ProCom®

Company presentation

Facts
Solutions
References

Customer Seminar 14/08/27
at NARFOAMKAR Tehran

Railway **Steel** **Power** **Mining** **Industry** **Logistic** **Chemical**

Introduction Procom

Basic Company Data

Group:	euromicron AG (PLC)
	CDAX Stock Exchange Germany
Establishment:	1996
Company type:	Limited Company (Ltd.)
General Manager:	Marc Lützenkirchen
Headquarter:	Alfredstraße 157
	45131 Essen
	Germany

Company Profile

Presence Worldwide

Subsidiaries and Partner Companies

- ProCom Bejing, People´s Republic of China
- Communications Ltd., Saint Petersburg, Russia
- Narfoamkar, Tehran, Iran
- Frequentis AG, Austria

Sales Partners and System Integrators

- Netherlands
- South Africa
- Brazil
- Indonesia
- United Arabic Emirates

Company Profile

ProCom®

Develop-ment

Production

Sales

Service

Intercom- / PAGA-systems

DVS-21 for harshly environments (noisy, dirty, dusty, hot, cold, high mechanical strain)

Central Equipment for PAGA-Systems

Highly available server / client architecture BSA and Softswitch to connect DVS-21 as well as systems from other suppliers

(Tunnel) Emergency Communication Systems SOS

Call stations for party-line communication, SOS-center DVS-21, PAGA-systems for tunnels

Company Profile

Target Markets

Transport Companies
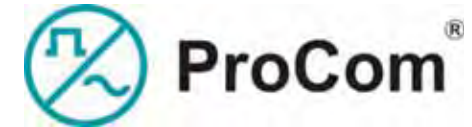(Railway Companies, Road Operators, Ports etc.)

Utility Companies
(Power, Gas, Water)

Industrial Companies
(Metal, Chemical, Petro-Chemical, Food)

Introduction Procom

Turnover (euromicron AG)

2010:   204,000,000 Euro

2011:   305,000,000 Euro

2012:   330,000,000 Euro

Turnover ProCom (german market, incl. RSR)

2011:   7,000,000 Euro

2012:   6,375,000 Euro

2013:   6,900,000 Euro

Turnover ProCom (international markets)

2011:   725,000 Euro

2012:   1,700,000 Euro

2013:   3,300,000 Euro

Introduction Procom

Employees (euromicron AG)

2010:	1081
2011:	1455
2012:	1699

Employees ProCom (year 2013)

Management / Accounting / IT-Administration:	6
Research & Development:	10
Engineering / Construction:	11
Assembling / Testing / Commisioning:	18
Sales / Purchasing:	7
Construction supervision:	4

Railway solutions

Solutions

ProCom®

Railway solutions

Local public address systems for different kinds of railway stations (small up to large stations)

Remote controlled public address systems for different kind of track and station types

Accoustical passenger warning systems (e.g for highspeed lines)

Announcement centers for manual, half automatic and fully automatic PA

Intercom and PA for marshalling yard

SOS systems for railway tunnels

Announcements Solution with DVS-21

Public Address Interfaces

- IP-networks (VoIP)
- Euro-ISDN (S0-Access)
- DVS-21-networks
- 3rd party equipment (analogue)

Public Address Sources

- ProCom Workstation BSA
- Indoor and Outdoor Call Stations
- 3rd party Call Stations
- Automatic announcement systems

ProCom DVS-21 PA/GA

Announcements Solution with DVS-21

Features

- Complete loudspeaker line monitoring
- Automatic volume control (daytime and night-time)
- Subscriber identification and priority control
- Internal voice memory (process- or manual controlled
- ambient noise control
- Various system sizes from 100 watts to many kilowatts of power amplifier
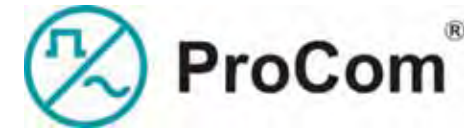- State of the art digital amplifiers from 100 Watts to 500 Watts Fanless Maintenance Free
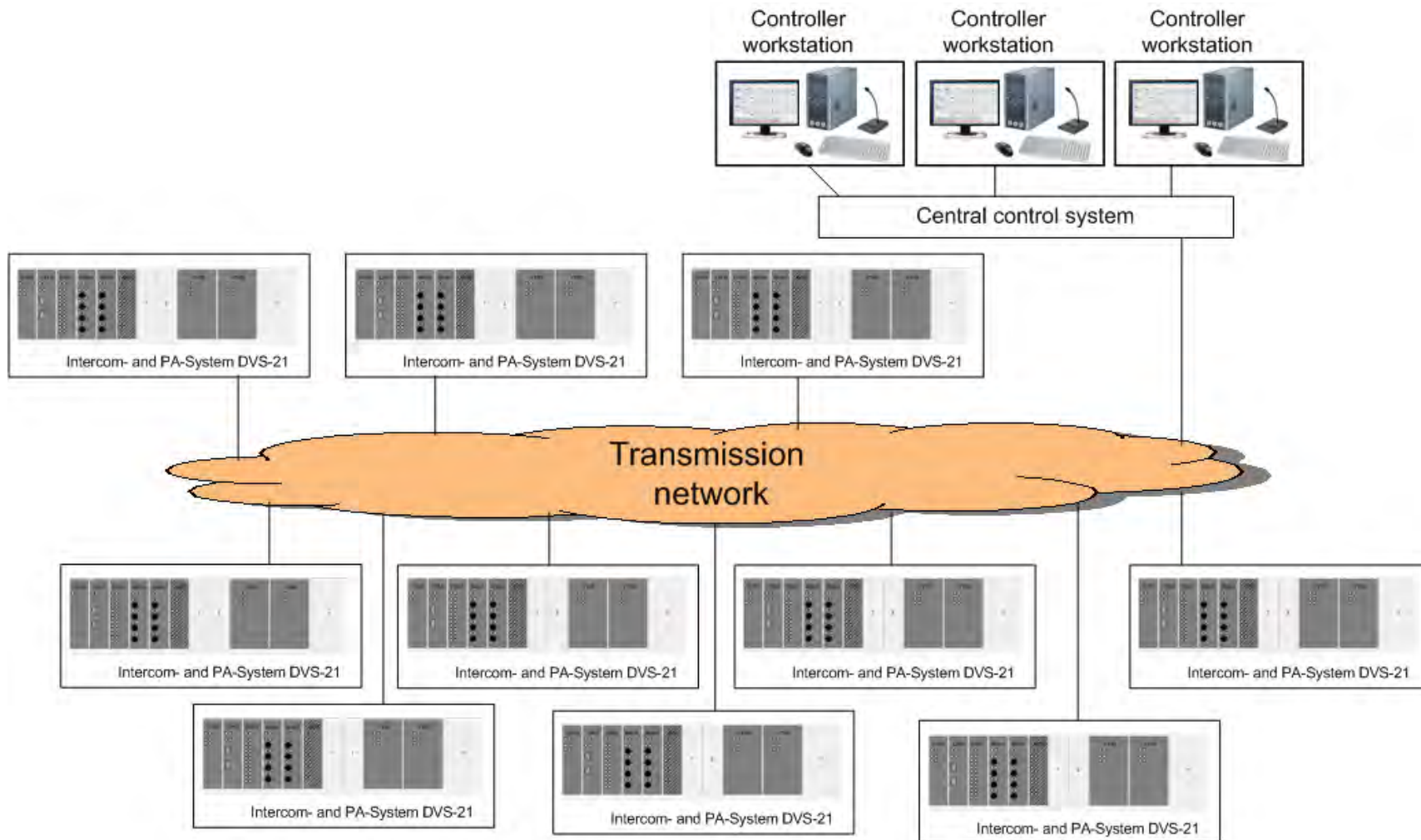
Local PA systems

