IPv6 SAFETY

IPv6-powered solutions for international public safety cooperation

University of Ljubljana, University of Luxembourg, University of Murcia

Cross-border safety and cooperation benefiting from IPv6

In the event of a cross-border or out of area emergency operation deployed units need to communicate with their command level and collaborating units in a reliable and secure way.
Given financial constraints on the equipment and training of rescue staff, existing emergency responders' communication equipment must be re-used to a maximum extend and predefined operational plans must be considered.

On the other hand, operational effectiveness can be widely enlarged by environmental awareness aided by the inclusion of existing sensors and databases.

- IPv6 provides a future-proof base for communication equipment integration Into a common framework
- Device integration on IP level enables seamless operation over most wide area networks

ABOUT GEN6

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 deployment 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

Supported by EC, Grant nr. 261584

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VoIP for Emergency

Integration of Professional Mobile Radios

IPv6 acts as an enabler to interconnect different professional VoIP solutions through the use of gateways:

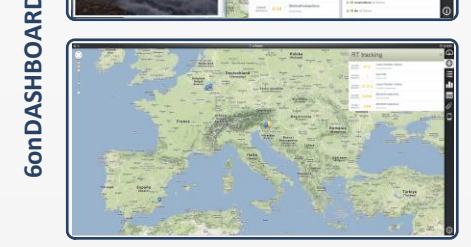
- 128 bit addressing vastly increases address space for end devices
- Sensor Network Integration: 6lowpan
- Built-in security support via IP layer security (IPsec)
- Stateful or stateless auto configuration (DHCPv6, SLAAC) simplifying network management
- New addressing options for link local, anycast, intra-domain, and globally unique Internet communications.
- Secure addressing options for randomly-generated addresses to protect privacy, and cryptographically-generated addresses used to sign and authenticate messages

6inACTION SYSTEM

Smart system for emergency response and disaster relief communications

Designed to provide public safety agencies with survivable, scalable and robust communications and professional IoT-supported intervention management services

- 6onCORE – compact mobile node for high-performance communications in day-to-day operations and survivable communications in extreme conditions
- 6onFIRE – on-site intervention monitoring with IoT services
- 6onDASHBOARD – professional intervention management software



More info available at www.6inaction.net

6inACTION International Cooperation

6inACTION intervention management feature for cross-border safety cooperation

Support for cross-border first responder operations management and international public safety agencies cooperation

- Based on 6inACTION system for emergency response and disaster relief communications
- Location-independent IPv6 sensor deployments for situation surveillance – permanent or ad-hoc/temporal
- Plug&play sensor deyplomont and mobility to support ad-hoc or permanent sensor deployments via 6onFIRE
- Connected into 6inACTION via cross-border network layer interface (InterOperability Point – IOP)

6onDASHBOARD (Slovenia)

Cross-border IoT services in 6onDASHBOARD professional intervention management software

- Unified intervention management in 6onDASHBOARD for all locations
- Real-time monitoring and alerting for distributed locations
- Cutomizable views and access control for cross-border, cross-agency and national levels
- On-click IPv6 connectivity to sensors
- IPv6-based sensor and sensor group/unit management
- Full 6onDASHBOARD feature set – analytics and tracks, intervention reports, full data storage

