

# IDDS - TETRA Trunking

The Integrated Digital Dispatching System



*... creating safety  
by technology!*

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## The Integrated Digital Dispatching System

In order to be able to direct their deployment staff quickly and effectively, public authorities and organisations with security tasks (BOS) need adequately equipped command centres. All incoming emergency calls must be able to be coordinated and dispatched through a central communication system.

With IDDS, eurofunk Kappacher sets the benchmark for the future. The Integrated Digital Dispatching System is a modular digital communications system with numerous possibilities for expansion as well as an interference-proof and future-proof technology. The IDDS architecture has proven in many places to be a very flexible and extremely stable platform for handling emergency calls and radio communication groups.

eurofunk IDDS has already proven fully TETRA interoperability the fully TETRA interoper. eurofunk Kappacher has successfully integrated TETRA into the IDDS radio and emergency call system with several command centre projects.

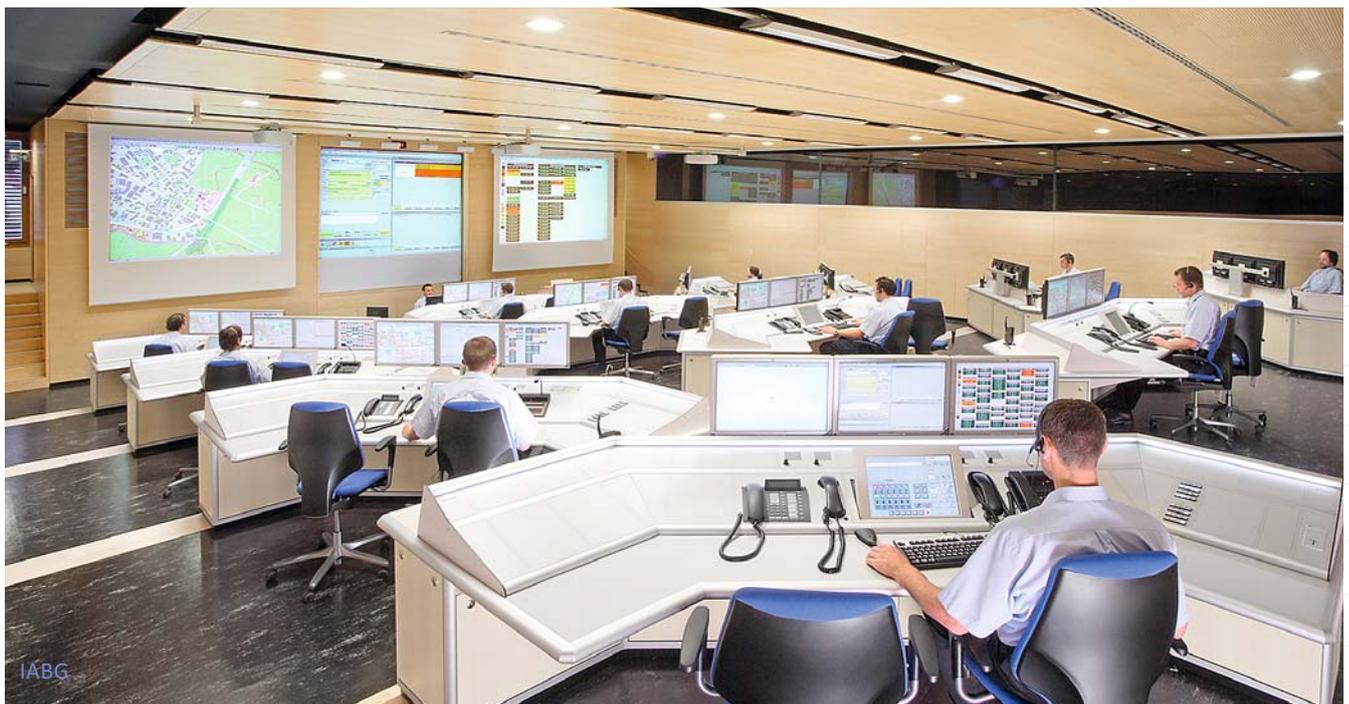
Linking the command centre to the TETRA command centre gateway is done through ISDN multiplex connections (E1) for transmitting voice and control information as well as through an IP connection for accessing services from the TETRA server.

With the implementation of this interface, the command centre has the possibility to use all functions of the TETRA network.

All features of analogue radio channels and modern digital dispatched-trunked radio systems are supported.

