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since 1985



Digital People Warning System – digitexCZK/IP®

The **digitexCZK/IP®** system has been **created** on the basis of on up-to-date technologies, according to a PLATAN construction team's original design. This is **the only one** in Poland warning system which for **data transmission** uses not only analogue but also **digital radio communication** in the **DMR (TDMA)** and **NXDN (FDMA)** standards, as well as local area and wide area networks (**LAN, WAN**) and encoded IP.

In the **digitexCZK/IP®** system, use of IP for data and voice **transmission** makes it possible to create and expand the system **easily** and it allows for integration with the existing **analogue** warning systems, i.e.: **digitexCZK/FSK, DSP-50, RSSS-2000/3000, MDSA-24.**

Implementation of a new Digital People Warning System does not require exchanging the „old: one. The existing system may become **integrated** with **digitexCZK/IP®**. In the case of integration, all the sirens, both the new ones, operated in the digital standard

and the existing ones (analogue) are operated from the same **dispatcher stand**. Thanks to the use of computer network and IP protocol, operation of the system may be held on various access levels.

digitexCZK/IP® consists of **system nodes**, whose structure may be identical to the hierarchic one - **existing in Poland**. Then, we single out **regional, county and commune nodes**.

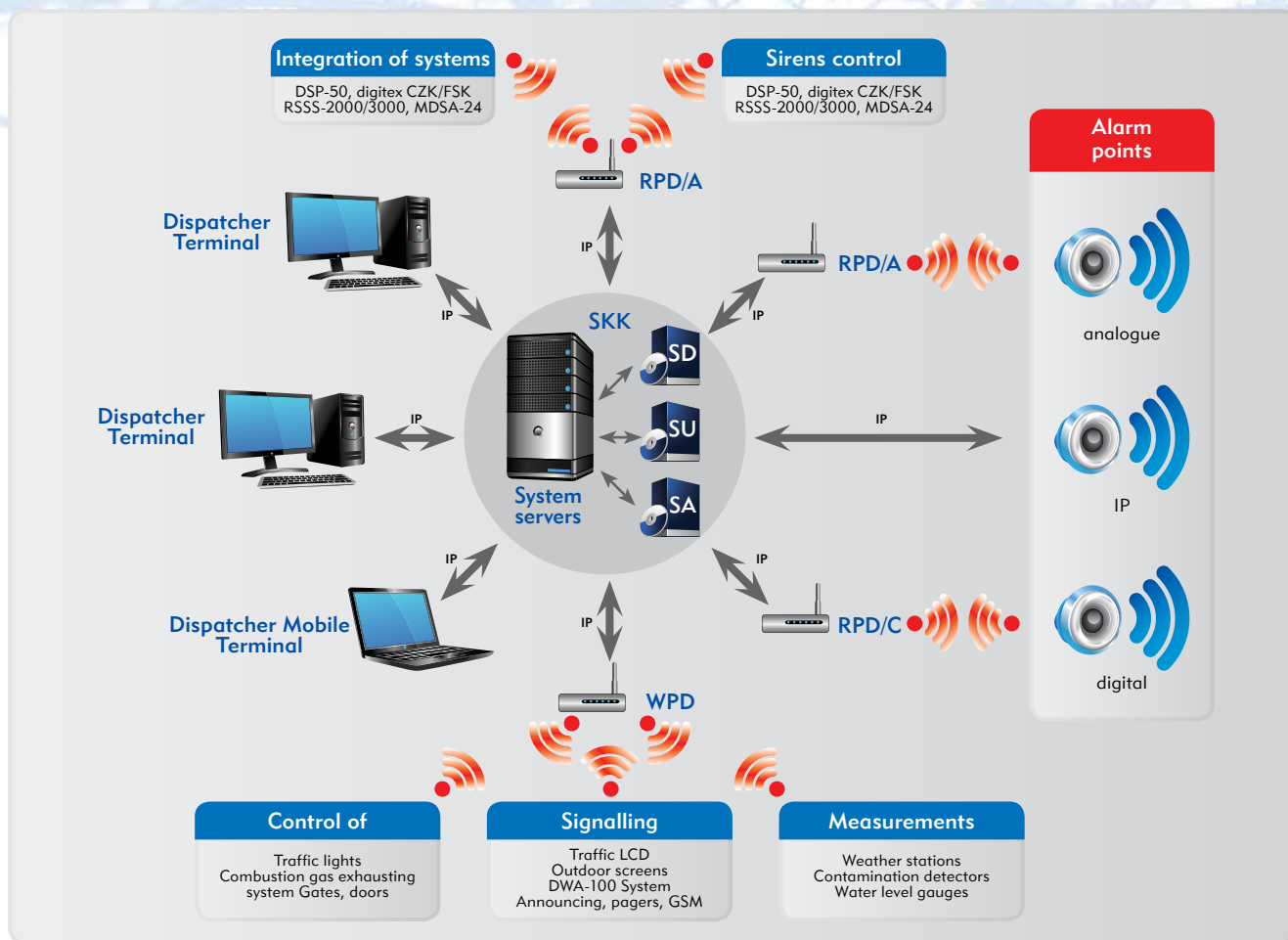
Each dispatcher stand in the **digitexCZK/IP®** system is equipped with a PC with **digitexCZK/IP® software**. The software includes a **map** of a region on which all the **alarm points** operating in the system are marked. From the map level, a **dispatcher** is able to control and **test** both electronic and electromechanical sirens. Additionally, from **digitexCZK/IP®** he or she may get **information** on: **communication** or lack of communication with the sirens, feeding (main/backup), performing a certain task (alarm activated, testing), battery level,

