



BOSCH

Invented for life

IP-connected and fully-featured

PRAESENSA
Public Address and Voice Alarm System

EN54-16

EVAC Certified
Emergency
Voice Alarm

PRAESENSA, IP-connected and fully-featured

Introducing PRAESENSA, the new standard in Public Address and Voice Alarm (PAVA) systems from Bosch. The system provides high-quality audio for music or messaging to every area in your building and is controlled via the intuitive graphical user interface on the call station touchscreen, or via personalized software running on a tablet or PC. Easy to install and highly cost-efficient, this advanced Public Address and Voice Alarm system brings peace of mind to a new level.

Fully IP-based and fully-featured, this is a state-of-the-art Public Address and Voice Alarm system. Installation and integration are straightforward, and it delivers great audio quality with an easy-to-use interface. PRAESENSA uses IP-connectivity and a smart power concept with integrated redundancies to give you an extremely cost-efficient system, equally suited to either centralized or decentralized topologies.



Shopping malls | Mixed use buildings | Exhibition centers | Hotels | Education | Airports
Power plants | Oil & gas | Tunnels | Metro | Railways



secure IP infrastructure

All components of the system are IP-networked **for highest flexibility and scalability**



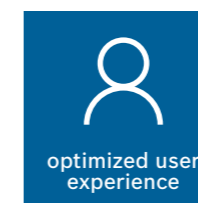
effective power utilization

Innovative amplifier architecture allocates power intelligently for **lower cost of ownership**



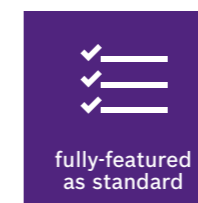
highest system availability

No single point of failure with built-in redundancy is core to the system concept



optimized user experience

User-centric design delivers an intuitive interface with **feedback on progress and status**



fully-featured as standard

Comprehensive system **adapts to changing needs**

...for every mid-to-large application



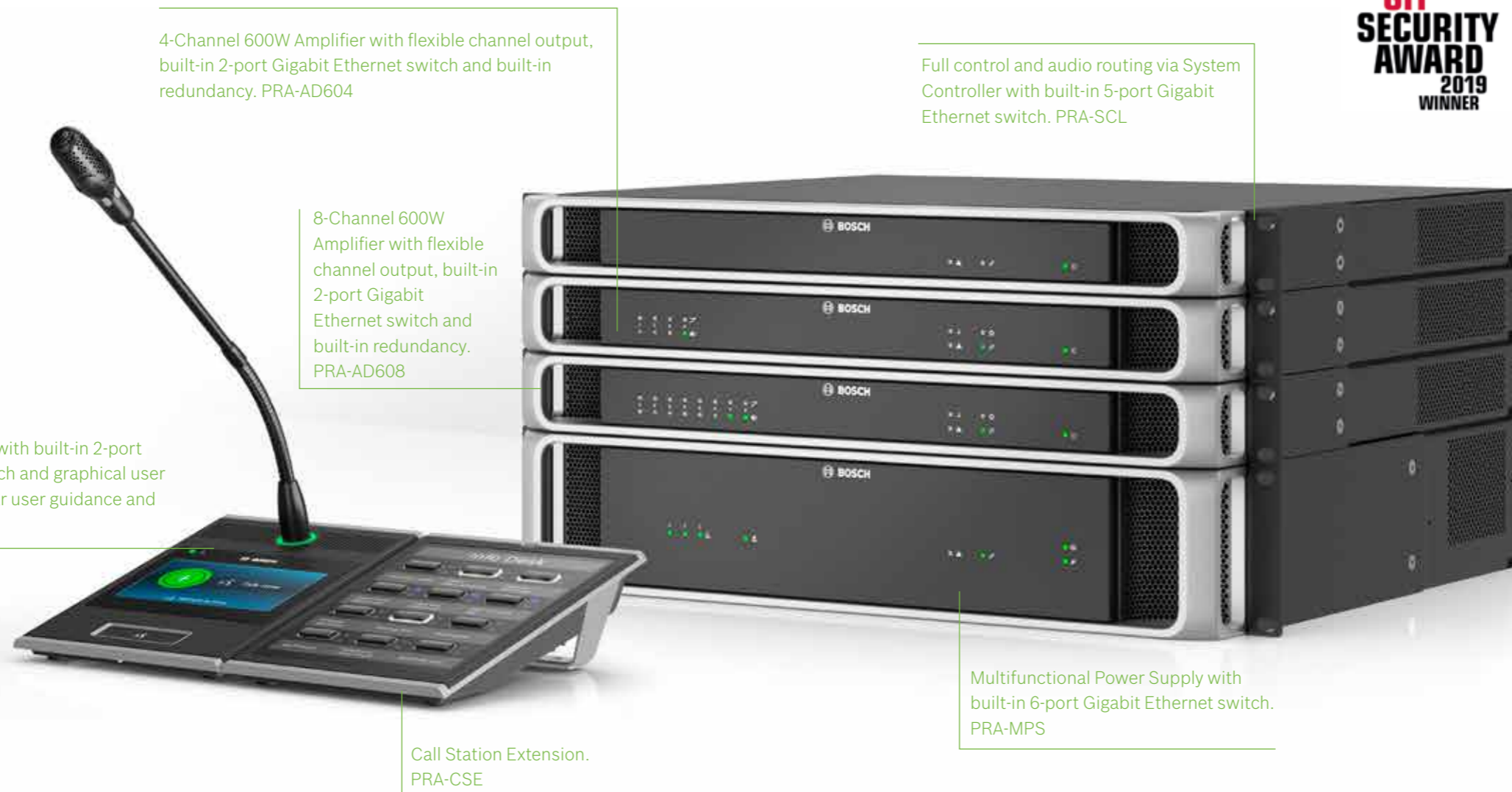
Highest interoperability, flexibility and scalability...