ProCom®

station controller

Intercom- and PA-System DVS-21

Local PA systems

Scalable up to local systems for big stations (fully redundant)
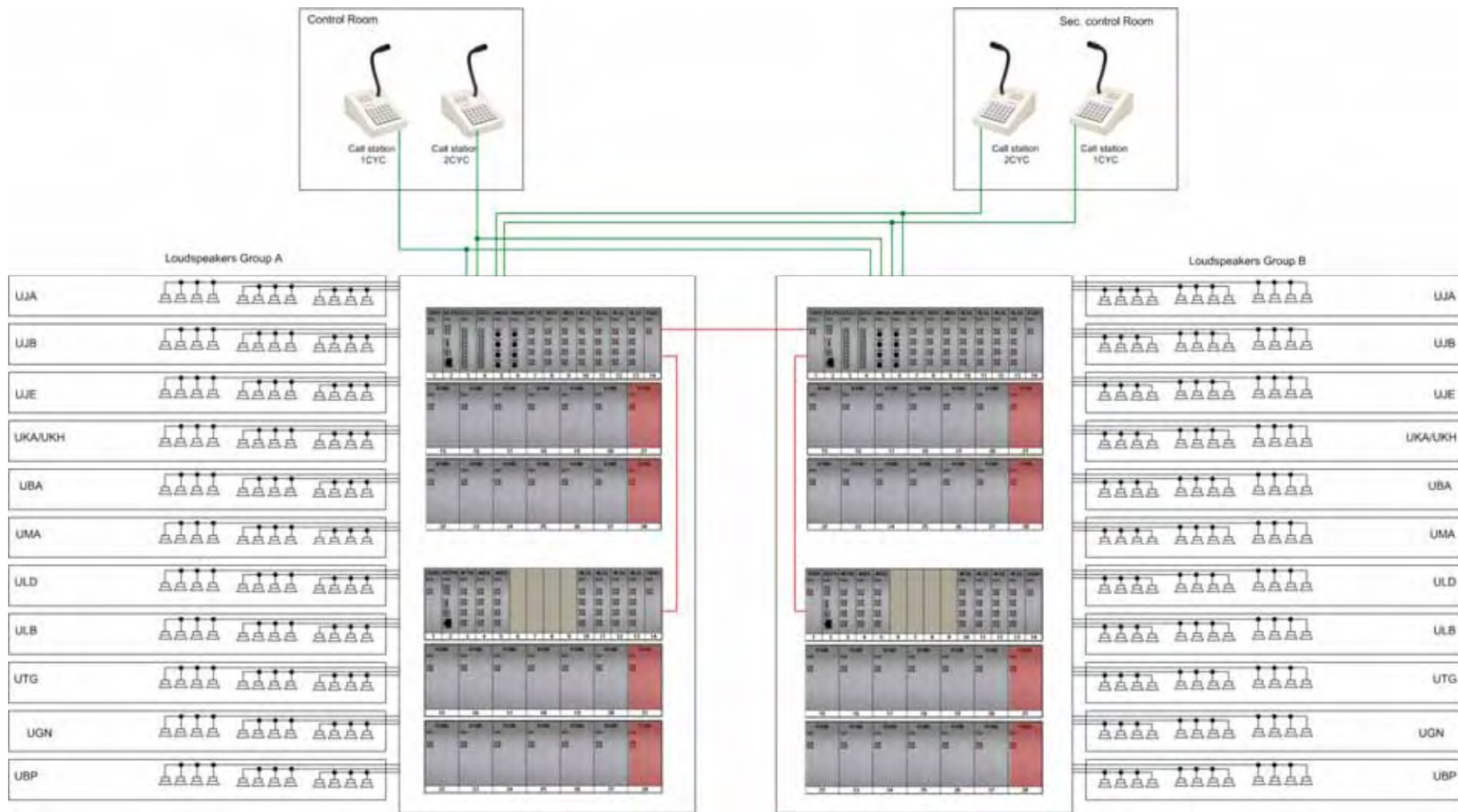
Remote controlled PA systems

Scalable up to large track or area PA systems
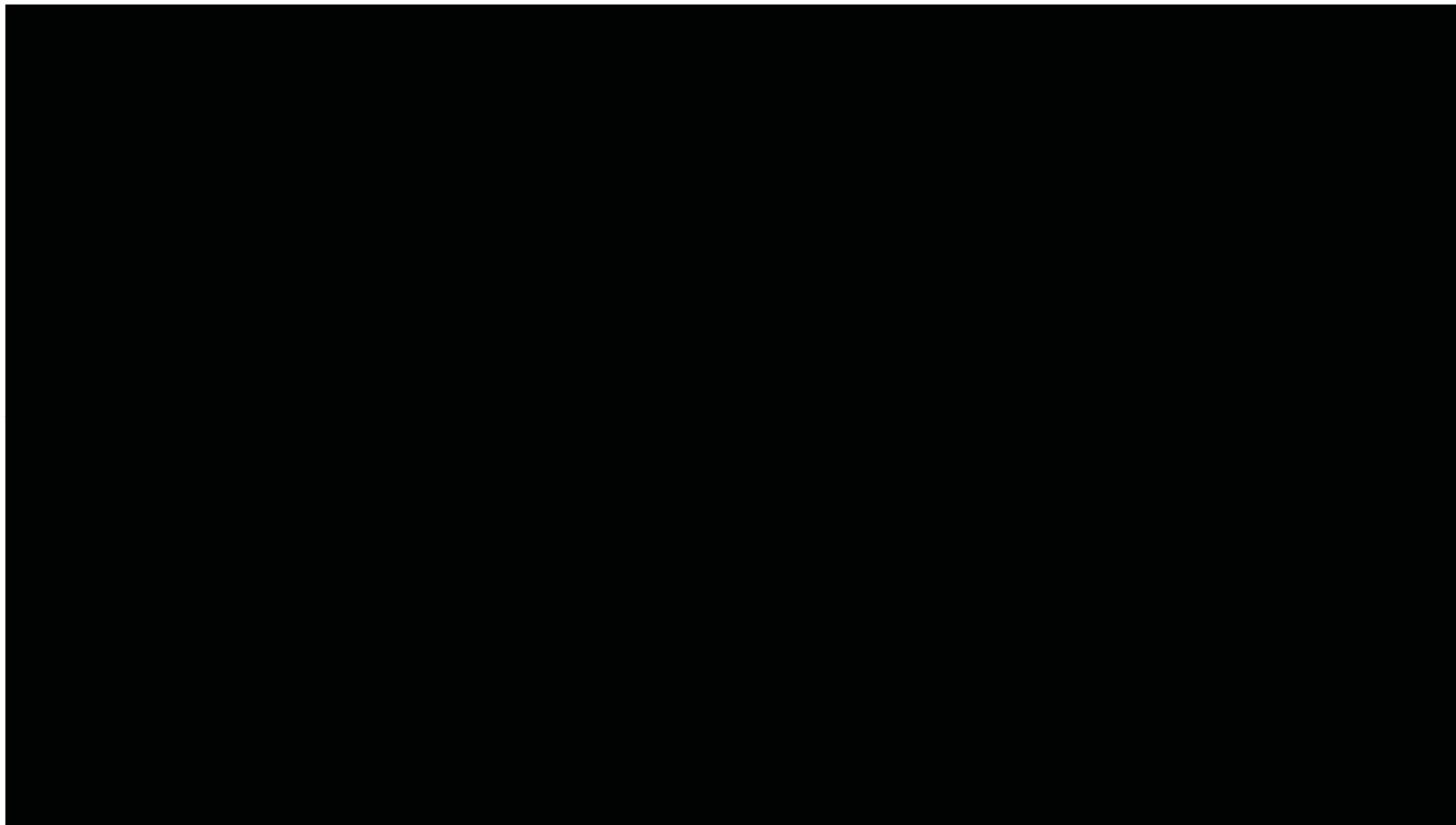
Why Passenger warning systems? ProCom®

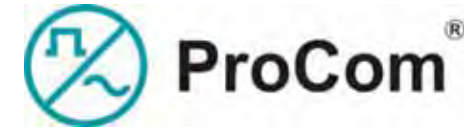## What can happen during a cargo or highspeed train passing?

