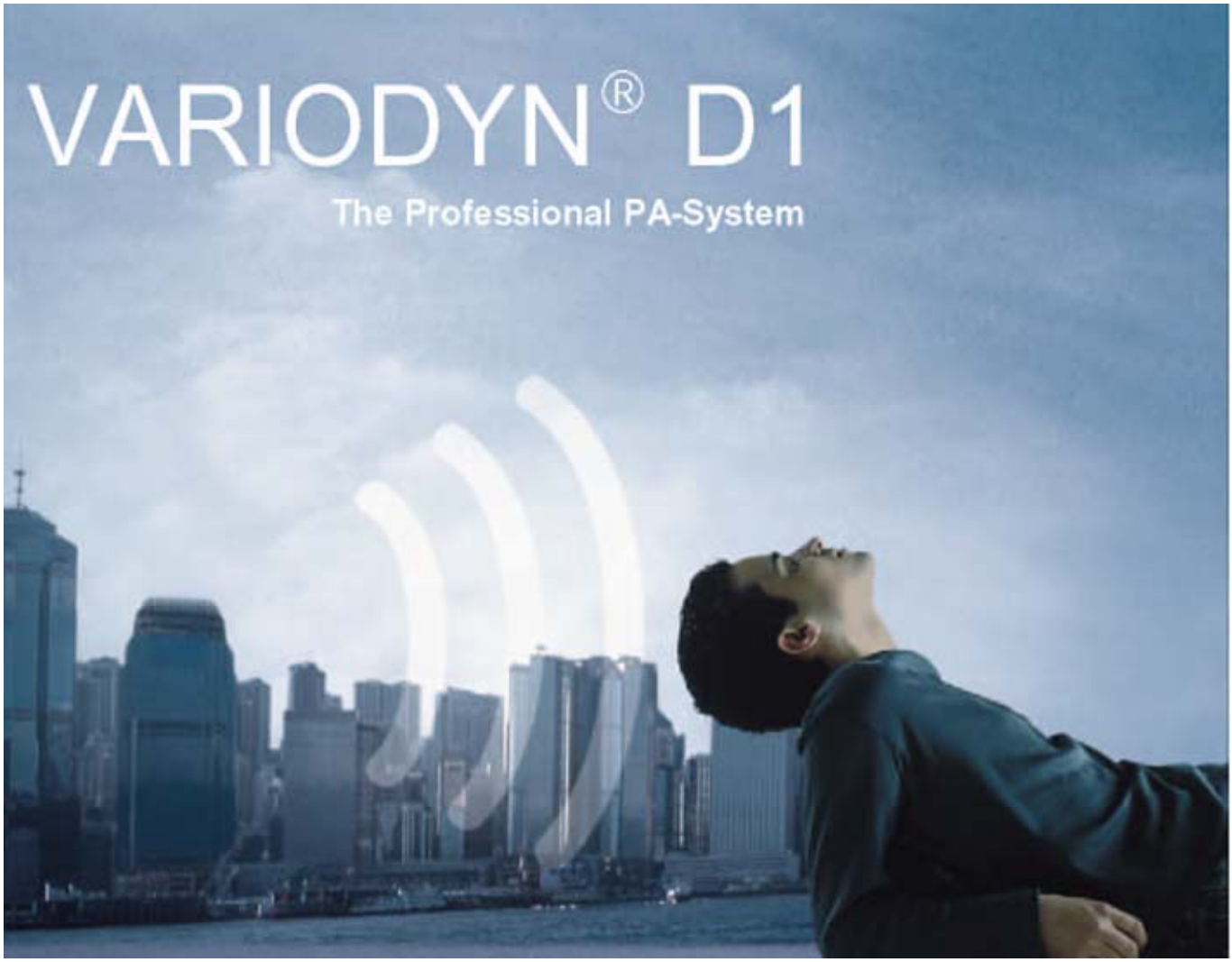
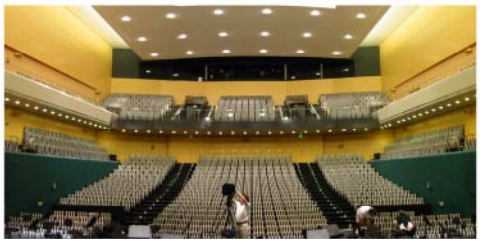
av digital