At last, a system that communicates with all its component parts effortlessly and reliably. Using an advanced media networking architecture, PRAESENSA provides full control and communication with all areas in the application building(s). When buildings are changed, for instance when new areas are added or defined, PRAESENSA can immediately accommodate these changes. Thanks to IP connectivity, the system enjoys extreme adaptability and scalability. And with backup power kept local to the amplifiers, the system is equally suited to both centralized and decentralized set-up. All PRAESENSA devices include a built-in and pre-configured multi-port Gigabit Ethernet switch. This assures to have a fully EN54-16 certified system and reduces costs for third party networking equipment.

Everything in a PRAESENSA installation is connected to an advanced media networking architecture called OMNEO. This enables full device interconnectivity for digital audio communication and always-on system control. OMNEO is built upon multiple technologies and open standards, supporting AES67, Audinate's Dante* and AES70, with additional network security from AES128 for audio encryption and TLS for real-time authentication.

Using this professional-grade media networking architecture, PRAESENSA gives you easier installation, better audio quality and greater scalability than any other Public Address and Voice Alarm System available today.

... with every system component securely connected via IP



4-Channel 600W Amplifier with flexible channel output, built-in 2-port Gigabit Ethernet switch and built-in redundancy. PRA-AD604

8-Channel 600W Amplifier with flexible channel output, built-in 2-port Gigabit Ethernet switch and built-in redundancy. PRA-AD608

Desktop Call Station with built-in 2-port Gigabit Ethernet switch and graphical user interface offering clear user guidance and feedback. PRA-CSLD

Call Station Extension. PRA-CSE

Full control and audio routing via System Controller with built-in 5-port Gigabit Ethernet switch. PRA-SCL

Multifunctional Power Supply with built-in 6-port Gigabit Ethernet switch. PRA-MPS



Efficient amplifier performance ...

