial *Logon the application, page 30*.
2. **Both credentials** are used to create a secured configuration connection between the computer and the PRAESENSA network devices, and a secured connection when uploading the devices firmware.
3. See *Change user name and passphrase, page 102* if you want to change the credentials.
4. See 1st time / initial *Logon the application, page 30* for the automatically generated secured credentials.
5. See *Check/Upload the devices firmware, page 16* for a secured device firmware upload connection.
6. See *Backup and restore, page 93* for a (secured) *backup* and *restore* of your configuration file.

7.1.1 Change user name and passphrase

Only Administrators can change the **security** user name and passphrase which are automatically generated and created at 1st time / initial logon. See *User accounts, page 33* and *Logon the application, page 30*, if required.

To change:
1. **Below** the *System security* page, **click** the + of the *Change user name and passprase* category row:
   – Make sure that all configured network devices are connected. See also *Show disconnected devices, page 103*.
2. **Click** the *Generate (recommended)* button which will generate a **new** *User name* and *Passphrase* **or enter** a **new** *User name* (minimum **five** (5) and maximum **sixteen** (16) characters) and *Passphrase* (minimum **eight** (8) and maximum **sixteen** (16) characters):
   – **IMPORTANT**: for security reasons, both the *User name* and *Passphrase* need to be changed.
3. Click the *Change* button:
   – **IMPORTANT**: Devices that get disconnected during the change process will still receive the changes upon **reconnection within one hour**. After one hour, remaining devices must first be reset to factory default, and then reconnected. See *Reconnect factory default devices, page 102*.

7.1.2 Reconnect factory default devices

Use this function if you want to securely reconnect one or more factory default devices.

To do so:
1. Reset the disconnected device(s) to default by using the *reset* to default button:
   – For location of the reset to default button of the individual devices, see *Device options, page 38* > <device name> > Rear panel indicators and controls and/or the PRAESENSA installation manual.
2. **Below** the *System security* page, **click** the + of the *Reconnect factory default devices* category row:
   – Make sure that all network devices to be reconnected are reset to default and correctly (wired) connected. See also *Show disconnected devices, page 103*.
3. **Click** the *Reconnect* button:

- Reconnected devices will be connected again. This process could take 5 minutes.
4. **Check** if all **reconnected** devices are connected now. See *Show disconnected devices, page 103*:
   - If reconnected devices are still listed in *Show disconnected devices*, visual check and reconnect the devices, again and repeat previous steps.
   - See also *System composition, page 35*.

7.1.3 Show disconnected devices

Use this function if you want to check/see if devices need to be reconnected:

To do so:
1. **Below** the *System security* page, **click** the + of the *Show disconnected devices* category row:
   - Make sure all network devices are correctly (wired) connected. See also *Reconnect factory default devices, page 102*.
2. Click the *Refresh* button:
   - Disconnected devices will be listed by *Name*, *Hostname* and location (if entered).
   - See *Reconnect factory default devices, page 102* and/or *System composition, page 35*.

7.2 Open interface

The PRAESENSA system controller can produce and use it's self-signed certificate (SSL) file. The Open Interface **certificate** gives you the authorization to setup a secured (https and SSL) data interface protocol between PRAESENSA and the 3rd party application.

To do so:
1. **Below** *Security*, **click** *Open interface*:
2. **Click** the *Download certificate* button:
   - You will be asked to *Save File* or *cancel* the certificate.
3. **Click** *Save File* if you want to *save* the certificate on your PRAESENSA configuration computer:
   - Follow the onscreen instructions. Or:
4. **Click** the *General* tab if you want to *install* the certificate on your computer to be used by the 3rd party application:
   - Follow the onscreen instructions. Or:
5. **Click** the *Detailed* tab and **click** the *Copy to File* button if you want to *store* the certificate on your computer:
   - **Select** also the file format (DER... or BASE-64... or Cryptographic...) to be stored (default DER).
   - Follow the onscreen instructions.
   - Run the stored certificate, if required.
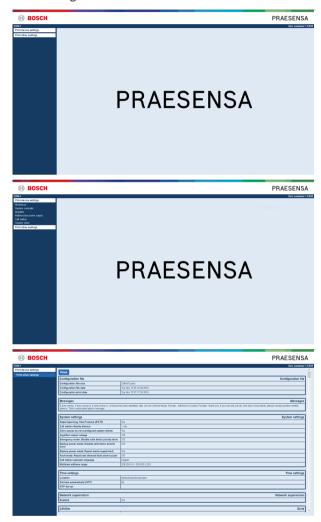6. **Go to** > *Optional: Using the Open Interface, page 120*

IMPORTANT: each time the system controller is reset to default, the system controller generates a new system certificate. In that case the previous described procedure needs to be done, again.

8 Print configuration

The PRAESENSA (mandatory) software installs automatically the configuration printing utility. This utility can read information from configuration files. The configuration printing utility shows the information on screen in a formatted way to check and/or archive the configuration on paper.

IMPORTANT: Only PRAESENSA administrator and installer user accounts have access to the *Print configuration* section.

To do so:

Click *Print configuration* to make available the following menu items:

Print configuration (menu items)		
1	**Print device settings**	Can be used for printing the configuration file settings of all connected devices or each device type category separately (e.g. System controller, Amplifier, etc.).
2	**Print other settings**	Can be used for printing all general configuration file settings, such as; messages, system settings, time settings, network supervision, Lifeline, zone(s), BGM channel and call definition.

9   About

Below the *About* page, licenses can be download. It is not required to have PRAESENSA
administrator or *installer* logon user account rights to view and/or download items in the *About*
section.

To do so:
Click *About* to make available the following menu item:

About (menu item)		
1	*Open source licenses, page 105*	Is used to view and download the PRAESENSA open source licenses.

9.1   Open source licenses

An up to date listing of open source licensed software which may accompany a PRAESENSA
device is stored inside the device and can be downloaded as a zip-file. Download instructions
are in the Quick Installation Guide (QIG) of the device. This list is also available from http://
www.boschsecurity.com/xc/en/oss/.

To do so:
1.   **Below** *About*, **click** *Open source licenses*:
2.   **Click** the *download button*:
      –   A file screen appears with a .zip file.
3.   **Open** and/or **save** the .zip file on your computer:
Each of the components listed may be redistributed under the terms of their respective open
source licenses. Notwithstanding any of the terms in the license agreement you may have with
Bosch, the terms of such open source license(s) may be applicable to your use of the listed
software.

10 Introduction to make an announcement

As PRAESENSA is a Public Address and Voice Alarm System, it is used to distribute data, live speech, background music and (evacuation) messages. All data and audio in the system is distributed in the form of announcements/calls.

An announcement/call always consists of the following attributes (click the link):
– *Announcement content, page 106*
– *Priority and announcement type, page 106*
– *Routing, page 107*

Using the call station (extension)

The functionality of a *call station*, including the appearance of the items of the graphical user interface LCD, and *call station extension* (buttons), are configured in: *Call station, page 53*.

10.1 Announcement content

The content of a background music (BGM) announcement typically consists of an (mono/ stereo) line level audio signal coming from a BGM source, such as a music player, tablet, mobile phone etc.

The content of *normal* announcements and *emergency* announcements is defined by a *Call definition*, which can consist of:
– A start tone (message).
– Pre-recorded message(s).
– Live speech.
– An end tone (message).

See *Call definitions, page 72*.

10.2 Priority and announcement type

To each announcement, a *priority* is assigned. When two or more announcements are addressed to the same *zone*, *zone group* or need shared resources (e.g. a message player), the system only starts the announcement with the highest *priority*. The range of priorities that is available for an announcement depends on the *announcement type*:

Priority	Announcement type
0 to 31	Background music (BGM)
32 to 223	Normal
224 to 255	Emergency

Announcements with the same priority operate on first in first serve basis, except in the case of priority 255: announcements with the same priority 255 overrule each other, so the latest becomes active. This assures that high priority announcements (microphones) that are left behind in an active state will never block the system.

BGM announcements

Background music (BGM) announcements are typically used to distribute (background) music. Their content consists of an audio signal from a BGM source. If a *zone* or *zone group* is already in use by another announcement with the same priority or higher, the *BGM announcement* will not be routed to that *zone* or *zone group* until it has been released by the other announcement.

Normal announcements

Normal announcements typically contain live speech and optionally tones and pre-recorded messages. The content of normal announcements is defined by a *call definition*. See *Call definitions, page 72*.

Normal announcement is set in *Call station, page 53 > Class > Normal*.

Emergency announcements

Emergency announcements are similar to normal announcements. The major difference is that emergency announcements put the system in the emergency state, if configured. In the emergency state, PRAESENSA stops all *BGM announcements* and *normal announcements*, if configured.

How the system acts could be set in the configuration > *System settings, page 62* > Emergency mode. Emergency announcement is set in *Call station, page 53 > Class > Emergency*.

10.3 Routing

The routing of the announcement is the set of *zones* and/or *zone group* to which the announcement is intended to be addressed. Whether the announcement actually is addressed to the selected *zone*s and/or *zone group* depends on the *priority* of the announcement.

11 Optional: Using the Logging Server

The *Logging Server* application software is part of the PRAESENSA installation software package (*.zip). To use it, firstly the software needs to be installed on your configuration computer. See *Optional: Install the Logging Server, page 18*.

– **IMPORTANT**: Only use the PRAESENSA *Logging server* when connected to PRAESENSA systems. E.g. the PRAESIDEO *Logging server* does not work with PRAESENSA.