. . . your communication partner



www.av-digital.at

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Rampengasse 3-5
A-1190 Vienna



Multi Purpose Hall Festspielhaus St. Pölten, Austria





Klinikum Erfurt and Reichstag Berlin in Germany





Hotel Le Meridien and Office Buildings in Vienna





East Rail in Hong Kong and Transrapid in Shanghai



The new Airport and Parking Garage in Düsseldorf

train stations

office buildings

shopping malls

passenger infotainment

airports

hotels

industrial plants

conference halls

multi purpose halls

convention centres

schools

stadiums

hospitals

sports halls

theaters and operas

tunnels

underground trains



System category

- Public Adress system
- standalone or networked
- for fixed and mobile installations
- for 100V loudspeaker systems
- support for low impedance loudspeaker systems coming soon

Application

- paging – live messages
- scheduled messages
- background music
- intercom
- alarm sound system for emergency purposes compliant to IEC EN 60849 / BS 7443
- noise masking systems

New features

Significant new features and improvements over former and competing PA systems:

- fully digital system (digital control, digital audio)
- permanent supervision of all system parts (modules and connections)
- upgradeable to vast extents
- unlimited nettability
- for central and distributed systems
- easy software-aided planning
- user friendly software-aided configuration
- open interfaces

"You'll hear a lot more about us" the last page of a brochure of the Austrian hard- and software company av digital is promising. With the development of the new and revolutionary fully digital Public Address system called „D1", distributed under the well-known brand name VARIODYN®, av digital, having emerged from a former Siemens department, is hitting the top spot in professional international PA markets.

Public Address systems

Public Address systems are utilized in all public places attended by vast crowds of people like in underground and railway stations, on ships and in trains, airports, shopping malls, stadiums, exhibition halls, factory halls, schools, universities, theaters, office buildings, and conference centers. In daily operation such systems are not only used for information of the public or for promotional advertising, but also for musical entertainment or for internal purposes like the communication among staff in widespread buildings (by live announcements or by intercom operation). In cases of emergency such systems become particularly important: reliable alarming and acoustical guidance of crowds with people being directed to certain targets is absolutely necessary for the prevention of chaos and panic, so that organized scheduled evacuation can proceed as planned.



VARIODYN®

Products distributed under the brand name VARIODYN® are installed worldwide since 20 years and are established market leaders everywhere – not by chance: uncompromising development is carried on continually to keep the system always ahead of the latest state-of-the-art.
The VARIODYN® generations prior to D1, VARIODYN® 2000 und 3000, draw their reputation from their reliability and strict meeting of security standards. The proper functionality of every item inside these systems is monitored: from the microphone to every single loudspeaker.
Applauding crowds in theaters, frantic spectators in stadiums, trains pulling into railway stations, noisy machines inside factory plants: no matter, alarms and verbose announcements from VARIODYN® systems are recognized under all circumstances, because the systems are automatically adapting all parameters significant for comprehensibility of speech to every possible environment situation thinkable.

