

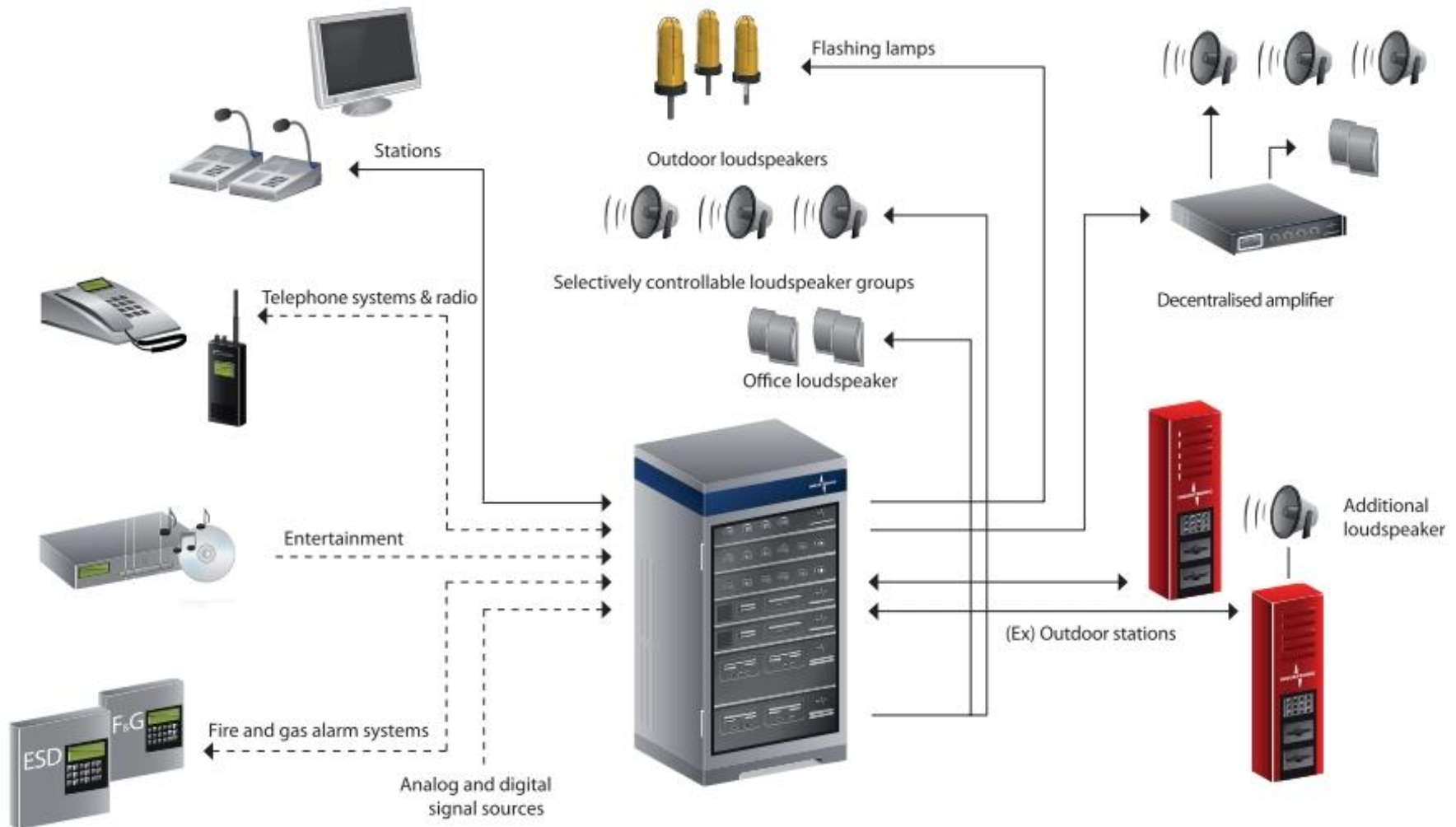


INTRON-D *plus*

System overview, key components,
networking capabilities and more.

