

DVS-21

**The System that
Speaks for Itself.**



Professional
Communication & Service



ProCom[®]

ProCom

- Spreading the word

ProCom Professional Communication & Service GmbH is a highly qualified innovative communications company that develops, engineers and markets Intercommunication and Public Address Systems for industry and the transportation sector since 1996.

Engineers of ProComs representative commissioning intercom and public address systems for several pellet plants of a large Brazilian producer.

To ensure effective production, the company philosophy is to concentrate "in house" resources on the core functions. These include quality control ISO 9001:2008, hardware and software design and development, P.C.B. layout, systems assembly and testing as well as final onsite commissioning.

Production of housings and assembly of printed circuit boards are outsourced to approved sub contractors, whereas marketing, installation and maintenance tasks can be delegated if required.



About us

At a glance

Success proves we are on the right track

- 1996 ProCom - Established
- 1997 First intercom/PA system for industrial application, first exports to Brazil, China and the Netherlands
- 1998 First PA system for vessels in the UK
- 1999 First intercom/PA/radio system for railways
- 2000 First PAGA system for nuclear power plant
- 2001 First Dual PAGA system for offshore platforms
- 2002 First completely digital Dual PAGA system delivered

- 2003 ProCom China formed
- 2004 ProCom + RSR Datacom agree on close cooperation
- 2005 Approved for German Railways „Deutsche Bahn AG“ (EBA permission)
- 2006 First exports to Russia Gost successfully certificated
- 2007 First operator´s call station (BSA) for railway and industry
- 2008 Full IP connectivity and networking capability
- 2009 Loudspeaker product Line
- 2010 2-wire technique - Launch of new equipment generation
- 2011 2nd Generation of our Partyline based SOS-System (WPS-PL) now in worldwide use
- 2012 Hot Standby Processing (CPU) and Power Supply (SV01) Modules released
- 2013 DVS –21 Softswitch Audio Gateway – Unlimited Bandwidth for high resolution audio applications (20 KHz)

We thank our customers for the confidence shown to us.



ProCom®

Matched configurations for all needs



Smart DVS-21

Compact PA / Intercom system, 19" half rack. - small-sized solution for applications with few targets at low starting price.



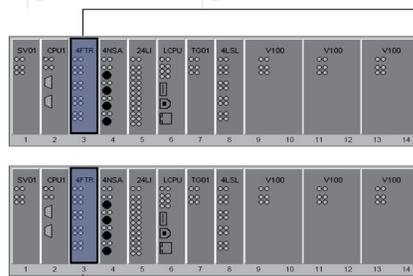
DVS-21 system

Basic structure consists of a 19" 3HU rack, equipped with power supply module SV01 and processor module CPU1 and HCPU, respectively. All modules of the system are interconnected via bus system PCB (printed circuit board). This architecture allows for easy upgrade without additional effort. Each system can manage up to 28 modules. Several system racks are available.



DVS-21 networking

By adding additional basic systems, installations of virtually unlimited size and No. of speech connections can be achieved. Interconnection of distributed basic systems is done by means of copper cable or optical fibres (OF) 2Mbps interfaces.



With separate 2Mbps Line terminal equipment (HDSL modem, copper or OF, or existing transmission system, if applicable (E1 interface))

The System DVS-21

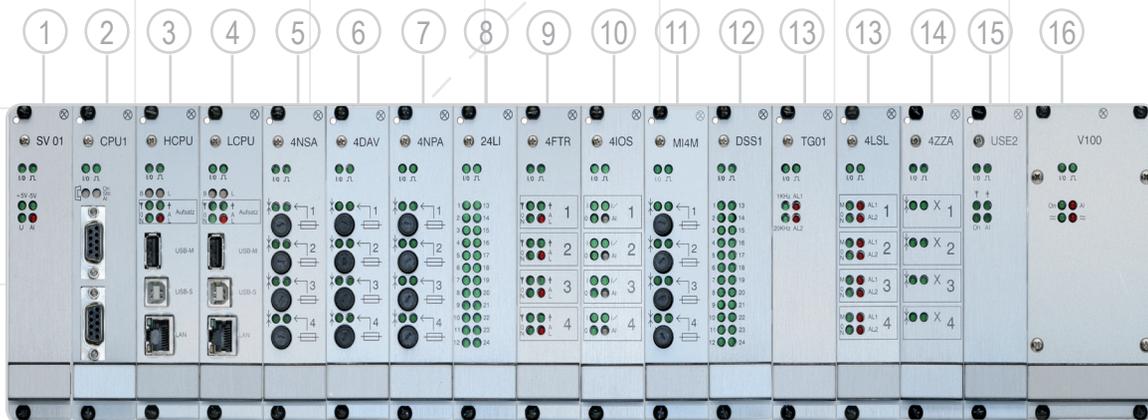
The DVS-21 system handles the requirements for small and large systems whether simple or complex without limitation.

