PRAESENSA

Public Address and Voice Alarm System

en Configuration manual

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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:

– **Chapter 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.
– **Chapter 2**: *Product overview, page 12* - gives an PRAESENSA product overview.
– **Chapter 3**: *Getting started, page 13* - describes software installation instructions and important procedures which have to take into account before, and during, configuration.
– **Chapter 4**: *Logon the application, page 34* - describes how to logon the PRAESENSA webserver webpages and important procedures which have to take into account before, and during, configuration logon.
– **Chapter 5**: *Configure the system, page 36*- describes everything what you have to know about the configuration of a PRAESENSA system.
– **Chapter 6**: *Diagnose, page 116* - describes i.e. configuration, amplifier loads and battery impedance diagnostics.
– **Chapter 7**: *Security, page 125* - describes how to change security credentials, reconnect lost and disconnected devices and Open Interface client certificate connections.
– **Chapter 8**: *Print configuration, page 128* - describes how to print device and/or system configuration settings.
– **Chapter 9**: *About, page 130* - describes how to view certificates and (Open Source Software) licenses.
– **Chapter 10**: *Introduction to make an announcement, page 131* - describes what, and how, to setup announcement content, priority and routing.
– **Chapter 11-16**: Describes how to use different (3th party) applications with PRAESENSA.
– **Chapter 17**: *Troubleshooting, page 146* - describes PRAESENSA troubleshoot options.
– **Chapter 18**: *Event messages, page 147* - provides information about (general and fault) events which could generated by the PRAESENSA system.
– **Chapter 19**: *Tones, page 166* - provides information of tones (messages) to be used with PRAESENSA.
– **Chapter 20:** *Support and academy, page 174* - provides (technical) support and training information.

Refer to

– *Support and academy, page 174*

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 controller > Downloads > Literature.

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.

1.5 Copyright notice

Unless otherwise indicated, this publication is the copyright of www.boschsecurity.com. All rights are reserved.

1.6 Trademarks

Throughout this document trademark names may have been used. Rather than put a trademark symbol in every occurrence of a trademark name, Bosch Security Systems states that the names are used only in an editorial fashion and to the benefit of the trademark owner with no intention of infringement of the trademark.

1.7 Notice of liability

While every effort has been taken to ensure the accuracy of this document, neither Bosch Security Systems nor any of its official representatives shall have any liability to any person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by the information contained in this document.
Bosch Security Systems reserves the right to make changes to features and specifications at any time without prior notification in the interest of ongoing product development and improvement.

1.8 Document history

Release date	Documentation version	Reason
2019.11	V1.00	1st edition
2020.05	V1.10	Chapters updated: 1.0, 1.3.1, 1.8, 1.9, 2, 3.2.2, 3.2.6, 3.2.7, 3.3.1, 4, 5.1.1, 5.1, 5.3.5, 5.4.1, 5.6, 5.7.1, 5.7.2, 5.8.1, 5.10.1, 5.10.2, 6, 6.3, 6.4, 7.1.1, 7.1.2, 7.1.3, 7.2, 8, 9.1, 11.1, 11.5, 12.1, 13, 14, 16, 17, 18, 19. Chapters added: 1.9 (old 1.9 > new 1.10), 1.11 New functions > Chapters: 5.3.4, 5.4.2, 5.7.2, 5.7.3, 6, 6.4 (old 6.4 > new 6.5).
2020.09	V1.20	Chapters updated: 1, 1.8, 1.9, 5.4.2, 5.7.6, 12.2, 15. Chapter added: 20
2021.06.23	V1.40	Chapters updated**:** 1.8, 1.9, 2, 3.2.1, 3.2.2, 3.3.3, 3.2.6, 4, 5.2, 5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.4.2, 5.5.1, 5.5.2, 5.6, 5.7.2, 5.7.3, 5.7.5, 5.7.6, 5.8, 6, 6.3, 13, 16. Chapters added: 5.8.3, 6.6.

1.9 Software and tool release history

PRAESENSA Software Package x.xx.zip

Release date	Released version	Reason
2019.12.06	1.00	1st official release
2020.05.18	1.10	2nd official release
2020.09.30	1.20	Official release
2021.02.10	1.30 and 1.31	Specific customer releases
2021.06	1.40	Official release

Firmware upload tool Vx.xx

Release date	Released version	Reason
2019.11	V6.50	1st official PRAESENSA release
Visit https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 for the latest Firmware upload tool Vx.xx (where x.xx is the version release number and will be changed at updates).		

1.10 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.

1.11 Security precautions

PRAESENSA is an IP-connected, networked Public Address and Voice Alarm system. In order to ensure that the intended functions of the system are not compromised, special attention and measures are required during installation and operation to avoid tampering of the system. Many of such measures are provided in the PRAESENSA configuration manual and installation manual, related to the products and the activities described. This section provides an overview of precautions to be taken, related to network security and access to the system.

- Follow the installation instructions with respect to the location of equipment and the permitted access levels. See section 4.1 of the PRAESENSA installation manual. Make sure that critical* call stations and operator panels that are configured for alarm functions only have restricted access using a special procedure, such as being mounted in an enclosure with lockable door or by configuration of user authentication on the device**.
  * Call stations, that address very large areas, are considered as critical.
  ** Availability of the user authentication function is to be announced.
- It is highly recommended to operate PRAESENSA on its own dedicated network, not mixed with other equipment for other purposes. Other equipment may be accessible by unauthorized people, causing a security risk. This is especially true if the network is connected to the Internet.
- It is highly recommended that unused ports of network switches are locked or disabled to avoid the possibility that equipment is connected that may compromise the system. This is also the case for PRAESENSA call stations that are connected via a single network cable. Make sure that the connector cover of the device is in place and properly fixed, to avoid that the second network socket is accessible. Other PRAESENSA equipment should be installed in an area that is only accessible by authorized people to avoid tampering.
- PRAESENSA uses secure OMNEO for its network connections, using encryption and authentication for all control and audio data exchange, but the system controller allows the configuration of unsecure Dante or AES67 audio connections as an extension of the system, both as inputs and as outputs. These Dante/AES67 connections are not authenticated and not encrypted and form a security risk, as no precautions are taken against malicious or accidental attacks via their network interfaces. For highest security, these Dante/AES67 devices should not be used as part of the PRAESENSA system. If such inputs or outputs need to be used, use unicast connections only. Only Dante devices should be used that support Device Lock. Device Lock allows you to lock and unlock supported Dante devices using a 4-digit PIN (Personal Identification Number). Make sure that the devices are locked when in normal operation. Dante Controller is needed to set the PIN and setup the connections. Alternatively use Dante Domain Manager.
- For security reasons, by default the PRA-ES8P2S Ethernet switch is not accessible from the Internet. When the default (special link-local) IP-address is changed to an address outside the link-local range (169.254.x.x/16), then also the default (published) password must be changed. But even for applications on a closed local network, for highest security the password may still be changed. See section 14.5 of the PRAESENSA installation manual.
- The PRA-ES8P2S network switch supports SNMP. By convention, most SNMPv1-v2c equipment ships from the factory with a read-only community string set to "public". This also applies to the PRA-ES8P2S. For security reasons SNMP should be disabled. If SNMP must be enabled, for example to use the Bosch Network analysis tool OMN-DOCENT, use SNMPv3. SNMPv3 provides much better security with authentication and privacy. Select the authentication level SHA and encryption via AES. To configure the switch accordingly, see section 14.5 of the PRAESENSA installation manual.

- The system controller webserver uses secure HTTPS with SSL. The web server in the system controller uses a self-signed security certificate. When you access the server via https, you will see a Secure Connection Failed error or warning dialog indicating that the certificate was signed by an unknown authority. This is expected and to avoid this message in the future you have to create an exception in the browser.
- Make sure that new user accounts for system configuration access use sufficiently long and complex passwords. The user name must have between 5 and 64 characters. The password must have between 4 and 64 characters.
- The PRAESENSA system controller provides an Open Interface for external control. Access via this interface requires the same user accounts as for system configuration access. In addition, the system controller generates a certificate to setup the TLS (secure) connection between the system controller and the Open Interface client. Download the certificate and open/install/save (depending on browser type) the crt-file. Activate the certificate on the client PC. See section 7.2 of the PRAESENSA configuration manual.
- System access to the devices of this system is secured via the OMNEO security user name and passphrase of the system. The system uses a self-generated user name and long passphrase. This can be changed in the configuration. The user name must have between 5 and 32 characters and the passphrase must have 8 to 64 characters. To update the firmware of the devices, the firmware upload tool requires this security user name and passphrase to get access.
- In case a PC for event logs is used (PRAESENSA logging server and viewer), make sure that the PC is not accessible by unauthorized persons.

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
	PRA-ANS Ambient noise sensor		

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 13*
2. *Install the system software, page 14*
3. *Check network and web browser settings, page 29*
4. *Configuration do's and don'ts, page 32*
5. *Logon the application, page 34*

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 14*.
2. Installation of the (mandatory) software package on the configuration computer. See *(Mandatory) software, page 15*.
3. Installation of the firmware on the system controller and other PRAESENSA network devices. See *Check/Upload the devices firmware, page 19*.
4. *Check network and web browser settings, page 29*.
5. *Optional: Install the Logging Server, page 21*
6. *Optional: Install the Logging Viewer, page 22*
7. *Optional: Install OMNEO Control, page 23*
8. *Optional: Install (OMNEO) Network Docent, page 24*
9. *Optional: Install Dante Controller, page 26*
10. *Optional: Install the Open Interface, page 28*
11. *Logon the application, page 34*

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 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 is made online available as follows:

