

PIK

Platform for Integrated Communication

Multi-variant, multi-level, mobile telecommunications solution offering:



Nationwide dispatch communications



Integration of various incompatible communication systems (Radio and GSM)



Exchange and information management system compliant with the Network-centric standards



Secure, mobile access to information from **databases** and **registers**



Live transmission of images from mobile and stationary crew **cameras** and **UAVs**



Broadband Internet access



Optimizing process of switching to other/new communication systems

PIK is a mixed hardware and software solution designed to provide seamless, safe, user- and supervisor-friendly voice and data communication. The PIK Platform consists of both hardware and specialized software.

PIK HARDWARE COMPONENTS

Gate PIK-GAT

The PIK-GAT module is the core hardware component of the PIK system. The main function of PIK-GAT is the integration of different forms of radio communication systems and ensure secure data transmission in the system.

As a standard, each PIK-GAT is equipped with 3 communication slots dedicated to work in LTE / UMTS (any operator) or / and others e.g. LTE450 or CDMA. For the operation of the PIK-GAT gate, it is necessary to provide packet data communication (GSM).



Standard version of PIK-GAT, dedicated for vehicles and on-site installations



Special, camouflaged portable version of PIK-GAT, dedicated for foot patrols and undercover operations

PIK-GAT main features:

Extends the range of UHF / VHF systems without building infrastructure – thanks to GSM

Integrates UHF / VHF radio systems and various communication standards (DMR, TETRA, Nexedge, analog) **into one integrated communication system**

Integration of various DMR / TETRA / Nexedge / analogue communication systems into a data exchange and information management system

Broadband data transfer – wide range of functionalities, including video, data from service repositories, digital documents (plans, images, forms) and other files transfer, safe access to various databases etc. enabling visualization of officers and service activities, by offering built-in: Ethernet ports with PoE and 2 USB ports

The possibility of **any configuration** on the device **interfaces and communications operators** (LTE, CDMA, UMTS, working in their own APN **aggregation channels serving in special dedicated networks:** LTE 450, GSMR, LTER)