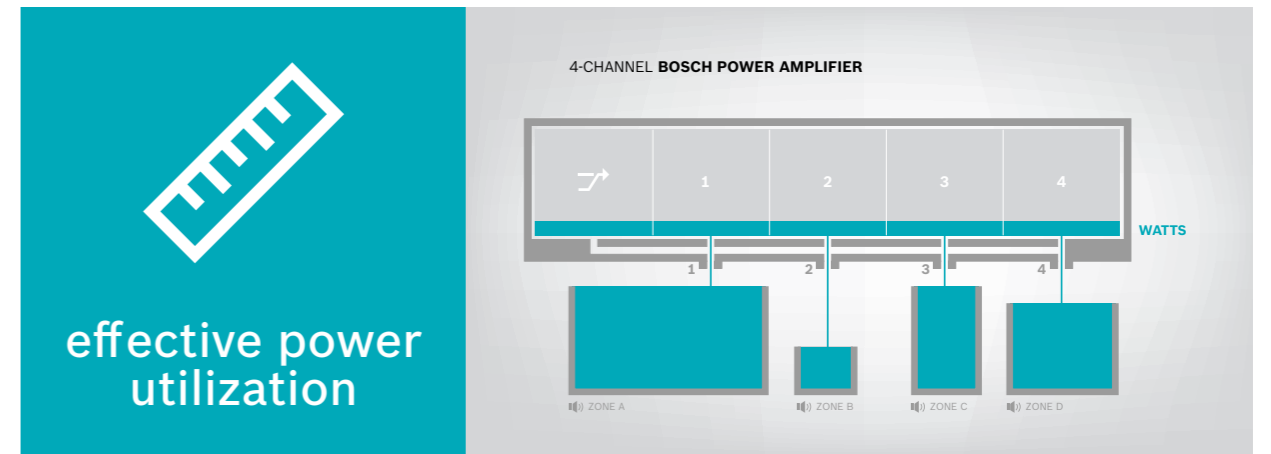
PRAESENSA uses a highly innovative multi-channel amplifier architecture developed by Bosch, allowing the system to adapt individually to connected loudspeaker loads. It does this by intelligently dividing the available output power across all channels, to a total of 600W. This means that available amplifier power is utilized more effectively with less surplus power, and less supply power and fewer amplifiers are needed to cover the speakers' power demand. Power consumption is especially reduced in the idle state (where most systems spend a great deal of time), further saving energy costs.

...further reduces total cost of ownership

Choosing this system means choosing lower operational and maintenance costs. Battery consumption is reduced and fewer batteries are needed, reducing heat loss and needing less rack space too.



For the consultant, specifying the PRAESENSA system is straightforward. Just two pieces of information are required to begin: the total power demand of the installation and the number of areas to be covered.



- ▶ Each PRAESENSA amplifier includes a spare amplifier channel which automatically takes over the operations of the failing channel, using the same redundant power supply and heatsink, making it an extremely cost-effective and space-saving redundancy measure.
- ▶ Intelligent load sensing and variable output power for each channel allows PRAESENSA to make maximum use of available amplifier power. This approach sets the system apart from traditional multi-channel amplifier systems with

fixed maximum output power per channel. This fixed output means that unused or under-loaded channels cannot share unused capacity with other channels. As a result, those traditional systems with separate spare amplifiers require three to four times more amplifier power than loudspeaker power. The knock-on effects of more amplifiers include more rack space, more backup batteries and more air conditioning capacity. PRAESENSA uses around half the amount of amplifier power to do the same job, with noticeable savings on space, energy and cost.