11.1 Start

The PC automatically starts the *Logging Server* when Windows is started. To indicate that the *Logging Server* has been started and operates correctly, an icon appears in the system tray of the taskbar of Windows.

When the *Logging Server* has been started and faults have occurred in the communication between PRAESENSA and the logging system, the icon has a red cross.

Start manually

When the PC does not automatically start the *Logging Server*, proceed as follows to start it manually:

1. In **Windows**:
   – version **< 10**: *Start > Programs* > Bosch > PRAESENSA.
   – version **10**: *Windows (right mouse click) > Apps and Features >* Bosch PRAESENSA Logging Service Dev customer x.x.xxx
2. Click *Logging Server*:
   – A new icon appears in the system tray of the taskbar of Windows.

11.2 Main window

Proceed as follows:

1. Double click on the *Logging Server* icon.
2. When *server authentication* is enabled, the *Logging Server* asks for a *user name* and *password*.

Status messages

The *main window* displays the *status* of the *Logging Server* by means of messages:

Message:
The Logging Server is OK.
Description:
The Logging Server operates correctly.
Recommended action:

Message:
Logging Server has no connection with <system>
Description:
There is no connection with the specified system.
Recommended action:
Make sure that the specified system is running and that the specified system has an Ethernet connection with the Logging Server.

Message:

System controller <system> refused connection due to incorrect user name or password.

Description:

It is not possible to connect to the specified system, because the system controller authentication failed.

Recommended action:

Make sure the specified system knows the user name and password of the PRAESENSA *configuration and Logging Server.*

Message:

The Logging Server options are changed. Restart the Logging Server to use the changed settings.

Description:

The configuration settings of the Logging Server were changed. The changed settings are not used until the Logging Server is restarted.

Recommended action:

Restart the Logging Server to use the new settings.

Message:

The Logging Server database has reached its critical size. Please decrease the logging expiration periods.

Description:

The database has reached its critical size.

Recommended action:

Enable and decrease the logging expiration periods to move events to the overflow files or flush the database.

Message:

The Logging Server overflow files have reached their critical size. Please clear or delete the overflow files.

Description:

One or more overflow files have reached the critical size.

Recommended action:

The overflow files are comma separated value (.csv) files. They can be opened in an editor (e.g. Windows Wordpad, Microsoft® Excel). When an overflow file reaches its critical size, use an editor to delete data from the overflow file and decrease its size.*

Stop

Proceed as follows:

1. Open the main window
2. Go to > *File* > *Exit*.
   - The *cross* in the upper right hand corner of the main window does not stop the *Logging Server*.

Configuration
1. Open the main window.
2. Go to *> File > Options*.
3. Go to the *Connections* tab to define the connections to the systems of which the events must be logged.
4. Go to the *Database* tab to define the properties of the logging database.
5. Go to the *Logging Expiration* tab to specify the expiration periods of the logged events.
6. Go to the *Security* tab to change the security settings of the logging server.

11.3 Connections

The *Logging Server* can log the events generated by up to 64 systems. The connections to the systems must be defined on the *Connections* tab.

Add a system
Proceed as follows:
1. Click in the *Enabled* field of the row that is marked with an asterisk (*).
   – A new row is added to the list of systems.
2. Click the *System Name* field and enter the name of the system to which the *Logging Server* must connect.
   – The name may consist of up to 16 characters. For example, System 4.
3. Click the *System Name* or *IP-Address* field and enter the IP-address or the name (PRASCx-yyyyyy-ctrl.local) of the *system controller* of the system to which the *Logging Server* must connect. For example: 192.168.0.18
   – If the name of the system controller is used, the *name* of the *system controller* must be stored in the Windows hosts file (WINNT\system32\drivers\etc.). This file can be edited with Notepad.

Disable event logging for a system
To disable the event logging for a system, remove the check mark from its *Enabled* check box.

Delete a system
Proceed as follows:
1. Click the field in front of the row that contains the system.
   – For example, System 4.
2. On the keyboard of the PC on which the *Logging Server* is running, press the *Del* key.
   – The system is removed from the list.

11.4 Logging expiration

On the *Logging Expiration* tab, the expiration periods of the logged events can be defined.

Expiration periods
When expired events must automatically be moved to an overflow file, put a check mark in the *Move expired* events to overflow file field. Use the controls in the event logging period rows to define the logging periods. All fault that are older than the logging period are moved to an overflow file.

Overflow file
The overflow files contain the expired events. Use the controls in the *Overflow File block* to define:
– The location of the overflow files.
   – This can either be entered in the *Folder* field or selected from the file system with the *Brows*e button.
– The critical size of the overflow files in the *Critical size* field.

- When the critical size is reached, the *Logging Server* displays a message: *The Logging Server overflow files have reached their critical size. Please clear or delete the overflow file*s.
- When the overflow files have been deleted or reduced in size, the *Logging Server* must be restarted to remove this message.
- Notice: The overflow files are comma separated value files (*.csv).

11.5 Database

On the *Database* tab, the properties of the *logging database* can be defined.

Recent events

Use the *Recent events block* to define the number of recent events that is displayed in the *Logging Viewer*.

Database file

Use the controls in the *Database file block* to define:

1. The location of the logging database. This can be entered in the upper text box.
   - Notice: For experts only: the logging database is a Microsoft® Access file, which also can be opened with Microsoft® Access. If for any reason the database becomes corrupted and the Logging Server is not able to access the database, the database can be repaired with Microsoft® Access.
2. Close the *Logging Server* application. Open the database with Microsoft® Access:
   - Select: *Tools > Database utilities > Compact and Repair database*.
3. The critical size of the logging database. When the critical size is reached, the *Logging Server* displays the following message:
   - *The Logging Server database has reached its critical size. Please decrease the logging expiration periods*.
4. It is possible to make a back-up of the *logging database* (even if the *Logging Serve*r is running). When a back-up is made of a running *Logging Server*, it is advised to wait for a moment at which a low number of events is expected (i.e. when there are almost no running calls). Events that occur while the back-up is made will not be copied to the logging database.
   - Events that occurred during the back-up process can be viewed with the standard Windows Event Viewer (Windows 10 > right mouse click the Windows/start button > select and click *Search* > in the search box, type *Event Viewer*, and then, in the list of results, click *Event Viewer*. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.

Flush events

Use the controls in the *Flush events block* to flush events from the logging database. Proceed as follows:

1. If the fault events must be flushed from the logging database, put a checkmark in the *Fault events* check box.
2. If the general events must be flushed from the logging database, put a checkmark in the *General events* check box.
3. If the call events must be flushed from the logging database, put a checkmark in the *Call events* checkbox.
4. Click the *Flush now* button to flush the selected type of events from the logging database.
   - If the *Move expired events to overflow file* field of the selected type of events on the *Logging Expiration* tab contains a checkmark, the selected type of events are flushed to an overflow file.

- If the *Move expired events to overflow file* field of the selected type of events on the *Logging Expiration* tab does not contain a checkmark, the selected type of events are deleted from the database.
- Notice: When the database is flushed and the *Logging Server* is started again, the database is filled with the events that are retrieved from the enabled *system controllers*. Each enabled *system controller* keeps an internal list of up to 1000 events per category.

11.6   Security

On the *Security* tab, the security settings can be defined.

Server authentication

Use the controls in the *Server authentication block* to:
- Enable and disable server authentication with the *Use authentication box*. When server authentication is enabled, a *user name* and *password* must be entered to get access to the main window.
- Set the *password* and *user name* to get access to the *Logging Server* with the *Change User Name/Password* button. A password and user name can only be set when server authentication is enabled. The *password* must have at least five (5) characters. The *user name* must have at least four (4) characters.

Viewer/Network controller authentication

Use the controls in the *Viewer/System controller authentication block* to set the *password* and *user name* that:
- Gives a *Logging Viewer* access to the *Logging Server*.
- Gives the *Logging Server* access to all connected system controllers.

Note: Make sure that all systems have an account that contains the *user name* and *password* in the *Viewer/System controller block*. Otherwise, the *Logging Server* cannot connect to the systems.

12   Optional: Using the Logging Viewer

The *logging viewer* application software is part of the PRAESENSA installation software package (*.zip). To use it, firstly the software needs to be installed on your configuration computer. See *Optional: Install the Logging Viewer, page 19*.

–   **IMPORTANT**: Only use the PRAESENSA *Logging viewer* when connected to PRAESENSA systems. E.g. the PRAESIDEO *Logging server* does not work with PRAESENSA.

12.1   Start

Proceed as follows:

1.   In **Windows**:
     –   version **< 10**: *Start > Programs >* Bosch > PRAESENSA .
     –   version **10**: *Windows (right mouse click) > Apps and Features >* Bosch PRAESENSA Logging Viewer Dev customer x.x.xxx
2.   Click *Logging Viewer*:
     –   When the *Logging Viewer* has been started and faults have occurred, its icon shows the fault condition.

Figure 12.1: Logging Viewer icon (faults)

i	**Notice!** In Windows the taskbar buttons should be configured to 'Never combine' similar taskbar buttons. Otherwise the fault condition will not be shown in the taskbar

12.2   Configuration

Proceed as follows to configure the *Logging Viewer*:

1.   Go to *File > Options*. A screen similar to following appears:

Figure 12.2: Options window

2.   Enter the IP-address of the PC on which the *Logging Server* is running to which the *Logging Viewer* must connect.
     –   A server host name can be used instead of an IP-address if the IP-address was automatically provided by a DNS server, or if the IP- address of the PC is stored in the Windows host file (*WINNT\system32\drivers*etc.). This file can be edited using Notepad.
     –   If the *Logging Viewer* is installed on the same PC as the *Logging Server*, it is allowed to use *Localhost* as server name in the *Options* window.