Potential users of dispatched-trunked radio systems include primarily BOS organisations (fire brigade, police, emergency services, justice, military, and civil defence) as well as closed civil user groups such as transportation services, airports or energy companies. Many of these user groups are currently establishing their dispatched-trunked radio systems and have to integrate digital radio into their radio and emergency call handling systems.

*Command centre technology from eurofunk Kappacher in Bavaria.*



## Extract of the features of IDDS-TETRA Trunking

### Short Data Service

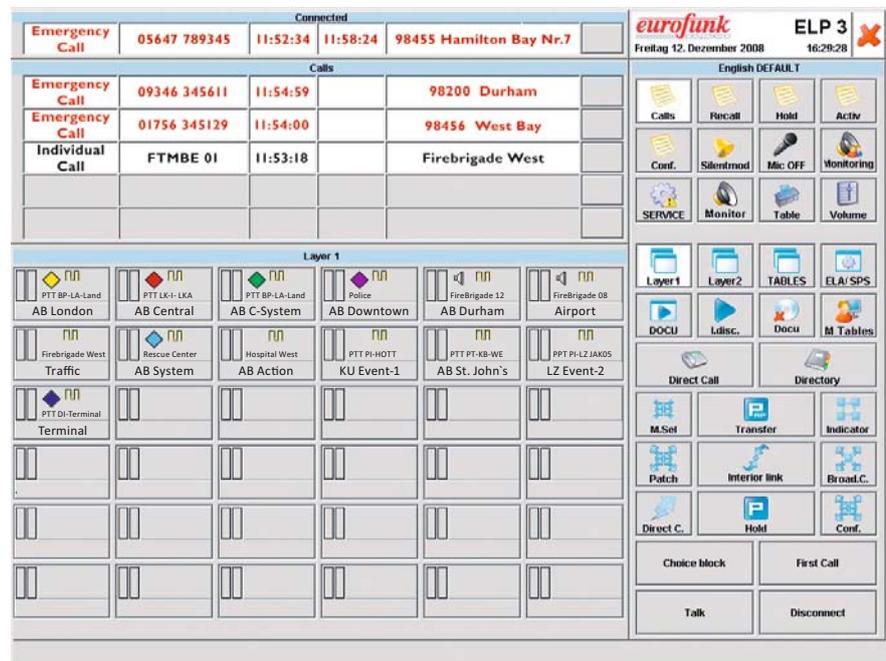
#### SDS Reception | Transmission

eurofunk Communication Technology is prepared for the reception and transmission for SDS in the TETRA network. SDS reception and transmission can be operated through the interface to computer Aided Dispatch System (CAD).

### Aliasing | Identities

#### (Access to the TETRA subscriber directory)

For setting-up of calls, the desired subscriber can be selected and called through a central TETRA subscriber directory; the search for the desired subscriber / terminal can be carried out by alias names or ISSI.



IDDS - TETRA touch screen developed by eurofunk Kappacher.

### Decryption | Encryption of Calls (E.g. BDBOS Germany)

eurofunk offers the possibility to encrypt calls between command centres and TETRA terminals based on the specifications of the BDBOS; for this, an encryption component (cryptoserver) is integrated which, communicates with the central key management in the TETRA network, and ensures the exchange of the necessary keys. This solution is used for the TETRA network of the Germany.

### Call Request to the Command Centre

For a call request with the command centre, a respective signalling the request may be initiated from the TETRA terminal by a SDS or status information and is presented on the at any of the IDDS user interface.

### Group Call

A group call represents a call to a group of TETRA terminals consolidated in one group; each group member can hear everything and can join the conversation.

### Broadcast Call

This service allows a collective call of several talk groups and hence a simultaneous set up of alarm and search announcement to several groups.

### Discrete Listening (Monitoring of Talk Groups)

Pre-selection of call groups for monitoring of talk groups

### Individual Call

With this function you can selectively call users | terminals; this can be done by entering the call number or by selecting from a directory.

### Dynamic Group Number Assignment DGNA

For temporary situations such as alarm searches, disasters, etc., different TETRA terminals from different talk groups can be consolidated | formed to a dynamic talk group. After completion of the assigned incident, this group returns to its previous formation.