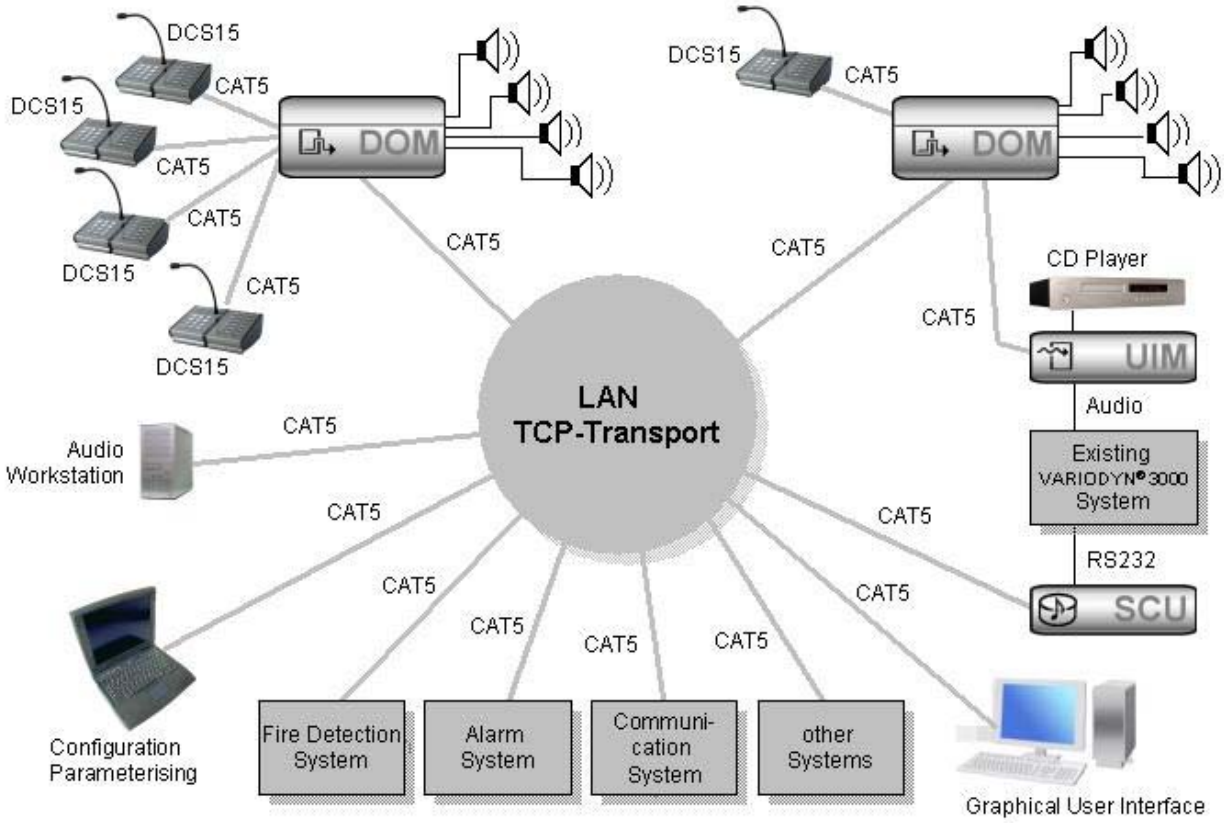
VARIODYN® D1

With the new high technology development VARIODYN® D1 on one hand the famous reliability of the VARIODYN® products is successfully continuing, on the other hand a bunch of brand new possibilities is emerging:
With VARIODYN® D1, Public Announcement systems for the first time get connected to Local Area Networks and Wide Area Networks. The total extension of the whole system gets limited only by vast, rather theoretical borders. The installation becomes more cost-effective because of application of the most modern electronic components, of plug&play devices and already existent cabling. State-of-the-art user interfaces are reducing practice periods and training costs.

VARIODYN® D1 – the future

VARIODYN® D1 is a fully digital, flexible, scalable and cost-effective system. You can rely on VARIODYN® D1 !

VARIODYN® D1 System Architecture



System architecture

The Digital Output Module DOM is used for connecting the LAN of a VARIODYN® D1 PA system with 100V loudspeaker lines. One standalone DOM unit is able to manage all tasks of a small PA system. But it can also work together in conjunction with other modules in a VARIODYN® D1 PA system of quite unrestricted dimensions like a musician in a big orchestra does.
A proprietary 100MB Ethernet LAN is serving as signal transportation medium; therefore existing and commonly used cable routes can be taken advantage of.

Graphical user interface

Similar to all security facilities, the software provides a user interface with a graphical depiction of the supplied building, both for configuration and operation of the system. Both functions can be performed from any client terminal or – a brand new highlight as well – by means of a script editor operated by a local specialist or by remote service.

Security

A module named DOM is performing the D/A and A/D conversion and signal processing for 4 channels. The supervision of speaker lines is integrated into the DOM. All DOMs are arranged into 19” racks together with power amplifiers and an optional Uninterrupted Power Supply.