12.3 Operation

The *Logging Viewer* contains the following:

- **Menu bar** - A menu bar that provides access to the menus of the *Logging Viewer*.
- **Show active button** - A button to select between showing all fault events, irrespective of status, or just the active fault events, that have not been reset. This button is only available in the Fault Events tab.
- **Block buttons** - Two buttons to select the next and previous blocks of events.
- **Logging Status button** - A button that opens a window that shows the status of the *Logging Viewer*. When the *Logging Server* or *Logging Viewer* does not operate correctly, the button is red.
- **Tabs** - Use the tabs to select the type of events that are shown by the *Logging Viewer*. For information about events, see *Event messages, page 122*.

12.3.1 Menu bar

The menu bar contains the following:

- The *File* menu.
- The *View* menu.
- The *Systems* menu.
- The *Action* menu.
- The *Help* menu.

File

The items in the *File* menu are used to export and print events and to configure the *Logging Viewer*. It contains the following items:

- *Options :*Opens the *Options* window that is used to configure the *Logging Viewer*.
- *Export:* Exports all events in the current event view to a comma separated values file (*.csv). This file can be opened with, for example, Microsoft® Excel.
- *Print:* Prints all events in the current event view or prints a selected block of successive events. (To select a block of events: click the first event and then hold the <Shift> key and click the last event.)
- *Exit:* Closes the *Logging Viewer*.

View

The items in the *View* menu are used to set the event viewing options. It contains the following items:

- *Recent :*Shows all recent events. The number of displayed recent events is defined by the *Logging Server* window.
- *Historical:* Shows historical events. These are retrieved from the logging database. When this item is selected, a calendar appears in which a start date (*Start Date*) and an end date (*End Date*) can be selected. When the number of historical events is more than 10000, the *Logging Server* delivers the events in blocks to the *Logging Viewer*. Use the *NextBlock* and *Prev. Block* buttons to scroll through the blocks.
- *Refresh:* Refreshes the list of events.

> **Notice!**
> New events are only shown in the *Recent* view. The *Historical* view does not show new events.

Systems

The items in the *System* menu are used to select the system from which the events are displayed. The list of available systems is generated by the *Logging Server* to which the *Logging Viewer* is connected. When *All* is selected, the events from all systems are displayed, including events from disabled systems and events from non-configured systems. Events generated by the *Logging Server* itself can be selected separately.

Action

The items in the *Action* menu are used to acknowledge and reset fault events. It contains the following items:

– *Acknowledge All Fault Events:* Acknowledges all new fault events in all systems that are connected to the *Logging Server*. The user must log on to the *Logging Server* to acknowledge fault events.
– *Reset All Fault Events:* Resets all acknowledged fault events in all systems that are connected to the *Logging Server*. The user must log on to the *Logging Server* to reset fault events.
– *Log Off:* Logs the user off from the *Logging Server*.

Help

The item in the *Help* menu provides version information about the *Logging Viewer*.

12.3.2 Logging status button

The *Logging Status* window displays the status of the *Logging Viewer*. The following messages could be displayed:

Message:

The Logging Server and Viewer are OK.

Description:

The *Logging Server* and *Logging Viewer* operate correctly.

Recommended action:

Message:

Logging Server has no connection with <system>.

Description:

There is no connection with the specified system.

Recommended action:

Make sure that the specified system is running and that the specified system has an Ethernet connection with the Logging Server.

Message:

The Logging Viewer has lost contact with the Logging Server.

Description:

There is no connection with the Logging Server.

Recommended action:

Make sure that the Logging Server is running and that the Logging Server has an Ethernet connection with the Logging Viewer.

> **Message**:
> *The Logging Server options are changed. Restart the Logging Server to use the changed settings.*
> **Description**:
> *The configuration settings of the Logging Server were changed. The changed settings are not used until the Logging Server is restarted.*
> **Recommended action**:
> *Restart the Logging Server to use the new settings.*

> **Message**:
> *The Logging Server database has reached its critical size. Please decrease the logging expiration periods.*
> **Description**:
> *The database has reached its critical size.*
> **Recommended action**:
> *Enable and decrease the logging expiration periods to move events to the overflow files or flush the database.*

> **Message**:
> *The Logging Server overflow files have reached their critical size. Please clear or delete the overflow files.*
> **Description**:
> *One or more overflow files have reached the critical size.*
> **Recommended action**:
> *The overflow files are comma separated value (*.csv) files. They can be opened in an editor (e.g. Windows Wordpad, Microsoft® Excel). When an overflow file reaches its critical size, use an editor to delete data from the overflow file and decrease its size.*

12.3.3   Blocks

When the current view is the *Historical* view and the number of historical events is more than 10000, the *Logging Server* delivers the events in blocks to the *Logging Viewer*.

– If a next block is available, the *Next Block* button is enabled. The next block contains events that are newer than the events that are currently displayed.
– If a previous block is available, the *Prev. Block* button is enabled. The previous block contains events that are older than the events that are currently displayed.

13 Optional: Using OMNEO Control

How to use OMNEO Control is described in a separate manual, called:
– OMNEO_Control_Manul.pdf.pdf.
    – Download pdf from www.boschsecurity.com > PRAESENSA product section > System
      controller > tab Documents or the Bosch download area: https://
      licensing.boschsecurity.com/software/. See also *Related documentation, page 7*.

i	**Notice!** OMNEO Control shows only device hostnames, not e.g. the control hostname of a system controller

14   Optional: Using (OMNEO) Network Docent

How to use Network Docent is described in a separate manual, called:

–   Docent_manual.pdf.
   –   Download pdf from www.boschsecurity.com > PRAESENSA product section > System
        controller > tab Documents or the Bosch download area: [https://
        licensing.boschsecurity.com/software/](https://licensing.boschsecurity.com/software/). See also *Related documentation, page 7*.

15   Optional: Using Dante Controller

This section of the PRAESENSA acts as a quick guide to Dante Controller. More detailed information can be found in the Dante Controller user documentation.

–   It can be downloaded from www.audinate.com > Dante Controller. See also *Related documentation, page 7*.

Network view and routing

1.   Startup Dante Controller:
     –   Dante Controller will show all connected Dante devices in the network, including the unsecure PRAESENSA OMNEO network devices (mainly the system controller with maximum 120 inputs).
     –   The *Routing* tab of the Dante Controller Network View shows the connected devices with all inputs and outputs.
2.   By clicking on cross-point the connections are set up.
3.   The tab *Device* Info shows details of the connected devices.
4.   The tab *Clock Status* shows the clock status and which device is the Master.
5.   The tab *Network Status* shows for each device:
     –   *Network speed*, occupied *Transmit* and *Receive* bandwidth, selected *Latency Setting*, and more.
6.   The tab *Events* shows recent changes to connected devices.
7.   By double-clicking on a device in the *Routing* overview, or clicking *Device* from the menu and selecting a device, the *Device View* opens:
     –   In tab *Device Config* the *Latency* can be optimized to the network topology and speed. Make sure that CAT5e or CAT6 network cables are used in case of a Gbps-network. On 100 Mbps networks also CAT5 can be used.
     –   The sample rate is always 48 kHz. Other options in this view are not yet supported.

Refer to
–   *(Mandatory) software, page 13*
–   *Related documentation, page 7*

16   Optional: Using the Open Interface

TCP/IP devices can access the system through the *Open Interface*. A **maximum** of **seven** (7) TCP/IP devices with *Open Interface* access can be used. This includes connection to Logging Servers (see *Optional: Install the Logging Server, page 18*). The configuration web browser uses a different port (port 80) for the connection and is not part of this limitation.

The PRAESENSA *Open Interface* is based on a C# implementation and on .NET framework technology, as described by Microsoft.

Many programming languages recognize .NET, which makes development of user interfaces (e.g. PC call stations) by third parties easier.

The PRAESENSA *Open Interface* is described in the PRAESENSA *Open Interface programming instructions* manual:

–   Open Interface programming instructions.pdf
    –   Download pdf from www.boschsecurity.com > PRAESENSA product section > System controller > tab Documents or the Bosch download area: https:// licensing.boschsecurity.com/software/. See also *Related documentation, page 7*.
–   It is not possible to derive any rights from this PRAESENSA *Open Interface programming instructions manual* regarding the programming interface.
–   Extensions and improvements on the *Open Interface* can be implemented when new versions of PRAESENSA are introduced. See *(Mandatory) software, page 13*.
–   Since the *Open Interface programming instructions manual* is intended for programmers, it is only available in English.

TCP/IP connection and ports

After PRAESENSA has been started, the system controller listens to port **9401** and **9403**. The set-up of the TCP/IP connection must originate from your system using the **control hostname** address of the PRAESENSA system controller (see *Logon the application, page 30*) and port **9401** or port **9403**. The connection between the PRAESENSA system and your system is based on a stream connection. This implies that messages may be transferred using multiple packets.

IMPORTANT: Port **9401** is used for non-secure connections and port **9403** is used for secure connections. For secure connections, TLS 1.2 is used.

Safety precautions

The *Open interface* connection (i.e. an Internet connection) is regarded as an open connection that requires extra safety precautions. For example, a firewall to prevent unauthorized persons using the PRAESENSA system. Therefore install and run the PRAESENSA *Open Interface* certificate. See *Open interface, page 103*.

