

5G Enabled Public Safety Services and Applications

5G Safety Status and Overview

ANA ROBNIK, 5G Safety Coordinator

Advisory Board Meeting, 25.5.2021

Agenda



The Progress of the Project and Deliverables



The Changes in Project planning due the COVID-19



5G Safety Results and Achievements



Final thoughts

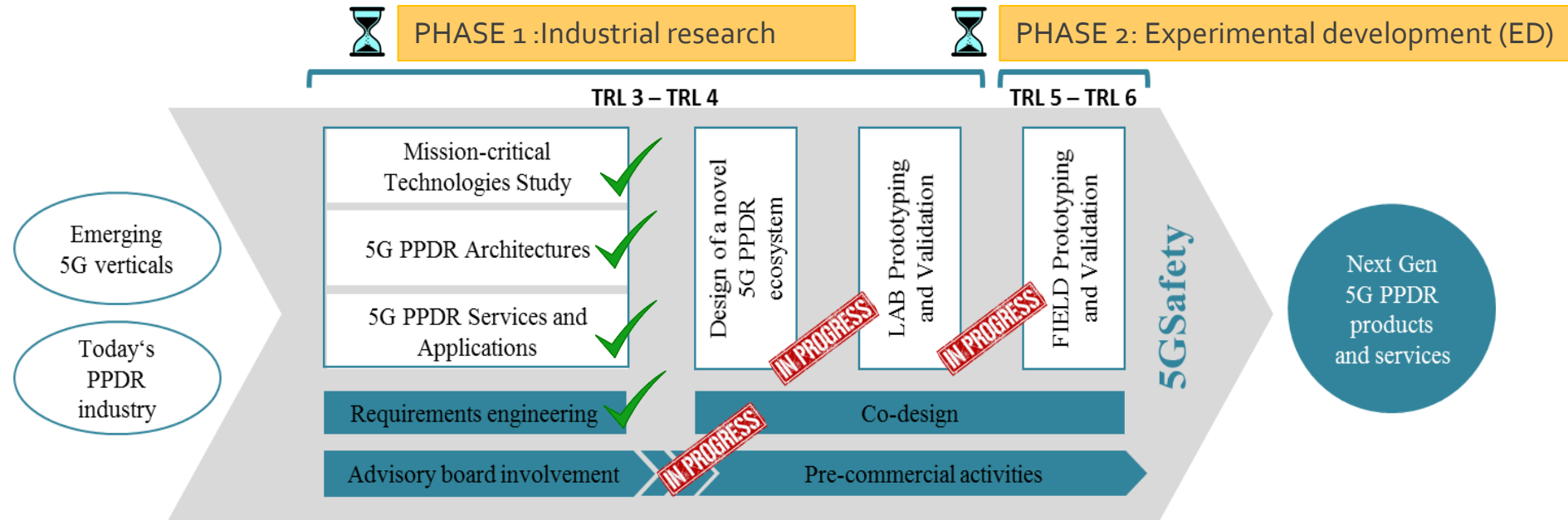


5G Safety

Project Status and Deliverables



5GSafety approach, Technological Deliverables -Status



5G Safety Technological Deliverables (1)

- Dispatcher as a Service
- Mobile Apps for Citizens and PPDR professionals
- Operational Communications for Disaster Scenarios

5G Safety Technological Deliverables (2)

- Novel interactions modality and User Experience
- 5G PPDR Experimentation Environment
- E2E Security and Integrity



Status of Deliverables Up-to-now (1/2)

– Sub-phase IR.1 Business models and Innovations – In Progress

Deliverable	Title of Deliverable	Responsible	Type (TRL)/Status	Milestone
IR.1	Business Models and Exploitation	ISK	Document (3-4)	M.1 (M36)
IR.2	Innovation Management	OSI	Document (3-4)	M.1 (M36)



