5G Varnost

5GSafety – Dispatcher as a Service

(5G Safety Workshop)

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5GSafety: Strategy Dispatcher as a Service (DPaaS)

5GSafety targets

Completely **new concept** of delivering **dispatch** functionality as **virtualised** cloud-based and **network-agnostic** services.

Conceptual design

DPaaS as a state-of-the-art set of **features over 5G** based communication **infrastructure.**

Service (DPaaS)

Targeting PPDR professionals with **new generation** of **user-centred** applications for personal safety of citizens.

Applications implementation

In **virtualised** and **shared** 5G environment which is **safe**, **private** and backwards **compatible** with current PPDR communication systems.

High level functional blocks

Intelligent adjustment of the scope of subsystem performance services

Primary services: voice, video and data communications

Customize profiles according to the current organisational structure of operators

Support services: statistics, information on service provision, recording, location

Enabling services for different domain groups and operator profiles

All-IP infrastructure

Domain services: domain-specific with integration into a single user experience

Technology framework

Re-use state of the art technology

- Multi node(distributed) applications
- Multi node(distributed) storage components
- Blockchain technology to record event data of the incident
- Use 5G technology to assure multi node applications and storage
- Cloud technology for IT infrastructure

Presentation layer

- Fully custom designed component
- Technology agnostic vs. DPaaS
- Content addressing principle to access services of DPaaS

HL design

- Generic service(s) available via (CSP) deployment mechanism
- Domain specific configuration via technology for high level programing
- Project specific configuration via simple configuration API

Main functional blocks

Features set already defined (voice, video, data)

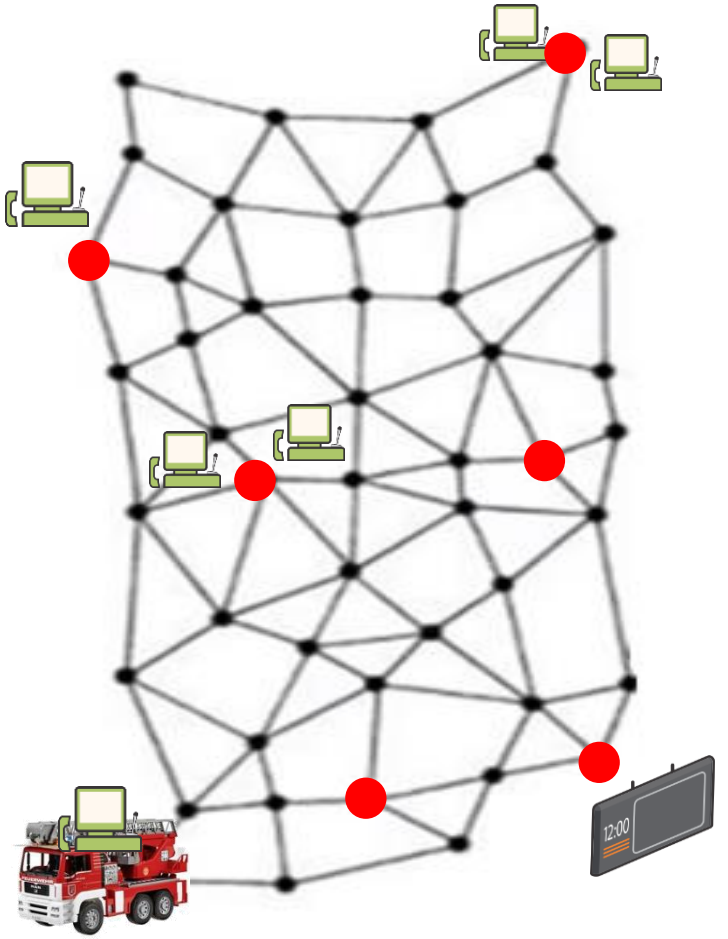
- Based on an abstract model to assure services for hybrid networks

Smart handling of voice and video communications

- Local node communication principle
- Multi node principle of collecting meta data
- On the fly (re)configuration based on forking principle

Optimal principle for collecting the data of the incident

- Chain of data collected during the incident
- Additional meta data provided implicitly by component DPaaS
- Structure of meta data to support service DPaaS in case of disaster scenarios