–   PRAESENSA can also limit the access of TCP/IP devices. See *System settings, page 62*
–   Use of the *Open Interface* can lead to situations in which PRAESENSA does not comply anymore to the evacuation standards that have been verified by TÜV. In that case, the TÜV certificate can be lapsed.

Scope

As mentioned before, the PRAESENSA *Open Interface Programming Instructions manual* describes how to use the PRAESENSA *Open Interface* in combination with C# and .NET. To understand this manual, knowledge in the following fields is necessary:

–   The C# programming language and its development environment.
–   The principle of .NET.
–   PRAESENSA and its installation and functionality. See *Related documentation, page 7*.

17   Troubleshooting

If a network device and/or the configuration indicates a fault/error, you have a few troubleshoot options to find the fault/error:

–   See *Configuration, page 96* in the Diagnose section.
–   See *Optional: Using the Logging Viewer, page 113*.
–   See *Event messages, page 122*
–   See the troubleshoot section of the PRAESENSA installation manual.

If a fault cannot be resolved, please contact your supplier or system integrator, or go directly to your Bosch representative.

IMPORTANT

From our experience, and based on data from our repair shops, we know that problems on site are often related to the application and not to the performance of the device(s) individually. It is therefore important that the available product related documentation (i.e. manuals), including the release notes, are read. This will save your time and helps us deploying the quality of Bosch products. See *Related documentation, page 7*.

Tip: Be informed about the latest released (configuration) software version and devices firmware version of an PRAESENSA system installation. Make sure you have the correct (configuration) software and/or product firmware installed. See the *(Mandatory) software, page 13*

18   Event messages

Each event message generated by the PRAESENSA system belongs to an event group. PRAESENSA has three event groups: **General**, **Call** and **Fault**.

General events

General events contain information about special situations. For example, the connection of a device to the PRAESENSA system.

Call events

Call events contain information about calls/announcements in the PRAESENSA system. For example, the start of a call/announcement.

Fault events

Fault events contain information about faults/errors in the PRAESENSA system and/or device. For example, an overload of an amplifier output and/or malfunctioning of a device.

General system and device event messages

The event messages which PRAESENSA could generate are divided in:

– *General system events, page 125*
– *Device specific events, page 133*

All events are logged by the system controller and are available for the **Logging Server**, **Logging Viewer** and **Open interface** (see: *Optional: Using the Logging Server, page 108*, *Optional: Using the Logging Viewer, page 113*, *Optional: Using the Open Interface, page 120*. See also *Diagnose, page 95*.

> **Notice!**
>
> If the function "Clear event logging on restart" is enabled, all events are erased after restart of the system (controller). See *Save configuration, page 92*.

Event information

Depending on the event group and type, the following information is given:

> **Event** (type)**:** describes the event name (e.g. Call start).
> **Group**: describes the group to where the event belongs to (General, Call or Fault).
> **Occurrence:** describes the event and when the event occurs.
> **Originator**: describes from which device and/or where the event can occur.
> **Resolve**: describes when the event is resolved (only for fault events).
> **Extra information:** extra information available in the event.
> **Note:** special properties of an event (if applicable).
> **Recommended action**: describes the action(s) to be taken by the user.
> **Aggregate to zone fault:** Specifies if the fault must be aggregated to a zone fault (is reflected in the zone fault status). If not specified then no aggregation to zone fault status shall be done. Zone fault aggregation is done to the following fault types: 'open', indicating an open line fault and 'other', indicating a short or other fault.
> **Aggregate to main power fault:** Specifies if the fault must be aggregated to a main power fault. If not specified then no aggregation to main power fault status shall be done.
> **Aggregate to backup power fault:** Specifies if the fault must be aggregated to a backup power fault. If not specified then no aggregation to backup power fault status shall be done.

Event message content

An event message contains the following information:

– **Event** type/name (for instance: Call Start or Memory Error).
– **Date and time** on which the event occurred.

- – Information about the **originator of the event**. The originator is the device where the event occurred. Depending on the device, the following information is available:
  - – **Device**: serial number and name (if available).
  - – **Control input**: name and device serial number (if available).
  - – **Audio input**: name and device serial number (if available).
  - – **Audio output**: name and device serial number (if available).
  - – **Open Interface**: IP-address or, if available, TCP/IP device name, name of the user (if available).
  - – **Call station** with authentication enabled: user ID (if available).
  - – **Extra information** based on event type (if applicable).
- – Specifically for **fault events**, the next event state information shall be present:
  - – **Acknowledge** date and time and originator.
  - – **Resolve** date and time and originator.
  - – **Reset** date and time and originator.

Fault events

The system controller stores the **last** 1000 fault events. The oldest fault event will be removed from the non-volatile memory to free space for the new fault event.

Fault event status

Each fault event has a status:

Status	Description
New	The fault event is a *new* fault event. When a fault event occurs, it shall initially be in the *new* state. Events can occur at any moment in an operational system but only on devices that are enabled in the configuration, unless specified otherwise. All *fault outputs* * are activated (e.g. fault alarm beeper, fault alarm indicator). See *Multifunction power supply, page 47* and/or *Call station, page 53*.
Acknowledged	It is possible to *acknowledge* one or all events that are in the *new* state. An event can only be *acknowledged* once. Once an event is *acknowledged* the event shall enter the *acknowledged* state. If all faults in the system have been *acknowledged*, all *fault alarm beeper* outputs are deactivated *.
Resolved	The *acknowledged* fault event is *resolved*. Fault events shall automatically resolve. For some fault events this is not possible and these events shall have to be resolved manually (e.g. overload of an amplifier). When the event is in the acknowledged state, and the error situation that triggered the event is no longer present in the system, the event shall automatically be resolved. An event can only be resolved once. Once an event is *resolved*, the event shall enter the *resolved* state.
Reset	The *resolved* fault event is *reset*. One or all events that are in the resolved state can be reset. An event can only be reset once. Once an event is reset, the event shall enter the *reset* state. An event in the reset state shall not be able to make any more state transitions: it is its final state. If all faults in the system have been *reset*, all *Fault alarm indicator* outputs are deactivated. *

* A fault output is a *control output* that has been configured as a *Fault alarm beeper* or as a *Fault alarm indicator*. See *Multifunction power supply, page 47* and/or *Call station, page 53* (extension).

Resolve fault events

Before *acknowledged* fault events can be *reset*, they first must be *resolved*. Most fault events are automatically resolved by the system when the fault situation no longer exists. Others need to be resolved manually, first (e.g. an amplifier overload). If the fault is still present, a *new* fault event is created.

When all faults are *reset*, the *Fault alarm indicator outputs* are deactivated.

IMPORTANT: Fault events that require a manual resolve that are not yet in the *resolved* or *reset* status, will not be removed. In the situation that all 1000 faults are of these types and not in the *resolved* or *reset* status, the oldest fault event will be removed.

Acknowledge and reset fault events

New fault events can be *acknowledge* and *reset* by:

– Using *control inputs* or call station extension *buttons*. See *Multifunction power supply, page 47* and/or *Call station, page 53*. It is not possible to acknowledge/reset individual faults using a *control input* or *button*.

– *Optional: Using the Open Interface, page 120*.

18.1 General system events

General system events contains information about special situations and calls/announcements. For example, the connection of a network device to the system and/or the start of a call/announcement. The PRAESENSA system controller stores the **last** 1000 general system events. The oldest general system event will be removed from the non-volatile memory to free space for the new general system event.

The general system events are divided in:

- *System wide events, page 125*
- *All devices events, page 127*

18.1.1 System wide events

Like the name implies, system wide events do not occur on a particular device or Open Interface client. Therefore the information referring to the originator is not always available. The system wide events are divided in two groups: **General events** and **general fault events**, and are listed in the following paragraphs.

General events

Event: Backup power mode started
Group: General
Occurrence: Logs the start of a backup power mode.
Originator: The (first) device that started the backup power mode.
Extra information: Backup power mode start events are only generated when the configuration setting "Report mains supply fault" in "System settings" is set to "Disable".

Event: Backup power mode ended
Group: General
Occurrence: Logs the end of a backup power mode.
Originator: The (last) device that ended the back-up power mode.
Extra information: Backup power mode end events are only generated when the configuration setting "Report mains supply fault " in the "*System settings, page 62*" is set to "Disable".

Event: Logging of call events resumed
Group: General
Occurrence: Call logging resumed after diagnostic server input queue overflow situation has disappeared (when the queue size drops to 300).

Event:Call logging events discarded due to logging que overflow
Group: General
Occurrence: When a configuration has been restored .

General fault events

Event: No valid configuration file found: a new configuration file will be loaded
Group: Fault
Occurrence: Logs the absence of the configuration file (default configuration loaded when occurring at start-up).
Resolve: Immediately after acknowledgement.
Recommended action: Restore/backup the correct configuration file.

Event: Configuration file version mismatch
Group: Fault
Occurrence: Logs the mismatch of the version number of the configuration file and the version number of the configuration file the software expects.
Resolve: Immediately after acknowledgement.
Recommended action: Restore/backup the correct configuration file.
Extra information:
–   Version of the configuration file.
–   Version of the configuration file the software expects.

Event: Configuration file error
Group: Fault
Occurrence: Logs the corruption/consistency error in the configuration (default configuration loaded when occurring at start-up).
Resolve: Immediately after acknowledgement.
Recommended action: Restore/backup the correct configuration file.