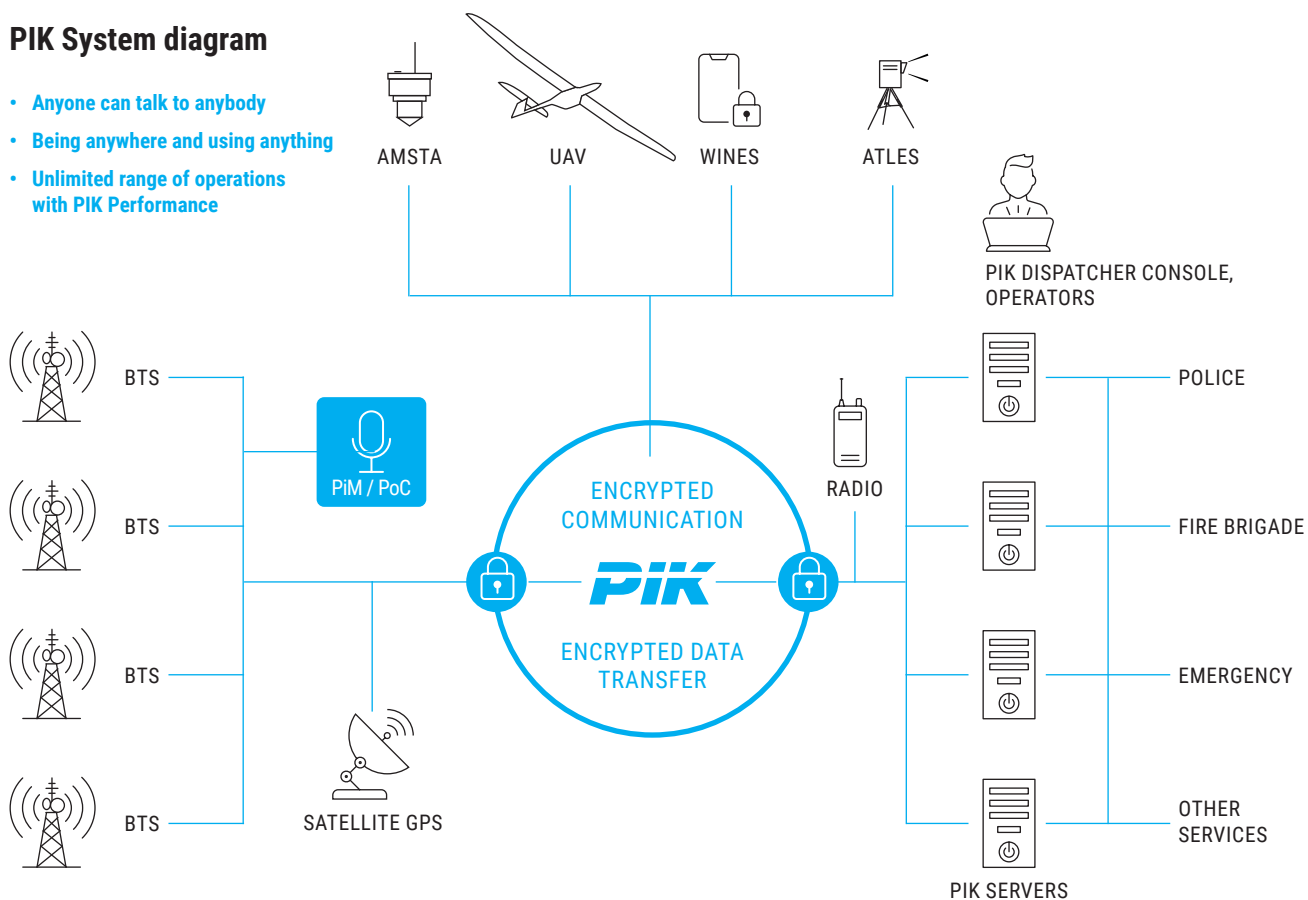
The support system with tools for **remote monitoring of the System operation, software update & upgrade** with new functionalities

Maintenance free

Fast and easy assembling and installation

PIK System diagram

- **Anyone can talk to anybody**
- **Being anywhere and using anything**
- **Unlimited range of operations with PIK Performance**



AMSTA – Advanced Monitoring of Stand-off Areas

WINES – Wireless Network Shield /passive system detecting attempts to hacking attacks through GSM network

ATLES – Automated Traffic Law Enforcement System

System Servers

The software for PIK system servers has been entirely designed by MindMade Ltd. and are organized in a transparent form for monitoring the infrastructure work, comprising two functional modules: Single IP server, Group server. Optional are also offered: video server, allowing live transmission of camera images in streaming mode to many recipients simultaneously (point-to-multipoint streaming) and access to databases and user servers.

The **Single IP Server** serves as an interface between users and server infrastructure and is responsible for cryptography, setting encryption keys and secure data tunnelling and mediates in their combination between users and the server infrastructure.

The **Group Server** works as a platform for applications responsible for the organization of user groups.

Server system main features:

Cryptographic system based on data transmission standards in encrypted **VPN** tunnels, based on **IPsec** algorithms with a key length of 128 (256) bits. Tunnel authentication using **PKI / X.509** and certificate rotation using the **SCEP** protocol

Advanced billing system, including information on each connection, its' exact time and duration, with **optional record** and playback function

Own internal automatic time synchronization system for all devices in the entire system based on an NTP server