- From www.boschsecurity.com > PRAESENSA product section (i.e. the system controller) the .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
  - Bosch PRAESENSA Firmware.exe
  - *: Bosch PRAESENSA Logging Server.exe
  - *: Bosch PRAESENSA Logging Viewer.exe
  - *: Bosch-OpenInterface-Net-installer.exe
- From https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 the Firmware upload tool Vx.xx (where x.xx is the version release number and will be changed at updates). It includes:
  - 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 166*
  - PRAESENSA pre-defined tones (.wav). Go to www.boschsecurity.com > PRAESENSA product section > system controller > Downloads.
- **: *Optional: Install OMNEO Control, page 23*:
  - The OMNEO Control software enables users to configure audio devices, and to route audio all over the network.
- **: *Optional: Install (OMNEO) Network Docent, page 24*:
  - 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 26*:
  - 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 28*:
  - 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 ** characters in front are NOT part of the PRAESENSA Installation Package x.xx.zip file and can be downloaded from as indicated within their installation chapters. * Is part of the PRAESENSA Installation Package x.xx.zip and 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 42*
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** Downloads > Software on the product page >
   - **Select** PRAESENSA Installation Package x.xx.zip and and other (optional) files, if required.
   - **Save** PRAESENSA Installation Package x.xx.zip files to a safe location on your computer's hard drive.
4. **Go to** https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 and **download** the Firmware upload tool Vx.xx (where x.xx is the version release number and will be changed at updates) to a safe location on your computer's hard drive. It includes:
   - SetupOMNEOFirmwareUploadToolBundle(64).exe (two versions 32-bit and 64-bit).
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.
   - If the installation does not start automatically, check/run also the .exe files of the **redist** directory of the Installation Package x.xx.
8. In the following order, see also:
   - *Check/Upload the devices firmware, page 19*
   - *Optional: Install the Logging Server, page 21*
   - *Optional: Install the Logging Viewer, page 22*
   - *Logon the application, page 34*

Update the software

Important is to check the PRAESENSA Installation Package x.xx.zip and Firmware upload tool Vx.xx 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** Downloads > Literature on the product page >
   - **Select** the latest available Release notes. **Follow** the release note guideline on how to proceed.
2. **Select and click** the PRAESENSA product page of the System controller >
   - **Select and click** Download > Software on the product page > **Check** the release version (x.xx) and date of:
     PRAESENSA Installation Package x.xx.zip and other (optional) files, if required.
3. **Go to** https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 and check the Firmware upload tool Vx.xx (where x.xx is the version release number). It includes:
   - SetupOMNEOFirmwareUploadToolBundle(64).exe (two versions 32-bit and 64-bit).
4. **If** the online PRAESENSA Installation Package x.xx.zip and/or the Firmware upload tool Vx.xx release version is of a **higher/newer version** than the one installed on your computer; **install** (overwrite) the newly released version(s).
   - To install, see the previous topic: Install the software

Notice!

A configuration that was created with a newer software version, should not be used on an older software version. Always store and keep a backup of the current configuration version before upgrading.

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 15*.

– 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 15*.
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 34*.
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 34*.
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 118*.
   - 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 146*.

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 1st 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 1st 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 user 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 34* and/or *System security, page 126*.
   - **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- 1st 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 14*, 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 22*:
   - **IMPORTANT**: Go to *Optional: Using the Logging Server, page 133* 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 138* after the installation process of both the Logging Server and Logging Viewer.
8. **Continue** with: *Logon the application, page 34*

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 142*

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

Caution!
OMNEO control is an application for use with OMNEO channels only. It is not compatible with AES67 and Dante. OMNEO control will automatically clean up the AES67 connections every 30 seconds.

The OMNEO Control software is optional PRAESENSA software. See *(Mandatory) software, page 15*. It can be downloaded from the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000. It is named as OMNEO control Vx.xx (where x.xx is the version release and will be changed at updates and new releases). The OMNEO Control software is available for the Windows operating system.

- **Download** the software file as follows:
  - The installation process is described in a separate manual, called: OMNEO Control Software. See the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000.

1. **Go to** https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 > OMNEO control Vx.xx and be sure to **select** and **click** the right version for your system (the 32-bit or 64-bit software version).
   - Pressing the hotkey Windows+Pause will open a window with information about your system.
   - The download is a .zip file archive. Zip file archives have a .zip file name extension.
2. **Save** the .zip file to a folder on your Windows computer.
3. Windows will **unpack** the downloaded .zip file archive when you right click on the file name and select **Extract**.
   - Follow the onscreen instructions.
4. **Regularly check** the OMNEO control Vx.xx software for updates and new releases.

Refer to
- *Related documentation, page 7*

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 15*. It can be downloaded from the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000. It is named as Network Docent Vx.xx (where x.xx is the version release and will be changed at updates and new releases).

– The installation process is described in a separate manual, called:
  – Network Docent. It can be downloaded from the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000.

1. **Go to** https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 > Network Docent Vx.xx and be sure to **select** and **click** the right version for your system (the 32-bit or 64-bit software version).
   – Pressing the hotkey Windows+Pause will open a window with information about your system.
   – The download is a .zip file archive. Zip file archives have a .zip file name extension.
2. **Save** the .zip file to a folder on your Windows computer.
3. Windows will **unpack** the downloaded .zip file archive when you right click on the file name and select **Extract**.
   – Follow the onscreen instructions.
4. **Regularly check** the Network Docent Vx.xx software for updates and new releases.

Refer to

– *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.

Notice!
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.

Notice!
Some Dante devices do not automatically re-establish their connection with the PRAESENSA system controller after a reboot of the system controller. Re-establish the connection via Dante controller or use a Dante device that supports automatic reconnection.

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 144*.

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 144*
   - **IMPORTANT**: Go to *Optional: Using Dante Controller, page 144* after the PRAESENSA configuration process has been finalized or when the configuration process is asking for it.
7. **Continue** with: *Logon the application, page 34*

3.2.9 Optional: Install the Open Interface

The Open Interface application software is part of the PRAESENSA optional software. See *(Mandatory) software, page 15* (*.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 127* and *Optional: Using the Open Interface, page 145*
4. **Continue** with: *Logon the application, page 34*

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** Properties. 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** (used for non-secure connections) and **9403** (used for secure connections) with the **Open Interface** and port **19451** with the PRAESENSA **Logging Server** applications for communication. When using the PRAESENSA **Logging Server**, please make sure that port **19451** is not used by any other application, otherwise it will not start.

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** because a PRAESENSA system is, for emergency standards compliance, mandatory installed in a redundant network. **IMPORTANT:** When having RSTP **disabled**, and a redundant network installed, **the system will not function**. See the PRAESENSA installation manual.

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.

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 15*.
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).
- 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 34*.

- **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).

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

Refer to

- *Call definitions, page 88*

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 113*.

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.

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 29*.
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) administrator username (minimum **5** and maximum **64** characters) and (existing) password (minimum **8** and maximum **64** characters):

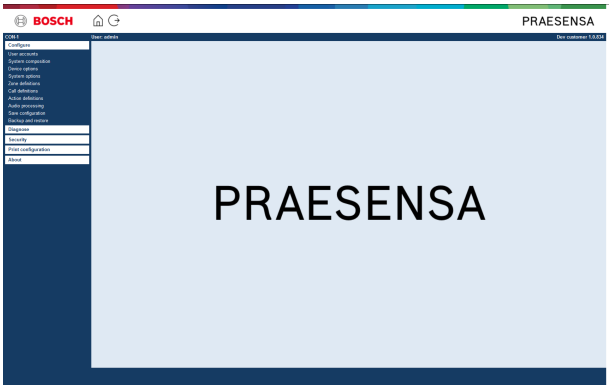
- PRAESENSA is default set for using a **secured connection** between the system controller and other network devices.
- An initial user account automatically gets the **secured** configuration administrator rights.
- Deleting the Initial (administrator) setup user account can only be done by adding a new user account with administrator rights and then delete the initial one. See *User accounts, page 37*.

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 126*.
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 15*).
   - **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.
   - **Notice**: English (UL2572) language selection is specific used for mass notification UL2572.
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 113*.
11. **Proceed** with: *Configure the system, page 36*.

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 37*.

– 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 32*



Configure (menu items)		
1	*User accounts, page 37*	The user accounts that provide access to the PRAESENSA webserver can be managed.
2	*System composition, page 39*	The network devices of which the system must consists can be added or removed.
3	*Device options, page 42*	Each network device that has been added using the System composition pages can be defined.
4	*System options, page 72*	A number of general system settings can be defined.
5	*Zone definitions, page 79*	The routing of zones, zone group, BGM, audio inputs and audio outputs of the amplifiers can be defined.
6	*Call definitions, page 88*	The announcement options (call definitions) can be defined.
7	*Action definitions, page 91*	The buttons of the call station (extension) and the control inputs can be defined.
8	*Audio processing, page 106*	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 113*	The current configuration can be saved.
10	*Backup and restore, page 114*	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 34*.

The webserver provides the following authorization levels:

- **Administrators**: Administrators have access to all parts of the webserver including the User accounts part, Logging Server, Logging Viewer and Open Interface.
- **Installers**: With the exception of the User accounts and Backup and restore parts, installers have access to all parts of the webserver, Logging Server, Logging Viewer and Open Interface.
- **Operators**: Operators have access to the Diagnose > version and About sections of the webserver, Logging Server, Logging Viewer and Open Interface.

Using the User accounts pages, it is possible to:

- *Add a user account, page 37*
- *Delete a user account, page 38*

Refer to

- *Logon the application, page 34*

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:
   - Minimum **5** and maximum **64** characters.
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**: Minimum **8** and maximum **64** characters.
   - **Installer and Operator**: Minimum **4** and maximum **64** characters.
   - 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 34*.

Notice!
The PRA-APAS (Advanced public address server) configuration is described in a separate PRA-APAS configuration manual. See *Related documentation, page 7*.

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 34*.
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 39* and
- *Add a device, page 40*.

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 40*

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 34*, 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 34*, 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 113*.
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:
   – Notice that the changes are not permanent until the configuration is saved. See *Save configuration, page 113*.

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 42*
- *Amplifier, page 48*
- *Multifunction power supply, page 53*
- *Call station, page 61*
- *System client, page 71*

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 34*, 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 116* and *Optional: Using the Logging Viewer, page 138*. **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 73* 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.
Emergency relevant	Enable (default) / Disable	By default, Emergency relevant is **enabled** and cannot be disabled at the System controller. Emergency relevant troubles (faults) are troubles (faults) that affect the emergency capability of the system. To differentiate between Mass Notification System (MNS) troubles (faults) and other troubles (faults) it is needed to assign (or not) Emergency relevant. Troubles (faults) that occur on devices that have assigned Emergency relevant will reported as MNS faults. Only when Emergency relevant is enabled, it shall trigger the general trouble (fault) alarm visual/audible trouble (fault) indicators when a trouble (fault) is reported. AC power supply trouble (Mains supply fault) / backup power fault / ground fault

Item	Value	Description
		indicators will show on First responder panel (Emergency/MNS call station) if the originator is Emergency relevant.
Submit	Button	**Click** the Submit button to store the settings: Notice that you always have to Save the configuration. See *Save configuration, page 113*

– * 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 Interface, 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 113*

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 26*.

