CONNECT UNIVERSITY

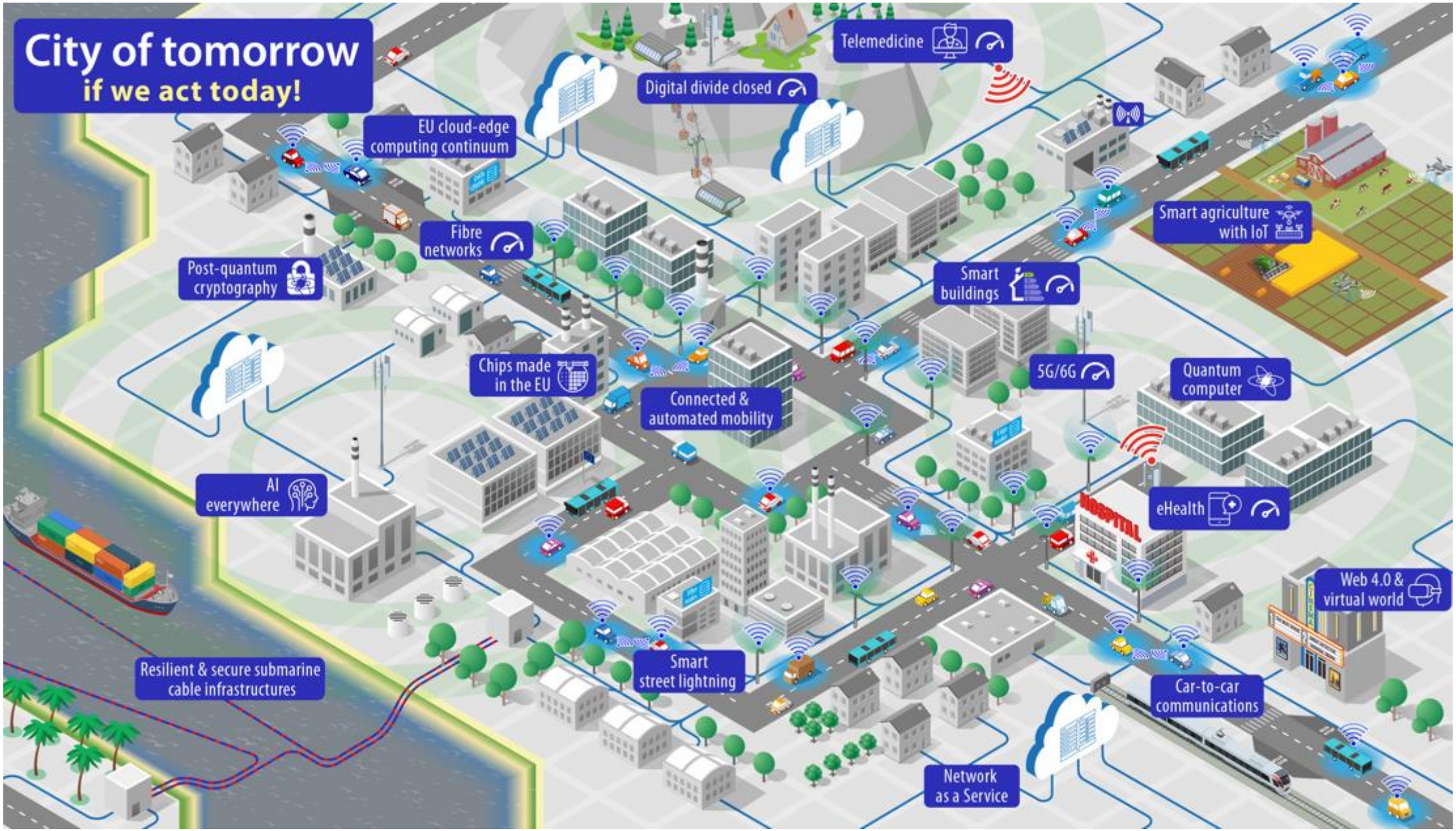
5G deployment:
An expert’s perspective

Introduction

Mr Franco ACCORDINO,

Head of Unit, Unit B.5. - Investment in High-Capacity Networks

DG CONNECT, European Commission


City of tomorrow
if we act today!
Telemedicine
Digital divide closed
EU cloud-edge computing continuum
Fibre networks
Post-quantum cryptography
Smart agriculture with IoT
Smart buildings
Chips made in the EU
5G/6G
Quantum computer
Connected & automated mobility
AI everywhere
eHealth
HOSPITAL
Web 4.0 & virtual world
Resilient & secure submarine cable infrastructures
Smart street lightning
Car-to-car communications
Network as a Service

Vision for connectivity in the digital ecosystem

- Blurring of borders between traditionally separate segments - end-to-end integrated infrastructures and platforms (edge, cloud, HPC, etc.)
- Bundling connectivity with innovative use-cases, stimulus to EU digital supply, digital sovereignty – new business models
- Scale matter: Core network operator provisions, spectrum licenses, EU operators vs. OTT/CDN
- EU digital sovereignty, trusted suppliers, post-quantum crypto, competitiveness
- Options to frame the massive investments, including instruments to combine European and national, public and private investments

The 5G “continuum“

Large-scale 5G deployments → Local 5G systems

Major transport paths

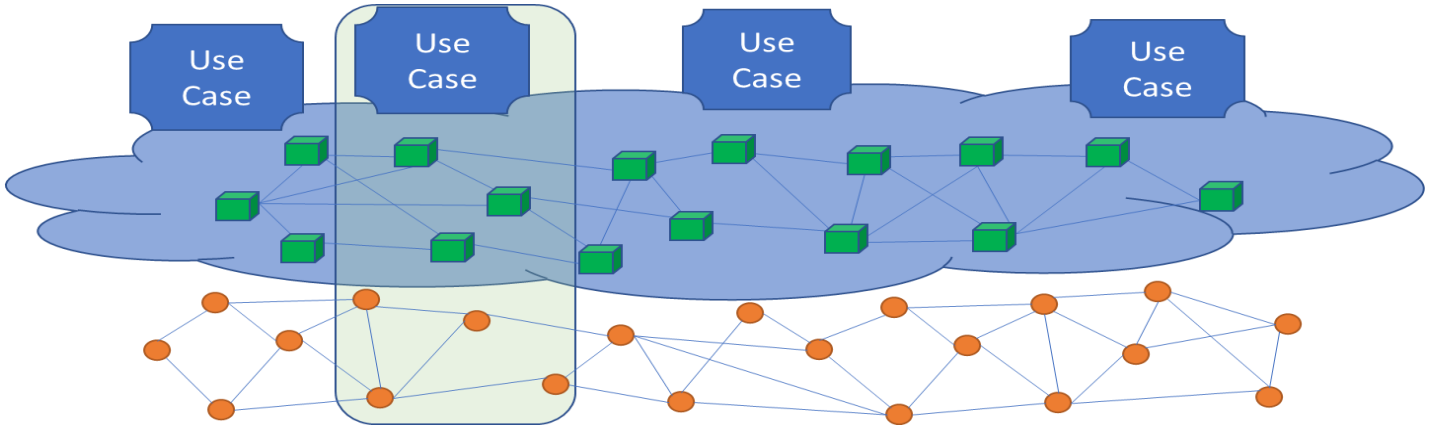
Urban areas

Rural areas

Geographical continuum:
From main corridors and cities to local communities and villages

Cloud Edge infrastructure

Connected objects and devices (IoT)