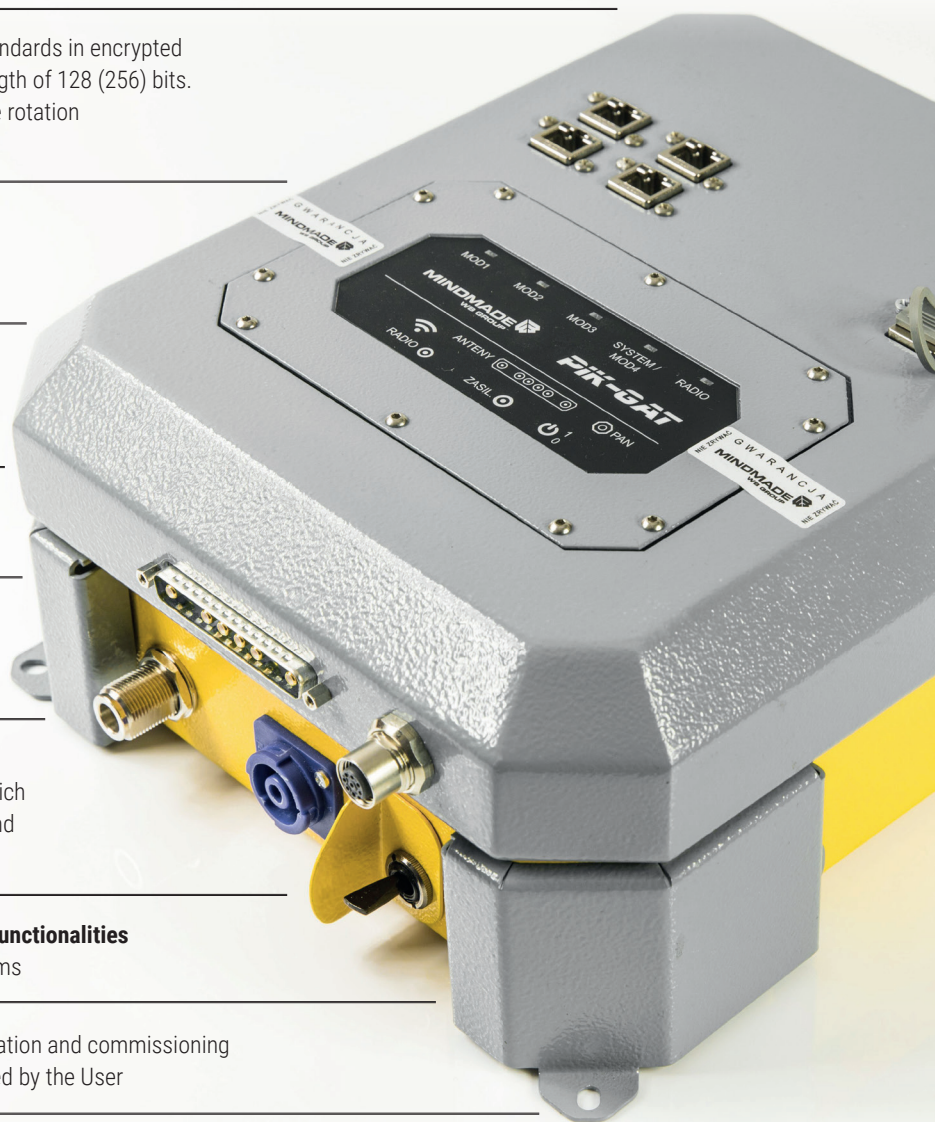
Group management, support for the dispatcher in managing **internal group communication**

Communication management with repositories and **internal databases** of institutions, services with their network-centric distribution in the system

Automatic device supervision system that collects historical information about the range conditions in which the device operated, the quality of the transmitted sound and data transmission parameters in the network

Expansion possibilities with user-specific additional functionalities and integration with existing or planned external systems

Optionally, we also provide hardware servers for installation and commissioning of PIK in accordance with the level of reliability expected by the User



End-point devices

The basic tenet of PIK system is the usage of existent users equipment for **voice and other data transmission processing equipment** (radios, cameras, printers, scanners, terminals, computers etc.). The manufacturer can deliver any equipment in accordance with the customers' requirements.