- INTRON-Dplus - System overview
- INTRON-Dplus - Objectives of the system concept
- Key components
- System properties
- System functions
- Networking capabilities
- Graphic configuration tool "Config Manager"
- System interfaces
- System requirements

INTRON-D *plus* – System overview



INTRON-D *plus*: Objectives of the system concept

- Simple configuration and management of network systems
- Flexible networking capabilities comprising different media (copper, fiber-optic, Ethernet)
- Integration into existing customer networks (Ethernet/IP)
- Easy set-up of distributed system units
- Comprehensive system properties
- Large number of system resources capable of being flexibly addressed and combined within complex systems

1 DXC 03 High-performance central processing unit



2 Ethernet /IP interfaces for various networking solutions

Audio signal transmission through Ethernet / IP (VoIP)

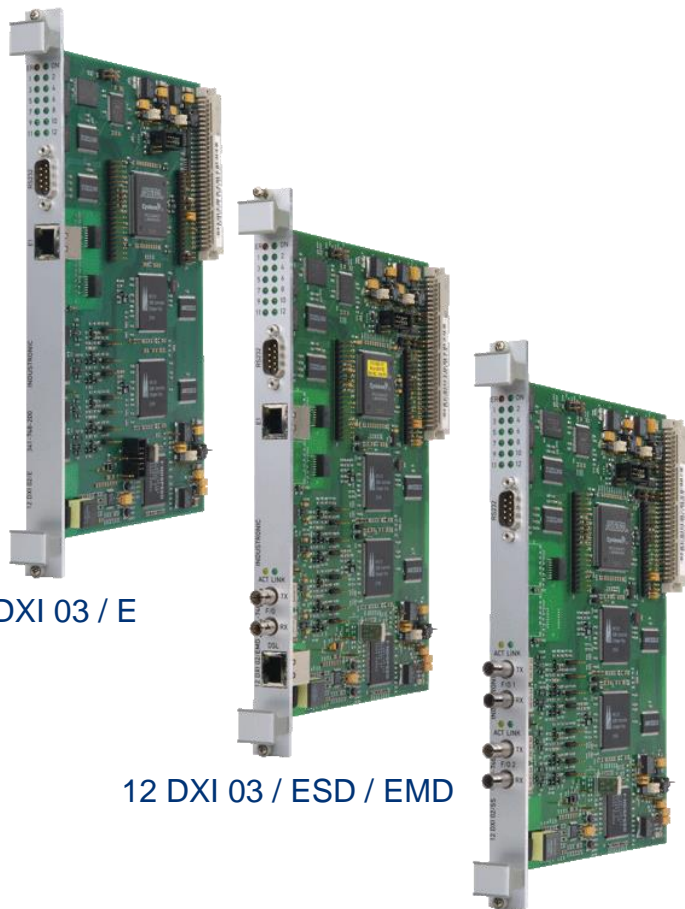
High-performance processor and hardware platform

Linux operating system

Modular software structure

Integrated Web interface for remote maintenance

12 DXI 03 interface units to interconnect systems



12 DXI 03 / E

12 DXI 03 / ESD / EMD

12 DXI 03 / SS

System networking through E1 / DSL

System networking through single-mode or multimode fiber optics

Transmission of control and audio data

12 AF channels per unit

1 IP-based channel per unit to transmit control protocols

IP Outdoor Intercom Station (NRO 001)