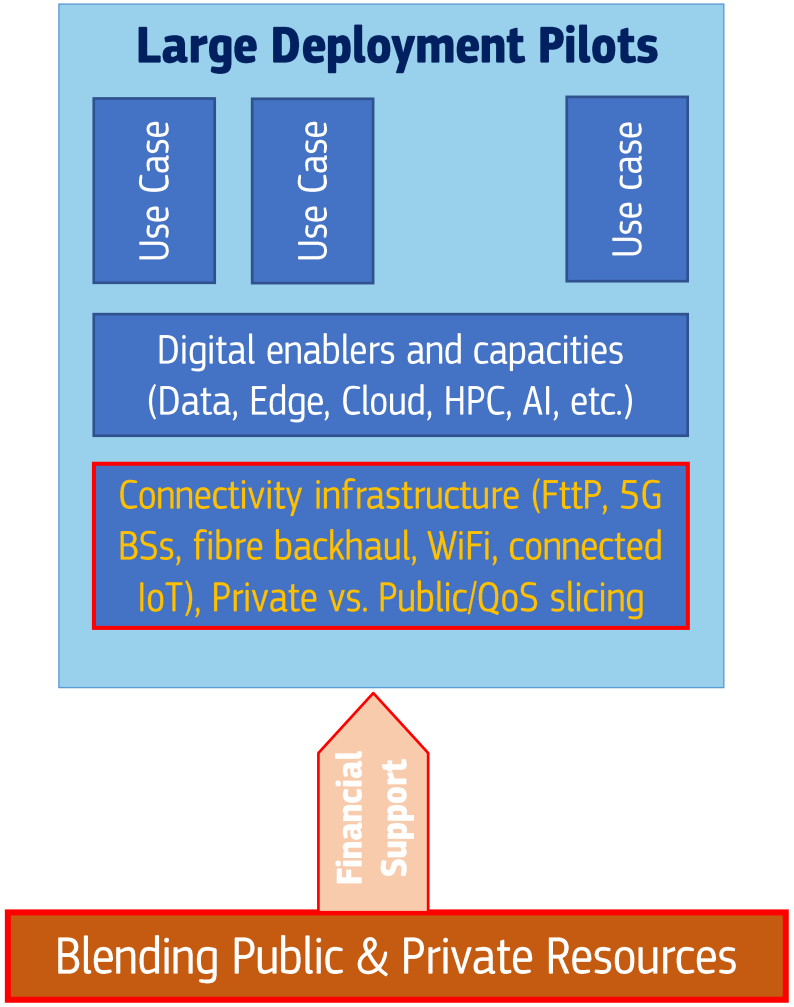


Technological continuum:
Application-driven vertical integration, stimulus to EU digital supply chain

5G deployment and take up (bundling connectivity to applications via cloud-to-edge/data/IoT)

Digitally transform local communities: the “3C” continuum
Connected Collaborative Computing

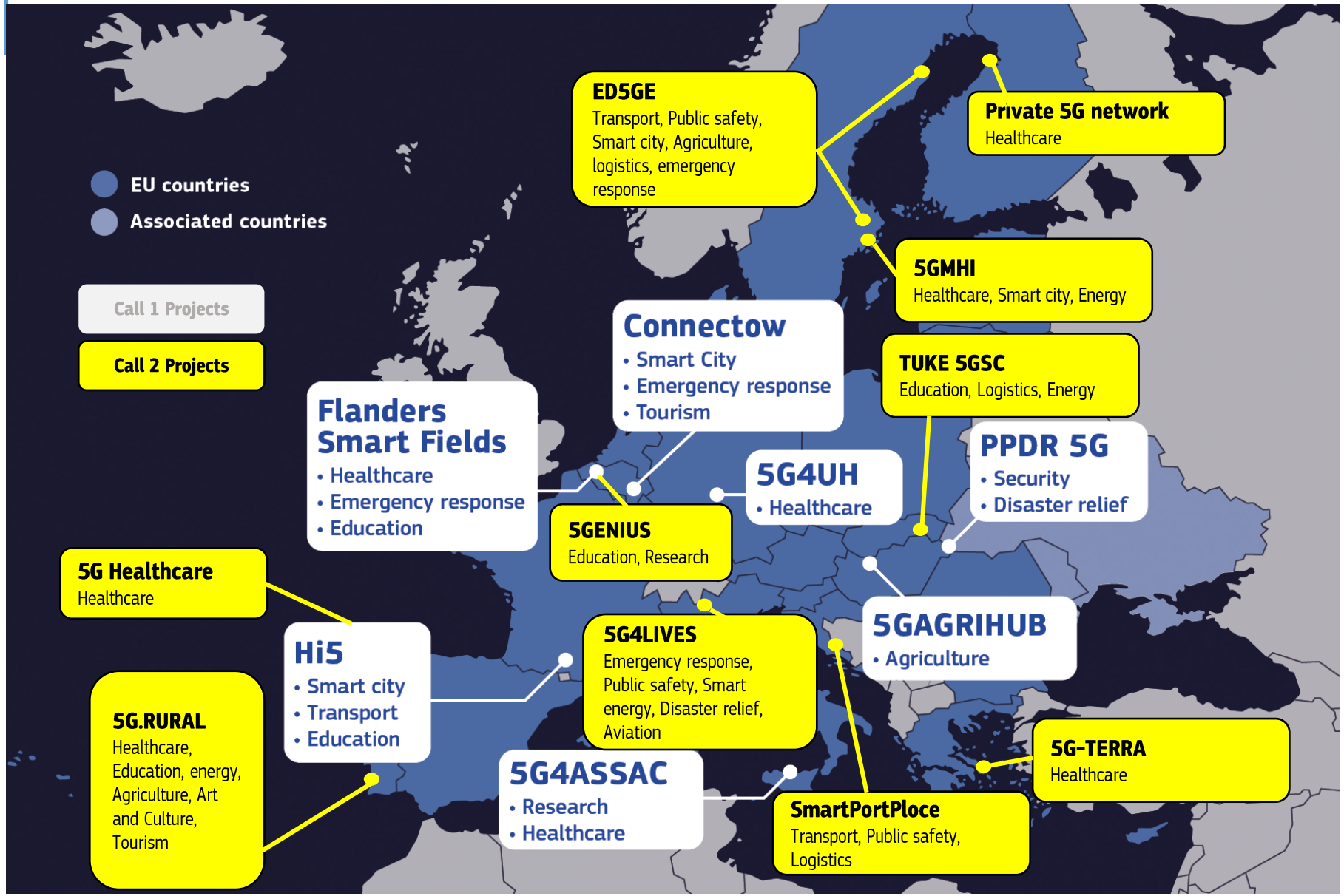
- Use cases to develop or improve public services for 5G local communities or along 5G corridors
- Stimulating European digital supply chain and standards
- Gigabit and 5G rollout linked to use cases and enabling digital capacities’ interconnection



Bundle deployment with take up:

- Healthcare: patient monitoring and assistance at home
- Disaster prevention: geo-environmental data, predictive modeling
- Immersive virtual education and smart working environments
- Smart agriculture and precision farming
- Industry 4.0, manufacturing and logistics
- ….

Walking the talk: 5G smart communities - Calls 1 & 2



- 17 Projects
- € 50 mil. grants
- Numerous use cases
- Wide EU coverage

Panel Discussion

General considerations on 5G

Moderated by ***Ms Stéphanie CHAR,***

Strategy Consulting Director, IDATE

Projects Presentations

How does CEF Digital fill the gaps?