The following two chapters describe the mapping of theVirtual 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 26*.

– 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 113*

Unencrypted virtual audio inputs (Dante/AES67)

Valid for unencrypted audio channels 17 up to 128.

See also *Optional: Install Dante Controller, page 26*.

– 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 113*

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 39*.

Front panel indicators

⚠	Device fault present	Yellow	⏻	Power on	Green
🔗	Network link present Network link lost Standby for redundancy	Green Yellow Blue		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 39*.

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 34*
- *Optional: Install Dante Controller, page 26*

5.3.2 Amplifier

1. **Below** Device options, **click** 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 116* and *Optional: Using the Logging Viewer, page 138* **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 116* and *Optional: Using the Logging Viewer, page 138* **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 116* and *Optional: Using the Logging Viewer, page 138*
Emergency relevant	Enable (default) / Disable	By default, Emergency relevant is **enabled** and can be **disabled.** Emergency relevant troubles (faults) are troubles (faults) that affect the emergency capability of the system. To differentiate between Mass Notification System (MNS) troubles (faults) and other troubles (faults) it is needed to assign (or not) Emergency relevant. Troubles (faults) that occur on devices that have assigned Emergency relevant will reported as MNS faults. Only when Emergency relevant is enabled, it shall trigger the general trouble (fault) alarm visual/audible trouble (fault) indicators when

Item	Value	Description
		a trouble (fault) is reported. AC power supply trouble (Mains supply fault) / backup power fault / ground fault indicators will show on First responder panel (Emergency/MNS call station) if the originator is Emergency relevant.
Submit	Button	**Click** the Submit button to store the settings. Notice that you always have to Save the configuration. See *Save configuration, page 113*

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 116* and *Optional: Using the Logging Viewer, page 138*
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 116* and *Optional: Using the Logging Viewer, page 138*
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 116* and *Optional: Using the Logging Viewer, page 138*
Load connection	Selection (by default Single)	Enable **Loudspeaker line** to select Dual or Loop. **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 113*

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 39*.

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 Amplifier in standby mode	Green Yellow Blue
	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 39*.

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			

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 AC power (for UL)	Enable / Disable	**Enable**: a mains supply (AC power) 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 116* and *Optional: Using the Logging Viewer, page 138*. **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 116* and *Optional: Using the Logging Viewer, page 138*. **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 116* and *Optional: Using the Logging Viewer, page 138*.

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 116* and *Optional: Using the Logging Viewer, page 138*.
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 116* and *Optional: Using the Logging Viewer, page 138*. **Disable:** results in a system that does not indicate and report amplifier (1, 2 and/or 3) (analog) lifeline failures.
Emergency relevant	Enable (default) / Disable	By default, Emergency relevant is **enabled** and can be **disabled.** Emergency relevant troubles (faults) are troubles (faults) that affect the emergency capability of the system. To differentiate between Mass Notification System (MNS) troubles (faults) and other troubles (faults) it is needed to assign (or not) Emergency relevant. Troubles (faults) that occur on devices that have assigned Emergency relevant will reported as MNS faults. Only when Emergency relevant is enabled, it shall trigger the general trouble (fault) alarm visual/audible trouble (fault) indicators when a trouble (fault) is reported. AC power supply trouble (Mains supply fault) / backup power fault / ground fault indicators will show on First responder panel (Emergency/MNS call station) if the originator is Emergency relevant. A reported **AC power supply trouble: External (Mains supply fault: External)**, which is triggered by a **control input**, is always Emergency relevant, regardless of the configuration.

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 113*.

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 91*.

- 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 40* 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 88*.			

Item	Value	Description	Added functionality at selected function
Make announcement	Selection	See *Action definitions, page 91*	**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 91*	**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 91*	**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 91*	N.a.
External zone fault Zone trouble (for UL)	Selection	See *Action definitions, page 91*	N.a.
Mains supply fault: External. AC power supply trouble: External (for UL)	Selection	See *Action definitions, page 91*	N.a
Power save mode	Selection	See *Action definitions, page 91*	N.a.
Acknowledge and/or reset	Selection	See *Action definitions, page 91*	N.a.
Switch control output	Selection	See *Action definitions, page 91*	N.a.
Local BGM source	Selection	See *Action definitions, page 91*	N.a.
Local BGM on/off	Selection	See *Action definitions, page 91*	N.a.
Local BGM volume control	Selection	See *Action definitions, page 91*	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.

Item	Value	Description	Added functionality at selected function
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 113*	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 91*.

– 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 40* for the naming of the MPSn.
Function Sets the functionality of the control output. See also *Call definitions, page 88*.		
Switch output	Selection	**Selected** on default. The control output is activated by a Switch control output control input and/or call station extension button.
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 Trouble sounder (for UL)	Selection	The control output activates a fault alarm buzzer/ trouble sounder (e.g. a connected buzzer/sounder) each time a fault is detected in the system. It can only be deactivated by acknowledging all faults using a

Item	Value	Description
		control input and/or call station button. **Notice**: Fault: relay contact open. No fault: relay contact closed.
Fault alarm indicator Trouble indicator (for UL)	Selection	The control output activates a visual fault/trouble indicator (e.g. a LED/lamp) each time a fault/trouble is detected in the system. Indicate a mains power fault/AC power trouble after grace time can be enabled/disabled. See also *System settings, page 73* and *Multifunction power supply, page 101* > Control outputs. It can only be deactivated by resetting all faults/troubles using a control input and/or call station button. **Notice**: Fault: relay contact open. No fault: relay contact closed.
Emergency alarm buzzer Alarm sounder (for UL)	Selection	The control output activates an emergency alarm buzzer/Alarm sounder (e.g. a connected buzzer/ sounder) 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 Alarm indicator (for UL)	Selection	The control output activates a visual Emergency/Alarm 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 System trouble indicator (for UL)	Selection	The control output activates a visual fault/trouble indicator (e.g. a LED/lamp); each time a system fault/ trouble is detected in the system. System faults/ troubles are a special category of faults/troubles, a subset of all possible faults/troubles. See also *Event messages, page 147* **Notice**: Fault: relay contact open. No fault: relay contact closed.
Power fault indicator	Selection	The control output activates the control output relay each time a Mains power fault or a Battery backup fault is detected in the system. E.g. a LED/lamp/ contact could be connected. See also *Multifunction power supply, page 101* > Configure Control outputs. **Notice**: Fault: relay contact open. No fault: relay contact closed.

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 113*

Front panel indicators

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

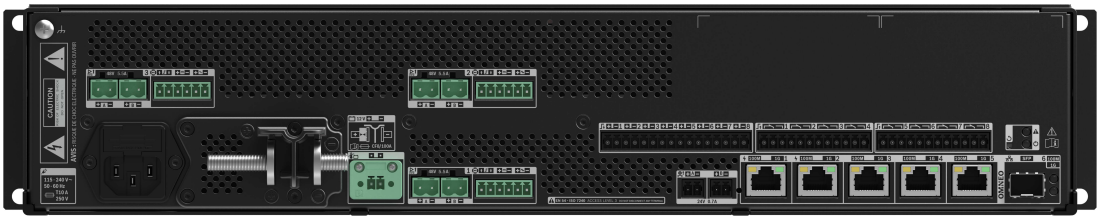
To make device identification visible, see *System composition, page 39*.

	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 39*.



	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 selection Settings and Emergency group appears.
2. Select Settings:
   – A new screen appears listed the network connected call stations / Fire response panels.
3. **Select and click** the call station / Fire response panel name to configure:
   – Notice that a Call station / Fire response panel is only listed when it is added to the System composition.
4. A new screen appears with the following functionality to configure:
   – **General**
   – **Functions** (only available for Class: Normal)
   – **Audio inputs**
   – **Extension** (Default not visible, unless you select 1-4 in the General section)
   – **Recorded messages** (only available for Class: Normal)
   – **Alert messages** (only available for Class: Normal)
5. Select Emergency group, if required:
   – See Emergency group in this section.

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 Mass notification	**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 92*) 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. When Class is **Mass notification**, the First responder panel act as a Mass Notification System (MNS) panel. The LCD is static, which means that only Mass Notification (trouble) indications are listed on the LCD. **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.

Item	Value	Description
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.
Emergency relevant	Enable (default) / Disable	By default, Emergency relevant is **enabled** and can be **disabled.** Emergency relevant troubles (faults) are troubles (faults) that affect the emergency capability of the system. To differentiate between Mass Notification System (MNS) troubles (faults) and other troubles (faults) it is needed to assign (or not) Emergency relevant. Troubles (faults) that occur on devices that have assigned Emergency relevant will reported as MNS faults. Only when Emergency relevant is enabled, it shall trigger the general trouble (fault) alarm visual/audible trouble (fault) indicators when a trouble (fault) is reported. AC power supply trouble (Mains supply fault) / backup power fault / ground fault indicators will show on First responder panel (Emergency/MNS call station) if the originator is Emergency relevant.
Submit	Button	**Click** the Submit button to store the settings. Notice that you always have to Save the configuration. See *Save configuration, page 113*

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 88*.
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 88*.
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. 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

Item (LCD menu)	Value	Description
		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 * **Trouble log *** (for UL)	Enable / Disable	**Enable**: When Fault log / Trouble log is enabled a Fault Log / Trouble log tile will be available on the start screen of the call station / First responder panel display. The Fault Log / Trouble log tile is for the call station operator who will touch the Fault Log / Trouble log tile to see an overview of logged device and system faults / trouble.
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).
Submit	Button	**Click** the Submit button to store the settings. Notice that you always have to Save the configuration. See *Save configuration, page 113*

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 88*. **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 113*

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 88*.			
Select zone(s)	Selection	See *Action definitions, page 91*	N.a.
Make announcement	Selection	See *Action definitions, page 91*	**Actions (1-5)**: **Selects** the number of actions for this button if it is a Make announcement action.
Make announcement with zone selection	Selection	See *Action definitions, page 91*	N.a.
Start phased announcement	Selection	See *Action definitions, page 91*	**Actions (1-5)**: **Selects** the number of actions for this button if it is a Start action.