Digital call stations

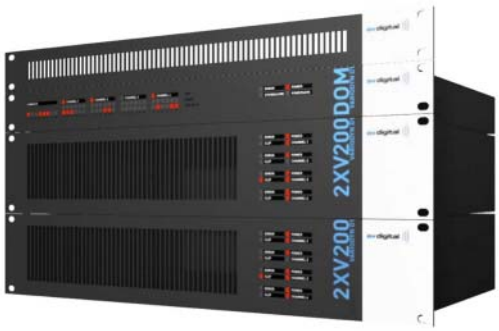
The call stations DCS15 are connected via a DOM to the LAN. Each of the DOMs can manage up to 4 call stations using the AES-EBU protocol. The call stations can easily be connected with CAT5 cables of up to 300m. As the number of DOM modules per system is unrestricted, so is its input side scalability.
In order to guarantee permanent proper operation according to EN60849, the microphone of the call station DCS15 is acoustically supervised all of the time. Also the incorrect operation of every key, component, cable and logical connection triggers an alarm at the operator’s terminal and redundant facilities are taking over automatically.

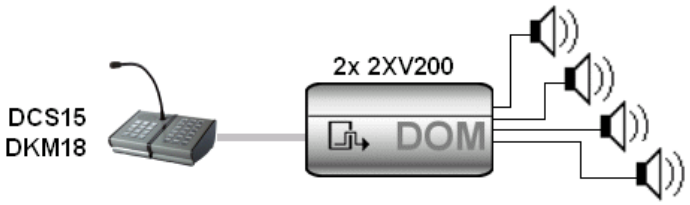
Pre-recorded messages

Announcement or advertising items for usage in railway stations, airports, shopping malls and all other kinds of public buildings can be edited, mixed, cut or filtered with any common audio processing software tool. Text files in the formats MP2 or WAV can be copied over LAN or sent over the internet. Speech text procession is simplified a lot by these new features. The security concept of VARIODYN® D1 is taking care of permanent secure storage of all digital message and alarm sequence items.