Procom Solution

Passenger warning systems

System needs (according to german railway regulations)

- **Redundant loudspeaker cabling**

- **Loudspeaker circuit monitoring to detect a single loudspeaker failure**
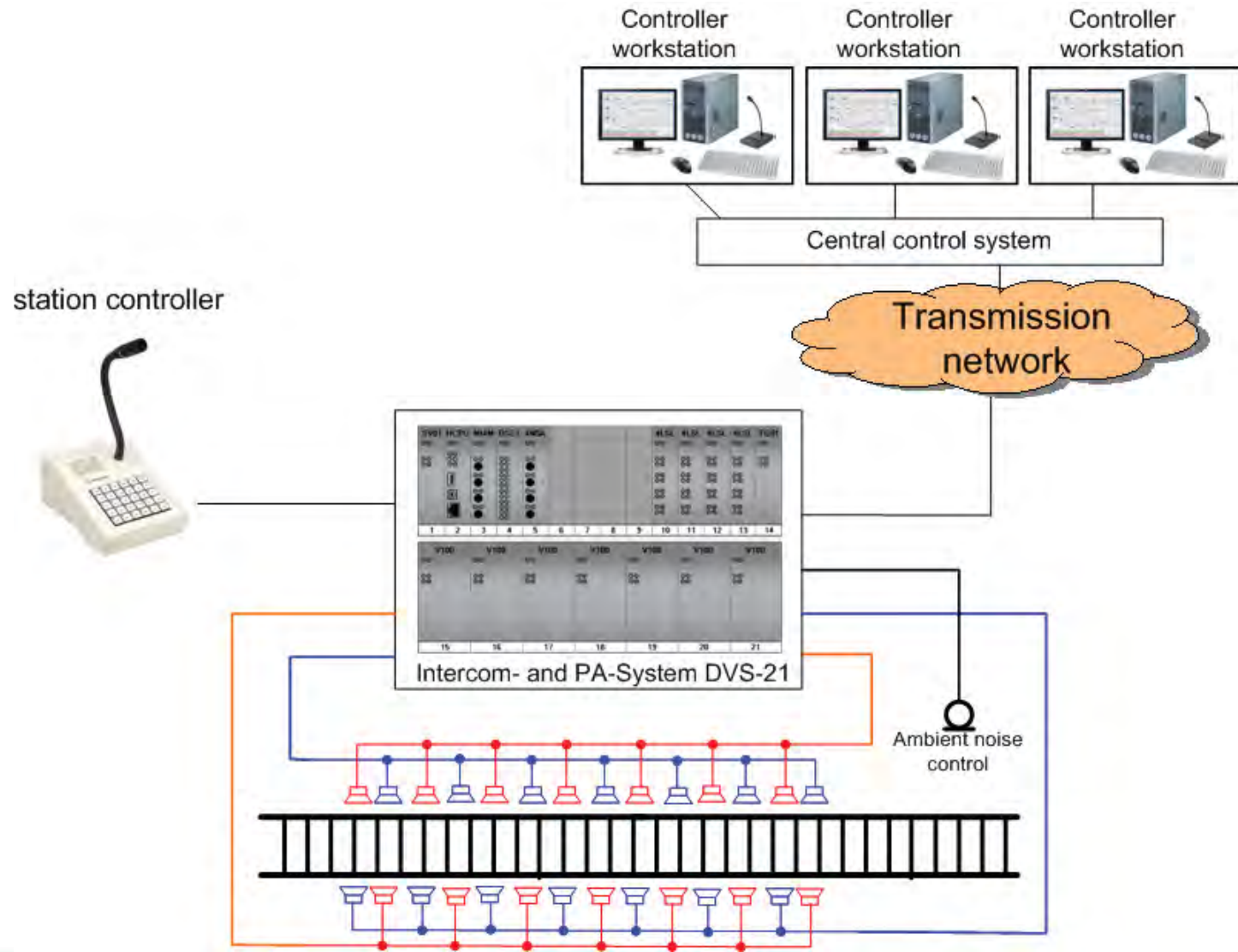
- **system and amplifier monitoring to detect system failures**

- **Ambient noise control**

- **Different audio levels during day- and night time**

- **Access and Priority control**

- **Optical signalling of the announcement status (successful, busy or failure)**

Controller workstation

Controller workstation

Controller workstation

Central control system

Transmission network

station controller

Intercom- and PA-System DVS-21

Ambient noise control

Passenger warning systems

Functionalities

Loudspeaker line monitoring (short cut, open circuit, impedance deviation)
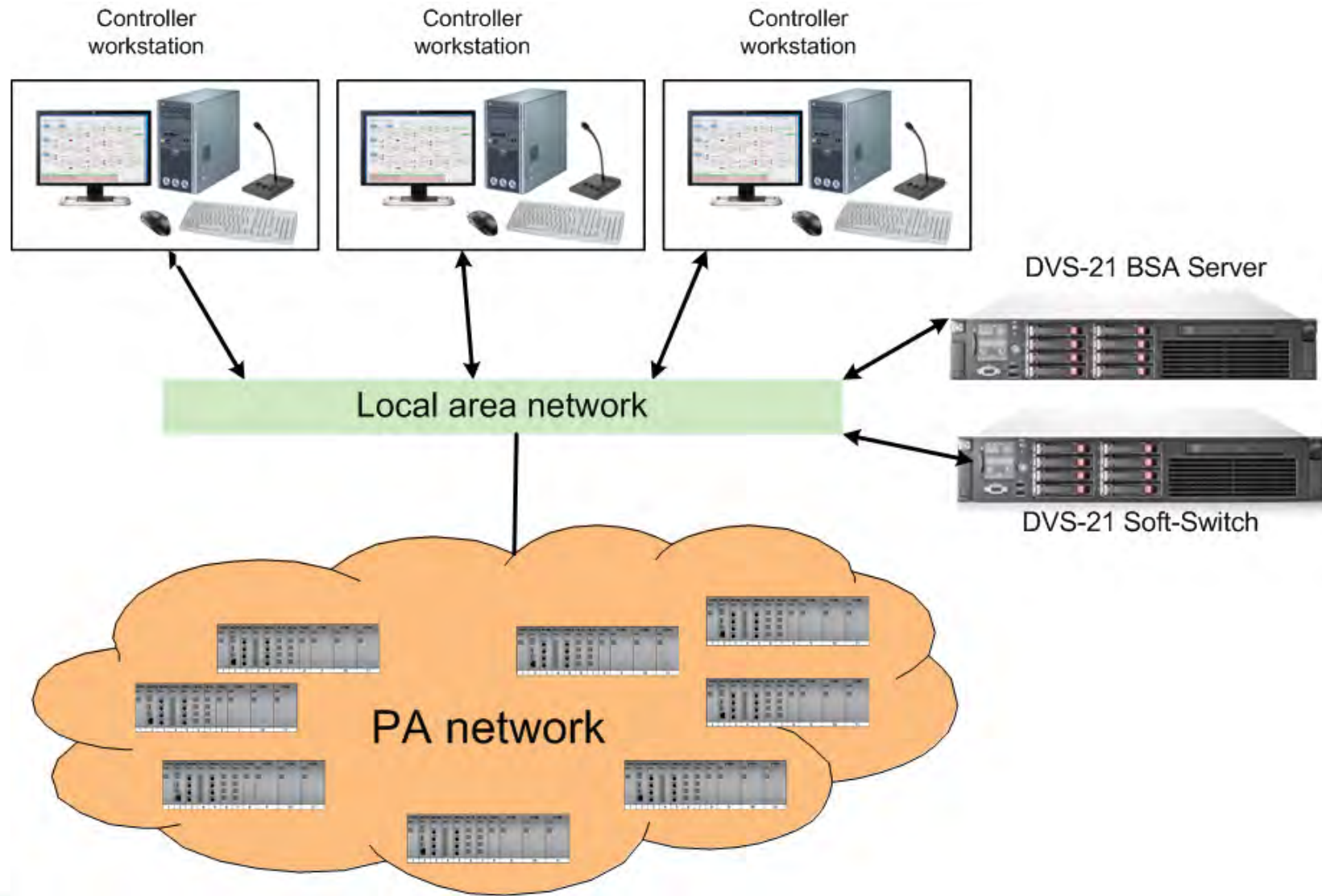
Redundant cabling for loudspeaker lines