Item	Value	Description	Additional function
Stop phased announcement	Selection	See *Action definitions, page 91*	**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 91*	N.a.
Acknowledge and/or reset	Selection	See *Action definitions, page 91*	N.a.
Indicator test	Selection	See *Action definitions, page 91*	N.a.
Switch control output	Selection	See *Action definitions, page 91*	N.a.
Local brightness control	Selection	See *Action definitions, page 91*	N.a.
Transfer of control (for UL)	Selection	See *Action definitions, page 91*	**IMPORTANT**: Function only visible when Class: Mass notification + Emergency Group are set.
Submit	Button	**Click** the Submit button to store the settings. Notice that you always have to Save the configuration. See *Save configuration, page 113*	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 messages category.
   - See also *Call definitions, page 88*.
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.

Emergency group

Emergency group is a set of functionality for Mass Notification Systems (MNS) that allows multiple first responders (fire fighters) to control the evacuation of a building from multiple locations in which each has, one or more, First responder panel(s) (FRP's) in use. All those First responder panels form a group. To be able to continue actions on another location (First responder panel), the user interface (LCD) of each First responder panel must be the same. The result of actions done on one First responder panel is also showed on the other First responder panels (LCD) in the group. In order to avoid confusion among the first responders (fire fighters), actions are only possible on one First responder panel at the time. That First responder panel is then 'in control' and the others are 'not in control'. It is also possible to force the 'in control' state from one First responder panel to the other.

A First responder panel (FRP) / call station is **only** visible/selectable when Class is set to Mass notification. To do so:

1. **Below** Device options, **click** Call station:
   – A selection Settings and Emergency group appears.
2. **Click** Settings:
   – A First responder panel / call station overview appears.
3. **Select and click** a First responder panel / call station name:
   – At least one First responder panel / call station must be selected.
4. **Select and click** the + of the General category to set the Class of **each** First responder panel / call station to Mass notification.
5. **Select** each of the following items:

Item	Value	Description
Emergency call station	Selection	**Shows** the First responder panel(s) / call station(s) which are selected, and set to, Class: Mass notification.
> and <	Buttons	**Using** the > and < buttons, selected First responder panel(s) / call station(s) can be added (>) to, or removed (<) from the Group and Overrule control request sections.
Group	Selection	**Shows** the First responder panel(s) / call station(s) which are selected to be part of the Emergency group of First responder panel(s) / call station(s).
Overrule control request	Selection	**Shows** one or more First responder panel(s) / call station(s) to select, which each could **request** the 'in control' function from the default 'in control' panel. See also Default in control.

Item	Value	Description
Group name	Enter text	**Enter** free text to name the Group of First responder panel(s) / call station(s). The group name will be automatically added to all Group selected First responder panel(s) / call station(s).
Default in control	Selection	**Select** the First responder panel / call station of the Group which must be default 'in control'. Only one panel/ station can be 'in control' at the same time. See also Overrule control request. If the panel/station is configured as Default in control but removed from the Group, the default is set to <None>.
Grant control timeout	Selection (1-90 sec) (default 30 sec)	If the Overrule control request First responder panel / call station does not respond on a request of control within the selected timeout, it will automatically lose the 'in control' status. See also Overrule control request. .
Submit	Button	**Click** the Submit button to store the settings: Notice that you always have to Save the configuration. See *Save configuration, page 113*

Add a mass notification panel/station

Be noted that a First responder panel / call station is **only** visible/selectable when Class is set to Mass notification.

Proceed as follows to add a First responder panel / call station:

1. **Select and click** Emergency group:
   - A new screen Emergency call station group appears where in Emergency call station the selected network connected First responder panel(s) / call station(s) for Mass notification are listed.
   - **IMPORTANT:** when Class: Mass notification of an already selected panel/station is changed to Normal or Emergency, it will be automatically removed from the Emergency call station section.
2. Be sure that the Call station operator language is set to English (UL) in *System settings, page 73*.
3. **Select** and **move (>) each** First responder panel / call station to the Group section:
   - The configuration of the panel/station itself will not affected if it is added to the Group.
   - Each panel/station could have a different configuration.
4. **Select** and **move (>) each** First responder panel / call station to the Overrule control request section if it must be allowed to have an 'in control' status when requested. It will overrule other panels/stations in the Group. When **not** 'in control':
   - A panel/station cannot be used.
   - User actions on the LCD and buttons are blocked.
5. **Name** (free text) the Group in Group name.
6. **Select** the (main) **'in control'** First responder panel / call station in Default in control:
   - This (main) panel/station is default 'in control' can always overrule other 'in control' panels/stations in the Overrule control request section.
   - Only one panel/station can be selected as default (main) 'in control'.

- LCD user actions and buttons are blocked when a panel/station is **not** ‘in control’.
- The behavior of the ‘in control’ panel/station is followed on the other panels/stations in the Group.
- The ‘in control’ panel/station can be configured to grant or deny a request. See *Action definitions, page 91* > Transfer in control.

7. **Select** the Grant control timeout (default is 30 sec) of the selected Overrule control request panel/station:
   - If the Overrule control request First responder panel / call station does not respond on a request of control within the selected timeout, it will automatically lose the ‘in control’ status.

Remove a mass notification panel/station

Proceed as follows to remove a First responder panel / call station:

1. A First responder panel / call station will be automatically visible and available on the Emergency call station section if Class: Mass notification is set.
2. To remove a First responder panel / call station from the Emergency call station section; change its Class to Normal or Emergency.

Rename a mass notification panel/station

To rename a First responder panel / call station, see *System composition, page 39* and Group name in this section.

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 39*.

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	 Green Green blinking		4.3" full-color capacitive touch screen	LCD

	Status emergency call Microphone active Alarm tone/message active	 Red Red blinking			
	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 103*

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 39*.
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. A fault for the missing system client will be reported after a grace timeout of 10 minutes.
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 113*.

5.4 System options

On the System options pages, a number of general, system wide settings can be configured, such as:

- *Recorded messages, page 72*
- *System settings, page 73*
- *Time settings, page 77*
- *Network supervision, page 77*

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.
Minimum length	500 ms for repeating messages.
Message/tone storage capacity	90 min.
Announcement	With tone, eight .WAV files played at the same time.

For specification of custom made messages/tones, see also the PRAESENSA installation manual > System composition > Amplifier power and crest factor.

Add a recorded message

Refer to *Tones, page 166* 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 113*

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 113*

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 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 29*, 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 119*.
UL amplifier mode	Enable / Disable	When enabled, the amplifiers comply to the requirements of UL with regards to temperature limitations. When disabled, the amplifiers run in the normal (EN54) mode. **IMPORTANT**: In UL amplifier mode the

Item	Value	Description
		amplifier fan is always blowing at 100%. This also means that, there is no temperature control of the amplifier fan.
Emergency mode		
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.
Mains supply fault		
Grace time to report mains fault on control outputs	Selection Off / 1-8 h(hr) (by default Off)	The purpose of the grace time is to suspend a warning to i.e. a third party management system, that informs service technicians on a remote location for i.e. systems in areas where short mains failures frequently happen. If the mains fault is only temporary present, the fault will not reported before the configured grace time ends. The function Fault alarm indicator acts immediately on the occurrence of a mains power fault, or that activation is suspended and will only happen if the mains power fault is still present after the configured grace time. All other faults will result in an immediate activation of this Fault alarm indicator. The Fault alarm buzzer is not delayed in order to give a local warning immediately.

Item	Value	Description
		See *Multifunction power supply, page 53* and *Multifunction power supply, page 101* > Control outputs **IMPORTANT**: The system backup power supply should at least be able to provide power during the configured grace time.
Alarm buzzer		
Reactivate silenced fault and emergency alarm buzzer	Selection Off / 1-24 h(hr) (by default Off)	
Fault mode		
Reactivate silenced fault alarm buzzer	Selection Off / 1h-24 h(hr) (by default 4 h(hr))	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.
System controller redundancy (* see description in this section)		
Group name	Enter text	Enter free text (between 1 and max. 32 characters), to name the redundant pair of system controllers. By using the exact name, including .local, the group name can also be used to logon the configuration.
Virtual Host ID (CARP VHID)	Selection	Common Address Redundancy Protocol (CARP) allows multiple hosts to share the same IP-address and Virtual Host ID (VHID). 1 is selected by default and is linked with the primary (duty) system controller. Unless another system controller will be acting as the primary one, selection of another number than 1, is not recommended.
IP-address	Fixed	This is the IP-address of the primary (duty) system controller. The IP-address is fixed, and cannot be changed here.
Netmask	Default	This is the Netmask of the primary (duty) system controller. The Netmask is fixed, and cannot be changed here.
Group IP-address	Enter address	The group IP-address is used to link the pair of system controllers. The first part of the IP-address is of the IP-address (range) of the primary (duty) system controller, it is fixed, and cannot be changed here. The second part

Item	Value	Description
		of the IP-address is free to enter but must be free available, and within the same IP-address range of the primary system controller.
Configuration software		
Automatic logout after inactivity of	Selection 5-30 min (by default 10 min)	If no configuration activity is detected by the system, the logged in user will be automatically logged out after the selected time.
Submit	Button	**Click** the Submit button to store the settings: Notice that you always have to Save the configuration. See *Save configuration, page 113*

*** System controller redundancy**

It is possible to have a primary (duty) and a secondary (standby) system controller in a single system, configured as a redundant pair. This to avoid that an PRAESENSA system becomes non-functional when an system controller fails. By default (on startup), the primary system controller will become the duty system controller, while the secondary will be the standby system controller. In operation, the primary system controller will copy all required configuration settings, messages, event logs and device status information to the secondary system controller.

Both system controllers can be connected via dual redundant connections to the network.

Caution!

Be aware that when start configuring redundancy, the secondary (standby) system controller is “reset to factory default” first (see *System controller, page 42* > Rear panel indicators and controls). This to avoid that a secondary system controller refuses to be configured.

Notice!

For time synchronization of the primary (duty) system controller and the secondary (standby) system controller, it is necessary to configure a NTP server. See *Time settings, page 77*.

Notice!

When Dante channels are used; be sure that the same channels are selected for the secondary (standby) system controller with Dante controller. See *Optional: Using Dante Controller, page 144*.