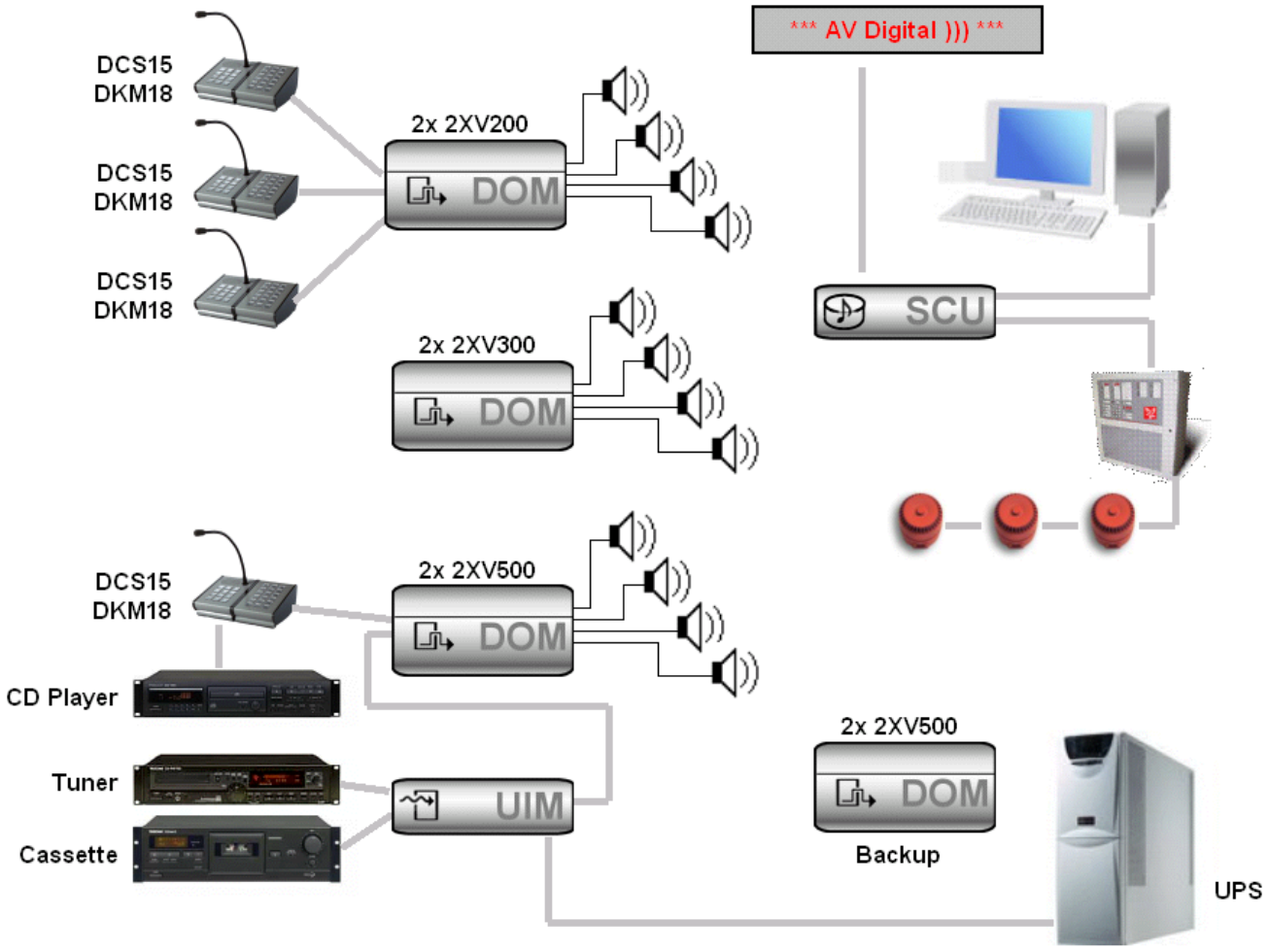
Networking

By the connection of several VARIODYN® D1 systems over Wide Area Networks further possibilities are gained: the broadcasting of announcements, the configuration of programmable sequences and of the systems themselves become transparent and installation is simplified substantially. Possible applications are the interconnection of underground or railway stations, airport terminals or locally widespread industrial plants.