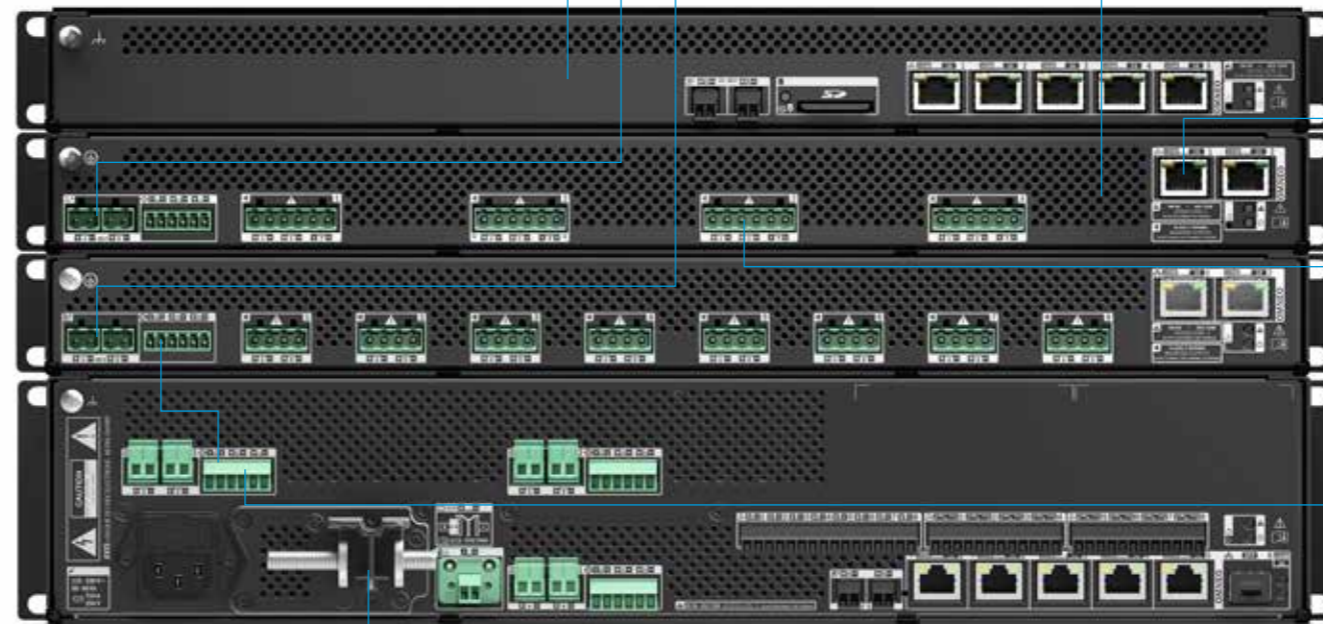
Multi-channel power amplifiers with integrated spare amplifier channel. Unique power partitioning means the amplifier's total power budget can be freely shared across all output channels.





Ensuring reliability from the moment of installation...

PRAESENSA maximizes system availability and reliability using multiple redundancies and thorough design measures. These include constant supervision of every device and connection in the system, all critical signal paths and functions, as well as the internal power converters that use power from mains or battery. All critical system elements are supported by built-in redundancy, and conservative derating of all components provides extra protection, increasing their reliability and life expectancy. Faults are reported to the system controller and logged, with fault notification within 100 seconds, in line with EN54-16 standards.



Controller redundancy

Dual connection to the double power converters

Power converter redundancy ensures operation of spare amplifier channel

Built-in spare amplifier channel redundancy

Network redundancy through loop-wired network

Loudspeaker wiring redundancy with A & B or class-A loop

Lifeline redundancy when network is down. If the amplifier is disconnected from the network, the Lifeline uses an analog audio connection which enables the amplifier to make an emergency call to all of its channels

Power supply battery backup facility

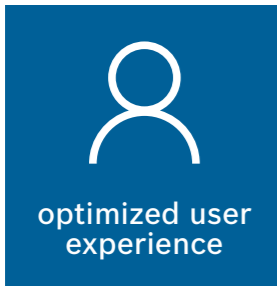
- ▶ All PRAESENSA system devices use dual Ethernet ports, supporting RSTP, for automatic recovery from a broken network link.
- ▶ Power supplies have battery backup facilities, making them immune to mains failures.
- ▶ In the case of a failing amplifier channel, there is an integrated, additional spare amplifier channel in the 8- and 4-channel amplifiers, which will automatically take over.
- ▶ Each amplifier has double power converters inside, which work in tandem to minimize stress

- on components. In the event of a converter failure, the remaining converter can provide full power to the amplifier.
- ▶ Each amplifier channel has two loudspeaker outputs which are separately supervised and protected, enabling the connection of interleaving loudspeaker strings within the same area. This prevents losing coverage of that area in the event of a shorted or interrupted loudspeaker line.
- ▶ A redundant system controller can be added and guarantees the highest safety for system operations.