European
Commission
5G4LIVES

5G for a Better Tomorrow:

Protecting Lives and the Environment in Riga and Turin

CNECT University Session - 5G Deployment

June 11, 2024

Inga Barisa

Adviser, Riga City Council Digital Agency

5G4LIVES project has received funding from European Union's CEF Digital programme 5G for Smart Communities under grant agreement no. 101133716

Humble road to success

- **December 2022:** Proposal idea presented
- **January 2023:** Project acronym defined
- **February 2023:** Use cases definition
- **March 2023:** Project proposal submitted
- **October 2023:** Evaluation results – Start of GA Preparations
- **December 2023:** Grant agreement signed
- **January 2024:** Project Start

5G4LIVES project has received funding from European Union's CEF Digital programme 5G for Smart Communities under grant agreement no. 101133716

Evaluation results

Evaluation Summary Report

Evaluation Result

Total score: 24.50 (Threshold: 15)

Criterion 1 - Priority and urgency

Score: **5.00** (Threshold: 3 / 5.00 , Weight: -)

Criterion 2 - Maturity

Score: **4.50** (Threshold: 3 / 5.00 , Weight: -)

Criterion 3 - Quality

Score: **5.00** (Threshold: 3 / 5.00 , Weight: -)

Criterion 4 - Impact

Score: **5.00** (Threshold: 3 / 5.00 , Weight: -)

Criterion 5 - Catalytic effect

Score: **5.00** (Threshold: 3 / 5.00 , Weight: -)

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Project partners

- ✓ RIGA CITY COUNCIL – MUNICPAL POLICE, DIGITAL AGENCY, DEVELOPMENT DEPARTMENT
- ✓ LATVIJAS MOBILAIS TELEFONS
- ✓ VEFRESH NGO
- ✓ VALSTS AKCIJU SABIEDRĪBA ELEKTRONISKIE SAKARI
- ✓ COMUNE DI TORINO
- ✓ WIND TRE SPA
- ✓ POLITO

5G4LIVES main data

Project number:	101133716
Project name:	5G for a Better Tomorrow: Protecting Lives and the Environment in Riga and Turin
Acronym:	5G4LIVES
Call:	CEF-DIG-2022-5GSMARTCOM
Topic:	CEF-DIG-2022-5GSMARTCOM-WORKS
Type of action:	CEF-INFRA
Service:	HADEA/B/01
Starting date:	1 January 2024
Project duration:	36 months

5G4LIVES project has received funding from European Union's CEF Digital programme 5G for Smart Communities under grant agreement no. 101133716

Project goals

- ✓ **Enhance** the effectiveness of life-saving and rescue operations in hard-to-reach places and large areas, including public beaches and bodies of water, through innovative solutions by Riga and Turin Municipal Police.
- ✓ **Improve** life-saving and health protection services by lifeguards using digital platforms, 5G technologies, and AI for better decision-making and reaction times in critical situations.
- ✓ **Deploy** 5G systems for high-capacity networks to drive socio-economic development and facilitate innovative, efficient, and sustainable public services.
- ✓ **Design**, implement, and evaluate a scalable novel SGI to enhance public and environmental health as a continuous service by public authorities.
- ✓ **Improve** prevention of land, water-derived, and hillside risks through enhanced monitoring and risk assessment using 5G and UAV technology.
- ✓ **Enhance** operational coordination with 5G connectivity for improved streaming quality and data processing.
- ✓ **Develop** a novel methodology for validating BVLOS (Beyond Visual Line of Sight) flights at the EU level.
- ✓ **Studies** to map safety protocols for urban drone operations in Riga and validate a beyond-visual-line-of-sight (BVLOS) methodology with EU-wide applicability.

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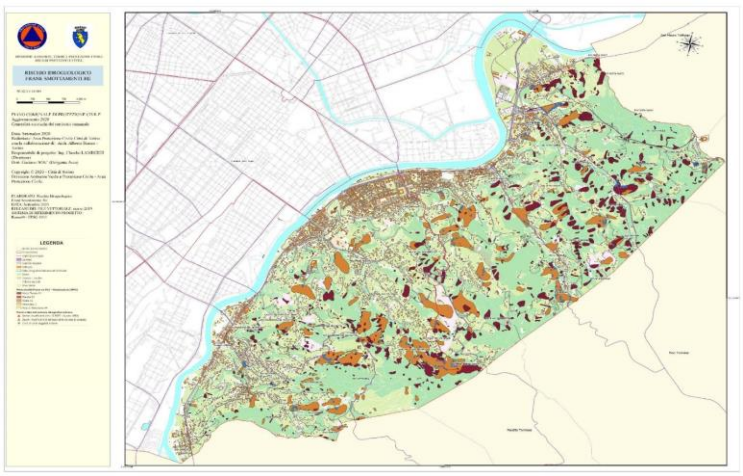
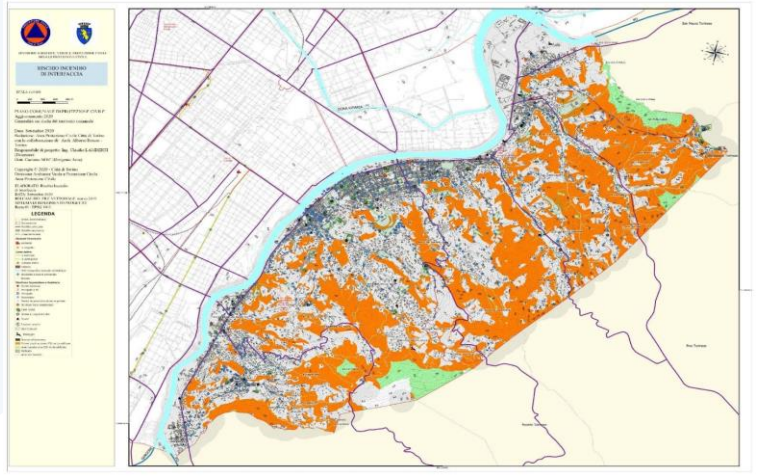
5G4LIVES locations

Riga – Ķīšaezers & Vecāķi beach

- ✓ **In Latvia** – the project focuses on deploying drones and 5G technology for monitoring and rescue operations at Vecaku Beach and Kisezers lake.
- ✓ **In Italy** – creation of 5G-enabled real-time service to mitigate natural disasters, test anti-drone-hacking tech and integrate satellite data for swift and sustainable emergency responses.