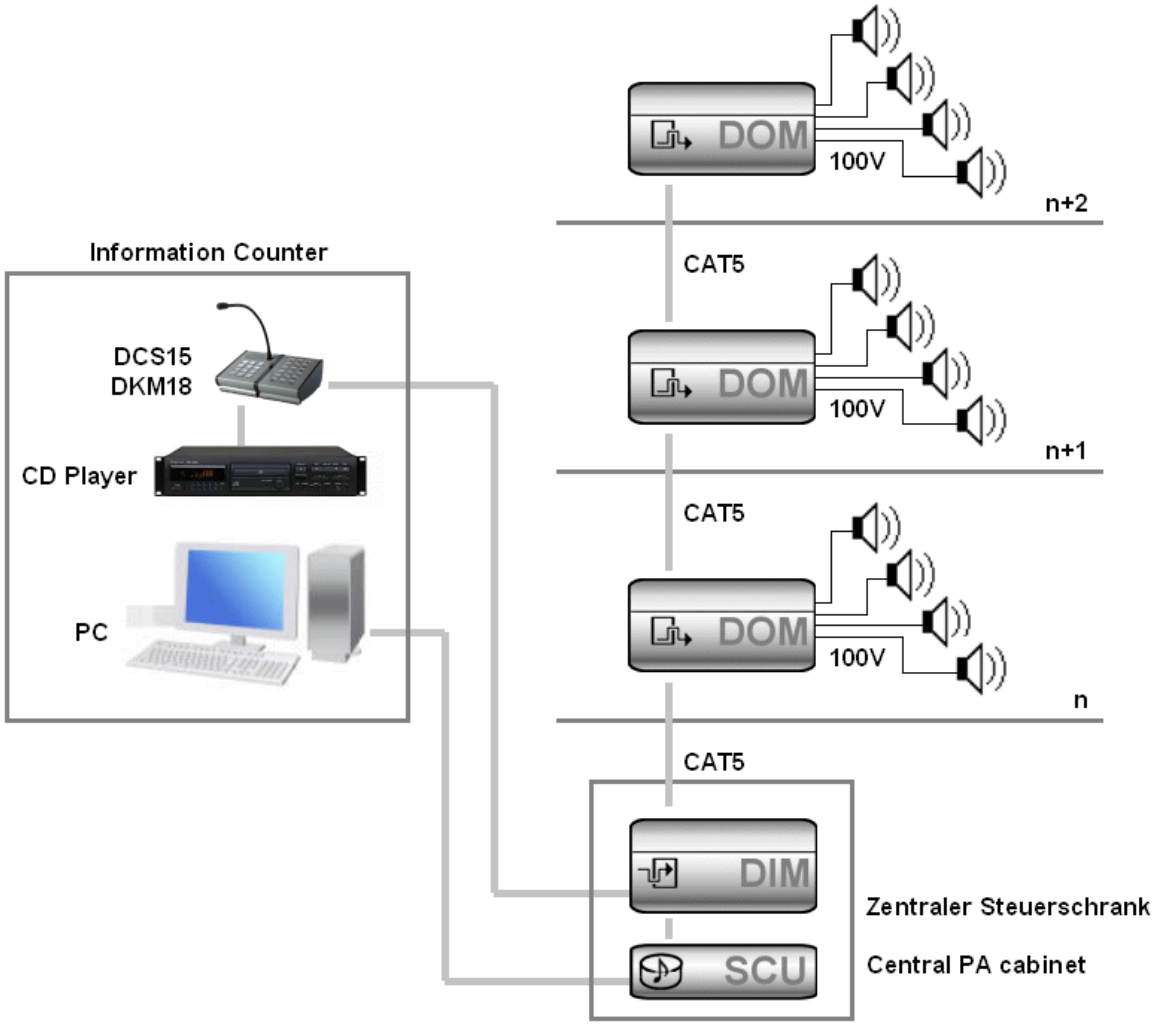




Minimal PA system for live announcements:
1x dig. call station, 1x output module, 1x two channel power amplifier, 2 loudspeaker circuits
can be upgraded to: 4 dig. call stations, 2x two channel power amp. – 4 audio channels – 8 loudspeaker circuits



Emergency PA system compliant to IEC EN 60849 / BS7443
With amplifier / output module backup uninterruptable power supply (UPS), background music, tape recording, display interfaces, interconnection to fire alarm system, PC for configuration / maintenance / operation purposes.
Extensible up to 1000 modules, interconnection of up to 1000 networked systems possible.



Distributed PA system, e. g. for skyscrapers or pavilions.
Structured cabling: Cat5 vertically – 100V horizontally. With supervision of all system parts and remote maintenance.
Extensible up to 1000 levels, interconnection of up to 1000 networked systems possible.

Dusseldorf Airport













Europe's most modern air terminal started its operation in July 2001. Also operational from the very beginning: One of the most complex call and alarm systems in the whole world, provided by AV-Digital. In the new central building and terminal B of Dusseldorf Airport, some 7000 speakers are interconnected via central units and the new glass fiber system OTN. This network fulfills the highest security and safety standards on the part of the customer.

The new three-storey check-in hall consists of a total of 60,000 square meters on three floors of space beautifully flooded with natural light; definitely a challenge for AV-Digital's sound system specialists. But the challenge has been met: Now, the announcements, indications and notices, but also the multilingual evacuation announcements in case of emergency are brought to the passengers and visitors in highest sound quality through the new speaker system.

The visible impact is hardly noticable: The system has been integrated in the ceilings and facades of the building and is almost invisible. The speakers are operated via three new VARIODYN® central stations which have been interconnected with six substations in other parts of the building to realize this task. It is thereby possible to operate and monitor all central stations from any other central station or from the log processor. The networking is realized via the multifunction light wave glass fibre system OTN, which fulfills safety and security guidelines of the highest level. It transmits data and modulation signals within the whole system to all buildings of the airport. In the current state of implementation, the call and alarm station of the Dusseldorf Airport is sure to be one of the largest and most complex sound systems in the whole world.

Especially the safety requirements of the alarm system represents a big challenge for the system's safety features, failure management as well as ease of maintenance and operation.

Some of the system's features are:

- 9 interconnected VARIODYN® central units on 44 mounting racks
- 88,400 watt speaker performance
- 79 call stations that are connected via matrixes (264 inputs and outputs) and can all be operated at the same time
- 472 calling circuits
- 7049 individually controlled speakers
- Digital voice announcement system
- Log computer
- Interconnection of the central systems through the multifunction FO safety system OTN
- LAN connections for the PC call stations
- Interconnection of the fire-alarm stations of 21 fire alerting panels via Simatic-SPS controls

The realization of the new check-in area and the new platform B has dramatically upgraded the service level of the airport. The customized audio system for Dusseldorf International Airport was realized in co-operation with SIEMENS Gebäudetechnik West, a partner of AV Digital. For the highly complex configuration of the system, the tested and proven VARIODYN®3000 sound system has been employed.