...with multiple integrated redundancies

PRAESENSA gives you robust and comprehensive security with a design created to ensure no single point of failure. The entire system incorporates full network link redundancy with smart integration of functions and backup facilities.





Unique user convenience with optimized call station design...

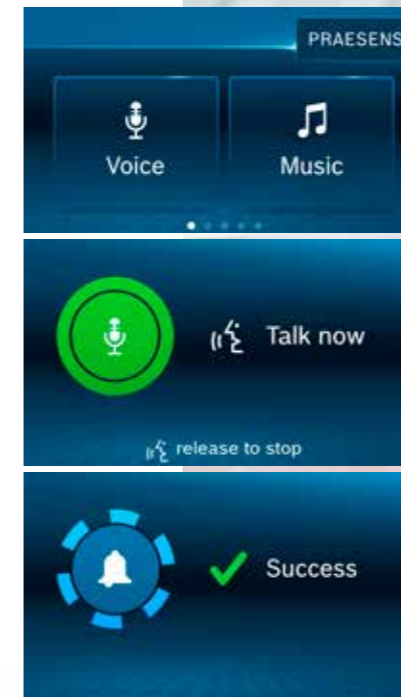
The PRAESENSA call station was developed by a design team in close cooperation with real users. Extensive research and field trials incorporated user experience, needs and wishes for an intuitive system that could also solve common operator issues.

With PRAESENSA, announcement progress is clearly indicated on the call station screen. Once initiated, the system guides the operator, telling them when to speak once the pre-chime or introductory message has ended. The system also shows when the announcement has been successfully completed in all destination areas.

All functions are easily selected from the touch screen, and areas are highlighted via keypad keys with LEDs providing instant and accurate status

information. Access permissions to certain functions and areas can be configured per call station or user, ensuring confident operation from the first day of use.

The ways a building is used tends to change over time. PRAESENSA takes that into consideration, with software functionality that can be easily adjusted to match those changing requirements and usage needs.



Integrated goose-neck microphone

Clear indication of status: occupied area or area fault

Clear overview showing which areas are selected

The 4.3" full-color touchscreen interface delivers role-specific feedback on progress and status.

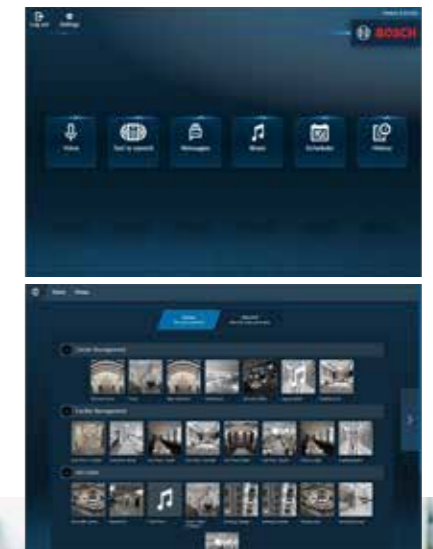
Local audio line input for connection to external background music



Press-to-talk button with tactile feedback and clear on-screen guidance

...and intuitive graphical user interface

Music streaming services can be facilitated and affordable text-to-speech in various languages are supported by the Advanced Public Address License. The scheduler enables automation of message management and music control. This ensures the right level of information and provides a comfortable atmosphere.



The Advanced Public Address License for PC / tablet control grants access to the PRAESENSA server. This allows venue owners or facility managers to use a tablet to adjust music volume in specific areas or throughout the installation remotely.