### Ambience Listening

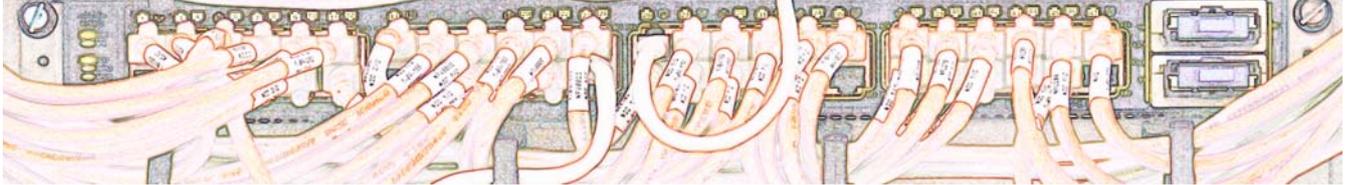
This service allows the dispatcher in confusing and dangerous situations to listen-in on a vehicle | the ambience of the terminal. This service is particularly important for the police and other security services.

### Emergency Call

Emergency calls initiated by TETRA terminals are appropriately signalled and prioritised in the IDDS.

### Patching of talk Groups (Interconnection of Talk Groups to one Group within the TETRA Network)

By this feature, talk groups are interconnected within the TETRA network; any communication of a terminal is received by all talk group members.



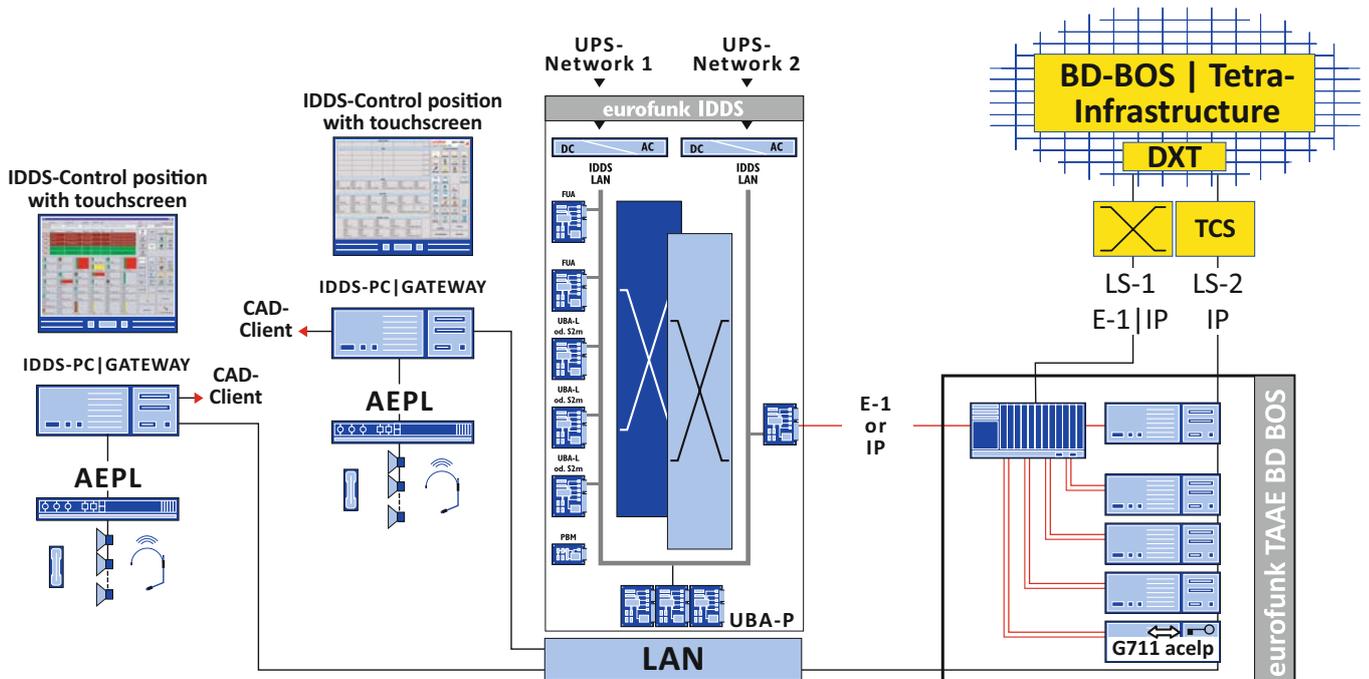
## Seamless migration to TETRA

New technologies are rigorously driven by the demands of our customers. Thus we are challenged to offer existing IDDS clients the possibility of linking to TETRA systems without changing the IDDS communication core. Because of its modularity, the integrated digital dispatching system as a digital communications system is well prepared for this task and means a substantial contribution to investment protection. In a variety of projects, the IDDS architecture has proven to be a very flexible and stable platform for detecting emergency calls and radio communication circuits with security command centres.