The modular hardware structure combined with the easily configured user software "ICS" allows instant solutions to any communication requirement.

Interfaces to other types of communication systems or their inte-

gration are a standard feature designed into the system. Even replacing just the control circuits (to facilitate upgrades) and maintaining the existing peripheral units such as power amp's or call stations is a standard feature.

The DVS-21 Hardware ...



All modules that make up the system are interconnected by the digital bus and are controlled by the processor module

- | | | | |
|----|---|----|--|
| 1 | SV01 DC/DC Converter Module
Power supply for a complete processor system | 12 | DSS1 Digital Storage Module
Alarmtones + messages / call evaluation |
| 2 | CPU1 Processor Module | 13 | 4LSL+TG01 Speaker defect detection
concerning impedance deviation,
short-circuit and open-circuit on Line, short-to-ground |
| 3 | HCPU new generation Processor Module | 14 | 4ZZA AF Interface Module, 4x exchange -exchange
coupling |
| 4 | LCPU module /IP interface | 15 | USE2 telephone IF (Pots, LB) |
| 5 | 4NSA AF Interface Module Four sets incl. fusing | 16 | V100 Digital amplifier Module 100 W,
also for crash switching |
| 6 | 4DAV AF Interface Module in 2-wire technique | | |
| 7 | 4NPA AF Interface Module Four sets, analogue version | | |
| 8 | 24LI Line Module with 24 Lines | | |
| 9 | 4FTR module 4xE1 / ISDN S0 | | |
| 10 | 4IOS In/Output Interface Module,
8 opto coupler inputs / 4 relay outputs | | |
| 11 | MI4M Level control depending on ambient noise | | |

The Exchange

The digital intercom exchange is constructed out of one or more sub-systems. A basic system consists of up to three module racks with DC/DC Converter and Processor that can be equipped with a additional 26 interface modules.

For PA applications that require additional capacity the addition of a module select decoder increases the addressable quantity of modules to 64.

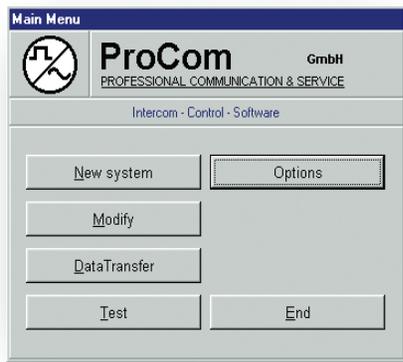
The DVS-21 provides for 48 audio channels.

Fully equipped the system copes with up to 104 AF interfaces or

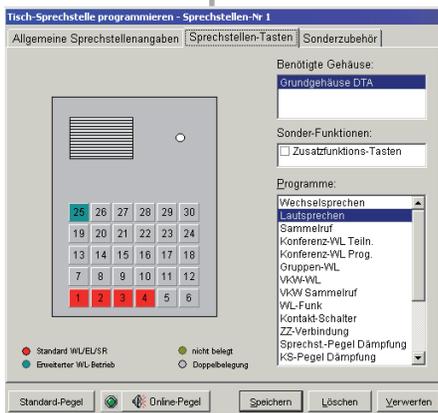
6 kW of audio power. Systems beyond this size are cascaded to form complex systems.

Basic systems can be coupled with a multifunction interface module 4FTR either with E1 or S0 ports or via LCPU IP interface.

Thus the construction of systems to operate with some 500 call stations or 20 kW centralized amplifier power is feasible.