Smart algorithm for availability of DPaaS

- Dynamically allocation of the active nodes related to the incident

Specific features

Assistance

- Communication link established with the expert can be on the same quality level as on the operator side
- Expert can get any voice/video source of involved resources in the incident
- Expert is able to assist (via voice/video/data) any rescue workers involved in the incident.
- The assistance can be accessible to all users with permission to monitor the first responder
- Assistance can be provided for the expert as well
- Roles and permissions for the expert

Improved features for the operator

- Real time monitoring of audio/video communications during the incident
- Advanced roles of operators
- In case of disaster scenario the Operator function can be handed over without data loss

Past incident processing

- Add comments and reports in the chain of records
- Add data to the chain of records for the training/follow up purposes

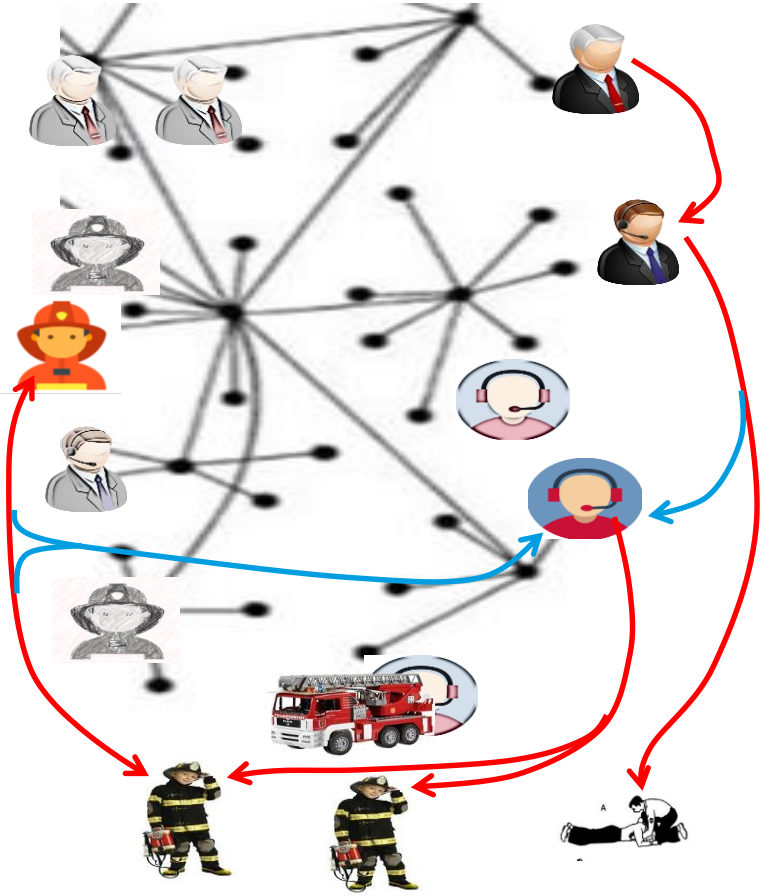
Fragments for use cases

Assistance request

- First responder can request for assistance using existing equipment
- Expert can assist via accessible equipment of the first responder
- Operator can coordinate and monitor any activity of the assistance

Cascade of assistances

- Assistant with access to DPaaS can request assistance for himself
- The Assistant in the cascade can be promoted to directly assist the originating assistance requester