– Sub-phase IR.2 Studies and Conceptual Design – Finished






Deliverable	Title of Deliverable	Responsible	Type (TRL)/Status	Milestone
IR.3	5GSafety Use Cases and Requirements	ULFE	Document (3)	M.2 (M09) ✓
IR.4	Mission-Critical Technologies in scope of 5GSafety	TS	Document (3)	M.2 (M09) ✓
IR.5	Studies and conceptual design for 5G PPDR architectural concepts	ISK	Document (3-4)	M.3 (M15) ✓
IR.6	Studies and conceptual design for network agnostic services and applications	ISK	Document (3-4)	M.3 (M15) ✓

IR.3, IR.4, IR.5 and IR.6 – the Summary of the Deliverables (Slovenian/English) available on 5G Safety home page ([here](#))





Status of Deliverables Up-to-now (2/2)

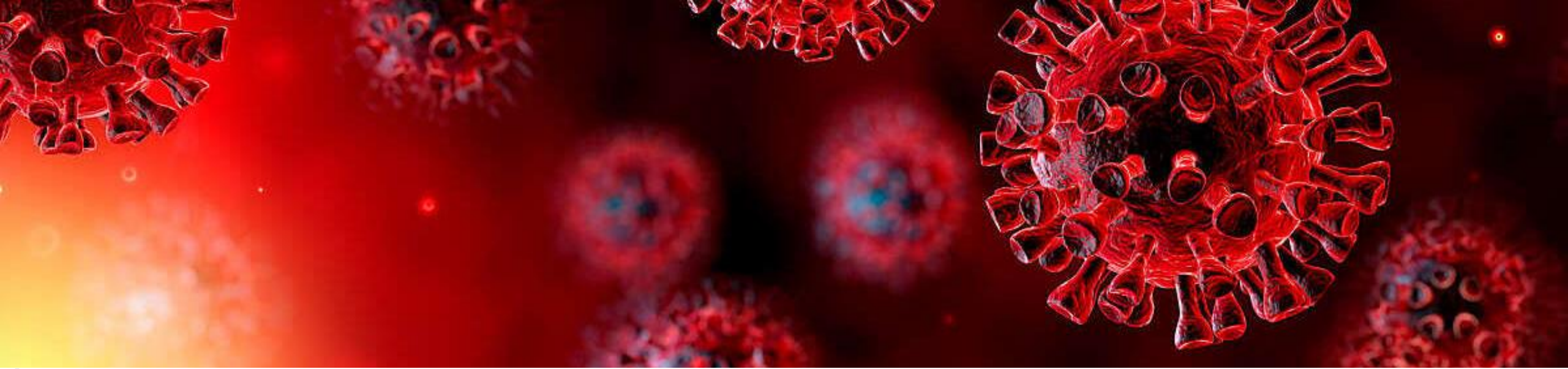
- Sub-phase IR.3 Laboratory Prototyping and Validation: almost Finished (Jun 2021)

Deliverable	Title of Deliverable	Responsible	Type (TRL) /Status	Milestone
IR.7	Report of laboratory prototyping and validation for Dispatcher as a Service	ISK	Document (3-4)	M.4 (M34) 
IR.8	5GSafety Mobile Apps and Novel Interaction Modalities	ULFE	Document (3-4)	M.4 (M32) 
IR.9	A study on unified user experience	ULFE	Document (3)	M.4 (M32) 
IR.10	Report of laboratory prototyping and validation for operational communications for disaster scenarios	ISK	Document (3-4)	M.4 (M32) 
IR.11	Report on Security and Integrity	OSI	Document (4)	M.4 (M34) 

- Sub-phase ER.1 Demonstration and Validation in Relevant Environment: In Progress

Deliverable	Title of Deliverable	Responsible	Type (TRL) /Status	Document
ER.1	Description of the demonstration scenario and test environment specifications	TS	Document (5-6)	M.5 (M27) 
ER.2	5G PPDR Safety Software objects	ISK	Software(6)	M.5 (M39)
ER.3	Final Validation Report	ULFE	Document (6)	M.5 (M39) 