Turin Hillside





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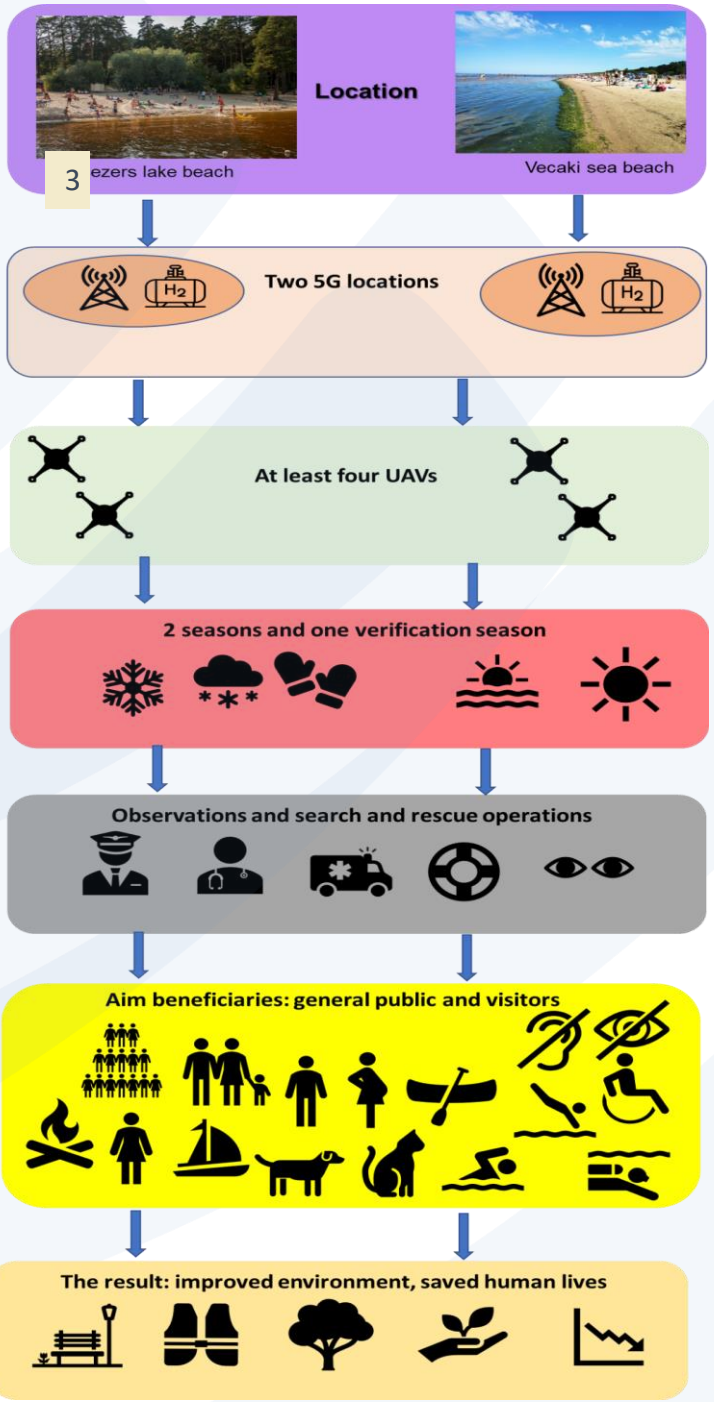
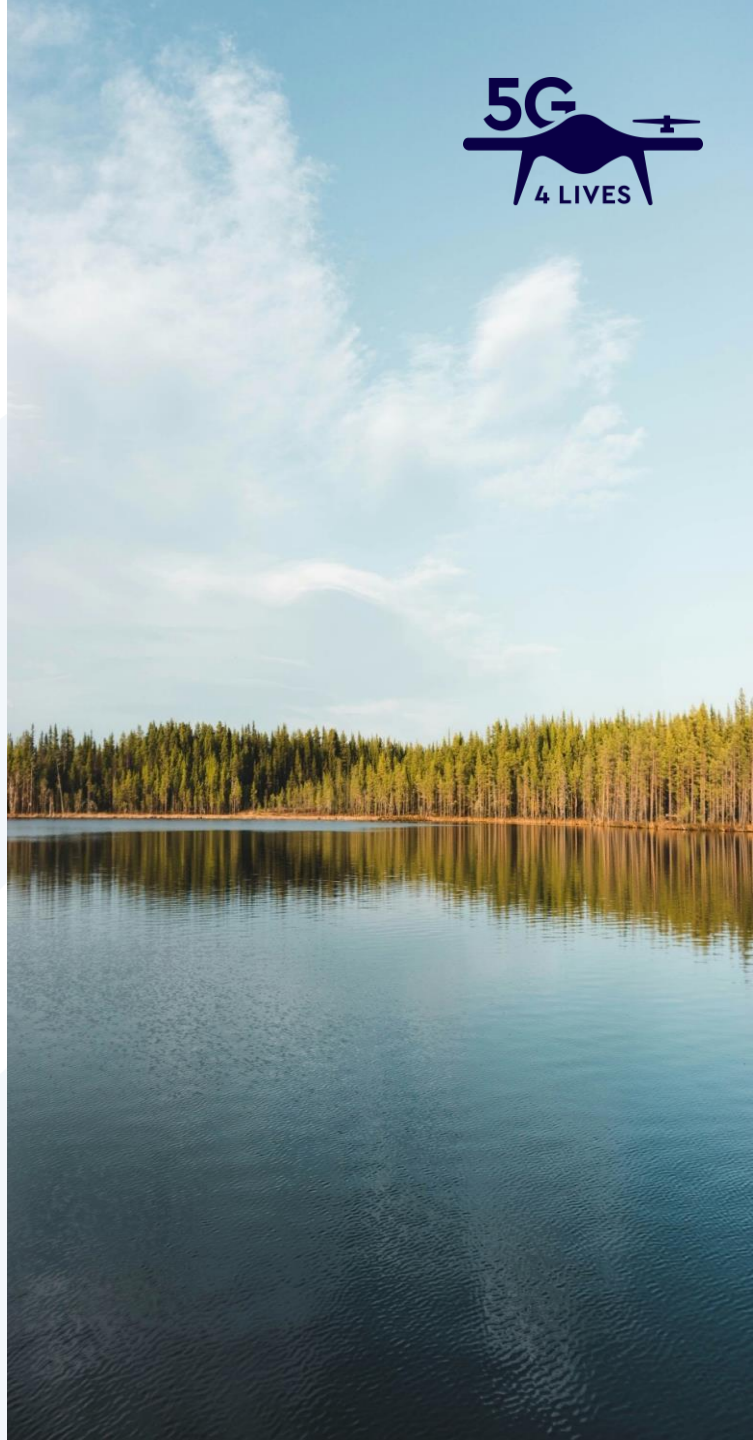
5G4LIVES demonstrations

- ✓ 3 new 5G connections
- ✓ 2 new users of 5G networks
- ✓ 4 5G use cases





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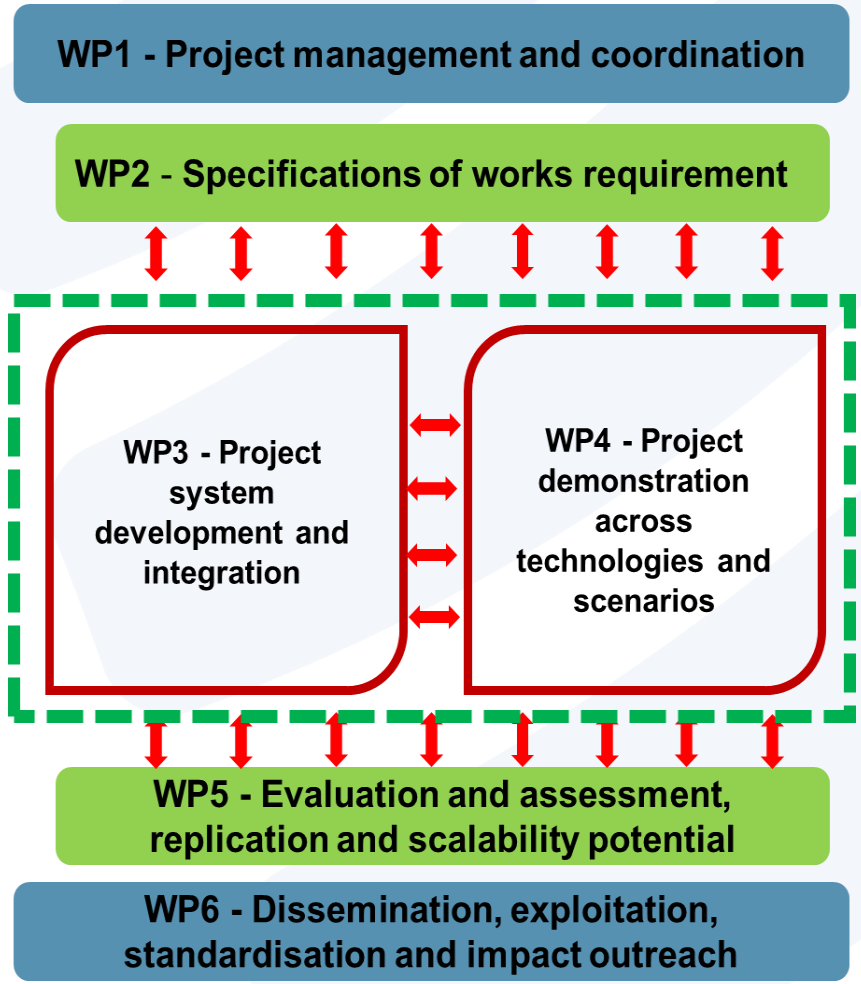
5G4LIVES work plan