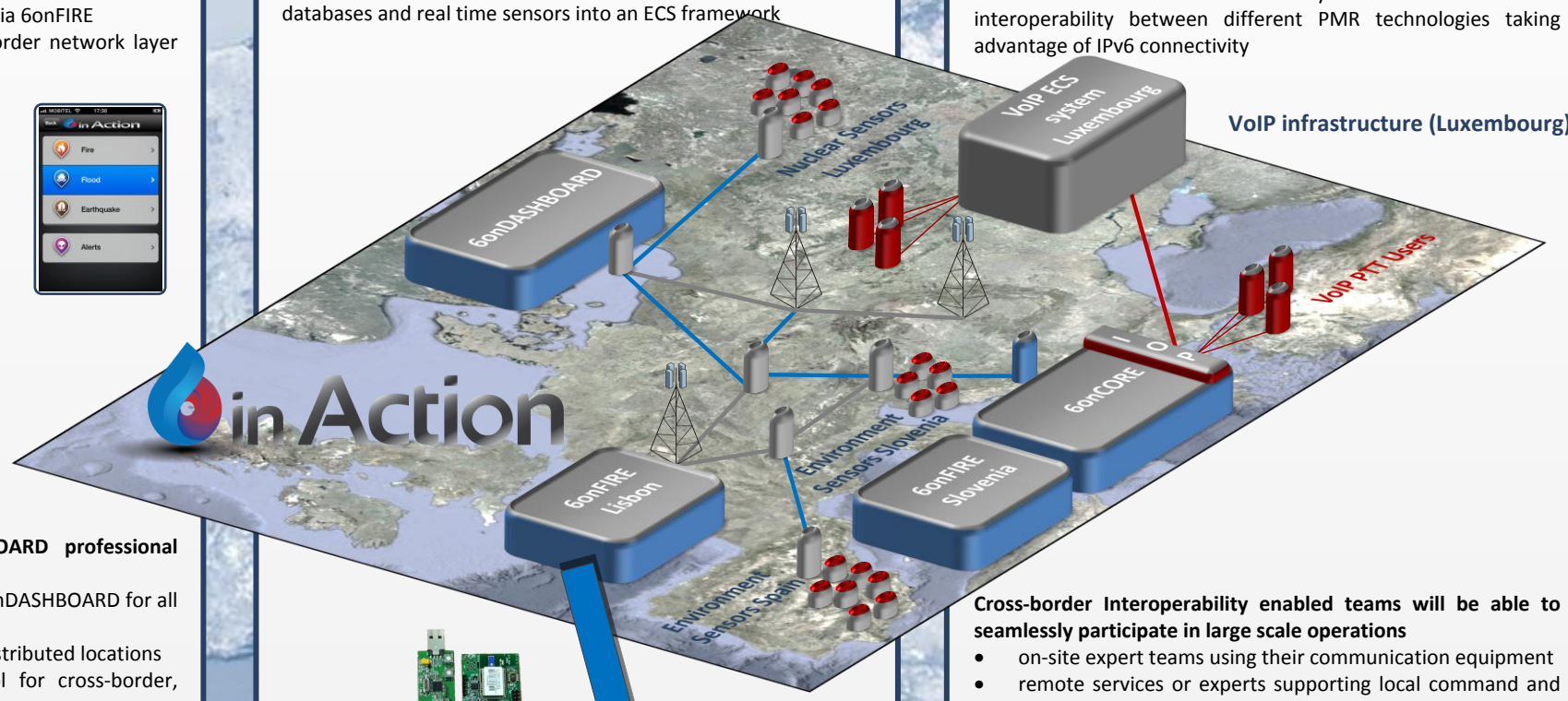
6inACTION International Cooperation deplyoment and tests

- 3 sensor deplyoments in Europe – Murcia, Ljubljana, Luxembourg

Data Fusion in Public Safety

Using Available Data Sources in ECS

Existing data collected for various purposes can have a beneficial impact on rescue operations if it is made available to command posts and staff in the field level.
Sensor data from environmental monitoring is mandatory for decision making and initiating effective counter measures in the field in the event of chemical, nuclear accidents or terrorist attacks as well as natural disasters as wildfires, floods or earthquakes.
GEN6 demonstrates the integration of data from external databases and real time sensors into an ECS framework



Sensor deployments (Spain, Slovenia, Luxembourg)

VoIP Services in ECS

Enabling Interoperability in Public Safety

Interoperability barriers in communication systems still exist at regional, national and European levels between Public Protection and Disaster Relief (PPDR) organisations; such barriers often impact upon the effectiveness of PPDR agency responses especially during a crisis event, but also limit the data flow in day-by-day operations to share information what improves situation awareness.

As voice communication is still a key GEN6 demonstrates the interoperability between different PMR technologies taking advantage of IPv6 connectivity

VoIP infrastructure (Luxembourg)

Cross-border Interoperability enabled teams will be able to seamlessly participate in large scale operations

- on-site expert teams using their communication equipment
- remote services or experts supporting local command and operations