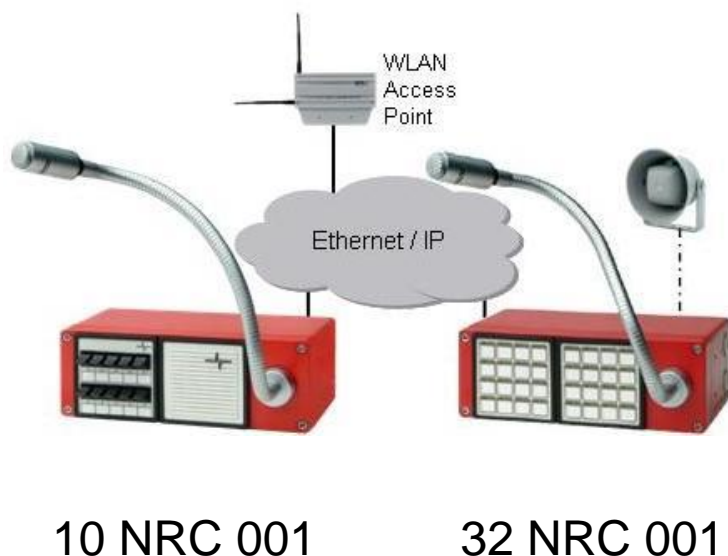
Features and Functions

- Robust construction for use in harsh industrial environments
- Degree of protection IP66
- Glass-fiber reinforced polyester
- Up to 3 momentary rocker switches
- Designed for use with industrial gloves
- Visual call or busy status via LED
- Network connection via Ethernet
- PoE or external power supply
- Adjustable speaker volume and microphone sensitivity
- Monitoring of microphone function

Robust IP Compact Intercom Station (NRC 001)

Features and Functions

- Robust IP compact intercom station for indoor use
- 2 module openings for keypads and/or speaker
- 3 potential-free inputs and 3 outputs
- Network connection via Ethernet
- PoE or external power supply
- Monitoring of microphone function
- Integrated web interface for setting and service functions



Features and Functions

- Modular design
- Touch Display (7 / 3,5 Inch)
- Handset
- Microphone
- Internal Speaker
- Status LEDs
- Direct keys



Features and Functions

- Up to 12 free programmable buttons with integrated signaling
- Monitored loudspeaker and microphone
- Voice and data communication via Internet Protocol (IP)
- RJ45 Ethernet connector
- Power supply via PoE
- LED at each key to signal an incoming call or a (preliminary) busy status



Features and Functions

- Robust IP gate station for use in harsh industrial Environments
- Stainless steel housing
- Up to 2 free programmable buttons with integrated signalling
- Integrated loudspeaker and microphone
- Voice and data communication via Internet Protocol (IP)
- Power supply via PoE



System properties within the systems network

65,000 freely selectable addresses for stations, speaker circuits, speed-dial numbers, etc.

1,000 (selectable) group calls

1,000 speaker groups

200 priority levels

Networking up to 250 distributed systems possible

Redundancy properties

Path redundancy due to flexible topology

CPU (1 DXC 03) redundancy (stand-by)

System properties continued

- High level of availability
 - Fast system start-up
 - Extended redundancy
- System-wide warning scenarios
- Customer-specific communication and warning functions
- Flexibly programmable I/Os to provide additional control functions
- Compliant to EN 60849
- Connection to IP intercom stations
- Expandability based on the system's modular architecture (hardware and software)

System properties continued

Adaptable logging and trace functions for effective trouble-shooting

SIP protocols to provide connection to modern IP telephone systems

Integration capability in existing network management systems through
SNMP

IP protocol enabling simpler interfacing with external systems
(e.g., DCS systems, F&G systems, OPC)

Centralized programmable parameterization of both individual systems
and networked systems

Time synchronization within the systems network via NTP

Alarm and Warning

- Pre-programmed and/or manual alarm activation
- Priority functions to override all established communication links
- Programmable to be zone, area and facility wide
- Custom alarm procedures using programmable scripts

All Call / Public Announcement (PA)

Direct Communication

- Point to point one touch communication

Dynamic Communication

- On demand communication links with any intercom station via numeric keypad

System functions continued:

Group Call

Multiple participants and areas linked together

Multi-Master Station Call

Single incoming call simultaneously received at multiple master stations

Page and Party Call

Announcement to the entire facility or a certain area

Response from any station to a specific station

Busy Signal Indicator

Visual and audible indication of busy call stations prior to the establishment of a call

System functions continued:

Call Storage

- Missed call notification via LED

Pre-Tone

- To alert the areas of the coming announcement

- Can also be linked to strobes or beacons for visual alerts

Priority Call Override

- Various predefined priority levels for all call stations

- Calls from stations with higher priority will override existing communication links

System functions continued:

Tone and Voice Signals

- Multi-channel stored recording of alarm tones and verbal instructions
- Variable output scenarios based on given pre-determined inputs

Visual Announcement

- Incoming call notification via external strobe and call station based LED

Monitoring

- Continuous monitoring of CPU, intercom stations and cabling
- Continuous monitoring of amplifiers
- Monitoring of loudspeakers and loudspeaker loops
- Errors are displayed and logged
- Acoustical and optical signaling of system errors

Interconnection of systems through

- Ethernet interface on 1 DXC 03

- Interface unit 12 DXI 03 with E1, DSL, fiber-optic interface

Implementation of different networking topologies

- Ring topology

- Star topology

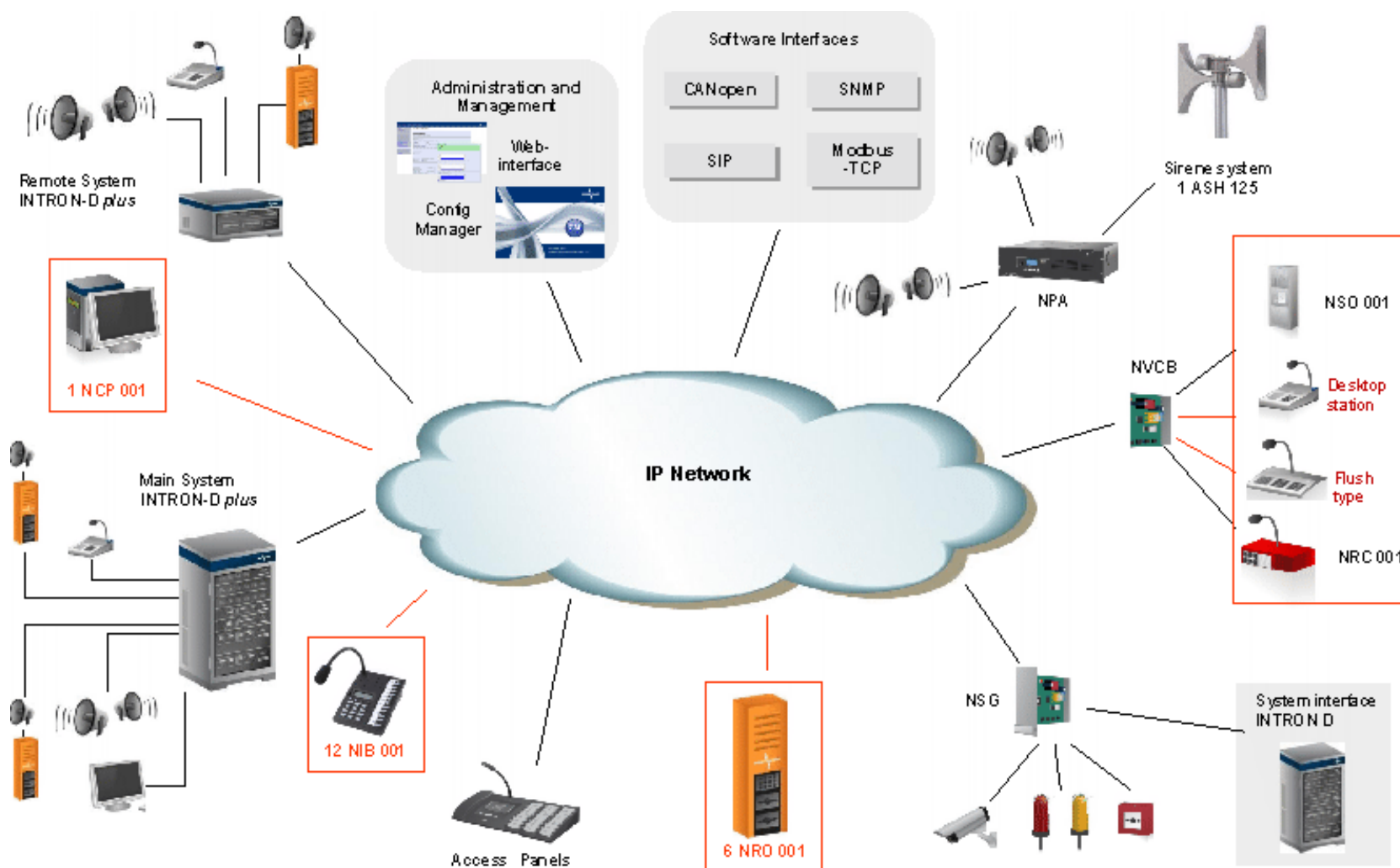
- Mixed topologies

Combination of Ethernet and DXI based connections in network systems possible

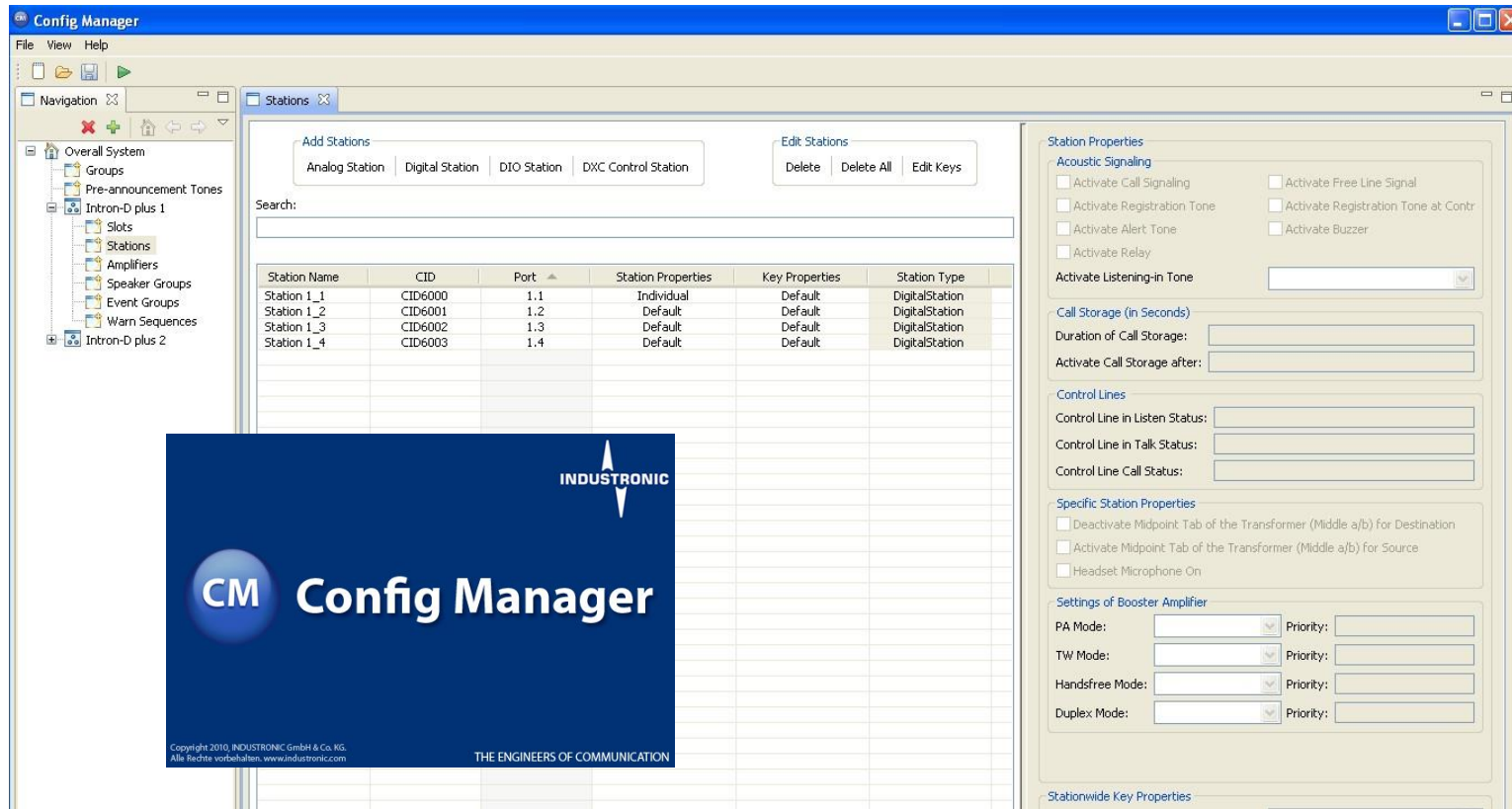
Consistent IP layer for signaling and control protocols