Refer to

- *Optional: Using the Logging Viewer, page 138*
- *Event messages, page 147*

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 113*

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. **Selec**t, **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 116* and *Optional: Using the Logging Viewer, page 138*. 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 113*. 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 79*
- *Zone grouping, page 84*
- *BGM routing, page 86*

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 a multifunction power supply Lifeline is default available to select.
Ambient noise sensor	Selection	**Shows** the available Ambient noise sensors (ANS) to select.
> and <	Buttons	**Using** the > and < buttons, selected ANSs can be added (>) to, or removed (<) from, an assigned zone. **IMPORTANT**: A maximum of four ANS may added to a zone. An ANS may not added to more than one zone. See also the Volume settings > AVC in this section.
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.

Item	Value	Description
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 113*

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 113*.

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 113*.

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 113*.

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.
Automatic volume control (AVC)	Enable / Disable	AVC improves the intelligibility of calls and the audibility of BGM in noisy environments. It adjust the call volume in a zone to compensate for ambient noise. **Enable/disable** the AVC function of the Ambient noise sensor(s) in the selected zone. If disabled (unchecked), all other AVC related settings are also disabled. **IMPORTANT**: If no ANS is assigned to a zone, the checkbox Automatic volume control and its AVC related settings are also disabled. See also *Ambient noise sensor, page 111* and *Ambient noise sensor, page 123*.
Ambient noise threshold	Selection (50 dBSPL - 90 dBSPL)	Select the SPL level for the ambient noise, which the output volume will be reduced within the attenuation range.This avoids that the sound is too loud to be comfortable, while intelligibility is maintained. The **default** value is 70 dBSPL.

Item	Value	Description
Attenuation range	Selection (4 dB - 18 dB)	Can be set between 4 and 18 dB in steps of 1 dB, where 10 dB is the **default**. A higher value will result in lower call volume levels when the ambient noise volume level increases.
Adaptation slope	Selection (1 dB/dB, 0.75 dB/dB, 0.50 dB/dB)	Is the integration time of the ambient noise level measurement. The adaptation slope is the ratio, between the volume change, as a result of the ambient noise level change. **Example**: if the slope is 0.5 dB/dB, it means that for every dB noise reduction, the call level will only be 0.5 dB reduced. 1 dB/dB is set as **default**.
Adaptation speed	Selection (Slow 0.2 dB/s Medium 1 dB/s Fast 5 dB/s)	Is the speed the attenuation of the call changes as a result of changes in the noise level. Can be set to Slow, Medium (**default**) or Fast. This applies to both attack and release time.
Control of BGM	Enable / Disable	Sets the AVC for BGM (**default** = Enabled/On). Attenuation can change (because of changes in noise level) during BGM. **IMPORTANT**: When AVC is enabled for BGM, make sure that the Ambient noise sensor (ANS) is not near the loudspeakers. If the ANS is near the loudspeakers, the BGM is seen as ambient noise and the volume level of the BGM will increase to the maximum volume level (feedback).
Control of business calls	Enable / Disable	Sets the AVC for business calls (**default** = Enabled/On). At the start of the business call, the attenuation is set according to the noise level. Attenuation is not change (because of changes in noise level) during a business call. **NOTE**: The ambient noise level that is used to adjust the volume of the call, is measured just before the start of the call.
Submit	Button	**Click** the Submit button to store the settings: Notice that you always have to Save the configuration. See *Save configuration, page 113*.

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.

Notice!
Ambient noise sensors cannot added to Zone group(s).

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 79*
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.

Item	Value	Description
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 113*

Add a zone group

Notice!
It is not possible to add PRA-ANS devices to zone groups.

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 79*.

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 79*.

Delete a zone group
The procedure for deleting a zone group is **similar** to the procedure for Delete a zone. See *Zone options, page 79*.

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 79* and *Zone grouping, page 84*
> 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 113*

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 79*.

Rename BGM routing

The procedure for renaming BGM routing is **similar** to the procedure for Rename a zone. See *Zone options, page 79*.

Delete BGM routing

The procedure for delete BGM routing is **simila**r to the procedure for Delete a zone. See *Zone options, page 79*.

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 113*.

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 131*, 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.
Alarm	Selection (None and Emergency)	From priority setting 224 onwards, the Alarm section becomes visible. Emergency is default selected and is used to trigger the alarm independent of the call priority so that it can test the settings without triggering an alarm.
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 72* and *Tones, page 166* 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 61* > Recorded/Alert Messages.
Attenuation	Selection (0 dB-20 dB)	**Adjust** the attenuation to **set** the volume level of the selected Messages.

Item	Value	Description
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).
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 72* and *Tones, page 166* 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. **IMPORTANT**: From software release 1.10 onwards, Continue call is forced set to **NO** when Live speech is set to **Yes** and Priority is set to a priority higher than **223** (i.e. an evacuation announcement/call).
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.

Item	Value	Description
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.
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 113*.

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 113*.

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 113*.

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 91*
2. *Assigning a function, page 92*

See the following sections to configure the actions per device type category:
– *System controller, page 100*
– *Multifunction power supply, page 101*
– *Call station, page 103*

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 92*).

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 type	Description
	operation 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.
Toggle	**The action** coupled to the button is started when the contact closes and stopped when the contact closes again.

Refer to

– *Assigning a function, page 92*

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 91*. 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 (*Function description, page 95*). 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
8	Toggle

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**	**8**
Press-to-Talk (PTT) button CS	-	-	-	**D**	-	**O**	-	-	-	-
Make announcement CSE, SC (VCI), MPS	**I**	**I**	**D**	**O**	**O**	**O**	**O**	-	-	**-**
Make announcement with zone selection CSE	**I**	-	-	-	**D**	**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**	-	-	**-**	**-**	-

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**	**8**
Acknowledge and/ or reset CSE, MPS	**I**	**I**	-	-	-	-	**D**	-	-	-
Indicator test CSE	**I**	-	**D**	-	-	-	-	-	-	-
External fault MPS	-	**I**	**D**	-	**O**	-	-	-	-	-
External zone fault (**Zone trouble** = for UL) MPS	-	**I**	**D**	-	**O**	-	-	-	-	-
Mains supply fault: External (**AC power supply trouble: External** = for UL) MPS	-	**I**	**D**	-	**O**	-	-	-	-	-
Power save mode MPS	-	**I**	**D**	-	**O**	-	-	-	-	-
Switch control output CSE, 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**	-	-	-	-	-
Local brightness control CSE	**I**	**-**	-	-	**-**	-	**D**	-	-	-
Transfer of control (for UL) CSE	**I**	**-**	**-**	**-**	**-**	**-**	**D**	**-**	**-**	**-**

Refer to

– *Assigning an operation, page 91*

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.

Make announcement with zone selection > (CSE)

This function can be assigned to buttons and is similar to the Make announcement function but without pre-configured zone / zone groups selection. Using the Make announcement with zone selection function, a pre-recorded message, based on a call definition, can be started/ aborted/stopped in one or more manual selected zones / zone groups.

- Select first one or more zones / zone groups to start a Make announcement with zone selection.
- A running call definition can abort/stop (depending on the configured operation) by pressing the Make announcement with zone selection button again.
- Removing zones / zone groups during a running call definition is not possible.
- Add a zone / zone groups to a running call definition by selecting a zone / zone group and then pressing the Make announcement with zone selection button again:
  - If no zones selected, and a call definition was already running, the call definition is stopped/aborted.
- The Make announcement with zone selection button LED ring is solid white as long as the call definition is running.
- The Make announcement with zone selection button loudspeaker LED is:
  - **Blue** for business/Normal announcements/calls.
  - **Red** for Emergency and Mass notification announcements/calls as long as the call definition is running.

– **Select**: Operation and Call definition.

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 inputs.

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 buzzer.
– **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 buzzer.
– **Reset**: If the button/control input is set to Reset, then the indicator functions as emergency 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 / Zone trouble (UL2572) > (MPS)

This function can be assigned to control inputs.

The External zone fault / Zone trouble action generates an external line fault/trouble. This fault/trouble 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 / Zone trouble, 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/trouble log in case of a fault/trouble.
- Preferably only a single zone should be configured for each External zone fault / Zone trouble 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 / AC power supply trouble: External > (MPS)

This function can be assigned to control inputs.

The Mains supply fault: External / AC power supply trouble: 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.

Power save mode > (MPS)

This function can be assigned to control inputs.

The Power save mode function is used to put the system in the backup power mode. A fault / trouble will **not** reported.

- 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.

Local brightness control > (CSE)
This function can be assigned to call station extension buttons.
The Local brightness control function is used to control the brightness of a call station display, LEDs and the connected call station extension LED's. Changing the brightness up and brightness down in steps by using the call station extension buttons. This function can be set to each individual call station and its connected call station extensions.
Select: Operation and Brightness (Brightness up or down).

Transfer of control > (CSE)
The Transfer of control function can **only** be assigned to extension buttons when the connected First responder panel / call station (button) is selected and set in *Call station, page 61* > Settings > Class: Mass notification and Emergency group > Group.
The Transfer of control function is used to set the Function of a button to:
- **Control indicator**:
  - White button ring lit: The First responder panel / call station is 'in control'.
  - White button ring off: The First responder panel / call station is NOT 'in control'.
- **Request control**: Used to request the 'in control' First responder panel / call station to take over the 'in control' function. It will be granted or denied by the current 'in control' First responder panel / call station.
  - Pressing this Request control button **long** on a First responder panel / call station, that is configured in the 'Overrule control request', will immediately transfer control to that First responder panel / call station.
- **Grant:** Used by the 'in control' First responder panel / call station to Grant an Overrule control request of another First responder panel / call station in the Overrule control request section.
- **Deny:** Used by the 'in control' First responder panel / call station to Deny an Overrule control request of another First responder panel / call station in the Overrule control request section.

The function can be set to each individual button.
Select: Operation and Function.

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 42* > VCI paragraph.
Function name	Static text	**Shows** the name of the Function which is **selected** in section *System controller, page 42* > VCI paragraph.
Call definition	Selection	**Select** the call definition which is **created** in section *Call definitions, page 88*
Zone / Zone groups	Selection	**Select** the zone or zone group which is **created** in section *Zone definitions, page 79*
> 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 113*

Configure a virtual control input action

See *Assigning a function, page 92* for Function (action) and *Assigning an operation, page 91* 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 113*.