Complete monitoring of the transmission line from the operator workstation down to the loudspeaker

Manual, half automatic or fully automatic passenger warning messages before a train pass a platform

➡ **More safety on highspeed lines or large passenger stations**

Announcement center

Announcements centers

Presentation Date: 2014/08/27
Author: Michael Wendler

Announcements centers

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Author: Michael Wendler

Announcements centers

Announcements centers

Projects at German Railways

AZ Kiel

AZ Lübeck

AZ Bielefeld

AZ Münster

AZ Essen

AZ Düsseldorf

AZ Köln

AZ Hannover

AZ Cottbus

AZ Halle

AZ Koblenz

AZ Frankfurt/Main

AZ Darmstadt

AZ Saarbrücken

AZ Stuttgart

AZ Dresden Neustadt

AZ Kassel

AZ Hagen

ProCom DVS-21 SOS
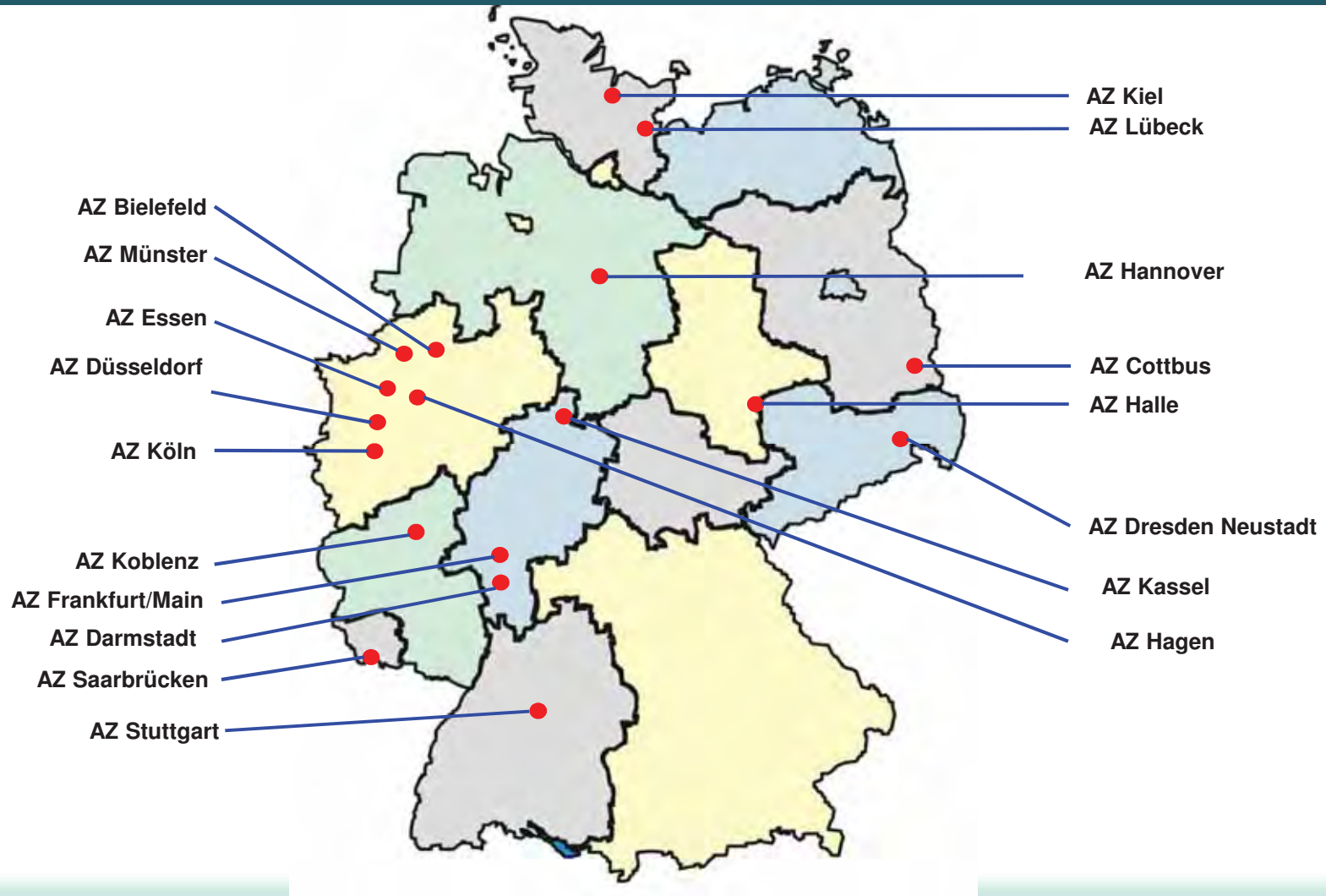
Tunnel Emergency at a Glance

SOS partyline system for up to 12 km per line

Up to 26 special SOS-call stations in one line

Through central power supply very low-maintenance system (No local Batterie needed)

Calls from the tunnel control center to the tunnel call stations (e.g.for maintenance communication)

Sequential group call for searching people in the tunnel (e.g. maintenance staff)

Extendable as a tunnel announcement system

VoIP interface to the tunnel control system

Products

ProCom DVS-21, Interface description

NSA-PL Line card for SOS Line interconnection in 6 wire technique

- **Robust transmission in 6-wire technology Audio / Data / Power**
- **Switching-on of up to 48 call stations per Line Interface**
- **Call station malfunction / identification from the control unit**
- **Monitoring of call station voltage**
- **Establishing long-distance lines of up to 13 km (Cable 4 x 2 x 1.2 mm)**
- **Sending/receiving level can be regulated**
- **48V / 72V increased Power Supply**

ProCom DVS-21, Interface description

SV01-PL Voltage supply module for NSA-PL

- **DC/DC voltage supply for NSA-PL interface module**
- **Display and forwarding of group malfunction signals**
- **Output voltage either 48V DC or 60V DC or 72V DC (configurable)**
- **Monitoring of the output current (continuous short-circuit protection)**

ProCom DVS-21, call stations

WPS-PL (SOS Line) Weatherproof Call Station, SOS

- 6-wire technology: Audio / Data / Power
- SOS Push Button / with backlight (LED)
- Two Versions available:
  - One SOS Button
  - One SOS Button and two Control Buttons
- Built-in microphone / 4 Watt Pressure Chamber Loudspeaker (SPL> 100dB)
- Weatherproof design (protection rating IP65)
- Large temperature range
  - Storage -30° C to +70° C,
  - Operating -20° C to +55° C
- Up to 13 km Distance and 26 Users (Cable 4 x 2 x 1.2 mm) per Line Interface NSA-PL and SV01-PL
- Good/Malfunction identification
- Hands-Free Operation

