

PIK – Communications Integration Platform

Product description



PIK is a communication platform that allows for the integration of different forms of radio communication, that otherwise would be incompatible with each other. The system allows for the coordination of different branches of the armed forces, and national services in response to crisis situations, where a variety of radios of different models are in operation. PIK provides large cost savings as it allows the user to keep all current radios, and there is no requirement to purchase either additional handsets or invest in a large infrastructure network.

Communications Integration Platform for Services

The GAT1 Gateway Module is the core hardware component of the PIK system. GAT1 utilises redundant cellular network technology, which allows for the selection of different wireless, cellular (CDMA, UMTS/HSPA/LTE) or broadband channels ensuring fast and effective data transfer.

The PIK system, in addition to allowing users to communicate via previously incompatible radios, also provides the option for remote users to communicate via a mobile phone application. The PIK to talk mobile app is a dedicated application for Android smartphones that allows for communication with VIPs and other individuals not directly involved in a working PIK group, communication with users who are travelling and away from a crisis zone, and situations where use of a dedicated radio platform is not applicable.

Supporting Infrastructure for PIK

PIK includes server infrastructure with capability for remote configuration and remote updates to the system. In addition, there continuous communications are achieved by utilizing Single IP technology to switch between multiple cellular networks.

On-line always and everywhere

The ability to access multiple cellular media increases the reliability and availability of the system, as well as ensuring countrywide broadband data transfer. Autonomous gateway selection provides optimum and uninterrupted communication.

Coverage extension

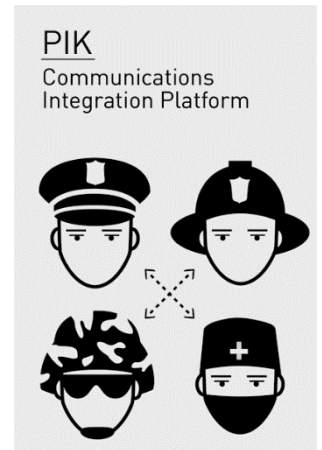
Each gateway module can assume the role of the main communication channel when individual radios move out of the coverage area of the native system. This means that radios within a PIK network can achieve a country-wide area of coverage, depending on PIK-GAT1 positions.

GPS Localization

Each gateway module has a built-in GPS receiver allowing monitoring of the position of each module. The dispatcher console is equipped with an integrated map application allowing positioning of both individual users, providing the radios have a built in GPS receiver, and gateway modules to be visualised during an operation.

Data transfer

PIK allows for end-user data transfer. Each PIK-GAT1 device provides an IP signal via a built-in Wi-Fi gate or – optionally – Ethernet cable connection. Each Gate allows for data transmission of up to 8 Mbit/s speed (depending on local conditions and network coverage). All data is directed to the Internet or an Intranet network, depending on the settings made at the implementation stage.



- > COMMUNICATION SYSTEMS INTEGRATION
- > INVESTMENT PROTECTION
- > LOW IMPLEMENTATION COST
- > COUNTRYWIDE AND WORLDWIDE COVERAGE
- > VHF/UHF COVERAGE EXTENSION
- > BROADBAND DATA TRANSMISSION
- > CDMA + UMTS/HSPA/LTE + WIFI REDUNDANCY
- > SINGLE IP TECHNOLOGY

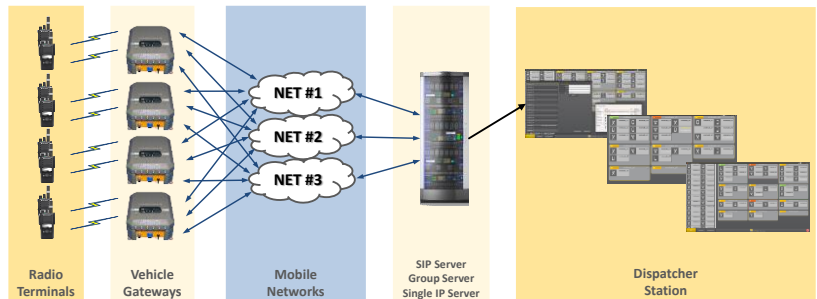
> **PIK** **why everybody can communicate with everybody although nothing has changed?**

Situation, Incident, Accident, Crisis situation on big area, catastrophe... On the scene comes various services: Medics, Fireguards, Police, Gas and Electro Energetic services, Military... Everyone uses different communication system, however thanks to PIK everyone can communicate with no limitation. Well organized and operating communication system is the key element to efficient management of a crisis situation.