IR.8, IR.9, IR.10 and ER.1 – the Summary of the Deliverables (Slovenian/English) available on 5G Safety home page ([here](#))



The Changes in Project planning due the COVID-19

- **5G Safety COVID-19 Code** effective from March 2020
- On November 2020 we addressed a request for the **Project extension** to the Ministry of Education, Science and Sport :
 - **End of Project** together with Business models & Innovations and Demonstration and Validation Activities shifted to **November 2021 (+3 Months)**
 - **End of Laboratory Prototyping** and Validation shifted to **June 2021 (+4 Months)**



About our results

and achievements

5G Safety Results and Achievements

- Technology Aspects for all Three Areas
 - Broadband Networks
 - Dispatching Solutions
 - PEMEA and OTT applications
- Additional Relevant Aspects for all Three Areas
 - Security & Privacy
 - Other Insights

Broadband Networks will shape the PPDR future

Broadband Network Technology Aspects

- Right mix of **coverage** and **capacity**
- **Standard** 4G/5G networks with multimedia and IoLST^(*) capabilities
- **QPP** is a must: Quality of Service, Priority, Pre-emption
- **Roaming** and **Slicing**
- **Provisioning** of QPP and PPDR members/groups are essential
- Appropriate **Governance model** (Private, Hybrid, MVNO)

(*) Internet of Life Saving Things

Other aspects (Slovenia), Security&Privacy

- **Dual economy** in the transition period: upgrade of TETRA and deployment of DMR in progress
- **Device Ecosystem, Economy of scale**
- PPDR **Spectrum** allocated but NOT assigned yet
- PPDR **Strategy** including 4G/5G networks is not yet on Horizon
 - A network of **Security Operations Centres** supporting E2E security
 - **Privacy** and ZVOP-2 (GDPR)

Dispatching Solutions for agile PPDR operations

Dispatching Solutions Technology Aspects

- **Standardized MC PTT, MC Data and MC Video** from PPDR Cloud
- **Dispatcher as a Service (DPaaS)** and **IoLST^(*)** as a part of **vPSAP** and **vCommand&Control Room**
- Operational Communications in **Disaster** Scenarios
- **APIs** for Common Registries / Inventory / Common Information Space and External DBs

(*) Internet of Life Saving Things

Other aspects (Slovenia), Security&Privacy

- **Software-based Solution and Deployment Options** offer Flexibility in Business Models
- **All-IP** Communication Services Support for **Emergency call** Takers
- Alignment to Pan-European PPDR **Strategy (SpiceNet Hub)** and **EENA NG 112 (ESInet)**
- **End-to-end Security and Compliance** from Cloud, Data, ... to Audit trails
- **Privacy** and **ZVOP-2 (GDPR)**

PEMEA and OTT applications will augment the PPDR future

PEMEA and OTT Apps Technology Aspects

- *Total Conversation and IoLST^(*) services based on **PEMEA Standard***
- **Rich context** (Identity, Location, Medical data, In Case of Emergency)
- **Applications for PPDR Professionals and Citizens** based on DPaaS and WebRTC
- Application **Ecosystem**
- **PPDR App Store** in Coexistence with **Commercial Apps**

Other aspects (Slovenia), Security&Privacy

- *Business Models are related to **B2B2C**, **free-of-charge** is very realistic option*
- **Certified & Trusted Applications**
- Apps **Strategy** Overall and **Legislation** is not yet on Horizon
- *Single Sign On: Identity, Credential and Access Management (**ICAM**)*
- App and Data **Security**
- **Privacy** and ZVOP-2 (GDPR) because of rich context


(*) Internet of Life Saving Things



Final thoughts

5G Safety Members are Thankful and Appreciate Support

– From Stakeholders in Slovenia

- Agency for Communication Networks and Services of the Republic of Slovenia
- University of Maribor, Faculty of Criminal Justice and Security
- Ministry of Public Administration, Information Society and Informatics Directorate
- Professional fire brigade Celje
- Ministry of Defence, Administration of Republic of Slovenia for Civil Protection and Disaster Relief
- SRIP Smart Cities and Communities  SRIP Pametna mesta in skupnosti
- IKT Horizontal Network
- The Slovenian Association for Electronic Identification and Electronic Trust Services