ProCom DVS-21 SOS partyline

Tunnel Emergency – typical installation
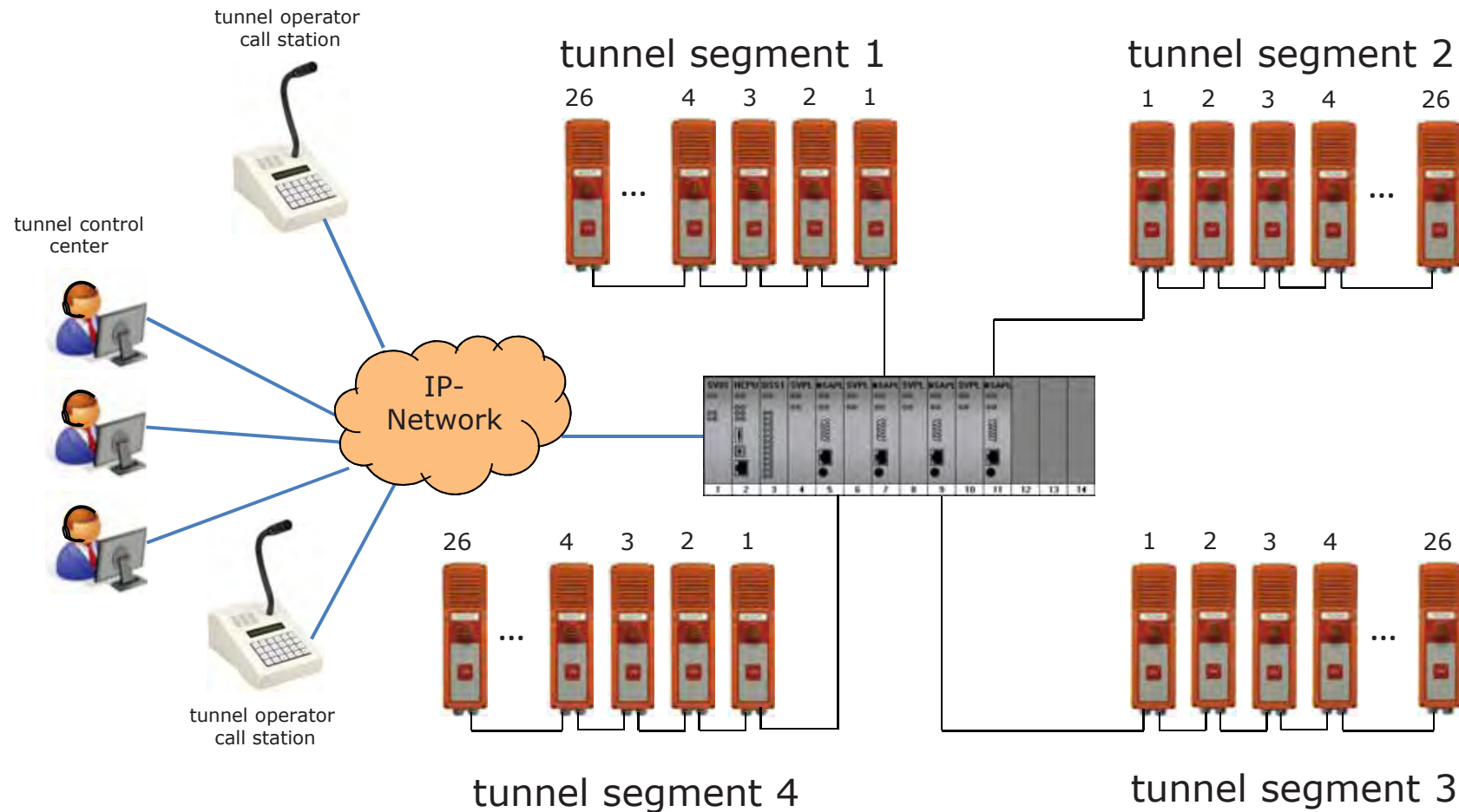
Industry solutions

Solutions

industry

Combined public adress and intercom systems for all kinds of industrial communication needs

Special protected call stations for potencially explosive areas

Interfaces to the existing communication systems like private mobile radio systems, PBX-systems, etc.

Monitored interfaces to existing alarm systems like fire- or gas alarm systems

Outdoor call stations and loudspeakers for harsh environments (hot, dusty, noisy areas)

System redundancy solutions for areas with high safety requirements

Overview

DVS-21 at a Glance

Completely modular communication and PA-System, that can be adapted to the customer needs and to the requested system size very easily

Complete monitoring of all system components and the loudspeaker lines is possible

Interfaces for a lot of different functions (call stations, communication lines, 3rd party equipment, VoIP, etc.)

Different subscriber terminials for indoor, outdoor and potentially explosive areas

Easy to program with special configuration tools

Customer specific adaptations possible

Digital communication System ProCom DVS-21

Sample configuration DVS-21

WPS-PL

WPS-08

WPS-04
AWC-06

DTA-LAN

DTA-012

DTA-030

DTA-048

Products

ProCom DVS-21 Features

- Modular and Flexible
- IP Communication Platform
- Multiple Functionalities
- Multi Connectivity
- Management
- Service & Maintenance
  - Fanless
  - Availability   > 99,9%
 - Maintenance Interval (*not applicable*)

ProCom DVS-21 modular and flexible

- Adaptable for every task
  - PA output power: 100W – 2000W in increments of 100W
- Easy programmable
- Extendible to 3 racks (internal bus)
- Basis system designed for 28 modules
  - (up to 104 call stations / 2000 Watts)
- Cascadable up to large configurations
  - (up to 600 call stations / more than 20 kW)

Products
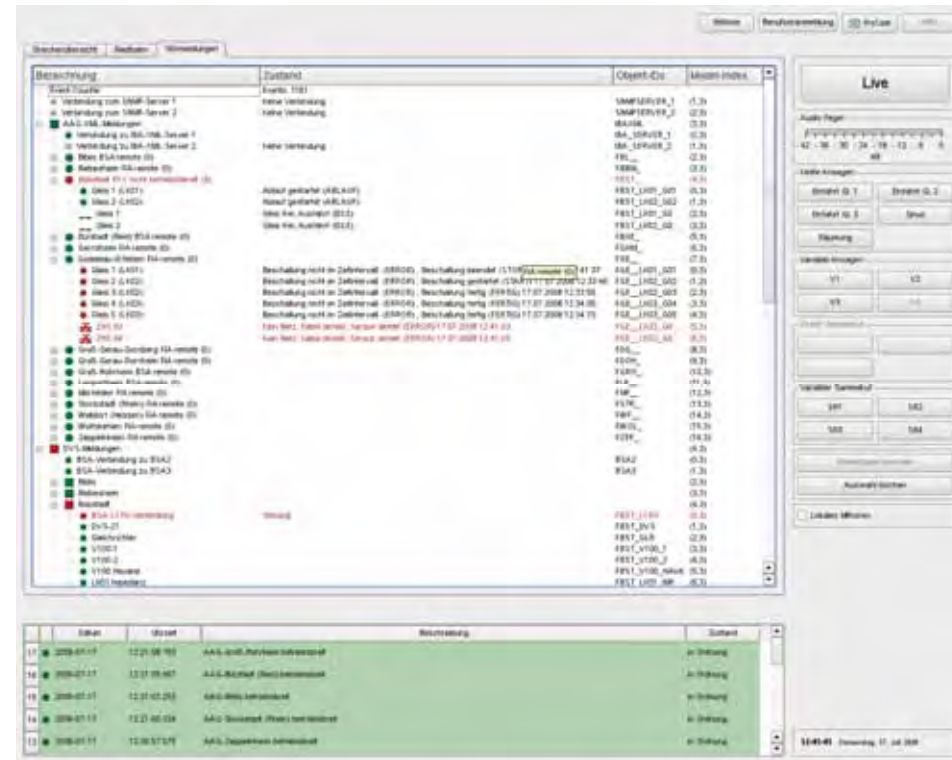
ProCom DVS-21 multiple connectivity

- IP
- SHDSL *
- E1 (G.703 / G.704)
- Serial (RS-232, EN 60870-5)
- Telephony Euro-ISDN S0 and Analogue (terminal)
- Analogue (-6 dBm 3,4 / 7kHz)
- Contacts / Lines (Telecontrol)
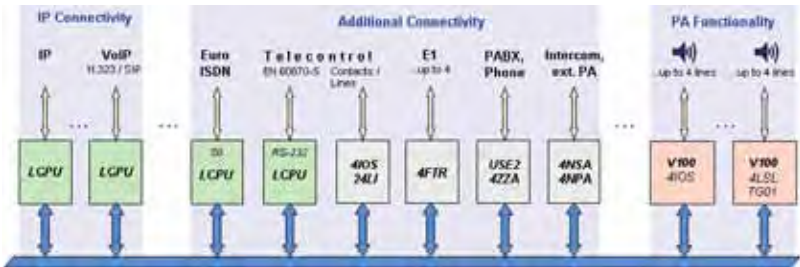
* via external Modems

ProCom DVS-21 fexible management

- **Reporting**
  - All boards
  - All inputs
  - All outputs
  - Loudspeakers
  - Loadspeaker groups
  - Signal paths
- **Controlling**
  - Remote System Configuration (RS-232 / IP)
  - 2 banks of System Firmware
  - 4 banks of system configuration

ProCom DVS-21, Interfaces

LCPU - linux CPU for different applications (VoIP, ISDN, DAS, ...)