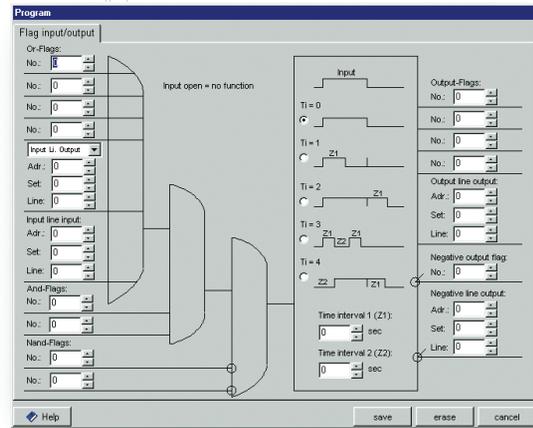


Main menu ICS
(Intercom Control Software)

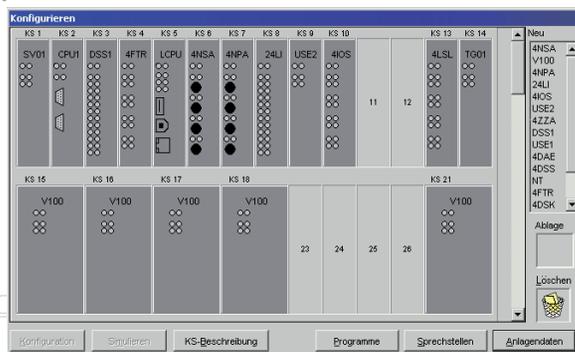


Assign push button function

... and its Software.



ICS logic components
(Flag input/output control)



Module configuration

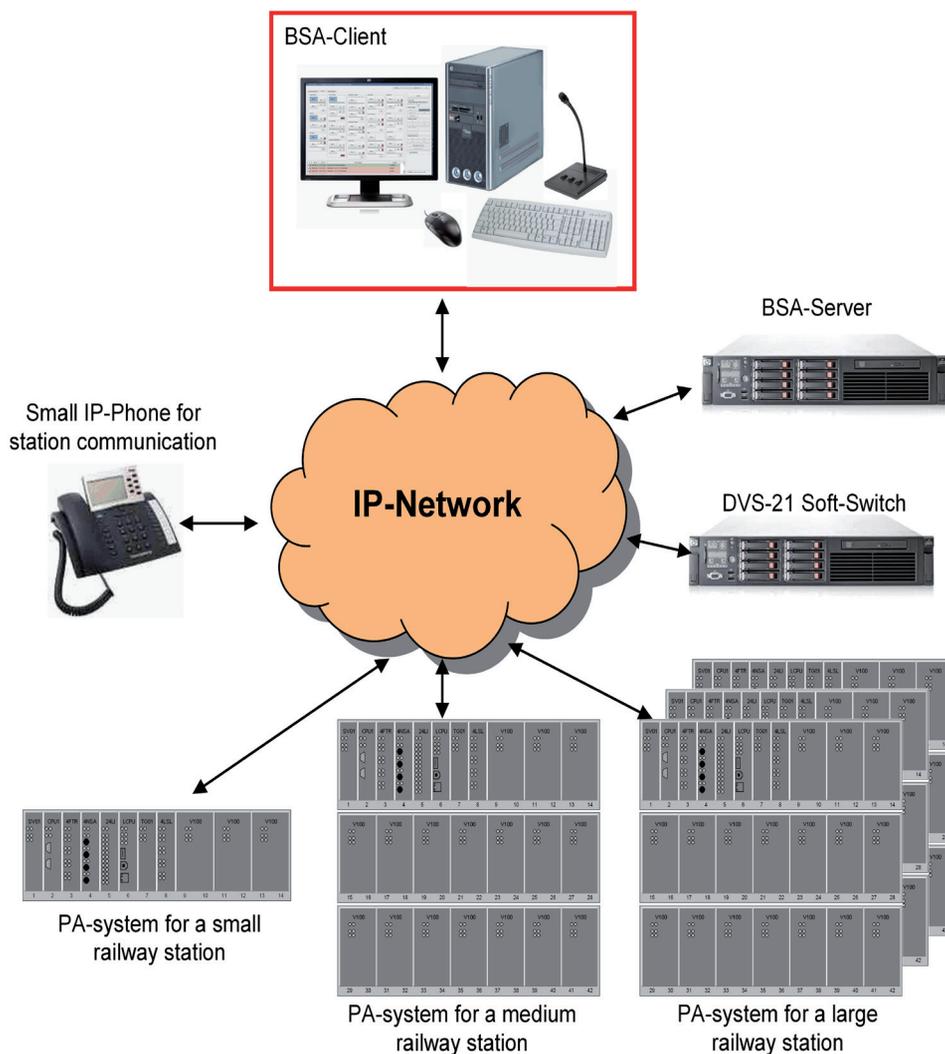
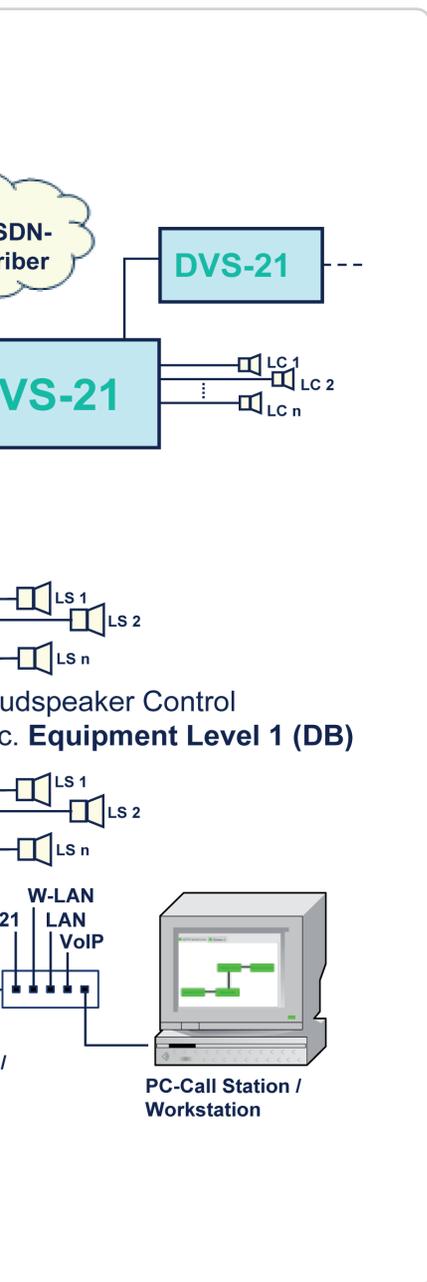
Intercom Control Software ICS