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 53*
Function	Static text	**Shows** the name of the function which is **selected** in section *Multifunction power supply, page 53* > control inputs chapter
Operation	Selection	**Select** the operation of the function which is **selected** in section *Multifunction power supply, page 53*. See also *Assigning an operation, page 91*.
Call definition	Selection	**Select** the call definition which is created in section *Call definitions, page 88*
Depending of the selected Function, different parameters could be selected, entered, added/removed. See *Assigning a function, page 92* 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 113*

Configure control inputs

See *Assigning a function, page 92* for functions and *Assigning an operation, page 91* 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 113*.

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, Power fault indicator and Fault alarm indicator / Trouble indicator (UL2572), the Name and the function of the control outputs are static and can only be changed in the section *Multifunction power supply, page 53*.
   – 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 53*.
   – Notice that the Power fault indicator requires selection of Mains power fault or Battery backup fault. See *Multifunction power supply, page 53* > Control outputs.

– Notice that Indicate mains power fault after grace time (if selected: 1-8 h) the Fault alarm indicator / Trouble indicator (UL2572) can be enabled/disabled. See *System settings, page 73* > Mains supply fault and *Multifunction power supply, page 53* > Control outputs.

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 92* for functions and *Assigning an operation, page 91* 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 91*.
Call definition	Selection	**Select** the Call definition to be **used** from the dropdown list. See *Call definitions, page 88*
Zone / zone groups	Selection	**Select** the Zone or Zone groups to be **used** from the dropdown list. See *Zone definitions, page 79*. **NOTE**: The selected Zone(s) and/or Zone group(s) will be used when (only) the PTT button is pressed. A call station extension (zone selection button) can still be added, but is not required.
> and <	Buttons	**Using** the > and < buttons, selected Zone or Zone groups can be added (>) to, or removed (<) from, the PTT button.
Depending of the selected Function, different parameters could be selected, entered, added/removed. See *Assigning a function, page 92* 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 113*.

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 61*. See also *Assigning an operation, page 91*.
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 86*. The configured BGM routing can be used on the call station Music screen for these specific selected Zone(s). A maximum of four music sources can be assigned to one Zone and will be shown in the display.
> and <	Buttons	**Using** the > and < buttons, a BGM routing channel can be selected (left area box) and added to, 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 92* 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 113*.

Configure buttons

See *Assigning a function, page 92* for functions and *Assigning an operation, page 91* 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 113*.

Recorded messages

Recorded messages selection is only visible/possible if this **function** is enabled in *Call station, page 61*.

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 113*.

Alert messages

Alert messages selection is only visible/possible if this **function** is enabled in *Call station, page 61*.

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 113*.

Refer to

– *Action definitions, page 91*

5.8 Audio processing

On the Audio processing pages, the audio processing parameters of an audio input of a call station, ambient noise sensor and/or audio outputs of an amplifier in the PRAESENSA system can be set: See:

- *Amplifier, page 106*
- *Call station, page 109*
- *Ambient noise sensor, page 111*

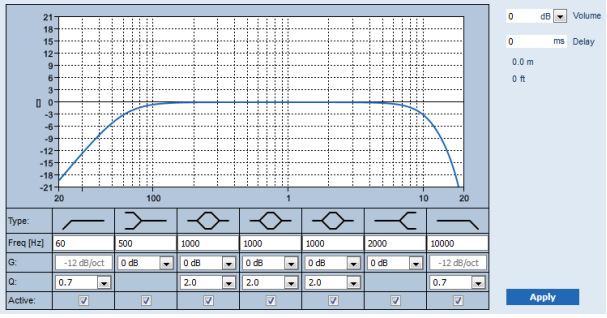
The DSP audio equalizers have an internal headroom of 18 dB. Do not use audio equalizer settings with an accumulated gain of more than 18 dB at any frequency, as this will cause audio clipping for full scale input signals. It is good practice to do most of the frequency response corrections by attenuation of prominent frequency bands.

5.8.1 Amplifier

On the Audio processing page of the Amplifier, the audio processing parameters of the selected amplifier outputs can be set.

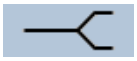
- For each audio output of the amplifier, a parametric equalizer, an audio delay option and a volume level selection button is available to set the audio output signal.

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)

Item	Filter	Value	Description
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 filters 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 113*.

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. Refer to the PRAESENSA installation manual (amplifier chapters) for a detailed description of the spare amplifier output channel function.

Lifeline audio input

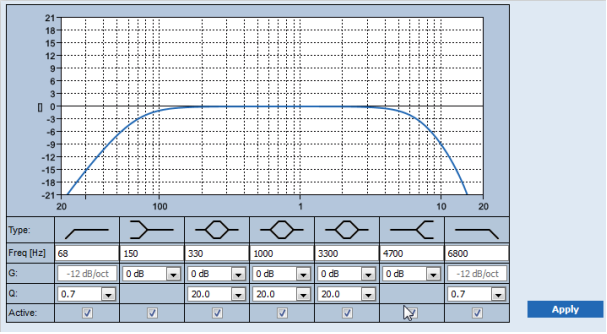
Each amplifier incorporate a (backup) **analog** lifeline audio input driving the spare amplifier audio output channel to serve all connected loudspeaker zones in case the network connections, or the amplifier network interface, would fail. The lifeline is automatically added as a zone when adding a multifunction power supply (mps) in *System composition, page 39* and *Zone definitions, page 79*. **No** separate audio options settings for the lifeline are available and required. Refer to the PRAESENSA installation manual (amplifier chapters) for a detailed description of the lifeline function.

5.8.2 Call station

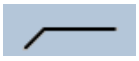
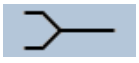
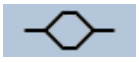
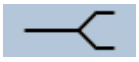
On the Audio processing page of the call station, the audio processing parameters of the selected call station input can be set.

– 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 filters 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 113*.

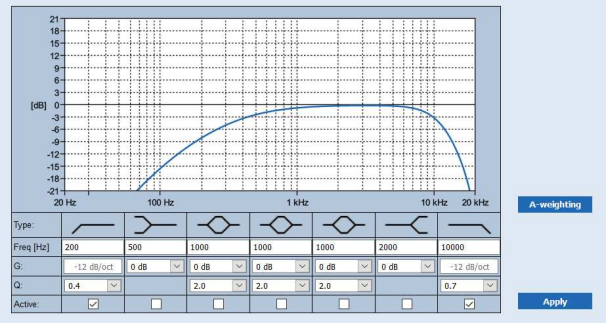
5.8.3 Ambient noise sensor

On the Audio processing page of the Ambient noise sensor (ANS), the audio processing parameters of the selected Ambient noise sensor (microphone) can be set.

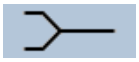
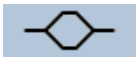
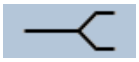
- For the microphone of the ANS, a parametric equalizer is available to set the audio output signal. The correct setting depends on to which noise frequencies the ANS should be sensitive, or insensitive, at the location where the ANS is installed.
  - The default EQ setting for an ANS is the A-weighting curve (low-cut at 200 Hz with Q = 0.4 and high-cut at 10 kHz with Q = 0.7).
  - To set the EQ back-to-default (A-weighting) curve, click the A-weighting button.

To do so:

1. **Below** the Audio processing page, **click** Ambient noise sensor:
   - A new screen appears, listed the connected Ambient noise sensor(s).
2. **Select and click** the Ambient noise sensor name to configure.
   - A new screen appears listed the Microphone(s)
3. **Select and click** the + of the Microphone 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 200 Hz, Quality factor 0.4 (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 2.0 (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:-20 dB - +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.

Equalizer settings

When automatic volume control (AVC) is enabled in a zone, an ambient noise sensor (ANS) continuously measures the ambient noise. PRAESENSA uses an averaging filter to derive the average ambient noise level from the signal of the ANS (microphone).

Proceeds as follows to **set** and **activate** the filters of **each** ambient noise sensor (ANS), individually.

1. **Make sure** that the ANS is correctly connected to the system and zone.
   - See *System composition, page 39* and *Zone options, page 79*.
2. **Make sure** that all loudspeakers (zones) are connected to each amplifier output, set at the correct power level, are aimed (if necessary) and are working.
3. Note that all filters are already set to the default values as indicated in the previous table. If required, adjust the frequencies, gain and quality factors of each filter.
4. **Enable** (checkmark) the Active box of each (required) filter to make it active in the system.
   - The high-pass and low-pass filters are the most valuable ones, and are default already activated.
5. **Click** the Apply button.
6. **Click** the Submit button to apply 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 113*.
7. Continue with *Ambient noise sensor, page 123*.

Refer to

- *Save configuration, page 113*
- *System composition, page 39*
- *Ambient noise sensor, page 123*
- *Zone options, page 79*

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 138*.

Refer to
– *Logon the application, page 34*
– *Backup and restore, page 114*

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 114*
- *Restore, page 115*

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 .tar.gz 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 72*.

Backup your configuration file

See *Logon the application, page 34*.

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 already submitted and saved configuration settings will be selected to backup to a location on your connected configuration computer.
3. **Enable** (checkmark) User credentials and certificates:
   - User credentials will be selected to backup, but also certificates will be done.
4. **Enter** your (new) Password in the text field (minimum 8 characters):
   - Notice that the password used for the backup could be different from the one used for logon the configuration.
5. **Click** the Create button:
   - A .tar.gz backup file will be created.
   - Depending on the web browser type (e.g. Firefox, Edge, etc.) a save/open file selection screen will appear.
6. Depending on the web browser type, **browse** to the file location where you want **to store** the backup file:
   - The configuration and credentials selected will be stored on the location you selected.
7. If required, see *Restore, page 115*.

Refer to

- *Recorded messages, page 72*

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 114*.

- **IMPORTANT:** Notice that recorded messages are **not** part of the backup configuration .tar.gz 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 72*.