HCPU - new Processor Module with remote configuration and monitoring

CPU1 - Processor Module

SV01 - DC-Converter in different performance classes for a complete DVS-21 system
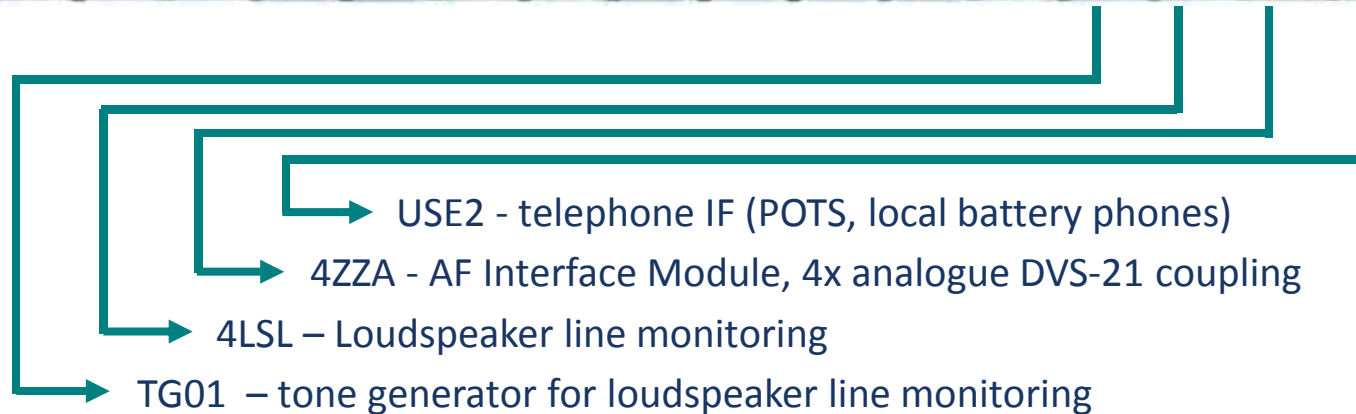
ProCom DVS-21, Interfaces

24LI – Line Interface Module with 24 Lines for analogue intercom

4NPA - AF Interface Module for 4 sets, analogue version

4DAV - AF Interface Module for 4 in 2-wire technique (for WPS-xx/2)

4NSA - AF Interface Module for 4 sets incl. fusing (for DTA xx and WPS-xx/4)

ProCom DVS-21, Interfaces

DSS1 - Digital Storage Module Alarm tones, messages, call evaluation

MI4M - Level control depending on ambient noise

4IOS - In/Output Interface Module, 8 opto coupler inputs / 4 relay outputs

4FTR - base interface for up to 4 E1 / ISDN-S0

ProCom DVS-21, Interfaces

USE2 - telephone IF (POTS, local battery phones)

4ZZA - AF Interface Module, 4x analogue DVS-21 coupling

4LSL – Loudspeaker line monitoring

TG01 – tone generator for loudspeaker line monitoring

Products

ProCom DVS-21, call stations

Outdoor – weatherproof call stations

- available with 4 or 8 toggles (4-way) with LED and as a dial version
- available as 6-wire version (with 4NSA) and 2-wire version (with 4DAV)
- Add-on Toggle Section with 6 Toggles
- built-in 25 Watt booster amplifier (optional in 2-wire version)
- Weatherproof design (IP65)
- Large temperature range (-30 °C to +70 °C)
- Resistant to many chemicals
- Flame resistant
- Easy installation

ProCom DVS-21, call stations

explosion-proof call station WPS-04 Exx and WPS-04Ex

- economical 2-wire digital technology
- Up to 4 km remote installation with internal 4 Watt loudspeaker
- Compact and robust design for wall mounting
- Intercom electronics with microphone preamplifier and dynamic compressor
- Material made of glass-reinforced polyester, fully insulated, colour red (RAL 3001)
- Operating voltage 48 VDC
- Protection class IP65

Products

ProCom DVS-21, call stations

indoor – desktop call stations

- available with 12, 30 or 48 button with LED
- Connection using plug-in cable
- Freely programmable key functions (e.g. louder/softer and alarm function)
- Optionally with hand-held microphone
- Optionally with head, audio, voice set (headset)
- Optional special functions by request (e.g. fire brigade call station with monitored microphone)
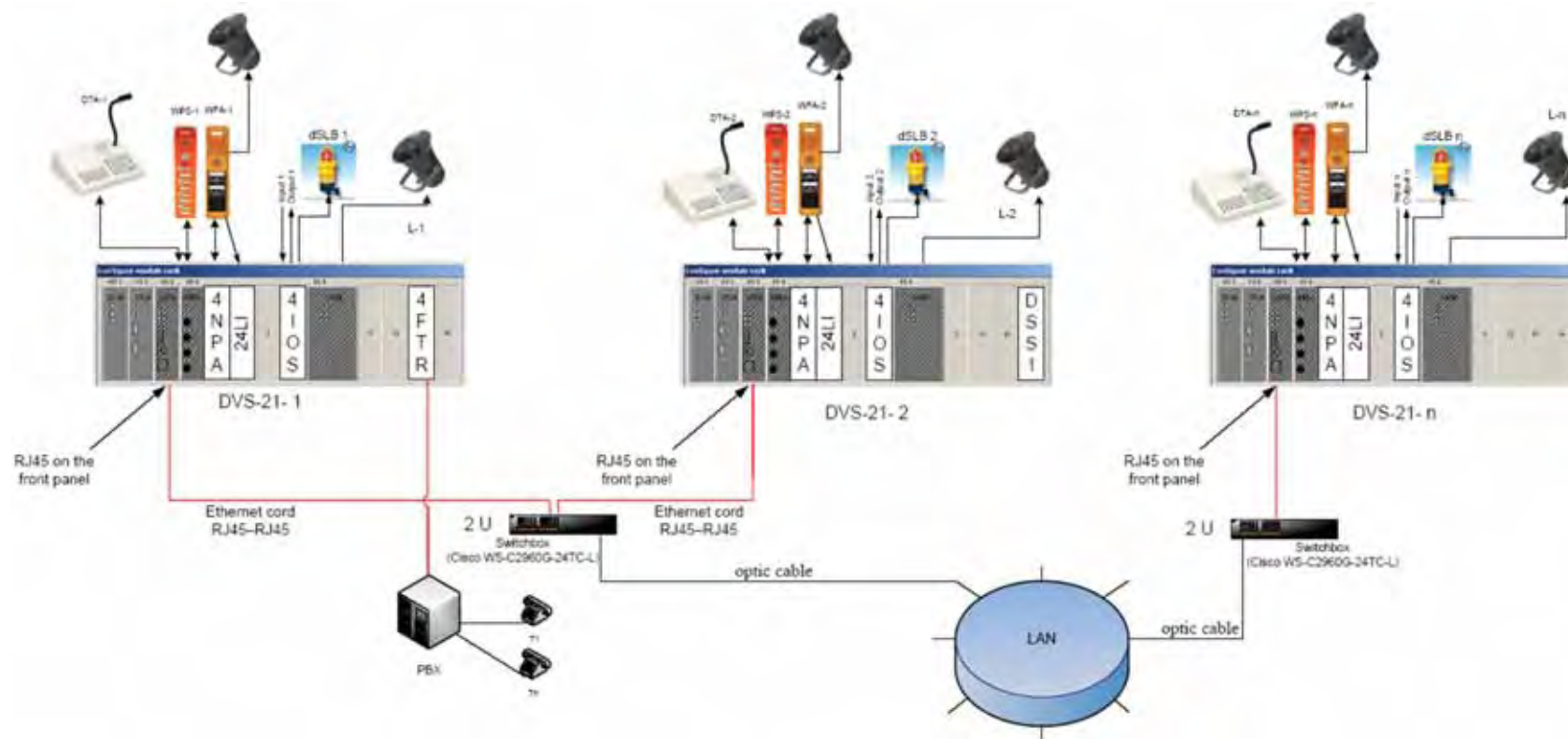
ProCom DVS-21, system examples