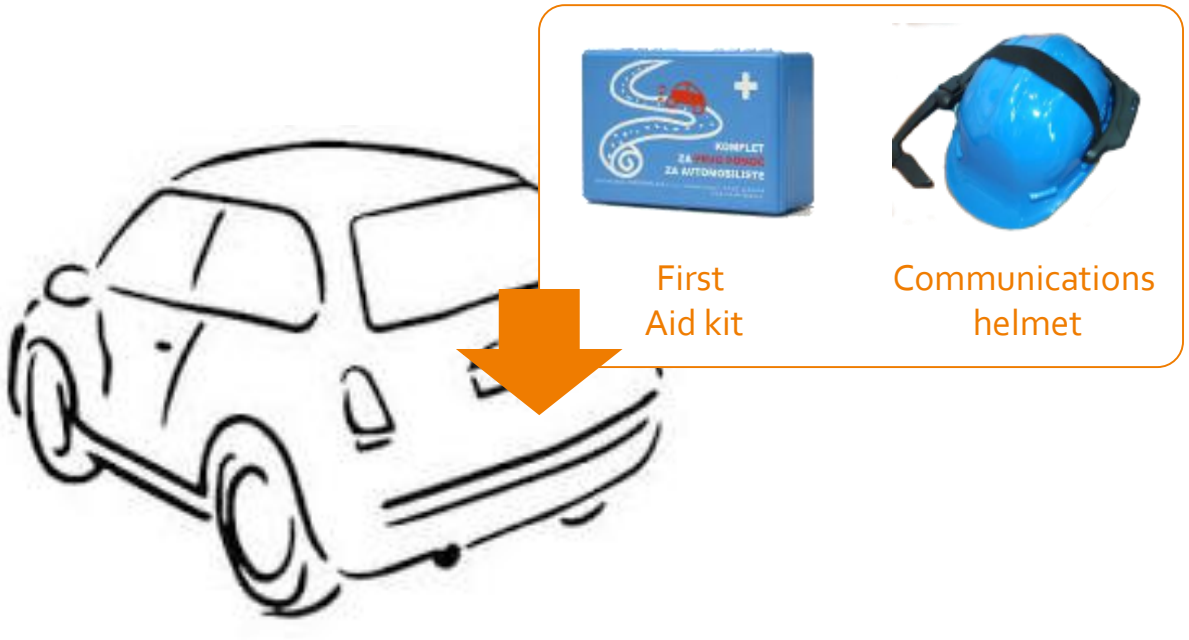
Supervision and forced assistance

- Experts can monitor the staff involved in the incident
- Expert can decide to assist via any currently available communications channel
- Expert can take over the leader role from the first responder

Assistance of the citizens during the first aid

- Based on new first aid equipment the citizen becomes an assistant to the first responder who is not yet present at the location of the incident
- Operator is able to coordinate and monitor the assistant activities

Iskratel's Enhanced First Aid kit



Fist Aid kit includes Communications helmet:

- Direct communications with PSAP
- Video stream over mobile network (3G/LTE)
- Plug &play

Use case:

Citizens can use advanced(5G based) First Aid kit communications (audio/video/data) to provide first aid . They can receive instructions from experts on how to react while they are waiting for first response arrival.

PSAP

Audio & **Video** communications

Traffic participant

Advantages

- **The 5GSafety will improve pre-first responder situation on the ground (First Aid kit is extended with 5G PPDR technology).**
- **The DPaaS will enable the citizen to become an additonal force to the first responder team.**

Iskratel's Assistant to the first responder

First responder can request assistant via available communication channels:

- Trigger via voice signal
- Trigger via data signal
- Communication channels over mobile network (5G/LTE)

Use case:

First responder can request assistance via any available communication channel.
The PSAP operator gets a request and communicates details about the assistance.
The third party assistant can be involved simultaneously through appropriate communication channel e.g. audio, video stream.
Complete situation awareness is available over the PSAP Operator console.

Advantages

- **The 5GSafety will improve situations where the assistant can be merged „to body" of the first responder on the field**
- **The DPaaS will enable that the assistant/operator can be replaced by other person simultaneously.**

Iskratel's Supervision and forced assistant

First responder can be assisted without his explicit request:

- Break into currently used/available communication channels
- Take control of systems used by first responder
- Communication channels over mobile network (5G/LTE)

Use case:

First responder can be fully monitored by the PSAP Operator and/or a group of assistants.
Assistant can decide to activate appropriate communication channel towards the first responder.
The assistant can take a control systems used by first responder(e.g. cameras, advanced helm sensors) to improve efficiency on the field .
Complete situation awareness is available over the PSAP operator console.

Advantages

- **The 5GSafety will improve situations where the assistant can be merged „with body" of the first responder on the field**
- **The DPaaS will enable the assistant/operator to be replaced by other person simultaneously.**

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