Integration in IP-based network structures at customer installations

Networking capability through IP network



Graphic configuration tool “Config Manager”



Graphic configuration tool “Config Manager” continued

Intuitive user interface

Central programming interface for all INTRON-D *plus* nodes

Configuration and overview of all INTRON-D *plus* parameter (top down)

Single system

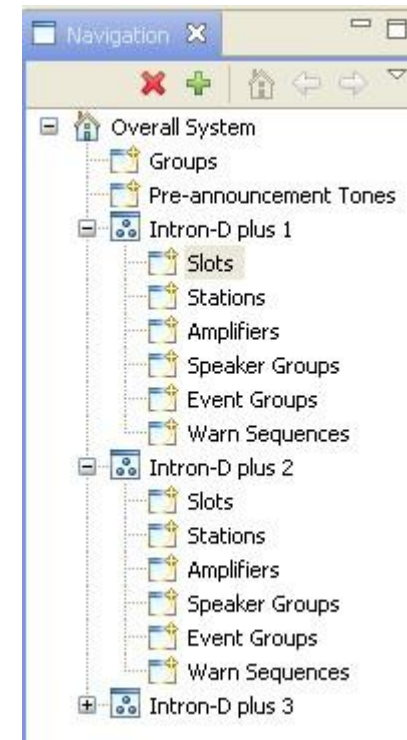
Distributed system

Slot allocation

Stations

Keypad

Key → key-function



Graphic configuration tool “Config Manager” continued

Configuration tool tailored to system networks

Comprehensive checking and support for
parameterization

Integrated configuration download to all systems within
the system network

Interface capabilities

Fire and Gas Alarming

Interfaces to standard Fire and Gas Detection Systems

Signals can be received to actuate pre-programmed alarming sequences

Telephony

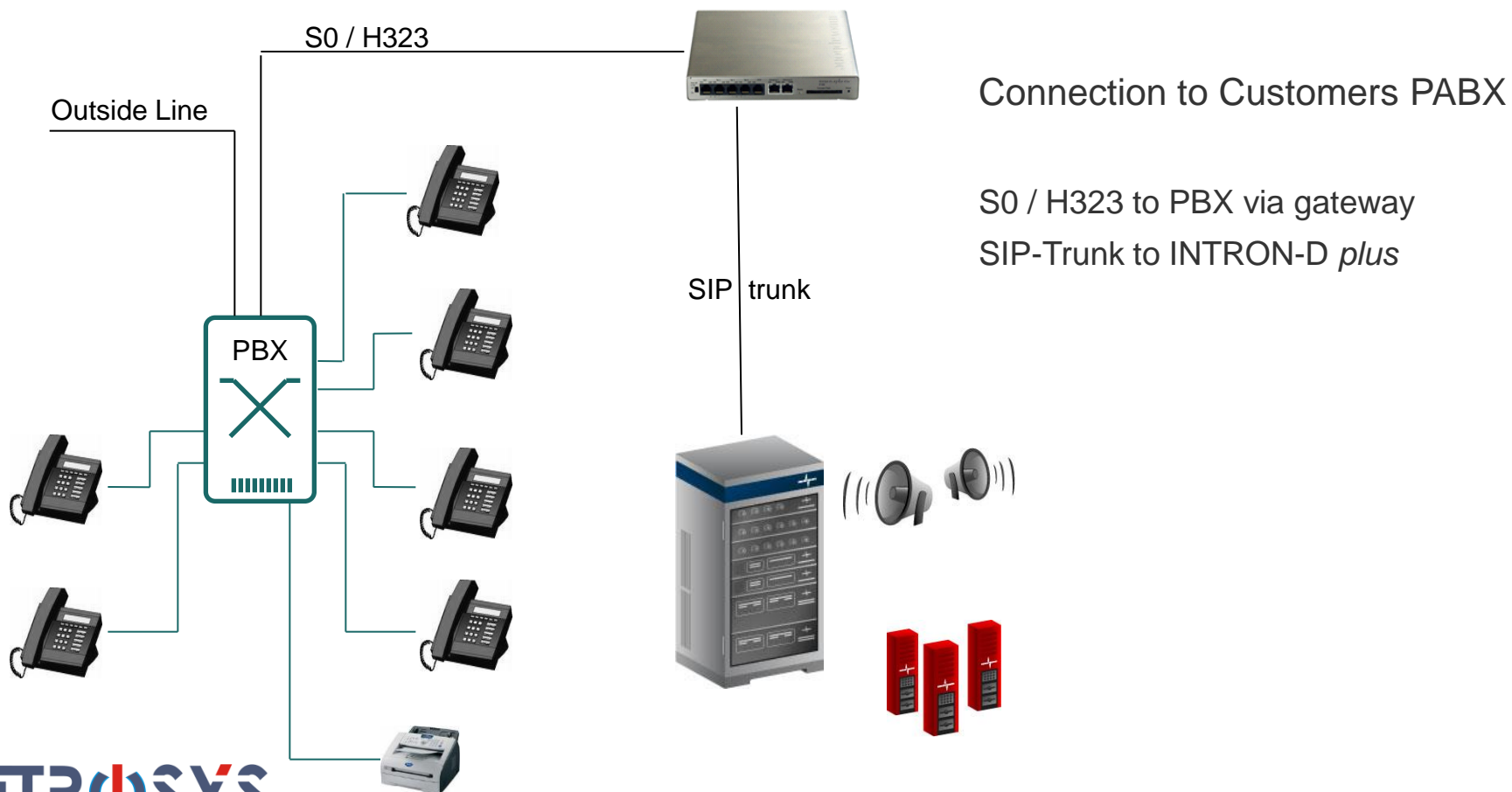
Integrated SIP-Interface for connections to VoIP registrar (IP-PABX)

Variety of communication options from telephony systems to the INTRON-D
plus System via optional telephone gateway