Feature-rich and future-ready...

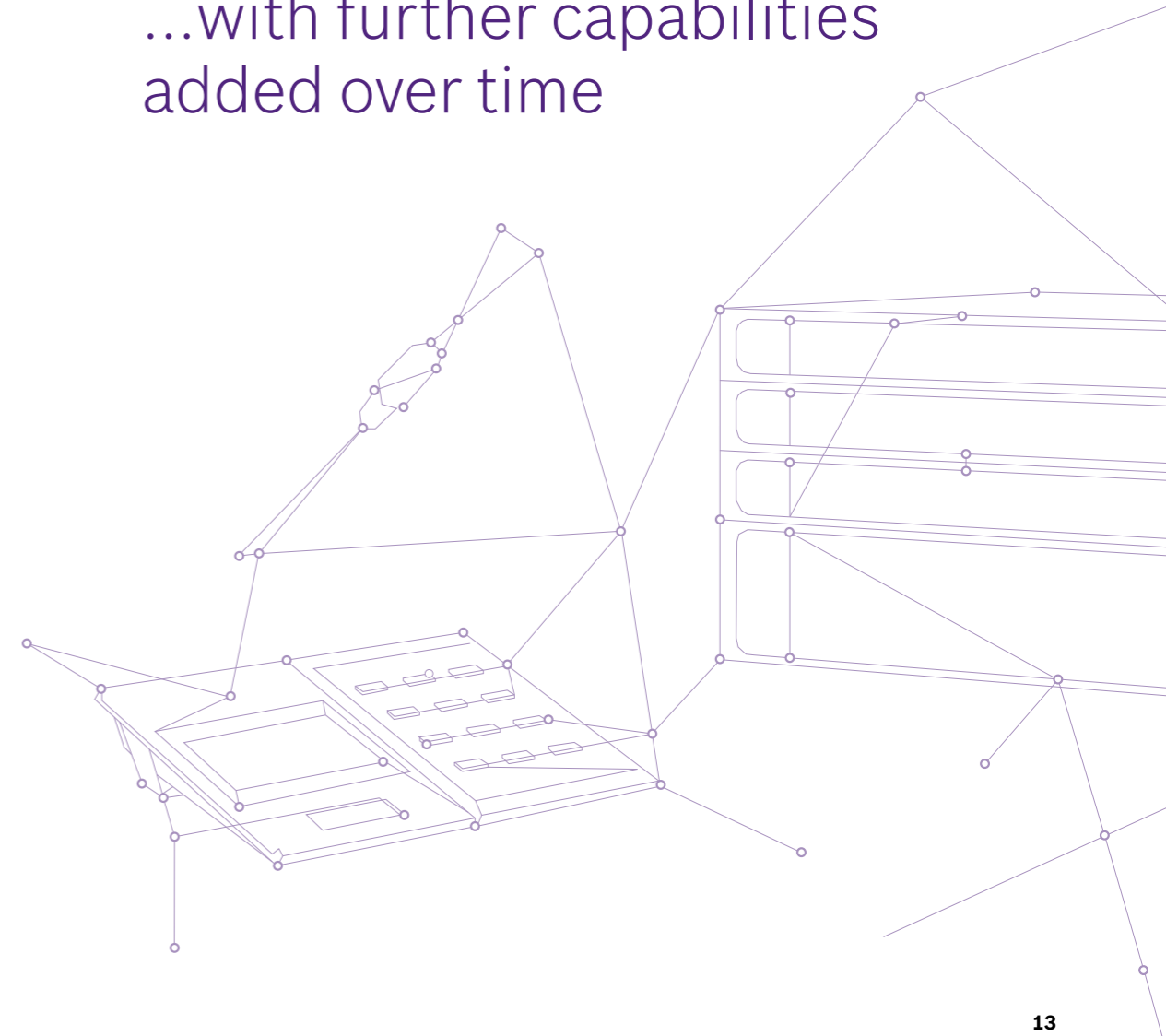
PRAESENSA is an advanced Public Address and Voice Alarm system comprising key hardware devices served by custom software solutions. Each hardware device is designed as a complete subsystem, requiring no additional peripherals. For example: call stations and amplifiers all have inbuilt DSP for sound processing; amplifiers have an inbuilt spare channel and flexible output power per channel; the power supply has an inbuilt battery charger. This design approach keeps every PRAESENSA system simple, flexible and scalable, with system functions governed by software which is regularly updated to extend the system's capabilities.