audio route **efficiency** and others. The **digitexCZK/IP®** is easy and **comfortable** to use and all the operations are performed **remotely** from the dispatcher's stand.

An inherent part of **digitexCZK/IP®** are modern **Electronic Sirens** of **DSE** series. Apart from **sound signals**, they allow for sending **voice messages** lives - remotely from the management stand or locally, with a microphone. Additionally, the **DSE** sirens are able to **spread** any sound announcements stored **in the memory** (wav or mp3 files).

Within the **digitexCZK/IP®** system, it is possible to connect **measuring transducers** and/or actuators (e.g. weather stations, gas detectors, contamination detectors, water-level gauges, opening gates, controlling displays, light signals or combustion gas exhausting, etc.).

System node functional diagram



OBJAŚNIENIA SKRÓTÓW:

SSK – system communication server,
SD – data server: collecting all data (siren condition),
 authorisation of users,
SU – service server: supervising system operation,
 handling demands from dispatcher terminals,
SA – audio server: handling audio streams
 (voice messages live),

RPD/A – Radio Access Point/Analogue: contains an interface
 for operating/integrating warning systems working in Poland,

RPD/C – Radio Access Point/Digital: contains an interface
 for operating alarm points via digital radio link,

WPD – Regional Access Point: contains an interface
 for communication with external devices connected to the system.

Basic advantages of digitexCZK/IP®

- ✓ Transmission using public and non-public IP networks.
- ✓ Transmission using digital radio-telephones (allowing for but not limited to better use of channel capacity, data certainty, wider coverage).
- ✓ **Higher safety** of data: encoding data in the **digitexCZK/IP®** system is identical to encoding in SSL transmissions, used e.g. in bank systems.
- ✓ **Complete tests** of the siren acoustic route (sound generator, amplifier, conductor, converter) – **automatic** performance of a complete test at a certain hour.
- ✓ Reading data from a siren **systematically** (state of door, power supply, batteries voltage).
- ✓ Possibility of remote **updating** of the siren sounds and software.
- ✓ **Compatibility** with other manufacturers' sirens and systems.
- ✓ Multiplied **speed** of operation and system testing.
- ✓ System architecture with a server in the cen-

tral point to which facility stations and dispatcher stations are connected. There may be several **equivalent dispatcher stations** operating within the system – or several stations of various priority and authorisation.

- ✓ Possibility of creating **multi-level systems** (there is no stiff restriction of region - county - commune type).
- ✓ Data of the whole system configuration are saved on the **system server**, in the SQL database.
- ✓ **Lower costs** of the service.
- ✓ Comfortable operation with the use of an up-to-date **program with a map**, updating the

sirens state **systematically**, information on sirens from the database (e.g. parameters, date and place of installation, responsible party, remarks, photo, etc.).