The user software runs under Windows 9x/ME and Windows NT/2000/XP or higher. The software is menu driven with graphic support, thus easy to operate.

A multiple choice of predefined user programs are supplied as standard for all customers. Many of these programs are a result of practical applications requested by clients and are constantly being supplemented.

4 user program configurations can be stored on the processor module simultaneously and a program update requires less than 60 seconds. Direct access with notebook PC or remote access via a modem is possible.

Besides the configuration of systems, the advanced ICS software offers options for testing and running simulations, for recording data telegrams with or w/o object filters and for producing the exchange documentation, reflecting any recent changes automatically.



Public address (PA) and general alarm (GA) system over IP Network

Connection Pattern

required for a complete system remains limited with multiple functions possible from a single module type.

The DSS1 module, for instance, can broadcast an alarm tone or a pre-recorded message or can be used for tone recognition (CTCSS) of radio transmitters, depending on ICS software programming.

Both fibre optic with transceiver units and copper cable are suitable as a transmission medium.

Programming can be executed by means of Notebook/ PC either locally at the system site or remotely via modem or LAN connection.



EBA permission, Document No. 3263686/0/8
 Sound Pressure Level 10 dB above the average noise level.
 Speech intelligibility acc. to RASTI > 0,45

Railway line Köln-Ehrenfeld - Langerwehe, Bf Düren.

Equipped with several DVS-21 systems for PA/intercom including radio interfaces for local and remote applications.

Railway line

The specific requirements of telecommunication systems for German railway applications, especially for public address on platforms must be strictly complied with and described in a performance manual which requires the approval of the Federal Railway Authority (EBA). A risk assessment of platforms results in a categorisation at two levels. The main requirement of level 1 (the most stringent) lies in the prevention of harm, whereas level 2 is for the giving of information.

ProCom has approval at both levels. This includes a.o. the automatic amplifier control with fault report and hot stand-by amplifier;

Dual amplifier configuration with two physically separated loudspeaker circuits including speaker defect detection; Priority control, sound pressure regulation as well as manual or automatic announcement are possible; all with remote control, diagnostic and fault reporting.