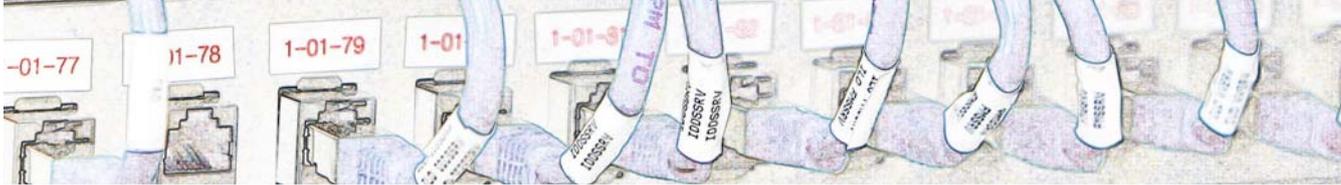
A simple connection of a command centre to TETRA can take place by means of a terminal connection (TETRA EGA). In agreement with the customer and dependent on the network planning, a number of TETRA radio sets are determined. They are installed at the location of the command centre and connected to the IDDS. Through the user interface, the radio sets are operated and the communication with the network is established. Functions, such as individual call, group call, emergency call, patching of talk groups are included within the scope of services of this solution.

An adequate linkage to a TETRA network node (gateway) is done through E1 or IP connections. They are provided for the transmission of speech information. Furthermore, IP connections are used for controlling and data transfer. eurofunk IDDS offers the appropriate interface units which handle these interfaces.

The functions of a TETRA network are fully integrated into the operating philosophy. The central part of each IDDS are touchscreen terminals with an efficient, ergonomic, and freely scalable user interface with a Microsoft Windows<sup>CR</sup> look and feel. The display and the control elements are freely configurable and can be arranged and defined according to the actual demands of the users. Hence, it is achieved that the dispatcher gets quickly and easily familiar with the new functions since only minor training is necessary, and an introduction in the running operation of the command centre is possible. This represents an enormous support for the dispatchers in every day's work.



IDDS TETRA concept BDBOS.



## Relapse concepts

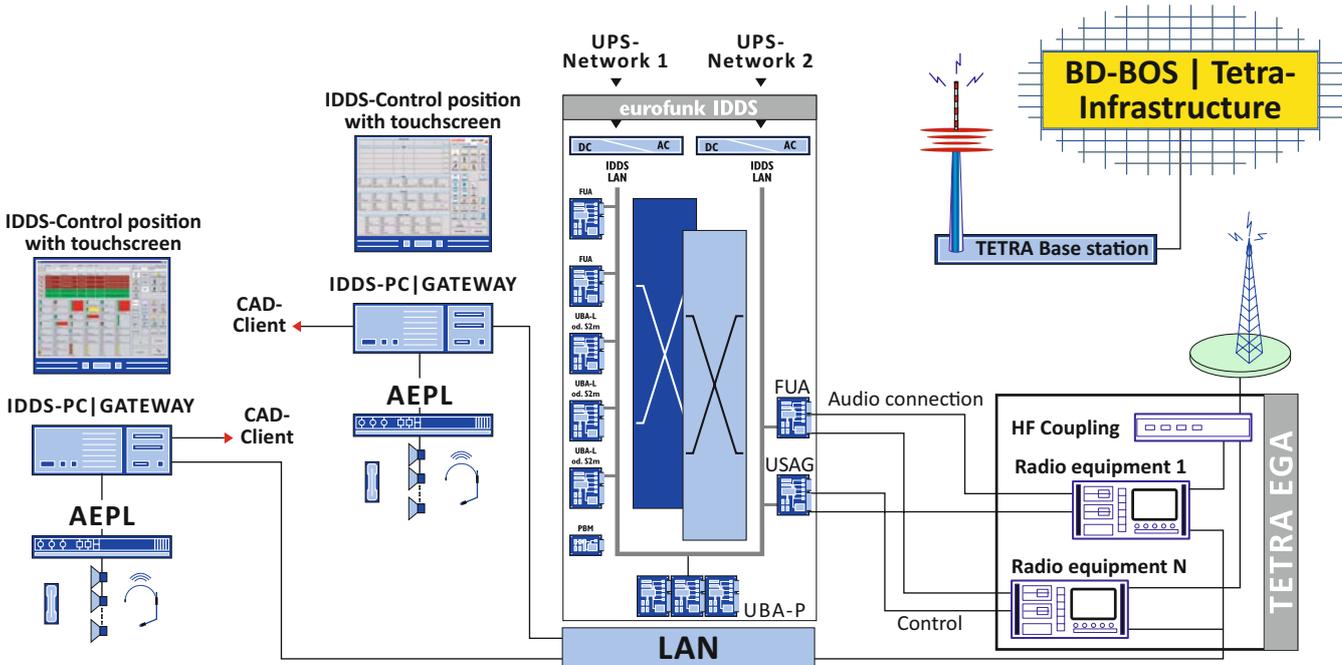
Through a necessary physical connection between the command centre via network connections or E1 lines to a geographically remote network node, the topic “failure safety” plays an important role in planning and in the running operation.