Work packages

Work Package No	Work Package Name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month
WP1	Project management and coordination	1-RCC	52.00	1	36
WP2	Specifications of 5G4LIVES concept requirement	6 - CITTA DI TORINO	55.00	1	22
WP3	5G4LIVES system development and integration	2 - LMT	61.00	5	23
WP4	5G4LIVES demonstration across technologies and scenarios	1-RCC	97.00	1	34
WP5	Evaluation and assessment, replication and scalability potential	4 - VASES	66.00	14	36
WP6	Dissemination, exploitation and standardisation	3 - VEFRESH	76.00	1	36

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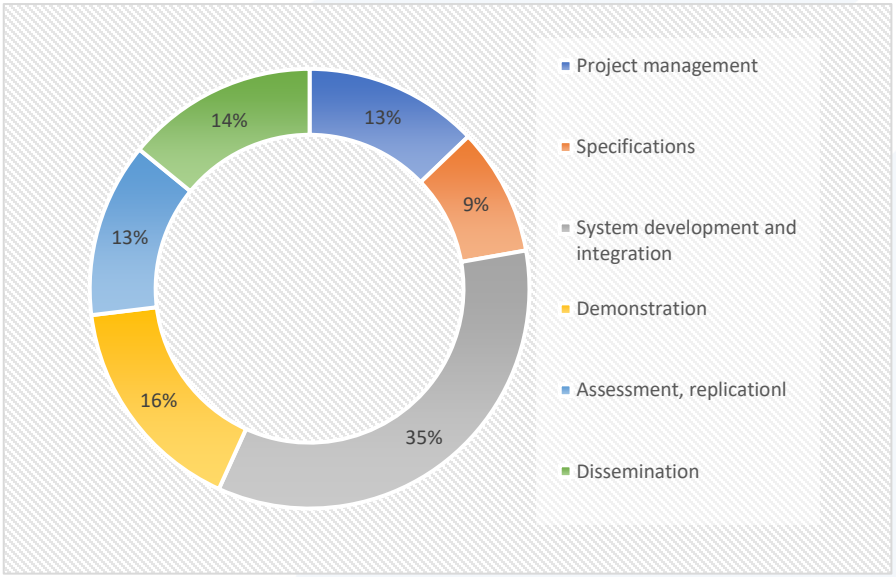
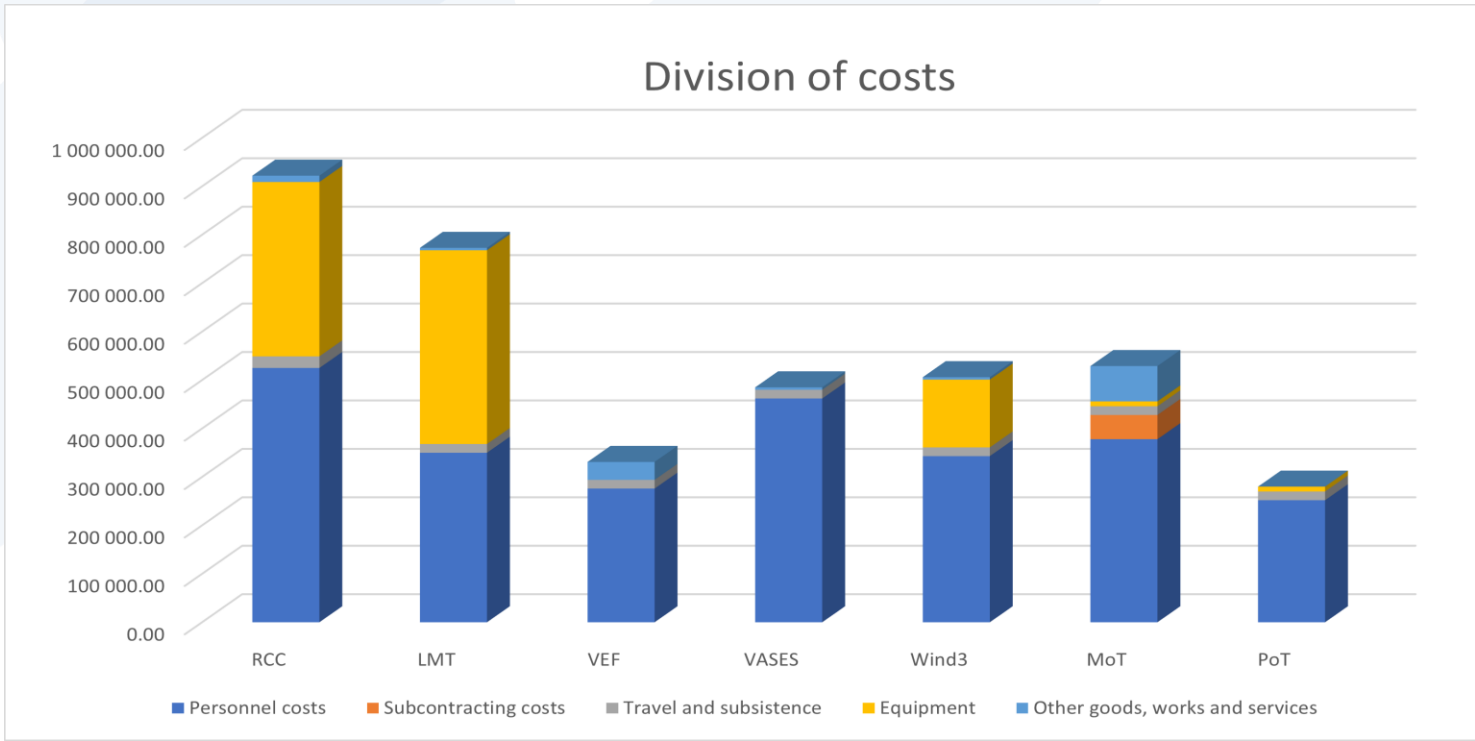
5G4LIVES division of costs

Work Packages	Sums
1. Project management	491 000
2. Specifications	359 000 3
3. System development and integration	1 322 000
4. Demonstration	624 000
5. Assessment, replication	491 000
6. Dissemination	539 000
Grand Total	**3 826 000**





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Benefits of 5G4LIVES to the society

✓**Enhanced Emergency Management:**

- Real-time Situational Awareness
- Improved Response Time

✓**Public Safety:**

- Search and Rescue Operations
- Disaster Management

✓**Environmental Protection:**

- Sustainable Technologies
- Environmental Monitoring

✓**Digital Inclusion:**

- Connectivity in Remote Areas
- Educational Initiatives

✓**Economic Development:**

- Job Creation
- Sustainable Tourism

✓**Healthcare Support:**

- Efficient Rescue Operations
- Faster response times and real-time monitoring support

✓**Collaboration and Innovation:**

- Stakeholder Engagement
- Technological Advancements

5G4LIVES project has received funding from European Union's CEF Digital programme 5G for Smart Communities under grant agreement no. 101133716

5G4LIVES video

Thank you!

inga.barisa@riga.lv

5G4LIVES project has received funding from European Union's CEF Digital programme 5G for Smart Communities under grant agreement no. 101133716

22-SE-DIG-ED5GE

Co-funded by
the European Union

EDGE 5G

5G Edge Enabled Smart Communities for Green Transformation in the North (ED5GE)