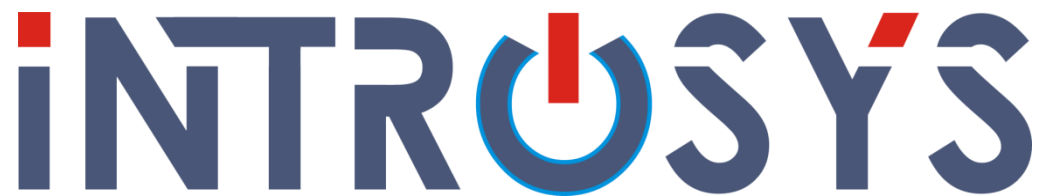
Example of telephony integration

- SIP-connection via DXC on-board Ethernet interface
 - RFC 3261 compliant
 - RTP voice data
 - Up to 8 simultaneous VoIP channels
 - G.711 a-law codec support
 - Direct Dial In support
 - Incoming calls can be mapped to PA, group calls and single stations
 - Supports Point-to-Point connection and Point-to-Multipoint connection
 - Internal Functions (e.g. alarm start) can be triggered by incoming calls
 - External calls can be established from internal stations

Example of telephony integration continued



- Network equipment delivered by customer
- Configuration and management of network by customer
- One separate VLAN for INDUSTRONIC equipment
 - Exclusive VLAN for PA/GA network (port-based VLAN managed by network)
 - Separated from other network applications
 - Protected from unauthorized access
- 100 Mbit Ethernet/IP connection to each INTRON-D *plus*
- Maintenance access (with regard to e.g. firewall)
- QoS for prioritization of IP packets (signaling and voice)
- Maximum latency of 20ms



Please, do not hesitate to contact us!

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