fully equiped system
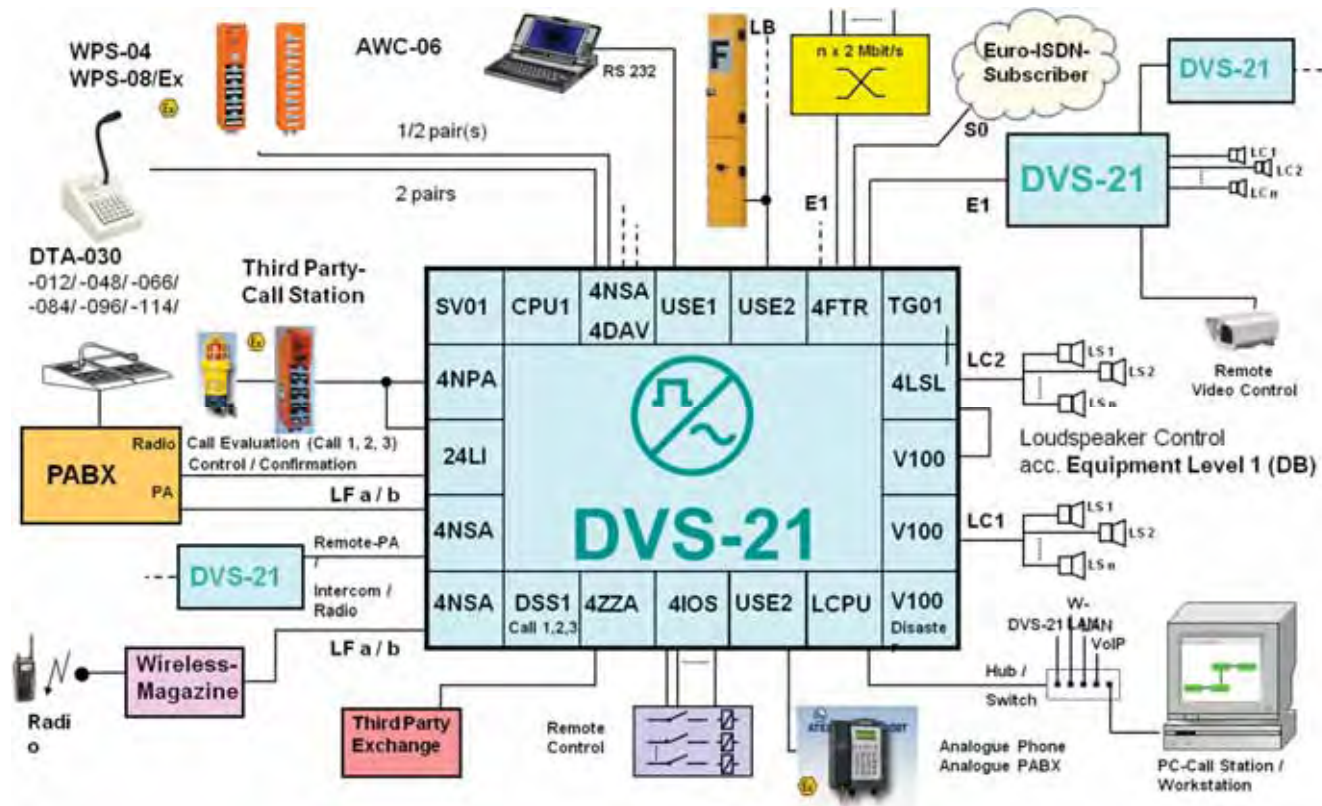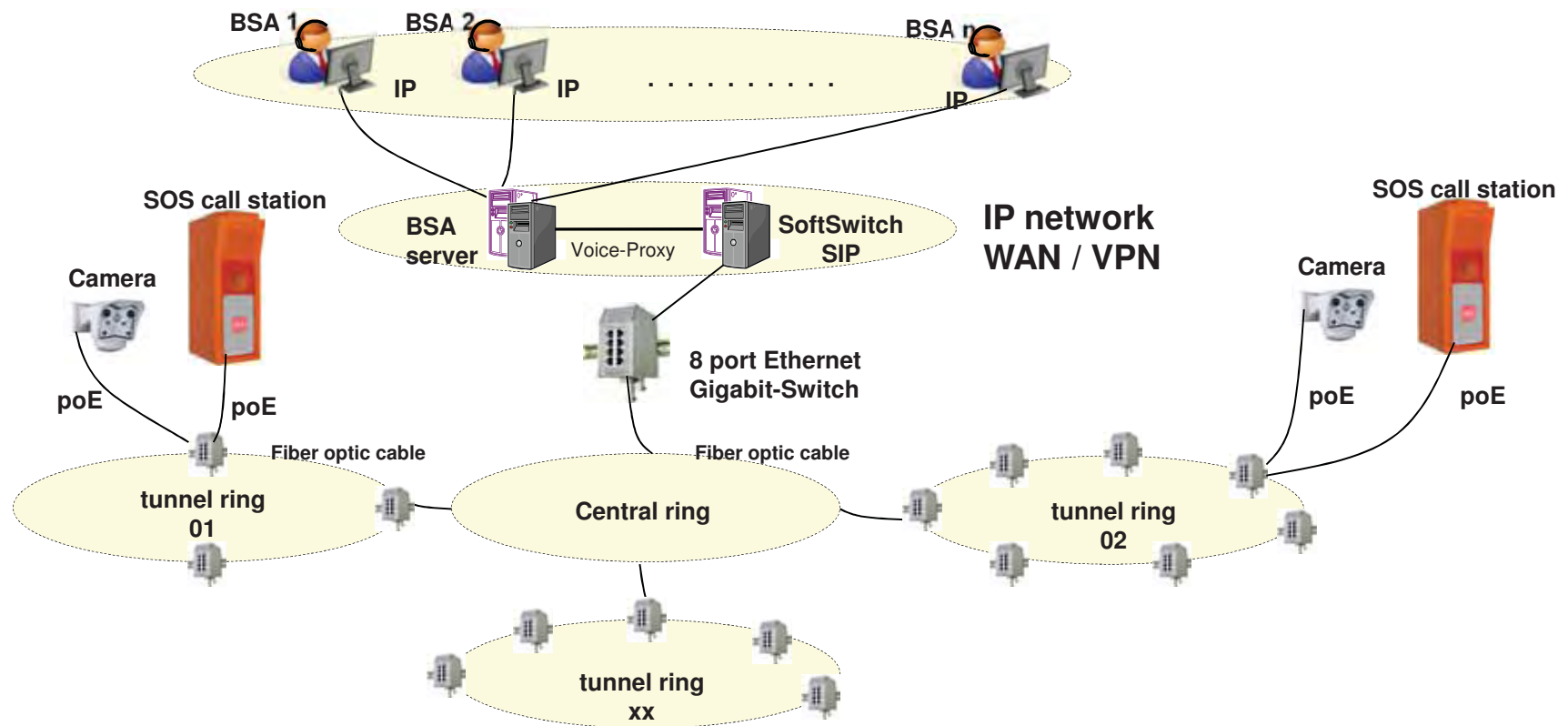
ProCom DVS-21, system examples

Excample for networked trackside equipment

ProCom DVS-21, system examples

Example for tunnel communication system (Turkey)