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Grant Manager, Strategic Programs and Partnerships
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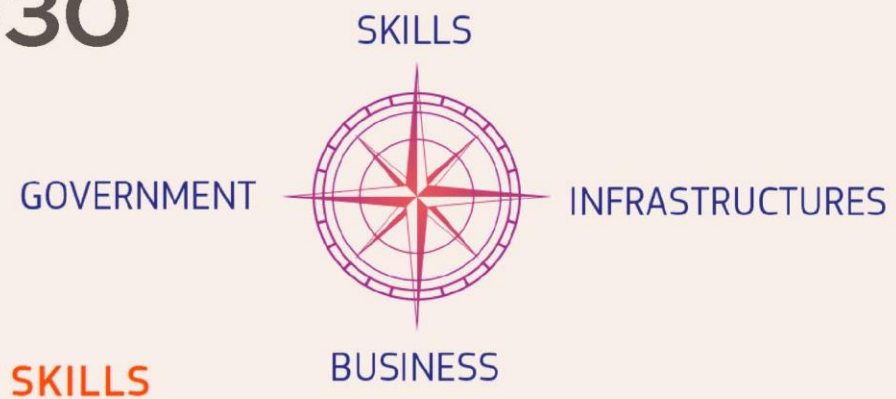
RI. SE

Telia

Europe's Digital Decade: digital targets for 2030



Deploy **≥ 10,000 edge nodes** in the EU for **fast data access and processing**

DIGITAL SKILLS

Adults with basic digital skills

NOW	54%
TARGET	80%

Employed ICT specialists & gender balance

NOW	8.9 million
TARGET	20 million

DIGITAL INFRASTRUCTURES

Gigabit network coverage

NOW	70%
TARGET	100% of households

High-speed mobile coverage (at least 5G)

NOW	66%
TARGET	100% of populated areas

*2030 Digital Compass: the European way for the Digital Decade | Brussels, 9.3.2021 COM(2021) 118 final

**Policy Programme: a Path to the Digital Decade – factsheet: https://digital-strategy.ec.europa.eu/en/library/policy-programme-path-digital-decade-factsheet

ED5GE CEF2-5G Smart Communities

EU Digital decade target

- 10,000 climate-neutral highly secure edge nodes by 2030.

Current situation

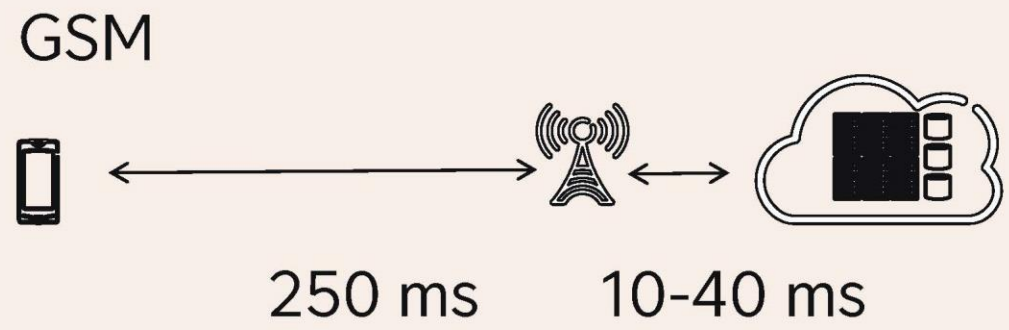
- Since latency is becoming decreasing in the 5G network (and later 6G networks) compared to the Internet, it makes sense to deploy compute and storage resources in between the devices and the cloud.
- Advanced applications using the low latency and network slicing have not yet been deployed and not many blueprints describing how it is done, are available.

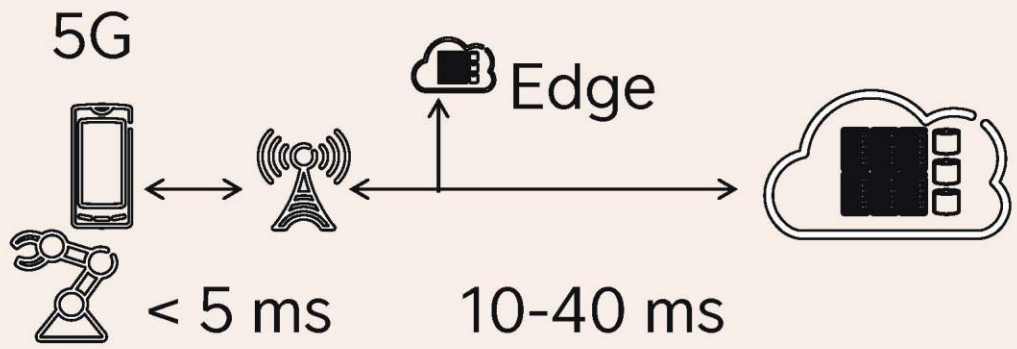
Challenge

- It is a catch-22 problem when developers do not know the capabilities since there are no cloud-edge capacity available that uses 5G features and lack of edge providers commitment due to lack of applications of edge.

Project details

— Duration: 36 months
— Location: 4 sites in Sweden
— Total project budget: 4.10 M Euro
— EU CEF2 contribution: 3.08 M Euro
— Partners: Telia, RISE, Municipality of Luleå and Boden Business Park