Wall Mount Call Station
PRA-CSLW

System integrators and installers are familiar with last-minute changes, and PRAESENSA makes it easy to manage late-stage adjustments at any time. PRAESENSA requires less cables for installation than a traditional system, and configuration is made simple with preconfigured and integrated Ethernet switches, making the whole process very straightforward.

...with further capabilities added over time

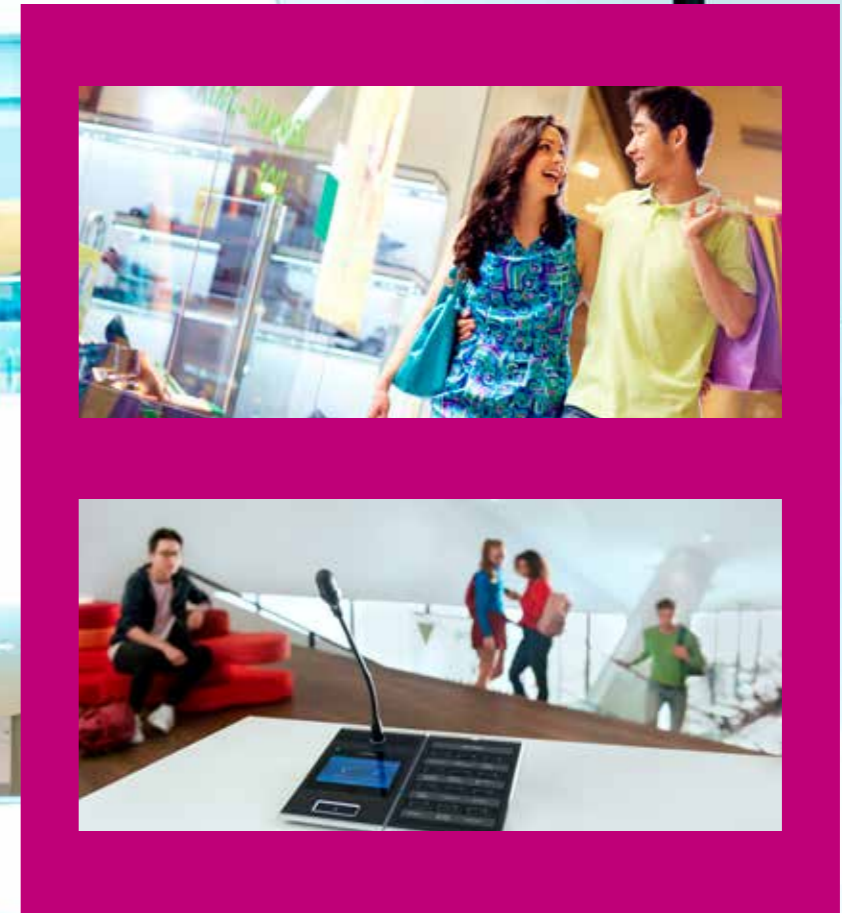


PRAESENSA...

PRAESENSA is the result of 90 years of Bosch PA experience and expertise. It is a unique system that can meet the multiple and changing needs of those looking for a cost-effective and extremely efficient PAVA solution. Keeping building occupants and visitors safe and fully informed has never been easier.

- ✓ Flexible
- ✓ Scalable
- ✓ Cost-efficient
- ✓ Reliable
- ✓ User-friendly
- ✓ Feature-rich
- ✓ Future-ready

...connecting
the dots



Bosch Security and Safety Systems

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