Event: Nofaults
Group: Fault
Occurrence: A message containing this event is sent to indicate that there are no existing fault events present on the storage of the PRAESENSA system controller, after a client subscribes to receive fault events. This message triggers the Logging Server to synchronize its database with the faultless system controller. The event itself should be ignored and is not logged.
Resolve: Irrelevant. Ignore the event.
Recommended action: None.
Extra information:
–   This event is sent with action type EXISTING_LAST and all event properties are left default (e.g. the event id is zero).

18.1.2 All devices events

The following events can occur on the following types of PRAESENSA devices: system controller, amplifier and call station. All events in the **Group**: **Call**, log the call-ID that is generated by the system controller.

The all devices events are divided in three groups:
- **Device call (announcement) events,**
- **General device events** and
- **General device fault events**,

and are listed in the following paragraphs.

Device call (announcement) events

Event: Call change **Group**: Call **Occurrence:** Logs the change in outputs/destinations of a call (announcement). Occurs when output resources are: overruled, missing or added/removed manually. **Originator**: Control input, Open Interface client or device, which caused the change of resources. **Extra information:** Name(s) of the output(s) that were removed from the call (announcement).And/or name(s) of the output(s) that were added to the call (announcement).

Event: Call end **Group**: Call **Occurrence:** Logs the end of a call (announcement). **Originator**: – In case of an overruled call, in case of lost resources or in any case the system decides to end the call: the system controller as device is logged as originator. – In case of an ended call by a stop command: the originator of the control input is logged as originator. – In any other case: Control input, Open Interface client or device, which caused the end of the call. **Extra information:** Completed phase of an ended call or abort reason and active phase of an aborted call.

Event: Call start **Group**: Call **Occurrence:** Logs the start of a call. **Originator**: Control input, Open interface client or device, which started the call (announcement). **Extra information:** For an original call (announcement) the following information is displayed: – call definition name used for the call. – priority of the call. – routing scheme (non-partial, partial, stacked) – timing scheme (immediate, time-shifted, pre-monitored) – name(s) of the start tone/message(s) of the call – name(s) of the message(s) of the call

- – number of times the message(s) of the call should be repeated
- – whether or not there was live speech in the call
- – name of the audio input used for live speech (if applicable)
- – name(s) of the end tone/message(s) of the call
- – name(s) of the output(s) of the call
- – For a replay call:
- – reference to the original call id
- – call definition name used for the call
- – priority of the call
- – routing scheme (always non-partial for the monitor replay phase and partial or non-partial for the broadcast replay phase).
- – timing scheme (always immediate)
- – name(s) of the output(s) of the call

Only routing that is part of the call (announcement) is logged.

Event: CallTimeout
Group: Call
Occurrence: Logs the time-out of a (stacked) call.
Originator: The system controller as device
Extra information: List of zones that did not receive this call completely.

General device events

Event: Emergency state acknowledge
Group: General
Occurrence: Logs acknowledge of the evacuation alarm.
Originator: Device, control input or Open Interface client that acknowledged the alarm.

Event: Emergency state reset
Group: General
Occurrence: Logs the reset of the evacuation alarm.
Originator: Device, control input or Open Interface client that reset the alarm.

Event: Emergency state active
Group: General
Occurrence: Logs the set/start of the evacuation alarm.
Originator: Device, control input or Open Interface client that set the alarm.

Event: Unit connect
Group: General
Occurrence: Logs the connection of a device.
Originator: Device that connected.
Extra information: Not available on Open Interface clients.

Event: User logged in
Group: General
Occurrence: Logs the user ID which has logged in to the system.
Originator: Device on which the login occurred or IP-address of the client from which the login has occurred including the user-ID which has logged in.

Event: User login attempt failed
Group: General
Occurrence: Logs when a login attempt has failed. During a lock out due too many login attempts this event is not logged.
Originator: Device on which the login attempt occurred or IP-address of the client from which the login attempt occurred including the user-ID that was used in the attempt.

Event: User logged out
Group: General
Occurrence: Logs the user-ID which has logged out from the system.
Originator: Device on which the log off occurred or IP-address of the client that logged off including the user-ID which has logged out.

General device fault events

Event: Mains supply fault: external
Group: Fault
Occurrence: Can occur on all devices when they receive a trigger on a control input configured as backup power mode.
Originator: Device which triggered the backup power mode.
Resolve: When the backup power mode is switched off or when the device disconnects.
Recommended action: Check powering device(s) and lines/connections.
Extra information: Aggregate to main power fault.

Event: Fan rotation fault: fan 1/2
Group: Fault
Occurrence: Logs that fan 1/2 of a device in the system has a fault.
Originator: Device that has the fan 1/2 fault.
Resolve: When the Fan 1 fault is not present anymore.
Recommended action:
–   Check the correct functionality of the device fan. Or
–   remove device and replace/repair fan (circuit).

Event: Ground fault
Group: Fault
Occurrence: Logs the ground short fault of a device in the PRAESENSA system.
Originator: Device that has the ground short fault.
Resolve: When the Short Fault is not present anymore.
Recommended action: Check and remove the ground short of the reported device.

Event: Incompatible firmware
Group: Fault
Occurrence: Logs the mismatch of the firmware (software) release of the device and the expected firmware (software) release.
Originator: Unit that had an invalid firmware (software) release.
Resolve: When the device is upgraded.
Recommended action:
–   Check firmware version and compatibility
–   Check (network/tool) settings, connections.
–   Repeat firmware upgrade, if required.
Extra information:
–   Current firmware release of the unit.
–   Expected firmware release.
–   Not available on Open Interface clients.

Event: Line input failure
Group: Fault
Occurrence: Logs the failure of a supervised audio line input on a device.
Originator: Audio input that did not receive the pilot tone.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action: Check the audio source (device), lines/connections.

Event: MemoryError
Group: Fault
Occurrence: Logs the memory error in a device.
Originator: Device that had a memory error.
Resolve: An EEPROM memory fault resolves immediately after acknowledge when the error is no longer present or when the device disconnects.
Recommended action: Whether the flash memory was defective. Whether the EEPROM memory was defective. Replace/repair device.
Extra information: Not available on Open Interface clients.

Event: Microphone failure
Group: Fault
Occurrence: Logs the microphone failure of a microphone on/connected to a device.
Originator: Audio input that failed.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action: Replace/repair device (microphone).

Event: NetworkChanged
Group: Fault
Occurrence: Logs the network neighbor missing for each device which is configured and operable.
Originator: Device that was missing network neighbor.

Resolve: When the network neighbor is present again.

Recommended action:

- To be able to supervise the network, the Installer has to first take the network snapshot. Once the network snapshot is available only then network supervision can be enabled and no reboot is required.
- To make the Network snapshot persistent a manual save is required, but reboot is not required.
- When network supervision is enabled, the installer cannot take a new network snapshot. If installer wishes to take a new network snapshot, first network supervision has to be disabled.

Extra information:

- During the first 2 minutes there will not be any reporting of the NetworkChanged event, only after 2 minutes of grace time a fault will be reported if there are any network neighbor missing.
- Network neighbors which are reported with the same chassisId and portId are filtered out from the Network snapshot.

Event: Control input line failure

Group: Fault

Occurrence: Logs the supervised input contact failure of an input contact on a device.

Originator: Control input that failed.

Resolve: When the error is no longer present or when the device disconnects.

Recommended action: Check input lines/connections.

Event: Unit missing

Group: Fault

Occurrence: Logs the absence of a configured device.

Originator: Device that was missing.

Resolve: When the device reconnects.

Recommended action: Check device and (network) lines and connections.

Extra information:

- During the first minutes (2 min for regular devices and 10 min for Open Interface clients) after the system controller has started, no missing devices shall be reported. Only when this time has passed, missing devices shall be reported.
- Open Interface clients shall only be reported missing when connection supervision is turned on in the configuration.
- Aggregate to "other" zone fault.

Event: Processor reset

Group: Fault

Occurrence: Logs the watchdog reset of a processor in a device.

Originator: Device that was reset.

Resolve: Immediately after acknowledgement.

Recommended action: Check device functionality after none expected device/system reset.

Extra information:

- Which processor was the cause of the reset (CPU, TBD). Not available on Open Interface clients.
- Event can only be generated when the device starts up. CPU only available on system controllers.

Event: Fault input
Group: Fault
Occurrence: Logs the activation of a fault input.
Originator: Control input or Open Interface client that injected the fault.
Resolve:
- When the input is deactivated or when the device disconnects (in case the event occurred on a device).
- When the Open Interface client reports the event to be resolved or when the client disconnects (in case the event occurred on an Open Interface client).
Recommended action: Check the lines/connections and devices.
Extra information: Description of the error as configured by the user.

Event: Zone line fault
Group: Fault
Occurrence: Logs the activation of a zone line fault input.
Originator: Control input that injected the fault.
Resolve: When the input is deactivated or when the device disconnects (in case the event occurred on a device).
Recommended action: Check zone lines/connections and devices.
Extra information: Name of the zones.

18.2 Device specific events

Each PRAESENSA network device could generate it's own event messages. The following sections represent the events per device type.

– *System controller, page 133*
– *Amplifier, page 134*
– *Multifunction power supply (MPS), page 135*
– *Call station, page 139*
– *Open Interface client, page 139*

18.2.1 System controller

The following **general** and **fault** events can occur **only** on system controllers.

General events

Event: Backup restored
Group: General
Occurrence: Logs the corruption / consistency error in the configuration (default configuration loaded when occurring at start-up)
Originator: The System Controller and the user that triggered the restore.
Resolve: Immediately after acknowledgement.
Recommended action:
Extra information:

Event: System restarted
Group: General
Occurrence: Logs the start-up of the system controller.
Originator: Device that started.