ProCom DVS-21, system examples

Example for industrial application

REFERENCES
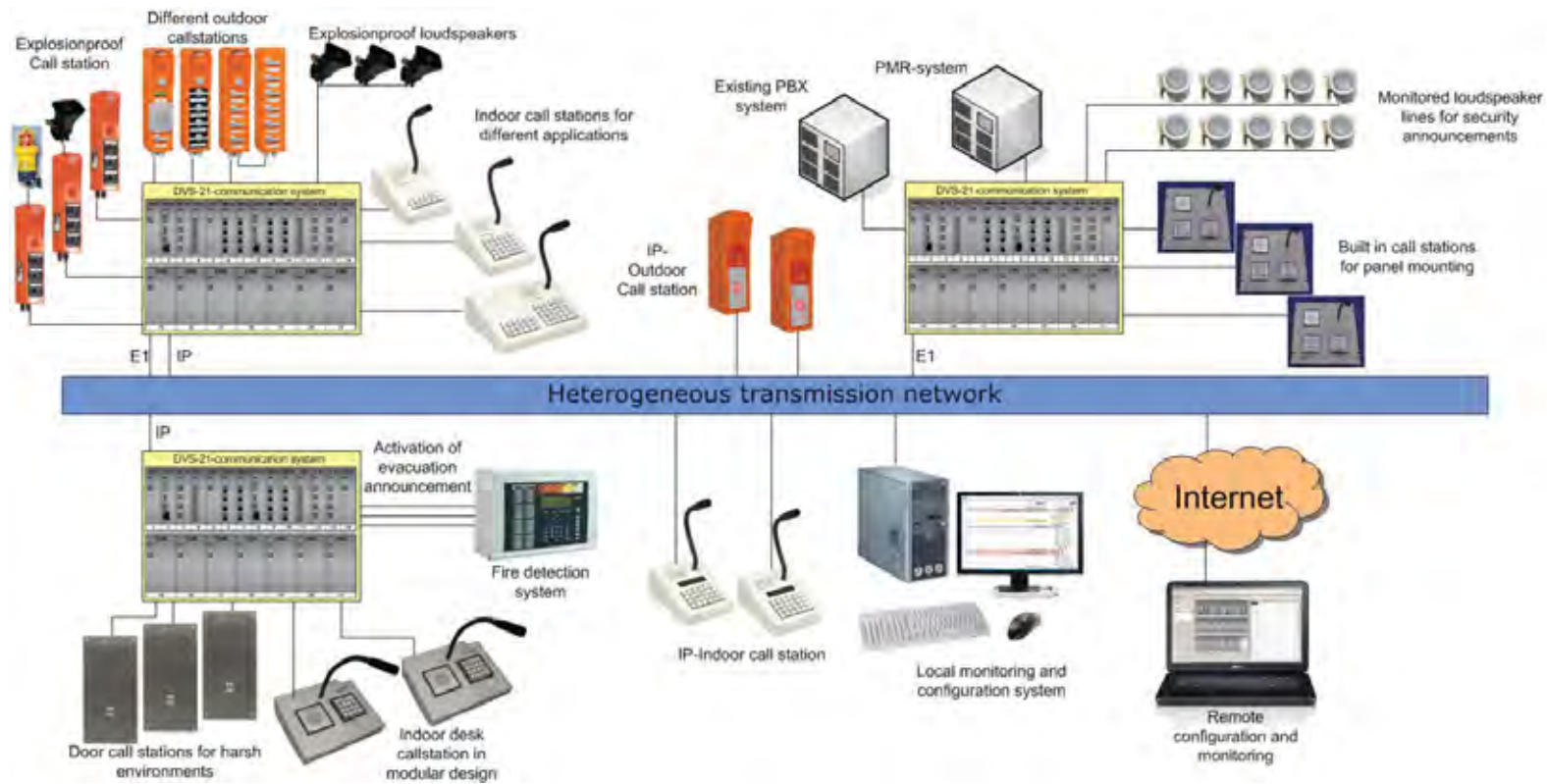
Steel & Aluminium Plants

Steel Plants

China, Brazil, Germany, Africa, Turkey

(eg. Baosteel, Thyssen Krupp, Mital Accelor, V&M, CSN)

Stainless Steel Plants

Brazil, China, Germany, Africa, Turkey

(eg. TISCO, Nirosta (Thyssen Krupp))

Aluminium Plant

Germany, Brazil

(eg. Novelis, Alumar)

REFERENCES

Petro Chemical & Chemical Plant

Petro Chemical Plants

China, Russia, Germany, Africa

(eg. Lukoil, Gasprom, elf/Total, CSPC /Shell, Petro China)

Chemical Plants

Brasil, China, Germany

(eg. BASF, Chempura)

REFERENCES

Power Plants

Nuclear Power Plants

Brazil, Switzerland

(eg. Angra II Elektrobras, Beznau Axpo AG)

Coal Power Plants

China, Germany, Netherland, Russia

(eg. Fuxi, RWE, Eon)

Water Power Plants

Russia

References

Outdoor call stations in operation

References

Dillinger Hüttenwerke (metallurgical plant)

- **Realization period:** 2001 until now
- **Project description**
    - 8 DVS-21 intercom/PA-systems (networked)
    - app. 200 outdoor call stations (patially explosionproof)
    - app. 120 indoor call stations
    - networking over 2 Mbps-links
    - 35 PA zones

The system will be used for the operational communication between control rooms and different productons areas- such as blast furnace, sinter plant, steel works and as acoustic warning system

Thyssen Krupp Nirosta (stainless steel works)

- **Realization period :** 2005 until now

- **Project description**
    - 7 DVS-21 intercom systems
    - app. 70 outdoor call stations
    - app. 35 indoor call stations
    - transmission system between the DVS-21
    - various PA-zones

The systems will be used for communication between control rooms and different production areas, such as strip caasting plant, rolling mills, glowing and pickling lines ans as acoustic warning system

References

TISCO-Taiyuan Iron & Steel (Group) Co., Ltd

- **Realization period :** 2010 till now
- **Project description**
  - 10 DVS-21 intercom/PA-systems (networked)
  - about 400 outdoor call stations (partially explosionproof)
  - about 100 indoor call stations
  - networking with PLC for process controlling
  - 60 PA-zones

The systems will be used for operational communication in the complete company area with the functions PA, intercom, PMR-links and acoustical alarming

ProCom®

Shanghai Baosteel

- **Realization period :** 2004 until now
- **Project description**
  - several DVS-21 intecom/PA-systems
  - app. 300 outdoor call stations (patially explosionproof)
  - app. 50 indoor call stations
  - networking over 2 Mbps-links
  - 25 PA-zones

The system will be used for the operational communication between control rooms and different productons areas- such as blast furnace, sinter plant, steel works and as acoustic warning system

References

South Kaveh Steel Company (Iran)

- **Realization period** : 2010/2011
- **Project description**
  - combined public address and intercom system
  - 18 indoor call stations DTA-066 and DTA-030WP (weatherproof version)
  - 20 weatherproof outdoor callstations WPS-04
  - 10 fully monitored loudspeaker lines for warning functions
  - Set of indoor and outdoor loudspeakers, junction boxes and special installation materials

The system will be used for the operational communication between control rooms and different production areas and as acoustic warning system

National Iranian Steel Co. Hormozgan Steel Complex

- **Realization period :** 2008 until 2010
- **Project description**
    - combined public address and intercom system
    - 3 indoor master control stations DTA-066
    - 21 weatherproof outdoor callstations WPS-08
    - 5 explosionproof outdoor call stations
    - 12 fully monitored loudspeaker lines for warning functions
    - Set of indoor and outdoor and explosionproofloudspeakers, junction boxes and special installation materials

The system will be used for the operational communication between control rooms and different production areas (partially potential explosive areas) and as acoustic warning system

References

Chemtura Acorn, Nantong Chemical industrial park

- **Realization period :** 2013 until now
- **Project description**
  - Combined intercom- , public adress and general alarm system for different production areas
  - 500 Watt amplifiers for PA and general alarm
  - 3 indoor call stations forthe main control rooms
  - 12 outdoor call stations (partially for hazardous areas)
  - Complete set of indoor, outdoor and explosion proof loudspeaker
  - Onsite project commisioning by our technicians in China

References

RWE Power (open-cast mining)

- **Realization period :** 2004 until now

- **Project description**
  - DVS-21 on dredger maschines in the open cast mines Inden and Hambach
  - 2-3 DVS-21 systems at each dregder machine, networked via fiber optic cable
  - Marshaller radio systems
  - Construction side radio systems,
  - Trunking radio systems

Thank you for your attention!

Any questions?