Metro Athen



Station Monastiraki since summer 2003 in use and another 7 stationes coming soon


Passenger Information and safety for the Metro Athen


the 20 stations have been equipped with about 2500 loudspeakers

information and safety for the Metro users in Athens.
Lines 2 and 3 of the Athens underground were implanted with the VARIODYN® 3000 loudspeaker system.
A section with 13 stations is operating since February 2000, further 6 stations since 2001.
A total of 20 stations were equipped with 2500 loudspeakers. From the central control room in Syntagma single zones, or even complete stations can be addressed. Stored messages can be activated from the central control room. The stations are equipped with loudspeakers fully covering the areas concourse, staircases and platforms to guarantee gap-free information for the passengers. Announcements are possible from the station control room as well as from the platforms. On each platform are 2 locked stations that allow announcements by the operating personnel in emergencies and offer intercom functions to the station control room.
The stations are approx. 110m long and mostly clad with marble tiles. Our loudspeakers are mounted in the suspended ceiling and in the corridors are matched to the lighting system.
The challenge with this project on the civil works side was in the difficult geological and historic underground of Athens. On the equipment system side the high amount of interfaces made the progress difficult.
For the technically interested a few details:
2500 loudspeakers
100V public address system
each station 900W output power
each station 5 microphone stations (control room, platforms with 2 microphone stations each)
Intercom function between platforms and control room
Automatic level adjustments on the platforms and in the Concourse
Monitor microphones combined with the CCTV-cameras for safety of the passengers
Networking of stations via modem and tunnel cable
Test und control of the systems possible through the network (simple maintenance)
Time controlled test routines of the systems (level, harmonic distortion)
Fault indication in the central control room in Syntagma
Emergency power supply with power failure indication to the central control room
61.000m halogen free Cable installed

Reichstagsgebäude in Berlin


Reichstag Berlin

The Project consists of systems for discussion, public address and simultaneous translation.
For the visitor service of the plenary hall a transmission system with wireless microphones is integrated into the electro acoustic system. This system is used to transmit speech from the speaker position and the presidents position as well as discussions from positions of ministers, county representatives and parliamentary representatives. Further microphone positions are for swearing in, secretary and for the recording of the ambient noise.
Utilising a variety of loudspeaker systems, sound reproduction with direction information in accordance to the active microphone is achieved:

- President, Government and County Representatives
- Representatives left
- Representatives centre
- Representatives right


Plenarhall

The recorded microphone signals are used for the loudspeaker system in the hall and also for transmission to the public media and the in-house distribution system. The mixing is achieved in two different control suites (control hall sound and control special channel). For the hearing impaired a induction loop supports hearing aids.
The main operation of the discussion and electro acoustic system used a central selection panel and a main audio control desk in the main control room. The selection panel consists of display and pushbutton elements in graphic layout corresponding to the seating in the plenary hall as viewed from the control room.
A discussion can be sequenced through notification from the representatives seats and the ministers. This speech application is displayed on the central selection panel and the discussion panel. The discussion system at any time administers speech requests, or switching of microphone lines from 3 reprentatives and one minister simultaneously. All other requests are ignored. A speech request from the county representatives is not implemented.