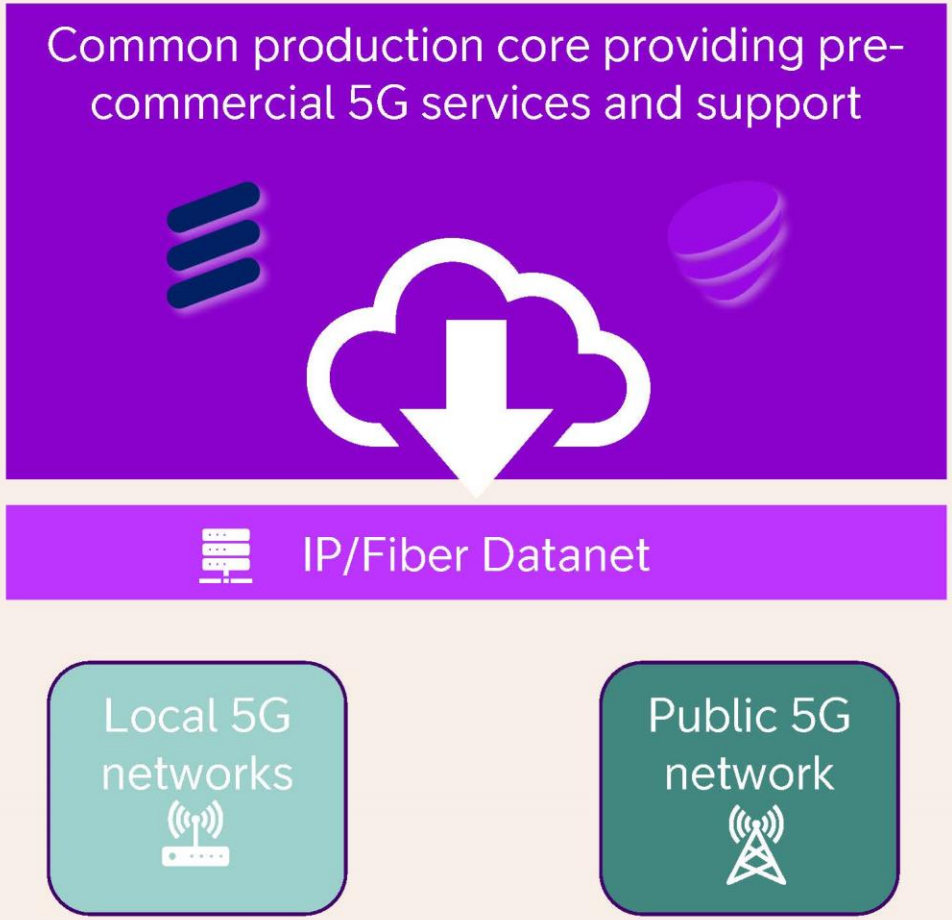


Keeping Sweden at the forefront of innovation

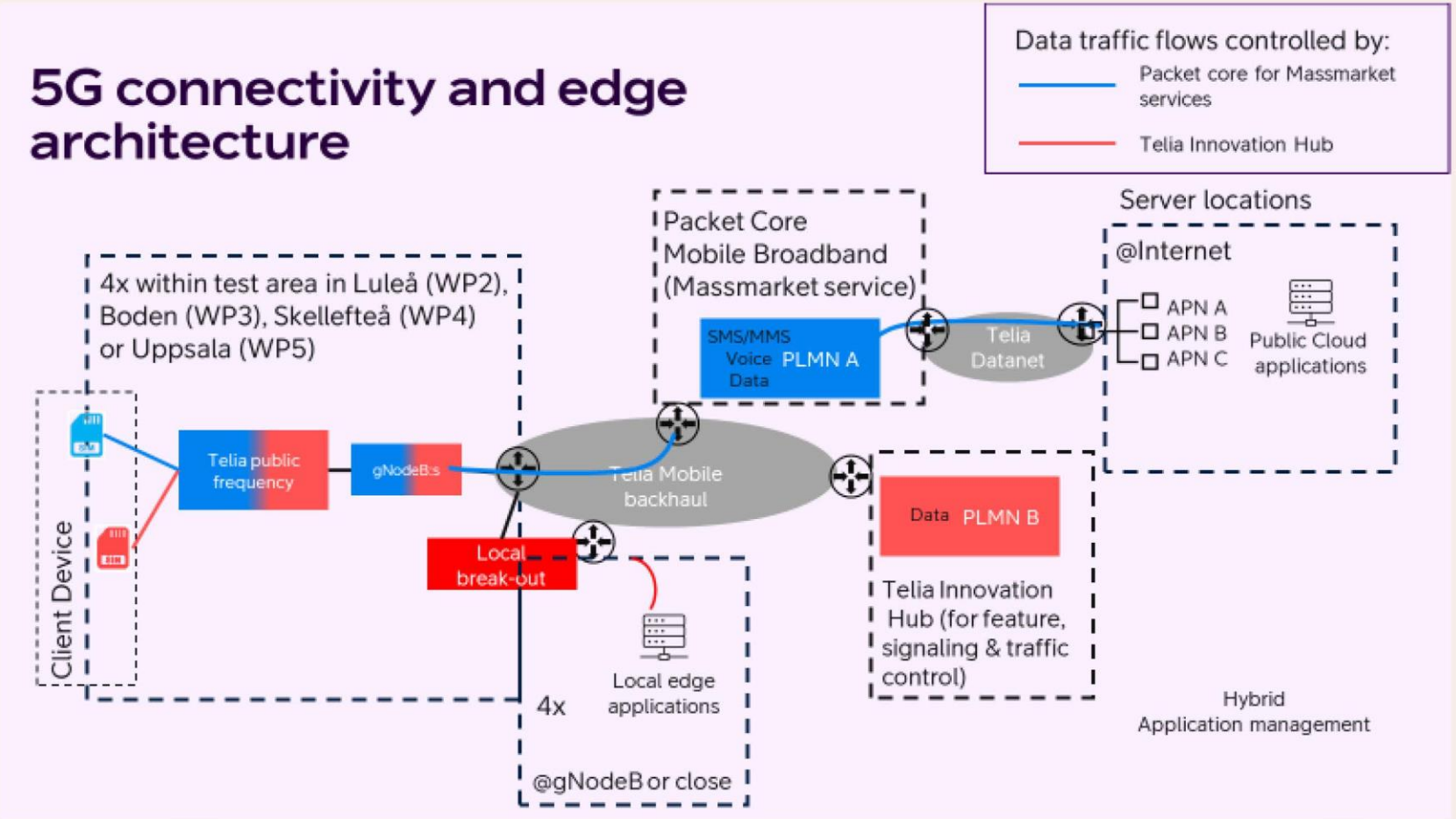
- NorthStar is a unique collaboration between Telia and Ericsson
- Offering access next-gen 5G technology. 2-3 years before commercial availability
- Connecting industry, academia and the public sector
- Furthering Sweden’s position as a leading industrial nation

NorthStar; Telia & Ericsson expand cooperation

- NorthStar exists in parallel to the commercial 5G network
- A dedicated 5G network core provided by and supported by Ericsson
- Dedicated 5G development environments anywhere in Sweden
- New services NOT yet available in public core networks