– From Stakeholder in European Union

- European Emergency Number Association
- Public Safety Communication Europe

– ... and are open for new supporters and new collaborations

- Institute of Traffic and Transport Ljubljana
- Digital Innovation Hub Slovenia



Fakulteta za varnostne vede



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA JAVNO UPR





5G Varnost

<https://5gvarnost.iskratel.com/>



twitter.com/Iskratel



linkedin.com/company/Iskratel

Links to 5G Safety events and 5G information:

<https://5gvarnost.iskratel.com/viri>

Ana Robnik

5G Safety Coordinator

T: 04 207 26 86

5Gvarnost@iskratel.si



osi.si

Naložbo financira Republika Slovenija
in Evropska unija iz Evropskega sklada
za regionalni razvoj.



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA IZOBRAŽEVANJE,
ZNANOST IN ŠPORT



Acronyms

- PPDR – Public Protection and Disaster Relief (civilna zaščita in pomoč pri nesrečah, zaščita in reševanje)
- AKOS - Agencija za komunikacijska omrežja in storitve RS (Agency for Communication Networks and Services of the Republic of Slovenia)
- FVV - Fakulteta za varnostne vede, Univerza v Maribor (University of Maribor, Faculty of Criminal Justice and Security)
- RS MJU, DID - RS Ministrstvo za javno upravo, Direktorat za informacijsko družbo in informatiko (Ministry of Public Administration, Information Society and Informatics Directorate)
- URSZR - Uprava RS za zaščito in reševanje, Administration of the Republic of Slovenia for Civil Protection and Disaster Relief
- MNZ – Ministrstvo za notranje zadeve, Ministry of the Interior
- MZ - Ministrstvo za zdravje, Ministry of Health
- MOP – Ministrstvo za okolje in prostor, Ministry of the Environment and Spatial Planning
- SRIP PMiS – Strateško razvojno-inovacijsko partnerstvo Pametna mesta in skupnosti, SRIP Smart Cities and Communities
- IKT HM - IKT horizontalna mreža, ICT Horizontal Network
- EIDES - Slovensko združenje za elektronsko identifikacijo in elektronske storitve zaupanja, The Slovenian Association for Electronic Identification and Electronic Trust Services
- MIZŠ – Ministrstvo za izobraževanje, znanost in šport, Ministry of Education, Science and Sport
- CEF – Connecting Europe Facilities
- H2020 – Horizont 2020
- R&D – Research and Development
- IP-CAN – Internet Protocol-Connectivity Access Network
- AR/VR – Augmented Reality/Virtual Reality
- M(V)NO – Mobile (Virtual) Network Operator
- SP – Service Provider
- PEMEA - pan-European mobile emergency applications
- ESINet – Emergency Services IP Network
- MC PTT – Mission Critical Push to Talk
- NG 112 – Next Generation 112
- EENA - European Emergency Number Association
- PSCE - Public Safety Communication Europe
- 3GPP - 3rd Generation Partnership Project
- ETSI - The European Telecommunications Standards Institute
- PSAP – Public Safety Answering Point
- E2E – End-to-End
- ID - Identity, LOC - Location,
- MED – Medical, ICE – In Case of Emergency
- CAPEX - CAPital EXpenditure
- OPEX - OPErational EXpenditure
- TTM – Time-To-Market
- B2B2C – Business to Business to Customer
- QPP – Quality of Service, Priority, Pre-emption
- *ICAM - Identity, Credential and Access Management*
- *IoLST – Internet of Life Saving Things*
- *IoPST – Internet of Public Safety Things*
- *GDPR - General Data Protection Regulation*
- ZVOP – Zakon o varovanju osebnih podatkov