PIK – Communications Integration Platform

Single IP Infrastructure

PIK employs Single IP technology to ensure a constant high quality of service due to redundant wireless interfaces and their transparent switching. This technology utilizes Single IP servers to ensure continuous connection during a loss of one of the radio links. The gateways constantly analyse the availability and quality of links and select the best route to send data packets.



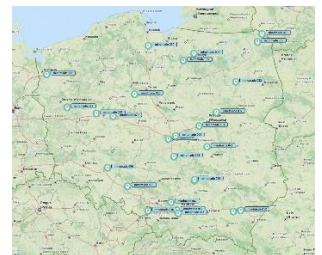
Broad spectrum of configuration capabilities

Each mobile gateway allows the user to select the preferred and backup network, to specify their communication modes, to define the usage mode for SIM/RUIM chips, in addition to many other configuration parameters. All configurations can be performed remotely via a www interface. For system-wide communication control an operation console is provided.

Basic platform parameters

- > **MOBILE INTERFACES:**
CDMA-2000 rev. A: 1XEVD0 L-band Polkomtel; EvDO A-band Orange
GPRS/EDGE/UMTS/HSPA+/LTE
- > **GATE PARAMETERS:**
Power: nominal 12V DC, acceptable 8-18V DC
Current consumption (radio 1W):
Radio idle: average 900mA
Radio reception: average 950mA
Radio transmission: average 1 300mA
Maximum: 2,3 A @ 25 ms peak
Current consumption (radio 25W):
Radio idle: average 1 000mA
Radio reception: average 1 100mA
Radio transmission: average 2 400mA
Maximum: 4,2 A @ 25 ms peak
Weight: 6,2 kg
Dimension: 300 x 240 x 125 mm
Work temperature -30 +50 °C, Humidity 5-95%
Protection grade IP44

- > **INTEGRATED COMMUNICATION SYSTEMS:**
Tetra
DMR (MotoTrbo, Hytera)
GoTa (Polkomtel)
Analog UHF/VHF
Nexedge (Kenwood)
FoNET (WB Electronics)
other ...
- > **ADDITIONAL FUNCTIONALITY:**
Single IP technology support
Dispatch console
PIK-to-Talk
GPS localization



PIK vs. homogenous system comparison

> FEATURE	> PIK Platform	> Homogenous system
Cost of investment	Low – purchase of gates and optional terminals	Huge – infrastructure & devices
Infrastructure construction time	None – uses existing cellular networks infrastructure	Long – building permissions, design, construction
Infrastructure maintenance cost	None (on the side of cellular operators)	High (system supplier or user)
Ordering diversification	Yes, considering suppliers and technologies	Yes, considering suppliers
System range	Country-wide – cellular networks coverage, with redundancy (many operators and technologies) Worldwide – roaming possibility	Limited – dependent on mast infrastructure
Terminals	Many producers, competitive prices dependent on terminals functions and standards (i.e. analogue, DMR, TETRA, NXDN)	Most often one producer (imposed by infrastructure supplier), high or very high cost (in case of encryption)
Frequency management	CAPEX – system user/owner OPEX – service supplier	System user/owner
Data transfer	High: up to 8 Mbit/s	Low: TETRA – up to 14 kbit/s (4 slots) TEDS – up to 40 kbit/s (4 slots), up to 100 kbit/s (8 slots)
Integration with other systems	Unlimited (system function), low implementation cost	Limited (fully dependent on infrastructure producer), very high additional implementation cost
Encryption	Yes (i.e. AES 128/256)	Yes (i.e. TEA1/TEA2)