DVS-21 - Softswitch & BSA Client/Server

The screenshot displays the ProCom DVS-21 software interface. The main window shows a detailed railway network map with various stations and lines. A legend indicates 'Ansagen durch AZ' (announcements by AZ) and 'Örtl. Ansagen' (local announcements). The interface includes several control panels on the right side:

- Audio-Pegel:** A volume control slider ranging from -30 to 0 dB.
- Vor-Gong:** A dropdown menu set to 'DINGDONG' with radio buttons for 'niemals', 'einmal', and 'immer'.
- Feste Ansagen:** A grid of buttons for fixed announcements such as 'Sicherheit', 'Taschendieb', 'Messe', etc.
- Variable Ansagen:** A grid of buttons for variable announcements labeled V01 through V10.
- Variabler Sammelruf:** A grid of buttons for variable group calls labeled VR01 through VR04.
- Buttons:** 'ProCom', 'Historie', 'Auswahl löschen', 'Zyklische Ansagen', and 'Benutzeranmeldung'.
- System Status:** A 'LIVE' indicator.
- Log Table:** A table with columns for 'Datum', 'Uhrzeit', and 'Beschreibung'. It shows recent events, including a test station alarm.

	Datum	Uhrzeit	Beschreibung
11	2010-07-05	17:17:50.750	
10	2010-07-05	17:17:44.005	Teststation 22 DVS-21 Nebenalarm gestört
9	2010-07-05	17:17:35.052	Teststation 22 Verbindung gestört

Engineering

Operator's PC workstation (BSA client/server)

Our multi-user DVS-21 operator's PC workplace is market leading due to unrivaled performance and user friendliness. The operator can easily display his operational requirements and make use of it. The BSA server structure allows for expanding the number of workplaces without limitations at any time.

Besides performing fully or partly automatic announcements, Live announcements can be performed at all times. Actual conditions of connected systems are displayed and documented permanently. System faults can be categorized and linked with actions, if required. The systems can be configured fully redundant.

Based on this, Public Address Center (German Railways), emergency call systems along traffic infrastructure (tunnel for motorway) and automatic alarm centers for plants can be realized.

The DVS-21 ...



Desktop station DTA (also in trolley mounted version) with 12-84 push buttons incl. of LEDs. Panel mounted key box PMK with 16 push buttons incl. of LEDs, expandable to 112 push buttons. Weatherproof and explosion proof call stations with 4 to 8/6 industrial switches with integrated LEDs, including 25W amplifier.



Stations

Various types of call stations and loudspeakers can be connected to the DVS-21 exchange. These consist substantially of desktop, flush mount and PC stations for indoor application and weatherproof and explosion proof for outdoor areas. The stations consist of microphone, loudspeaker, push buttons and station electronics. The outdoor versions also have an integrated 25 W booster amplifier.

A dual version of the flush mount station which allows the unit to be connected to two independent exchanges simultaneously is an exclusive ProCom development.

The stations are connected with 2 pairs of wires which includes the remote operating voltage of 48 VDC. Should additional loudspeakers or further simultaneous AF connections (e.g. real time radio monitoring) be demanded, one additional pair is required.



- Compatible and Flexible.

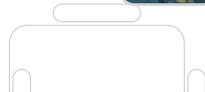
Offshore platform in the North Sea,
Dual Public Address General Alarm System
(PAGA)
with 10 kW of audio power



Nuclear Power Plant in Brazil,
PAGA System
2 x 3.6 kW audio power



Steel Plant in China,
Intercom system with 175 stations
and 20 wireless crane connections



Applications

Samples

The demands of the industrial and railway sectors lead to an increasing requirement for permanent control and alarm features for intercom and public address systems. The result was a decisive decision in favour of ProCom technology: Compact dimension of the exchange, simple recognition of the system condition, high build quality coupled with adaptable software control of functionality and system characteristics.

With the DVS-21 system, tailored solutions were supplied and commissioned to the total satisfaction of the client.

Amongst these are: Nuclear Power Plants in Brazil and Switzerland, Conventional Power Plants in the Netherlands, Offshore Platforms in the North Sea, various Industrial Plants in Brazil, China and South Africa, Industrial Companies and Railway Lines in various regions of Germany.



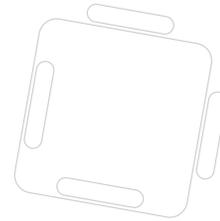
ProCom[®]

Product features of DVS-21

- Intercom: safe, fast and reliable
- Public Address PA
- Remote Announcements
- Remote Control

- Interface of Telephone Systems (PABX/EURO ISDN)
- Interface of Radio Systems
- Serial Interfaces RS232 and RS485
- Interface of Digital Networks (PDH/E1/10Base-T)
- Interface to Fibre Optics
- Modem Interface

- Menu driven software running under Windows
- Automatic Control and Reports
- Grow as you pay
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