Fault events

Event: Power supply fault: input A and/or B
Group: Fault
Occurrence: Logs the failure of power supply input A and/or B. Can only occur when supervision is enabled for input A/B.
Originator: Device which indicate power supply failure on input A/B.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action: Check/replace the powering device, lines and connections.

Event: Message missing
Group: Fault
Occurrence: Logs the mismatch of the configured and detected messages.
Originator: Device which had the mismatch.
Resolve: When the error is no longer present.
Recommended action: Reload/restore the (involved) correct messages.
Extra information: Name(s) of message(s) present in configuration but not on disk.

Event: Message corrupt
Group: Fault
Occurrence: Logs a checksum error of the configured messages.
Originator: Device which had the mismatch.
Resolve: When the error is no longer present.
Recommended action: Reload/restore the (involved) correct messages.
Extra information: Name(s) of message(s) with a checksum error.

18.2.2 Amplifier

The following **fault** events can occur **only** on amplifier devices.

Event: Temperature too high
Group: Fault
Occurrence: Logs that a device in the system has an overheat fault.
Originator: Device that has the overheat fault.
Resolve: When the Overheat fault is not present anymore.
Recommended action:
– Check the correct functionality of the device fan.
– Check if the device/rack environment temperature is within specifications.

Event: Power supply fault: input A and/or B
Group: Fault
Occurrence: Power supply fault: input A and/or B.
Originator: Amplifier.
Recommended action: Check/replace powering device (and/or amplifier), lines and connections.

Event: Power supply fault: lifeline
Group: Fault
Occurrence: Logs the failure of lifeline 18 V power supply to the controller of the amplifier.
Originator: Amplifier.
Recommended action: Check source (MPS) device lifeline, lines and connections. Check MPS lifeline power supply output.

Event: Amplifier channel fault
Group: Fault
Occurrence: Amplifier channel fault.
Originator: Amplifier channel.
Recommended action: Check input and output signals, lines and connections. Check/replace amplifier.

Event: Output overload fault
Group: Fault
Occurrence: Logs the channel output overload.
Originator: Amplifier.
Recommended action: Decrease the output load of the effected output channel(s).

Event: Short circuit fault: output A and/or B

Group: Fault

Occurrence: Short circuit fault: output A and/or B.

Originator: Amplifier.

Recommended action: Check/replace loudspeakers, lines and connections.

Event: Amplifier channel fault: spare

Group: Fault

Occurrence: Logs the failure of the Amplifier spare channel.

Originator: Amplifier.

Recommended action: Check/replace amplifier input, output and power signals.

Event: End of line fault: output A and/or B

Group: Fault

Occurrence: End of line fault: output A/B.

Originator: Amplifier channel.

Recommended action: Check/replace EOL board, lines and connections.

18.2.3   Multifunction power supply (MPS)

The following **fault** events can **only** occur on multifunction power supply devices.

Event: Amplifier 1/2/3 lifeline supply fault

Group: Fault

Occurrence: Logs the failure of the 18 V power supply for amplifier 1 and/or 2 and/or 3.

Originator: MPS

Resolve: When the error is no longer present or when the device disconnects.

Recommended action:

–   Check the MPS lifeline 18 V output power supply, lines and connections.

–   Check the amplifier 18 V output power supply input, lines and connections.

Event: Amplifier 1/2/3 lifeline audio fault

Group: Fault

Occurrence: Logs the failure of the lifeline audio output for amplifier 1 and/or 2 and/or 3.

Originator: MPS

Resolve: When the error is no longer present or when the device disconnects.

Recommended action:

–   Check the MPS lifeline, audio lines and connections.

–   Check the amplifier lifeline, audio lines and connections.

Event: Battery supply fault: outpu 1/2/3

Group: Fault

Occurrence: Logs the failure of the battery power supply for amplifier 1 and/or 2 and/or 3.

Originator: MPS

Resolve: When the error is no longer present or when the device disconnects.

Recommended action:
– Check the MPS DC output power, lines and connections.
– Check the amplifier DC power supply input, lines and connections.

Event: Battery fault: leakage current too high (charger function disabled)
Group: Fault
Occurrence: Logs the failure of the battery float charge.
Originator: MPS which has the battery connected.
Resolve: When the error is no longer present or when the device disconnects. The charger is suspended when this fault is active.
Recommended action:
– Check the MPS charger functionality including the configuration settings.
– Check the battery condition and connections.
– Replace the MPS and/or battery, if required.

Event: Battery fault: temperature out of range (charger function disabled)
Group: Fault
Occurrence: Logs the failure of the battery temperature out of range or a temperature sensor failure.
Originator: MPS which has the battery connected. The charger is suspended when this fault is active.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check if the battery load is within specification.
– Check on short circuits.
– Check the battery condition and connections.
– Replace the battery, if required.

Event: Battery fault: impedance too high
Group: Fault
Occurrence: Logs the failure of the RI (impedance) measurement of the battery.
Originator: MPS which has the battery connected.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check the battery condition and connections.
– Replace the battery, if required.

Event: Battery fault: short circuit (charger function disabled)
Group: Fault
Occurrence: Logs the failure of the battery short circuit.
Originator: MPS which has the battery connected.
Resolve: When the error is no longer present or when the device disconnects. The charger is suspended when this fault is active.
Recommended action:
– Check the battery condition and connections.

> – Replace the battery, if required.

Event: Amplifier 1/2/3 supply fault: output A and/or B
Group: Fault
Occurrence: Logs the failure of the 48 V DC output A and/or B of the power supply for amplifier 1 and/or 2 and/or 3.
Originator: MPS
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check the MPS 48 V DC output power, lines and connections.
– Check the amplifier 48 V DC power supply input, lines and connections.

Event:
Group: Fault
Occurrence: Logs the failure of the DC aux A/B power supply for the system controller.
Originator: MPS which delivers the DC power supply.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check DC output connections and power.
– Replace/repair MPS, if required.

Event: Mains supply fault: Charger (chager function lost)
Group: Fault
Occurrence: Logs the failure of power supply to the charger.
Originator: MPS with the charger active. The charger is suspended when this fault is active.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check the MPS charger functionality including the configuration settings.
– Replace/repair the MPS, if required.

Event: Mains supply fault: output 1/2/3/
Group: Fault
Occurrence: Logs the failure of the DC power supply for amplifier 1 and/or 2 and/or 3.
Originator: MPS
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check the MPS DC output power, lines and connections.
– Check the amplifier DC power supply input, lines and connections.

Event: Mains supply fault: input
Group: Fault
Occurrence: Logs the failure of the mains power supply. Can only occur when the supervision is enabled for mains power supply.
Originator: MPS

Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
– Check the MPS mains input power, lines and connections.
– Check the configuration.

Event: Mains power supply failure (charger function lost)
Group: Fault
Occurrence: Logs the failure of the mains supply
Originator: Device with the power supply.
Resolve: When the error is no longer present or when the device disconnects
Recommended action:
Extra information: The charger is suspended when this fault is active.

Event: Battery fault: Battery disconnected (charger function disabled)
Group: Fault
Occurrence: Logs the failure of the backup supply.
Originator: Device with the power supply
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
Extra information:

Event: ChargerSupplyTooLow
Group: Fault
Occurrence: To indicate the charger supply voltage is too low.
Originator: MPS
Resolve: When the error is no longer present or when the device disconnects.
Recommended action:
Extra information: The charger is suspended when this fault is active.

Event: BatteryOvervoltage
Group: Fault
Occurrence: Indicates if there is an overvoltage situation on the battery. The charger converter is turned off.
Originator: MPS
Resolve: Recovery is not possible. Turn off the MPS.
Recommended action:
Extra information:

Event: BatteryUndervoltage
Group: Fault
Occurrence: Indicates if there is an under voltage situation when mains is absent, the sepics are turned off when this fault occurs.

Originator: MPS
Resolve: This fault recovers when mains recovers.
Recommended action:
Extra information:

18.2.4 Call station

The following **fault** events can **only** occur on call stations.

Event: Call station audio path fault
Group: Fault
Occurrence: Logs the audio path fault (microphone audio path fails).
Originator: Microphone that had an audio path fault.
Resolve: When the device disconnects or when it is resolved manually.
Recommended action: Replace/repair call station (microphone).

Event: Extension mismatch
Group: Fault
Occurrence: Logs the mismatch of the number of configured and detected extensions on a call station.
Originator: Device that had the mismatch.
Resolve: When the error is no longer present or when the device disconnects
Recommended action:
– Check the correct number of connected extensions.
– Check the configuration.
– Check the loop through connections and correct functionality of each extension. Do the LED-test.
Extra information: Number of configured extensions. Number of detected extensions

Event: PoE supply failure
Group: Fault
Occurrence: Logs the failure of the backup power supply of the call station. Can only occur when the number of connected PoE inputs is less than the configured expected PoE inputs.
Originator: Device that had the PoE supply fault.
Resolve: When the error is no longer present or when the device disconnects.
Recommended action: Check the PoE output source (MPS), (network) lines and connections.

18.2.5 Open Interface client

The following **general** events can **only** occur on Open Interface clients.

Event: Device connected via Open Interface
Group: General
Occurrence: Logs the connection of an Open Interface client (like a PC Call Station.
Originator: Open Interface client that connected (which includes the user ID used for the connection).
Recommended action: None.