Restore your configuration file

Proceed as follows:

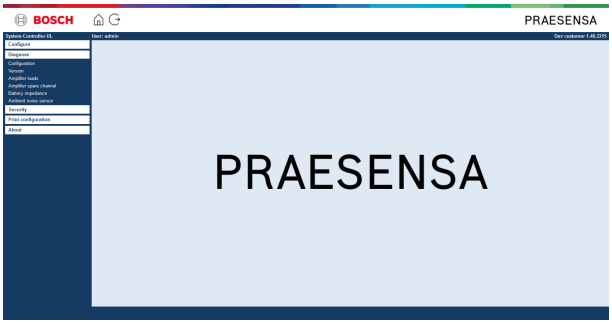
1. **Below** the Backup and restore configuration page, **click** Restore:
   - A screen appears with the following items:
2. **Click** the Browse button:
   - Depending on the web browser type (e.g. Firefox, Edge, etc.) A (different) file selection screen appears.
3. **Browse** to, and select, the .tar.gz file which need to be restored.
4. **Enter** your Password (used for the backup) in the text box below Provide password when backup contains user credential and certificates:
5. **Click** the Restore button:
   - The selected configuration and credentials file will restore your system configuration.
6. **Upload** the messages, if required. See *Recorded messages, page 72*.
   - **IMPORTANT**: After restore, the used recorded messages need to be uploaded to the system controller, again. This step is needed in case the system controller is **reset** to default and/or replaced.
7. **Upload/Activate** the certificate(s), if required. See *Open interface, page 127*.
   - **IMPORTANT**: This step is needed in case the system controller is **reset** to default and/or replaced.

Refer to

- *Recorded messages, page 72*
- *Backup, page 114*

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 37*.
IMPORTANT: When adding, or removing, devices in configuration, it requires a Save configuration and restart system, before the changes become effective and responsive on Diagnose web pages. See *Save configuration, page 113*.



To do so:
Click Diagnose to see the following diagnose menu items:

Diagnose (menu items)		
1	*Configuration, page 117*	Can be used to check the system (controller) configuration for inconsistencies.
2	*Version, page 118*	Can be used to check the hardware version of the connected network devices, their firmware version and other relevant information.
3	*Amplifier loads, page 119*	Can be used to calculate the amplifier load (in Watt) per amplifier output channel.
4	*Amplifier spare channel, page 121*	Can be used to generate a fault in an amplifier channel to force spare switching.
5	*Battery impedance, page 122*	Can be used to check the condition of the connected 12 Vdc (back-up) battery to the Multifunction power supply (Mps).
6	*Ambient noise sensor, page 123*	Can be used to monitor (changing) ambient noise levels for automatic adjustment of announcement or background music levels (AVC - Automatic Volume Control).

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. See also *Save configuration, page 113*.
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 configuration" 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 39*
Device type	The device type name (i.e. Amplifier) description is fixed and cannot be changed. See *System composition, page 39*.
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 39*.
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 hardware 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 that you need a PDF printer installed to generate a PDF document.

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

6.3 Amplifier loads

The Amplifier loads page in the Diagnose section is 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!
It is an essential step in the system configuration to do a load measurement to check whether the amplifier channels and the amplifier are not overloaded. Without this check, the amplifier channel volume is automatically set to -12 dB to protect the amplifier from unexpected overload conditions in case of an alarm situation.

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 73*.

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 40*.
Topology (@ 70 / 100 V)	**Select and click** Channels below Topology to see which output (A and/ or B) is selected/connected. See *Amplifier, page 48*.
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” topic 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 the status messages table following.

Item	Description
	The status is only visible after using the Start button See the “Start measuring output load” topic in this chapter. See also *Troubleshooting, page 146*.

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

Caution!
If the amplifier detects a temperature higher than +90 °C, the output level is attenuated by -3 dB in order to counteract this. The -3 dB attenuation is removed after the fault is acknowledged and reset. Before the fault can be cleared, the temperature needs to drop below +80 °C.

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 48*.

Caution!
When a load measurement is done with one of the loudspeaker lines shorted, the webpage will indicate; “**not measured**”. Resolve the short and start the load measurement again to resolve this.

Refer to

- *Amplifier, page 48*
- *System settings, page 73*
- *Add a device, page 40*
- *Troubleshooting, page 146*

6.4 Amplifier spare channel

The Amplifier spare channel page in the Diagnose section is used to generate a fault in an amplifier output channel to force it to the spare output channel of the selected amplifier. This function can be used to test the sparing and faults behavior in an installation (e.g. during commissioning and/or certification of an installation).
The following information is presented on the Amplifier spare channel page:

Item	Description
Name	**Shows** the name of each amplifier added to the system. See *Add a device, page 40*.
Faulty channel	**Click and select** the (faulty) amplifier channel which need to be forced routed via the spare amplifier channel. See *Amplifier, page 48*.
Apply	**Click** the **Apply** button to set and activate the forced spare channel switching of the selected amplifier (channel) in the system. See *Amplifier, page 48* > Front and rear panel indicators.

Notice!
To deactivate the spare channel switching: select “None” below Faulty channel, click the corresponding Apply button, and acknowledge and reset the fault (See *Assigning a function, page 92* > acknowledge and/or reset).

Refer to
- *Add a device, page 40*
- *Amplifier, page 48*
- *Troubleshooting, page 146*

6.5 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 53*.
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 53*.
Capacity [Ah]	**Shows** the configured capacity (in Ah) of the connected battery. See *Multifunction power supply, page 53*.
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 53*.
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 160* and/or *Troubleshooting, page 146*

Notice that the system continuously do measurements on the background and report the results. On the diagnostics (Battery impedance) page, the measurements can be started manually.

Start measuring battery impedance

1. **Check** the battery connections and settings as defined in *Multifunction power supply, page 53*.
   – 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.

6.6 Ambient noise sensor

The Ambient noise sensor page in the Diagnose section is used to calibrate the automatic volume control (AVC).
The following information is presented on the Ambient noise sensor (ANS) page:

Item	Description
Measure	**For each** connected ANS a Start /Stop button is presented, to start / stop the measurement of the ANS selected. This starts / stops the live reading of the noise level the ANS is sensing and how this is changing the volume in the assigned zone by means of the attenuation level.
Zone	The selected Zone name to where the selected ANS is added. See *Zone options, page 79* > Ambient noise sensor.
Name > Sensors	The Sensors section can be expanded or collapsed per zone. By default, the Sensors section is collapsed. **To show** the name(s) of the ANS(s) selected for the zone, select and click Sensors. See *Add a device, page 40*.
Sensor level	When the Start button is pressed, actual data (dBSPL) is measured by the ANS. – Sensor level is shown as "Unknown" if the ANS is: – Configured but not connected. – Sensor level is out of range (min. level ANS is 10 dB and max. level is 130 dB). – Initially when the page is just opened and/or left and re-opened. – When Stop is pressed (values are frozen and shown until the page is left).
Offset	The Offset value is added to the Sensor level and creates the Noise level that is taken into account when determining the level for the whole zone. Range: -20 dB to 20 dB in steps of 1 dB. **Default** is 0 dB. The changed Offset value is applied immediately, when the Apply button is pressed. **NOTE**: The Offset selection is disabled (grayed-out) when the following is done before Save & Restart the system: – A zone is removed, so that the Offset selection of all ANS devices assigned to the zone is disabled. – An ANS is removed from a zone and/or system composition page. See *System composition, page 39* and/or *Zone options, page 79*
Apply	To set and activate the Offset of the selected ANS in the system, click the Apply button.
Noise level	Indicates the measured level after adding up the Offset value for the zone, and indicates individual measurement results of the ANSs. The Noise level of the zone is equal to the maximum of the Noise levels of the individual ANSs in the zone.

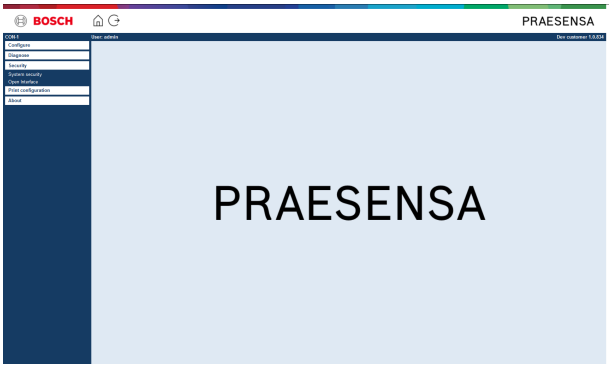
Item	Description
	NOTE: Shows "Unknown" when at least one of the ANSs of the whole zone shows "Unknown" for its Sensor level. In addition, the Sensor level and the Noise level of that ANS will show "Unknown".
Volume control	The actual attenuation of the zone. The value is continuously updated (when Start button is pressed). – When one of the Sensor levels is "Unknown", it shows 0 dB. – When initially page is just loaded, it shows "Unknown". – When AVC is NOT enabled for the corresponding zone, zone and Volume control will be displayed within brackets e.g. (<ZoneName>) and (<VolumeControlValue>)". See *Zone options, page 79*.
Submit	**Click** the Submit button to store the changes. Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 113*.

Start measurement/calibration

1. In the Diagnose section, select Ambient noise sensor
   – An ANS overview page appears.
2. Below Name, click Sensors to select the ANS name.
3. Of the ANS to measure/calibrate, select the required Offset value from the dropdown list, and click the Apply button to confirm.
   – Default: 0 dB
4. To start the measurement of (each of) the selected ANS in the zone, click the Start button:
   – When pressing multiple Start buttons, Sensor levels of multiple Zones are updated at the same time.
   – Live measurement results are visible below Sensor level.
   – The Offset value can be changed, and applied, during the measurement.
   – The maximum Noise level of all ANSs in a Zone is showing, and is calculated from the Sensor level + Offset.
   – The actual attenuation of the Zone is showing below Volume control. Attenuation can only be 0, or a negative value. The negative value never exceeds the attenuation range as configured in Zone options. The attenuation is fixed during a Normal call, but updated during a BGM call. See *Zone options, page 79*.
5. To save the Offset values, click the Submit button.
   – If Submit is not used when leaving the Diagnostics page, a reminder message appears.
   – Note that the changes are not permanent until the configuration is saved. See *Save configuration, page 113*.
6. To stop the ambient noise measurement/calibration, click the Stop button.
   – Updating of the specific Zone stops.
   – Last measured/calibrated and set values stay visible.

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 37*.



To do so:
Click Security to see the following security menu items:

Security (menu items)		
1	*System security, page 126*	Is used to create a secured configuration connection between the configuration computer and the PRAESENSA network devices.
2	*Open interface, page 127*	Is used to download the PRAESENSA Open Interface certificate.

Refer to
– *User accounts, page 37*

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 34*.
2. **Both credentials** are used to create a secure connection between the PRAESENSA system controller, the other network devices, PC and during upgrade of the PRAESENSA network devices firmware.
3. See *Change user name and passphrase, page 126* if you want to change the credentials.
4. See 1st time / initial *Logon the application, page 34* for the automatically generated secured credentials.
5. See *Check/Upload the devices firmware, page 19* for a secured device firmware upload connection.
6. See *Backup and restore, page 114* for a (secured) backup and restore of your configuration file.