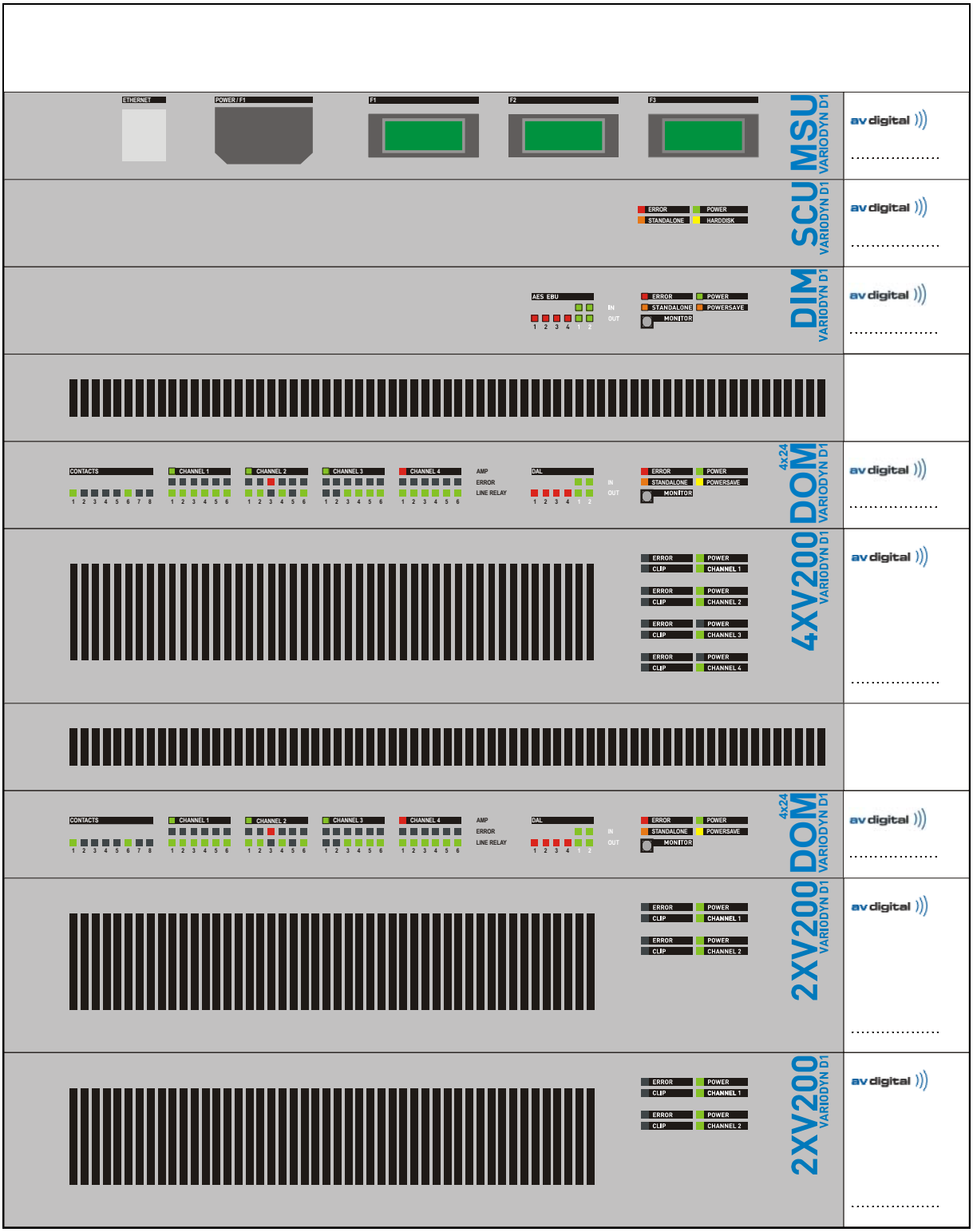


With a speech request the assignment of the 3 representative channels on the mixing console and their coloured display on the screen is controlled.
For the control of the speech requests and displays the ZPMS (central plenum management system) is used.
Normally speeches are made from the speaker dais and from the president position. These microphone signals are routed according to the allocation by the president from the central selection panel by an operator.


central desk

Parallel to this panel the president has a selection and display panel for the speaker microphone and his own. With this the president can always select to speak or give the word back to the speaker which is mostly the case in use. Both secretary positions on the presidium also have their own parallel speech buttons for their microphones.
During discussions the house is addressed from various positions in the hall. Therefore the following can be connected simultaneously:

- President
- Speaker dais
- 1 Minister
- 1 County representative
- 3 Representatives
- 1 Secretary



from top to bottom:
Cover Plate - MSU - SCU-1 - DIM4-16 - DOM4-24 -
Quadruple Amplifier - DOM4-24 – 2x Double Amplifiers