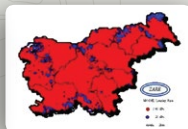## SMART IPv6 CONVERGENCE LAYER

6inACTION benefits from IPv6 features to provide reliable and seamless communication services

- NEMO with MCoA and IPSec to support secure and transparent 6onCORE node mobility
- DSMIPv6 for user and device level (6onFIRE) mobility and seamless connectivity
- SLAAC and DHCPv6 for hosts and network nodes auto configuration
- Multicast with MLD and PIM-SSM for flexible live multimedia streaming on-site and globalliy
- IPv6 hierarchical addressing scheme for fast unit, user and sensor provisioning
- BGP and OSPFv3 for network level self-healing capabilities

6inACTION DRIVE TESTS

Direct GAIN from converged professional and commercial systems proven with performance drive tests [100 kmph]

- Up to 1000 times faster data rate performance: from 9 Kbit/s (TETRA) to 7.1 Mbit/s (HSPA+)
- Data service response time up to 20 times faster: 1 s (TETRA) to 50 ms (HSPA+)
- High availability using two or more independent parallel networks functioning as one

ABOUT GEN6

6inACTION is powered by the Laboratory for telecommunications at the Faculty of Electrical Engineering, University of Ljubljana. Work was in part supported by the European Commission as part of the project »Governments Enabled with IPv6« (GEN6).
GEN6 is about stimulating EU-wide deployment of IPv6 by means of best practices and guidelines.

- National pilots to make a step further in IPv6 deplyoment in different sectors
- Cross-border pilots to demonstrate EU-wide interoperability of IPv6
- Communication activities and road shows to ensure dissemination in public administrations and with other relevant stakeholders

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GEN6
GOVERNMENTS ENABLED WITH IPv6

6in Action
Smart communications solution in emergency situations

University of Ljubljana, Faculty of Electrical Engineering, Laboratory for Telecommunications

6inACTION FOR LIFE

In emergency situations, such as massive flooding, nuclear accidents or earthquakes, communications services are a scarce and often unreliable resource.

6inACTION is an advanced compact mobile solution designed to provide first responders with reliable communications and IoT-driven situation surveillance and intervention management services in emergency situations.

- High-performance communications in day-to-day operations
- Survivable communications in extreme conditions
- Support for on-site intervention monitoring – water level, avalanche state, forest heatmap, radiation level, hazardous substance danger
- First responder mobility – Unit, User, Device, Sensor
- Unit monitoring and location tracking – GPS location, indoor positioning, rescue squad vital signs
- Coordinated first response actions across different national public safety agencies – fire fighters, police, ambulance, military
- International intervention – on-site interventions and cross-border cooperation

**University of Ljubljana
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LTFE
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Powered by partnership

6onCORE
IPv6 INTELLIGENT NETWORK ENABLER

1 Set up on-site intervention command center using 6onCORE

- Compact mobile network node
- Installed in first responder vehicle or fully portable
- Provides communication services for intervention management by selecting best available networks for the required services
- Connects – to 6onFIRE sensor deployoments on site

2 Deploy 6onFIRE sensor system on site of the intervention

- Ad-hoc or permanent deployment
- Various supported sensors – temperature, avalanche level, radiation sensor, water level, butane sensor …
- 6onMOBILE application for manual triage reporting
- 6onFIRE gateway connects sensors to the command vehicle or headquarters
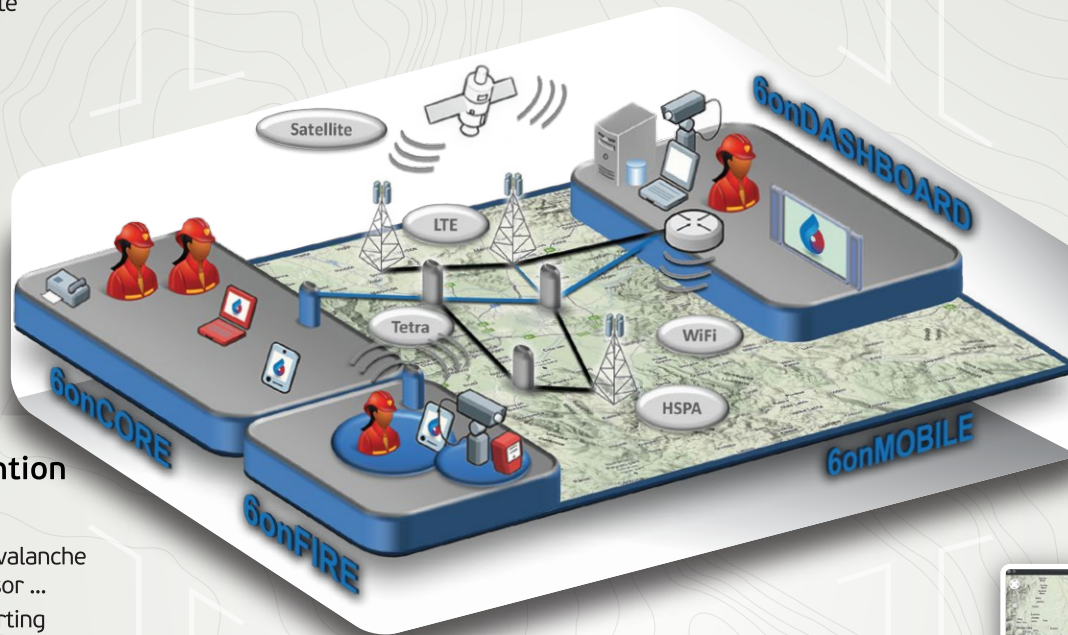- Can be kept on site after the intervention is over for long-term site surveillance

6onCORE features

- Voice services, data and video transmission, sensor and M2M services
- Seamless connectivity via best available professional (TETRA, satellite), commercial (UMTS/HSPA, LTE, FTTx) or ad-hoc networks (WiFi, compact LTE/EPC)
- Compact mobile or portable deployments with professional COTS equipment
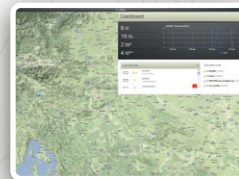
6onDASHBOARD
IoT-DRIVEN INTERVENTION MANAGEMENT

3 Manage the intervention with 6onDASHBOARD

- Central web-based intervention management and monitoring portal
- Tailor-made for intervention site monitoring
- Customizable views and access control for strategic, command, lead and operational levels

6onDASHBOARD features

- Connects to 6onFIRE sensor deployments on site
- Real-time monitoring of units, users, devices and sensors in a web-based GUI
- Big data analytics and tracks
- Full data storage
- Intervention reports
- Group and access right management customizable to chain of command structure

6onMOBILE
TRIAGE APPLICATION

4 Use a one-touch triage application to report conditions and events from the intervention site

- Triage application for Android and iOS
- Simple one-touch reporting from the intervention site
- Alerts transmitted to 6onDASHBOARD

6onMOBILE features

- Instant one-touch alerting – Fire, Flood, Earthquake, Tree down, Avalanche, Heavy snow, Line down, No power, Unknown
- Triage reporting of on-site conditions – Fire, Flood, Earthquake; with detailed reporting on Facility, Person, Animal and Hazardous
- Report procedures customizable to match standardized protocols
- Reports and alerts transmitted to 6onDASHBOARD in real time

Satellite

LTE

Tetra

WiFi

HSPA

6onCORE

6onFIRE

6onDASHBOARD

6onMOBILE

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