7.1.1 Change user name and passphrase

The **security** user name and passphrase are automatically generated and created at 1st time / initial logon. See *Logon the application, page 34*, 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 127*.
2. **Click** the Generate (recommended) button which will generate a **new** User name and Passphrase **or enter** a **new** User name (minimum **5** and maximum **32** characters) and Passphrase (minimum **8** and maximum **64** 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 126*.

Refer to

- *User accounts, page 37*

7.1.2 Reconnect factory default devices

Use this function if you want to securely reconnect one or more factory default devices. Notice that reconnect a network device only works when it was already added in *System composition, page 39*.

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 42* > <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 127*.
3. **Click** the Reconnect button:
   – Reconnected devices will be connected again.
4. **Check** if all **reconnected** devices are connected now. See *Show disconnected devices, page 127*:
   – 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 39*.

7.1.3 Show disconnected devices

Use this function if you want to check/see if devices need to be reconnected. Notice that reconnecting and visibility of a network device only works when it was already added and visible in *System composition, page 39*.

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 126*.
2. Click the Refresh button:
   – Disconnected devices will be listed by Name, Hostname and location (if entered).
   – See *Reconnect factory default devices, page 126* and/or *System composition, page 39*.

7.2 Open interface

At startup, the PRAESENSA system controller generates a number of certificates. One certificate is used to setup the TLS (secure) connection and offers an Open Interface client to make sure it communicates with the right PRAESENSA system controller.

To do so:

1. **Below** Security, **click** Open interface:
2. **Click** the Download certificate button:
   – Depending on the web browser type (e.g. Firefox, Edge, etc.) you will be asked to open/install/save the .crt file.
   – Follow the onscreen instructions.
3. Activate the certificate on your PC and follow the onscreen instructions.
4. **Go to** > *Optional: Using the Open Interface, page 145*

IMPORTANT: each time the PRAESENSA system controller is reset to default, the system controller generates new certificates. 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 PDF/paper.

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

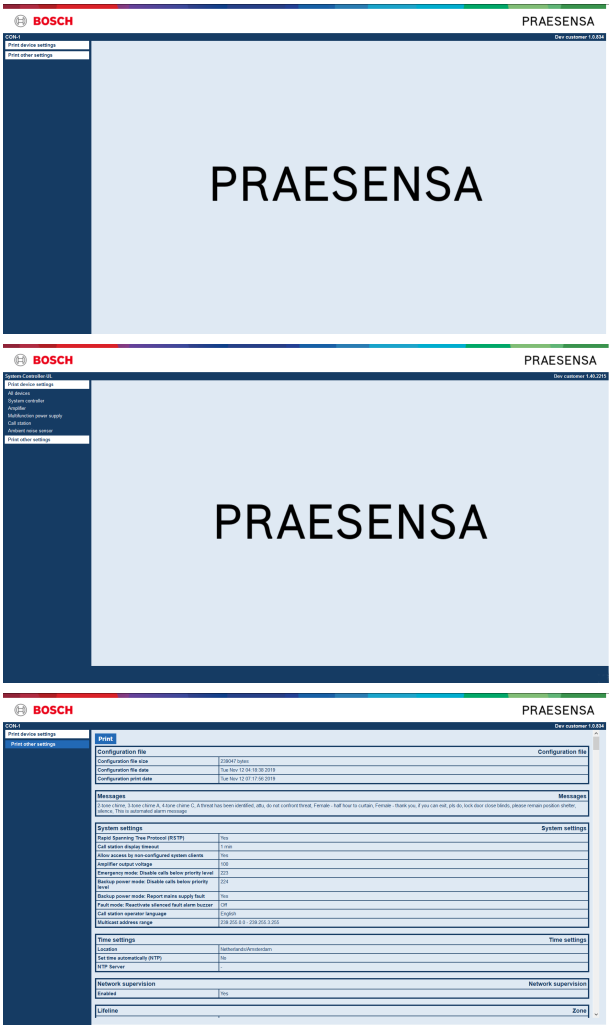


Figure 8.1:

To do so:

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

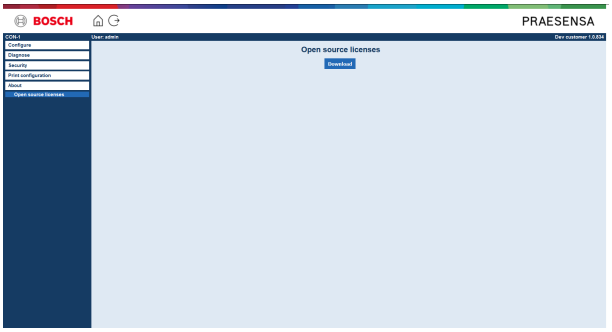
Print configuration (menu items)		
1	**Print device settings**	Can be used for printing the configuration file settings of all connected devices or each device type category separately (e.g. System controller, Amplifier, etc.).
2	**Print other settings**	Can be used for printing all general configuration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

2. **Select and click** the required print device/other settings item, which opens a new screen.

3. **Click** the Print button to produce and print/save a PDF file:
   – **Notice** that you need a PDF printer installed on your PC to generate, print and/or save a PDF document.

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 130*	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 www.boschsecurity.com/xc/en/oss/.

The license texts are also installed when installing the firmware in the location where the firmware files are installed. Windows 10: (“c:\ProgramData\Bosch\OMNEO\Firmware\xxx” with xxx the PRAESENSA software release).

From the configuration page **only** the licenses of the system controller open source software can be downloaded.

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 131*
– *Priority and announcement type, page 131*
– *Routing, page 132*

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 61*.

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 88*.

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 88*.

Normal announcement is set in *Call station, page 61* > 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 73* > Emergency mode. Emergency announcement is set in *Call station, page 61* > 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 zones 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 21*.

– **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 the user logs in. 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 following icon appears:

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 Logging Server.
   – version **10**: Windows (right mouse click) > File Explorer > c:\ProgramData\Bosch \PRAESENSA Logging Server.
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

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 Browse 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 files.
  - 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. 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.
3. It is possible to make a back-up of the logging database (even if the Logging Server 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.

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 22*.

– **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 Logging Viewer.
   – version **10**: Windows (right mouse click) > File Explorer > c:\ProgramData\Bosch \PRAESENSA Logging Viewer.
   – Click Logging Viewer:
   – When the Logging Viewer has been started and faults have occurred, its icon shows the fault condition.

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:

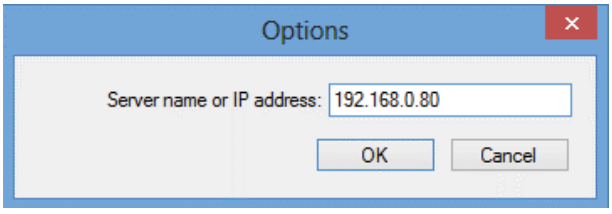


Figure 12.1: Options window

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.
   – 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 147*.

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/operate OMNEO Control is described in a separate manual, called:

- OMNEO Control Software
  - **Download** the manual (.pdf) from the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 > OMNEO control Vx.xx > Manual. See also *Related documentation, page 7*.

Caution!
OMNEO control is an application for use with OMNEO channels only. It is not compatible with AES67 and Dante. OMNEO control will automatically clean up the AES67 connections every 30 seconds.

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

14 Optional: Using (OMNEO) Network Docent

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

- Network Docent:
  - **Download** the manual (.pdf) from the Bosch download area: https://licensing.boschsecurity.com/OMNEO/html/load.htm?1000 > Network Docent Vx.xx > Manual. See also *Related documentation, page 7*.

15 Optional: Using Dante Controller

This section 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 15*
– *Related documentation, page 7*

16 Optional: Using the Open Interface

TCP/IP devices can access the system through the Open Interface. A **maximum** of **twenty** (20) TCP/IP devices with Open Interface access can be used. This includes connection to Logging Servers (see *Optional: Install the Logging Server, page 21*). The configuration web browser uses a different port (port 80 forwarded to HTTPS 443) 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 the manual from www.boschsecurity.com > PRAESENSA product document section (e.g. the system controller). 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 15*.
- 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 34*) 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. Also the application connecting to the Open Interface needs to validate the certificate. See *Open interface, page 127*.

- PRAESENSA can also limit the access of TCP/IP devices. See *System settings, page 73*
- Use of the Open Interface can lead to situations in which PRAESENSA does not comply anymore to the evacuation standards.

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 117* in the Diagnose section.
- See *Optional: Using the Logging Viewer, page 138*.
- See *Event messages, page 147*
- 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 (cabling, settings, etc.) 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 15*

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**.
Be noticed that events (descriptions) could be changed/removed and/or new ones could be added to the PRAESENSA system. Therefore; the PRAESENSA Logging Server and Logging Viewer applications are leading instead of the events described in this configuration manual.

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 150*
– *Device specific events, page 158*
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 133*, *Optional: Using the Logging Viewer, page 138*, *Optional: Using the Open Interface, page 145*. See also *Diagnose, page 116*.

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 113*.

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.
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 buzzer, fault alarm indicator). See *Multifunction power supply, page 53* and/or *Call station, page 61*.
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 buzzer 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.

Status	Description
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 buzzer or as a Fault alarm indicator. See *Multifunction power supply, page 53* and/or *Call station, page 61* (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 53* and/or *Call station, page 61*. It is not possible to acknowledge/reset individual faults using a control input or button.
– *Optional: Using the Open Interface, page 145*.

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 150*
– *All devices events, page 152*

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 73*" 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 158*
– *Amplifier, page 159*
– *Multifunction power supply (MPS), page 160*
– *Call station, page 164*
– *Open Interface client, page 164*

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: System controller supply fault: output A/B
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.
See the PRAESENSA Open Interface manual for all events.

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 72*.
The following .wav files (tones) are PRAESENSA predefined, are mono and have a 16-bit sample depth and 48 kHz sample rate. Be noticed that tones could be updated and new tones could be added. Previous means that possible tones are not all/different listed in this document version. See *(Mandatory) software, page 15* > Tones, for the latest version available.

- *Attention tones, page 166*
- *Alarm tones, page 169*
- *Test tones, page 172*

See also *Call definitions, page 88*.

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 Silence tones

Silence 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

20 Support and academy

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