- ✓ High **system scalability**. Possibility to create both flat hierarchy and vertical structures.
- ✓ Possibility to connect **measuring transducers** and/or actuators (e.g. weather stations, gas detectors, contamination detectors, etc.).
- ✓ Collecting and presentation of **measurement data**.



Requirements for IP network

Minimum requirements for IP links between the regional server and county/town server, between the server and the radio access points (RPD/A/C), as well as between the county/town and alarm points (sirens): Lost Frames - not more than 1/1000 (one per mille), CIR - 128 kb guaranteed bandwidth, PING - up to 100 ms. The above requirements are essential for proper system operation. The IP addressee of all devices within the **digitexCZK/IP®** system may be public or private (dynamic or static).

Details of the network organisation for ensuring communication (visibility) between all the network elements, such as IP address range, subnetwork mask and essential remote service access to the warning subnetwork must be agreed at the implementation stage. The IP network must ensure visibility in the network (in both directions) of all the **digitexCZK/IP®** system elements installed, i.e.: system communication servers (SSK) and dispatcher terminals (TD).

Communication between the system communication servers is held using the OpenVPN pack or VPN equipment routers (option).

Example scope of implementation

- ✓ running the **digitexCZK/IP®** software
 - ✓ server (SSK - regional, county, town, commune, facility, etc. version) on the customer's servers,
 - ✓ dispatcher (TD - regional, county ... etc. version) on customer's computers,
- ✓ IP network configuration (customer participating),
- ✓ providing appropriate number of one-stand licences for the **digitexCZK/IP®** software supplied (with the restriction to the number of analogue-controlled sirens found in the system),
- ✓ performing necessary tests of the system before and after implementation of the new software,
- ✓ training the system users,
- ✓ covering the new system with the manufacturer's supervision,
- ✓ providing at least 12-month guarantee for workmanship and software.

PLATAN has designed and created a completely Digital People Warning System **digitexCZK/IP®** which has been already implemented in Warsaw, Poznan, Bialystok...



digitexCZK/IP® in Warsaw

city digital warning system

At the end of 2009, we implemented and started a new Digital people Warning System in Warsaw, based on IP technology and high capacity alarm sirens.

In 2010, the system, was expanded with further elements, e.g. pole sirens located in the city inner centre. The system makes it possible to control all the sirens or a selected group of sirens simultaneously, as well as controlling each siren separately, and

uses IP network and digital radio communication (FDMA) for data transmission.

The system consists of: The Main Dispatcher Centre equipped with the system server and a computer with **digitexCZK/IP®** dispatcher software; Digital Radio Access Point (RPD/C); over 50 300W - 1200W sirens.



digitexCZK/IP® in Poznan

regional digital warning system

In July 2011, we equipped the Province Crisis Management Centre in Poznan with the Digital People Warning System **digitexCZK/IP®** and we integrated it with the existing system (operating in the analogue standard).

The city system has a direct IP connection with the regional one. Information on the state of sirens in the city are systematically updated on the regional server, which means the regional dispatcher does not lose time for testing them. If a failure of the city terminal occurs, the regional dispatcher may activate the city sirens any time.

The system consists of: the main, regional and city dispatcher centre; 5, Radio Analogue Access Points (RPD/A), over 450 existing Alarm Sirens included into the **digitexCZK/IP®** system and radio-controlled in the analogue system.



digitexCZK/IP® in Bialystok

regional digital warning system

In the mid 2011, the Digital people Warning System **digitexCZK/IP®** was implemented in the Province Crisis Management Centre in Bialystok. The system was integrated with the existing warning system and expanded with new electronic sirens.

The main dispatcher centre communicates with the city dispatcher centres vis IP network. The sirens are controlled via radio network (in analogue or digital standard).

The system consists of: the main, regional dispatcher centre; 19 city dispatcher centres located throughout the region; Radio Access Points (RPD/A/C) which make it possible to control alarm sirens via radio – in analogue or digital standard; 261 mechanical and electronic sirens.