### Redundant routes:

Telecommunications networks and carriers offer the possibility to lead the route redundant to the command centres. Whether by fixed connected routes or by a radio link system - the appropriate options are to be clarified and to be considered in a failure protection concept. VoIP networks are an alternative which must be equipped with adequate QoS and minor delay times. In the case of encryption of TETRA calls, appropriate safety measures must be fulfilled.

### Terminal connection TETRA EGA by eurofunk:

If redundant routes are technically not feasible, eurofunk offers a relapse solution involving TETRA terminals. This means, after planning together with our customer, a number of TETRA radio sets are connected to the IDDS. In case of a breakdown of the conventional command centre connection, through these devices, among other things, the functions individual call, group call, emergency call, patching of talk groups can be operated. Of course, these functions are integrated into the IDDS user interface and philosophy and offer the dispatchers optimal support in such an exceptional situation.



Overview over the IDDS TETRA concept with terminal connection.

## Cryptography

The BOS digital radio network in Germany is the first network for emergency and security forces which will be equipped nationwide with an end-to-end encryption. The digital radio network which is currently in the installation phase is based on the radio standard TETRA which was developed by the European standards institute ETSI for the professional mobile radio communication and includes an air interface encryption as a safety function. This function protects the communication between the radio set and the antenna location. Only the end-to-end encryption which is now usable in

Germany allows a comprehensive safety from interception. The functionality cryptography can be added to eurofunk's solution TAAE, in existing IDDS systems as well as in future solutions. A high-performance, scalable and highly available platform can individually be adapted to the requirements, and ensures an encrypted communication according to the specifications of the BSI.

## Austria – Headquarters

### eurofunk Kappacher GmbH

Eurofunk-Straße 1–6

5600 St. Johann

Salzburg | Austria

Tel.: +43 6412 6223-0

Fax: +43 6412 6223-1119

office@eurofunk.com

www.eurofunk.com

## Our locations

### Austria

#### Graz

Asperngasse 2–4  
8020 Graz

Tel.: +43 316 57 0001-0

E-Mail:

graz@eurofunk.com

#### Linz

Unionstraße 95  
4020 Linz

Tel.: +43 732 68 0080-0

linz@eurofunk.com

#### Salzburg

Vogelweiderstraße 29  
5020 Salzburg

Tel.: +43 662 88 3016-0

salzburg@eurofunk.com

#### Vienna

Landstraßer Hauptstr. 148/2  
1030 Wien

Tel.: +43 1 718 7770-0

wien@eurofunk.com

### United Arab Emirates

#### Dubai

Grosvenor Business Tower  
Sheikh Zayed Road P.O.Box 191776  
Dubai

Tel.: +971 4328 9320

office@eurofunk.com

### Germany

#### Ainring

Sägewerkstraße 5  
83404 Ainring

Tel.: +49 8654 4619-0

E-Mail:

ainring@eurofunk.com

#### Berlin

Düppelstraße 1  
14163 Berlin

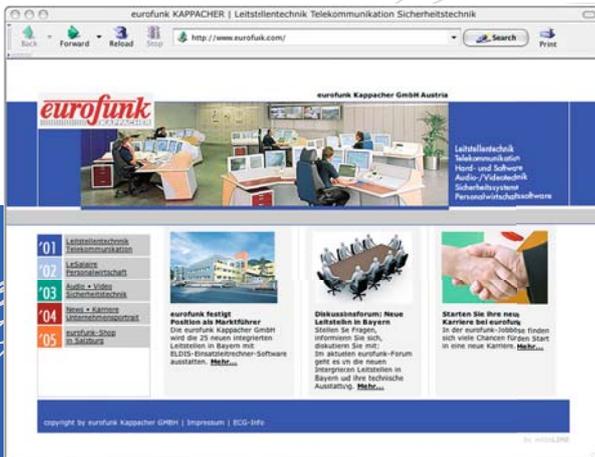
Tel.: +49 30 80 5865-0

berlin@eurofunk.com

#### Riedlingen

Sebastian-Sailer-Straße 19  
88499 Riedlingen | Donau

Tel.: +49 7371 96 6865



Online [www.eurofunk.com](http://www.eurofunk.com)