Event: Device attempted to connect via Open Interface
Group: General
Occurrence: Logs the failed connection attempt of an Open Interface client (like PC Call Station). During a lock-out due too many connect attempts this event is not logged.
Originator: Open Interface client that attempted to connect, including the ID of the user ID that was used in the attempt.
Recommended action: Check/connect Open Interface device, lines and connections.

Event: Device disconnected via Open Interface
Group: General
Occurrence: Logs the disconnection of an Open Interface client (like a PC Call Station).
Originator: Open Interface client that disconnected (which includes the user ID used for the disconnection).
Recommended action: Check/connect Open Interface device, lines and connections, if required.

19   Tones

Each tone and/or pre-recorded (spoken) message used in the PRAESENSA system must have the .wav audio file format. See *Recorded messages, page 61*.

The following .wav files (tones) are PRAESENSA predefined, are mono and have a 16-bit sample depth and 48 kHz sample rate. See *(Mandatory) software, page 13* > Tones.

–   *Attention tones, page 141*
–   *Alarm tones, page 144*
–   *Test tones, page 147*

See also *Call definitions, page 72*.

19.1   Attention tones

Attention tones are mainly used for a start and/or end tone at an announcement.

Filename format: Attention_<sequence number>_<number of tones>_<duration>.wav
–   Attention_A_1T_1.5s.wav
     –   Single tone chime
     –   Marimba and Vibraphone, A4
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 1.5 s
–   Attention_B_1T_1.5s.wav
     –   Single tone chime
     –   Marimba and Vibraphone, C#5
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 1.5 s
–   Attention_C_1T_1.5s.wav
     –   Single tone chime
     –   Marimba and Vibraphone, E5
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 1.5 s
–   Attention_D_1T_1.5s.wav
     –   Single tone chime
     –   Marimba and Vibraphone, G5
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 1.5 s
–   Attention_E1_2T_2s.wav
     –   Two tone pre-chime
     –   Marimba and Vibraphone, A4/C#5
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
–   Attention_E2_2T_2s.wav
     –   Two tone post-chime
     –   Marimba and Vibraphone, C#5/A4
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
–   Attention_F1_3T_2s.wav
     –   Three tone pre-chime
     –   Marimba and Vibraphone, G4/C5/E5
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
–   Attention_F2_3T_2s.wav
     –   Three tone post-chime
     –   Marimba and Vibraphone, E5/C5/G4
     –   Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
–   Attention_G1_3T_2.5s.wav
     –   Three tone pre-chime
     –   Marimba and Vibraphone, A#4/D5/F5

- – Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- – Attention_G2_3T_2.5s.wav
  - – Three tone post-chime
  - – Marimba and Vibraphone, F5/D5/A#4
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- – Attention_H1_4T_3s.wav
  - – Four tone pre-chime
  - – Marimba and Vibraphone, E5/C5/D5/E4
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_H2_4T_3s.wav
  - – Four tone post-chime
  - – Marimba and Vibraphone, G4/D5/E5/C5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_J1_4T_3s.wav
  - – Four tone pre-chime
  - – Marimba and Vibraphone, G4/C5/E5/G5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_J2_4T_3s.wav
  - – Four tone post-chime
  - – Marimba and Vibraphone, G5/E5/C5/G4
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_K1_4T_2.5s.wav
  - – Four tone pre-chime
  - – Marimba and Vibraphone, G4/C5/E5/G5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- – Attention_K2_4T_2.5s.wav
  - – Four tone post-chime
  - – Marimba and Vibraphone, G5/E5/C5/G4
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- – Attention_L1_4T_3s.wav
  - – Four tone pre-chime
  - – Marimba and Vibraphone, C5/E5/G5/A5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_L2_4T_3s.wav
  - – Four tone post-chime
  - – Marimba and Vibraphone, A5/G5/E5/C5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- – Attention_M1_6T_2s.wav
  - – Six tone pre-chime
  - – Marimba and Vibraphone, G4/C5/E5/G4/C5/E5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
- – Attention_M2_4T_2s.wav
  - – Four tone post-chime
  - – Marimba and Vibraphone, C5/E5/C5/G4
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
- – Attention_N1_7T_2s.wav
  - – Seven tone pre-chime
  - – Marimba and Vibraphone, E5/F4/C5/G4/E6/C6/G5
  - – Peak level -6 dBFS, RMS level < -10 dBFS, 2 s

- Attention_N2_4T_2s.wav
    - Four tone post-chime
    - Marimba and Vibraphone, C6/E5/C5/G4
    - Peak level -6 dBFS, RMS level < -10 dBFS, 2 s
- Attention_O1_6T_3s.wav
    - Six tone pre-chime
    - Marimba and Vibraphone, F5/C5/C5/G5/(A4+C6)/(F4+A5)
    - Peak level -6 dBFS, RMS level < -10 dBFS, 3 s
- Attention_O2_5T_2.5s.wav
    - Five tone post-chime
    - Marimba and Vibraphone, A#5/A#5/A5/A5/(F4+F5)
    - Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- Attention_P1_8T_4s.wav
    - Eight tone pre-chime
    - Marimba and Vibraphone, A4/A4/A4/C5/D5/D5/D5/(D4+A4)
    - Peak level -6 dBFS, RMS level < -10 dBFS, 4 s
- Attention_P2_4T_2.5s.wav
    - Four tone post-chime
    - Marimba and Vibraphone, (A4+D5)/A4/D5/(A4+D5)
    - Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- Attention_Q1_3T_3.5s.wav
    - Three tone pre-chime
    - Celesta, G4/C5/E5
    - Peak level -6 dBFS, RMS level < -10 dBFS, 3.5 s
- Attention_Q2_3T_3.5s.wav
    - Three tone post-chime
    - Celesta, E5/C5/G4
    - Peak level -6 dBFS, RMS level < -10 dBFS, 3.5 s
- Attention_R_6T_2.5s.wav
    - Six tone chime
    - Guitar, F4/C5/F5/F4/C5/F5
    - Peak level -6 dBFS, RMS level < -10 dBFS, 2.5 s
- Attention_S_3T_2s.wav
    - Three tone chime
    - Vibraphone, C4/D4/D#4
    - Peak level -3 dBFS, RMS level < -10 dBFS, 2 s
- Attention_T_3T_3s.wav
    - Three tone chime
    - Vibraphone, D5/C4/D4
    - Peak level -4 dBFS, RMS level < -10 dBFS, 3 s
- Attention_U_3T_3.5s.wav
    - Three tone chime
    - Vibraphone, C#6/E5/C5
    - Peak level -5 dBFS, RMS level < -10 dBFS, 3.5 s

19.2   Alarm tones

Alarm tones are mainly used for emergency and evacuation purposes (announcements).

Filename format: Alarm_<type>_<frequency (range)>_<duty cycle>_<duration>.wav
–   Alarm_Bell_100%_3x2.6s.wav
    –   Bell, 2.6 s, 3 repetitions
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Offshore "FG"
–   Alarm_Bell_100%_10s.wav
    –   Bell, 10 s
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Offshore "Abandon platform"
–   Alarm_MS_300-1200Hz_100%_10x1s.wav
    –   Sweep 300 Hz - 1200 Hz, up in 1 s, 10 repetitions
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   "General purpose"
–   Alarm_MS_350-500Hz_100%_10x1s.wav
    –   Sweep 350 Hz - 500 Hz, up in 1 s, 10 repetitions
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
–   Alarm_MS_400Hz_100%_10s.wav
    –   Continuous 400 Hz, 10 s
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
–   Alarm_MS_420Hz_48%_8x(0.60+0.65)s.wav
    –   Intermittent 420 Hz, 0.60 s on, 0.65 s off, 8 repetitions
    –   Duty cycle 48%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Australia, AS 2220 "Alert"
–   Alarm _MS_420Hz_50%_10x(0.6+0.6)s.wav
    –   Intermittent 420 Hz, 0.6 s on, 0.6 s off, 10 repetitions
    –   Duty cycle 50%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Australia, AS 1670.4, ISO 7731 "Alert"
–   Alarm_MS_422-775Hz_43%_5x(0.85+1.00)s.wav
    –   Sweep 422 Hz - 775 Hz, up in 0.85 s, 1.0 s off, 5 repetitions
    –   Duty cycle 43%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   USA, "NFPA Whoop"
–   Alarm_MS_500Hz_20%_10x(0.15+0.60)s.wav
    –   Intermittent 500 Hz, 0.15 s on, 0.6 s off, 10 repetitions
    –   Duty cycle 20%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Sweden, SS 03 17 11 "Local Warning"
–   Alarm_MS_500Hz_60%_40x(0.15+0.10)s.wav
    –   Intermittent 500 Hz, 0.15 s on, 0.1 s off, 40 repetitions
    –   Duty cycle 60%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Sweden, SS 03 17 11 "Imminent Danger"
–   Alarm_MS_500Hz_100%_10s.wav
    –   Continuous 500 Hz, 10 s
    –   Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
    –   Sweden, SS 03 17 11 "All clear"
–   Alarm_MS_500-1200Hz_94%_3x(3.75+0.25)s.wav
    –   Sweep 500 Hz - 1200 Hz, up in 3.75 s, 0.25 s off, 3 repetitions
    –   Duty cycle 94%, Peak level -1.3 dBFS, RMS level <-9 dBFS

- Australia, AS 2220 -1978 "Action"
- Alarm_MS_500-1200Hz_88%_3x(3.5+0.5)s.wav
  - Sweep 500 Hz - 1200 Hz, up in 3.5 s, 0.5 s off, 3 repetitions
  - Duty cycle 88%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Netherlands, NEN 2575
- Alarm_MS_500-1200-500Hz_100%_3x(1.5+1.5)s.wav
  - Sweep 500 Hz - 1200 Hz, up in 1.5 s, down in 1.5 s, 3 repetitions
  - Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - "Siren"
- Alarm_MS_520Hz_13%_2x(0.5+3.5)s.wav
  - Intermittent 520 Hz, 0.5 s on, 3.5 s off, 2 repetitions
  - Duty cycle 13%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Australia, AS 4428.16 "Alert"
- Alarm_MS_520Hz_25%_3x(0.5+0.5)s+1s.wav
  - Intermittent 520 Hz, 0.5 s on, 0.5 s off, 0.5 s on, 0.5 s off, 0.5 s on, 1.5 s off
  - Duty cycle 25%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Australia, AS 4428.16, ISO 8201 "Evacuation"
- Alarm_MS_550+440Hz_100%_5x(1+1)s.wav
  - Alternating 550 Hz, 1 s and 440 Hz, 1 s, 5 repetitions
  - Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Sweden "Turn out"
- Alarm_MS_560+440Hz_100%_20x(0.1+0.4)s.wav
  - Alternating 560 Hz, 0.1 s and 440 Hz, 0.4 s, 20 repetitions
  - Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - France, NF S 32-001 "Fire"
- Alarm_MS_660Hz_50%_32x(0.15+0.15)s.wav
  - Intermittent 660 Hz, 0.15 s on, 0.15 s off, 32 repetitions
  - Duty cycle 50%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Sweden "Air raid"
- Alarm_MS_660Hz_50%_3x(1.8+1.8)s.wav
  - Intermittent 660 Hz, 1.8 s on, 1.8 s off, 3 repetitions
  - Duty cycle 50%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Sweden "Local warning"
- Alarm_MS_660Hz_33%_(6.5+13)s.wav
  - Intermittent 660 Hz, 6.5 s on, 13 s off
  - Duty cycle 33%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Sweden "Pre-mess"
- Alarm_MS_660Hz_100%_10s.wav
  - Continuous 660 Hz, 10 s
  - Duty cycle 100 %, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Sweden "All clear"
- Alarm_MS_720Hz_70%_10x(0.7+0.3)s.wav
  - Intermittent 720Hz, 0.7 s on, 0.3 s off, 10 repetitions
  - Duty cycle 70%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - Germany "Industrial alarm"
- Alarm_MS_800+970Hz_100%_20x(0.25+0.25)s.wav
  - Alternating 800 Hz, 0.25 s and 970 Hz, 0.25 s, 20 repetitions
  - Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - UK, BS 5839-1 "Fire"

- – Alarm_MS_800-970Hz_100%_10x1s.wav
  - – Sweep 800 Hz - 970 Hz, up in 1 s, 10 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – UK, BS 5839-1 "Fire"
- – Alarm_MS_800-970Hz_100%_70x0.14s.wav
  - – Sweep 800 Hz - 970 Hz, up in 0.14 s, 70 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – UK, BS 5839-1 "Fire"
- – Alarm_MS_800-970Hz_25%_3x(0.5+0.5)s+1s.wav
  - – Sweep 800 Hz - 970 Hz, up in 0.5 s, 0.5 s off, up in 0.5 s, 0.5 s off, up in 0.5 s, 1.5 s off
  - – Duty cycle 25%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – ISO 8201
- – Alarm_MS_970Hz_25%_3x(0.5+0.5)s+1s.wav
  - – Intermittent 970 Hz, 0.5 s on, 0.5 s off, 0.5 s on, 0.5 s off, 0.5 s on, 1.5 s off
  - – Duty cycle 25%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – ISO 8201 "Low tone"
- – Alarm_MS_970Hz_20%_8x(0.25+1.00)s.wav
  - – Intermittent 970 Hz, 0.25 s on, 1 s off, 8 repetitions
  - – Duty cycle 20%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – "General purpose"
- – Alarm_MS_970Hz_50%_5x(1+1)s.wav
  - – Intermittent 970 Hz, 1 s on, 1 s off, 5 repetitions
  - – Duty cycle 50%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – UK, BS 5839-1 "Alert", PFEER "Alert"
- – Alarm_MS_970Hz_100%_10s.wav
  - – Continuous 970 Hz, 10 s
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – UK, BS 5839-1 "Evacuate", PFEER "Toxic gas"
- – Alarm_MS_970+630Hz_100%_10x(0.5+0.5)s.wav
  - – Alternating 970 Hz, 0.5 s and 630 Hz, 0.5 s, 10 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – UK, BS 5839-1
- – Alarm_MS_1000+2000Hz_100%_10x(0.5+0.5)s.wav
  - – Alternating 1000 Hz, 0.5 s and 2000 Hz, 0.5 s, 10 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – Singapore
- – Alarm_MS_1200-500Hz_100%_10x1s.wav
  - – Sweep 1200 Hz - 500 Hz, down in 1 s, 10 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – Germany, DIN 33404 Part 3, PFEER "Prepare for evacuation"
- – Alarm_MS_1400-1600-1400Hz_100%_8x(1.0+0.5)s.wav
  - – Sweep 1400 Hz - 1600 Hz, up in 1.0 s, down in 0.5 s, 8 repetitions
  - – Duty cycle 100%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – France, NFC 48-265
- – Alarm_MS_2850Hz_25%_3x(0.5+0.5)s+1s.wav
  - – Intermittent 2850 Hz, 0.5 s on, 0.5 s off, 0.5 s on, 0.5 s off, 0.5 s on, 1.5 s off
  - – Duty cycle 25%, Peak level -1.3 dBFS, RMS level <-9 dBFS
  - – USA, ISO 8201 "High tone"

- Alarm_SW_650-1100-650Hz_50%_40x(0.125+0.125)s.wav
    - Sweep 650 Hz - 1100 Hz, up and down in 0.125 s, 0.125 s off, 40 repetitions
    - Duty cycle 50%, Peak level -6 dBFS, RMS level <-9 dBFS
    - Offshore "H2S alarm"

19.3   Test tones

Test tones are mainly used for testing the audio output and loudspeaker zones (e.g. adjusting the audio signal (filter) levels).

Filename format: Test_<purpose>_<duration>.wav
- Test_Loudspeaker_AB_20kHz_10s.wav
    - Sine wave 20 kHz, peak level -20 dBFS, RMS level -23 dBFS, 10 s
    - Inaudible signal to drive the A-group loudspeakers and check connectivity of the A- and B-loudspeakers simultaneously while the building is occupied, the B-loudspeakers get a 22 kHz signal
    - The A-loudspeakers are connected to their own zone amplifier channel; this zone gets the 20 kHz signal
    - Keep smartphone in front of the loudspeaker, a smartphone spectrum analyzer detects both the 20 kHz and the 22 kHz simultaneously
- Test_Loudspeaker_AB_22kHz_10s.wav
    - Sine wave 22 kHz, peak level -20 dBFS, RMS level -23 dBFS, 10 s
    - Inaudible signal to drive the B-group loudspeakers and check connectivity of the A- and B-loudspeakers simultaneously while the building is occupied, the A-loudspeakers get a 20 kHz signal
    - The B-loudspeakers are temporarily connected to another amplifier channel, for another zone; this zone gets the 22 kHz signal
    - Keep smartphone in front of the loudspeaker, a smartphone spectrum analyzer detects both the 20 kHz and the 22 kHz simultaneously
- Test_LoudspeakerPolarity_10s.wav
    - Filtered sawtooth 50 Hz, peak level -12 dBFS, RMS level -20 dBFS, 10 s
    - Audible signal to detect proper polarity of connected loudspeakers
    - Smartphone oscilloscope detects a positive or negative sharp peak, that should be in the same direction for all loudspeakers
- Test_PinkNoise_30s .wav
    - Pink noise signal 20 Hz - 20 kHz, peak level -3 dBFS, RMS level -16 dBFS, 30 s
    - Audible signal for acoustic measurements
- Test_Reference_440Hz_10s.wav
    - Continuous 440 Hz sinewave, 10 s
    - Duty cycle 100%
- Test_STIPA_BedrockAudio_100s.wav
    - STIPA testsignal, peak level - 4.2 dBFS, RMS level -11 dBFS, 100 s
    - Test signal to measure the speech intelligibility via the Speech Transmission Index
    - Copyright Bedrock Audio BV (http://bedrock-audio.com), used with permission
    - Compatible with all STIPA meters compliant to IEC 60268-16 Ed. 4 (Bedrock Audio, NTi Audio, Audio Precision)
    - The signal can be looped. A 440 Hz beep signal of -12 dBFS, duration 1 s, marks the beginning of the 100 s test signal. Start the measurement after this beep, so the measurement will not be disturbed by a gap between end and restart.
    - A measurement cycle takes a minimum of 15 s

- Test_TickTone_1800Hz_5x(0.5+2)s.wav
  - Intermittent 1800 Hz sinewave, 0.5 s on, 2 s off, 4 repetitions
  - Duty cycle 20%
  - Route the tick tone to a zone to deliver an audible bleep from each speaker in that zone; loss of the tick tone along the line allows the engineer to identify the position of the line discontinuity.

19.4 Silense tones

Silense tones are mainly used for creating a silence before and/or between and/or after a message/tone.

Filename format: Silence_<duration>.wav
- Silence_1s.wav
  - Silence period, 1 s
- Silence_2s.wav
  - Silence period, 2 s
- Silence_4s.wav
  - Silence period, 4 s
- Silence_8s.wav
  - Silence period, 8 s
- Silence_16s.wav
  - Silence period, 16 s