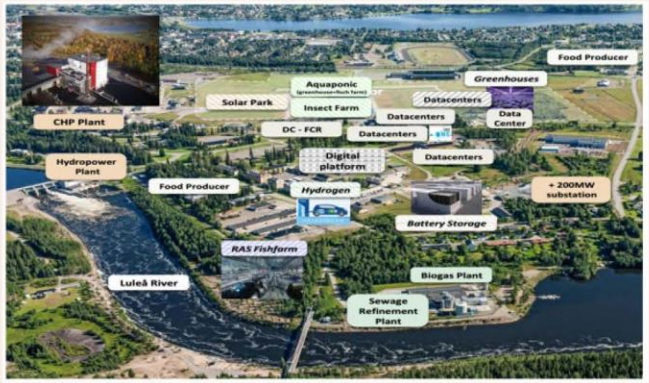
Telia Northstar 5G Innovation network



Smart communities at four sites in Sweden

Luleå city port

Boden Industrial park

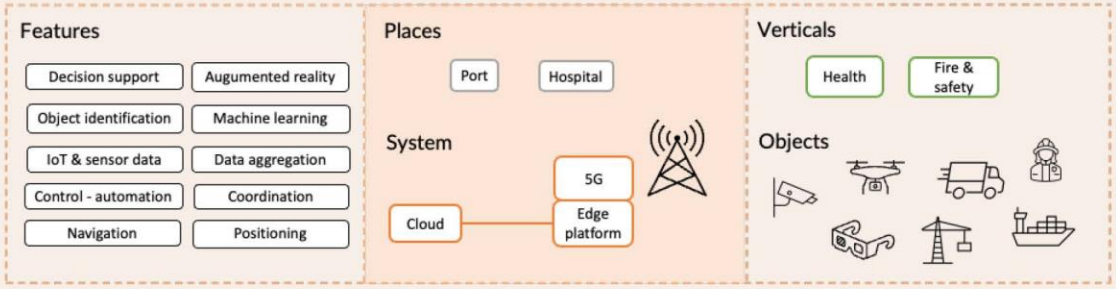


Skellefteå city north

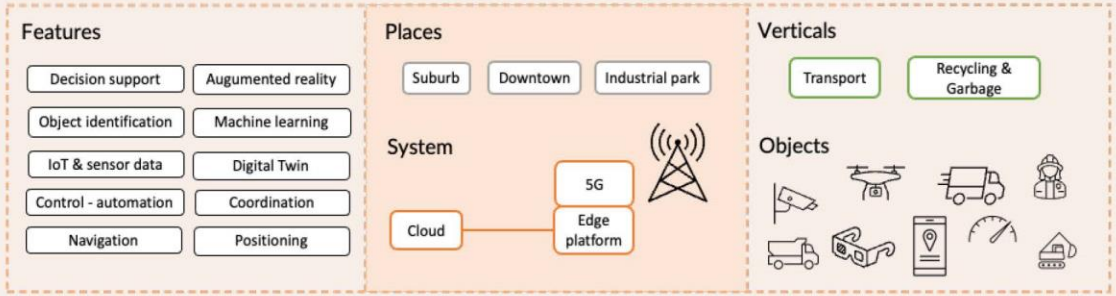
Agriculture testbed at Ultuna

Use cases

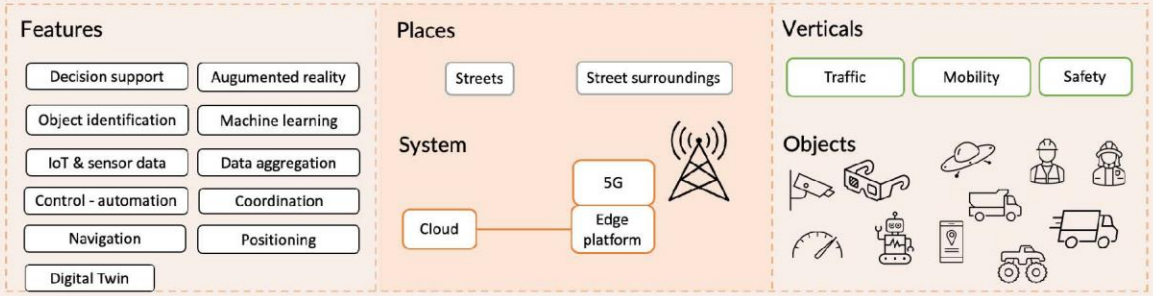
Smart Public Safety at Luleå port



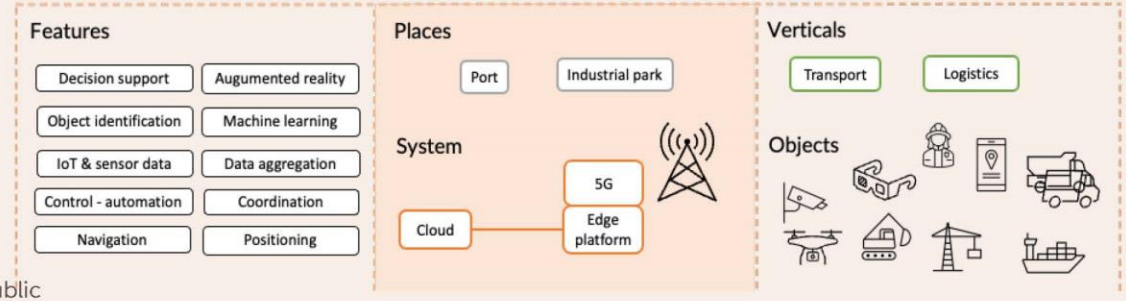
Smart Recycling and Waste Management in Boden



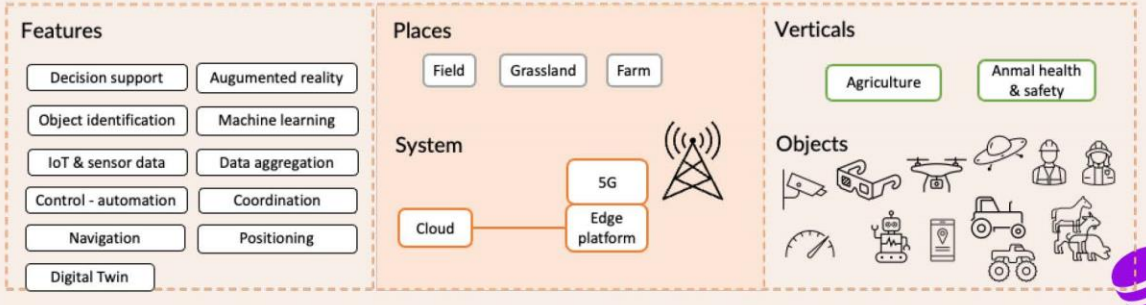
Smart city traffic management in Skellefteå city



Smart Transport at Luleå port



Smart Agriculture Automation at Ultuna



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Co-funded by
the European Union

22-HR-DIG-SmartPortPloce

Project name: Enhancing public services of Ploče Port Authority via implementing 5G connectivity (Number: 101133835)

22-HR-DIG-SmartPortPloče

Smart Port Ploče

Enhancing public services of Ploče Port Authority
via implementing 5G connectivity

11/06/2024

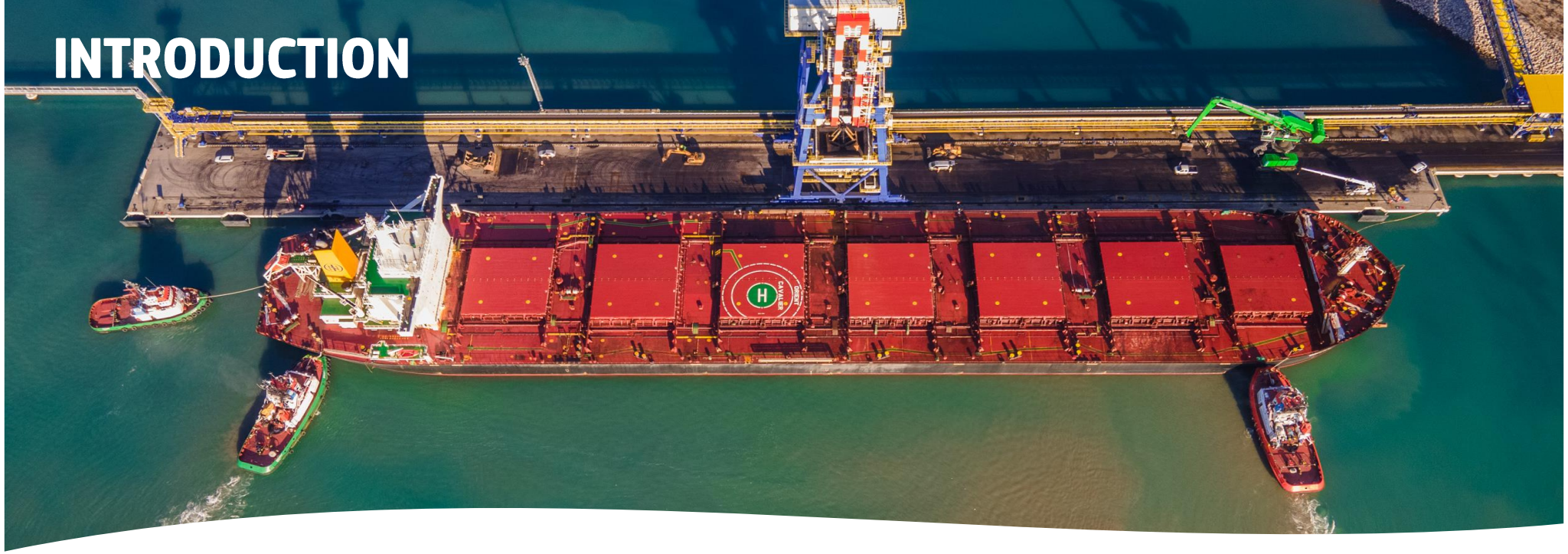
CONNECT University on 5G deployment – An expert's perspective

Darko Plećaš,
Head of the Digitalisation Department
Port of Ploce Authority

AGENDA

- INTRODUCTION
- STATE OF PLAY
- EXAMPLES
- AREA AND MAIN FACTS OVERVIEW
- SMART PORT PLOCE & 5G
- CONTACT US

INTRODUCTION



Port of Ploče Authority

- Primary focus on creating and securing conditions for efficient management of maritime and public property.
- Creating preconditions for the transformation of the port from **a transshipment port to a regional logistics centre in which, in addition to the application of modern technologies, various distribution and additional services will be provided on goods that run through the port.**

INTRODUCTION

Port of Ploče Authority

- The Port of Ploce Authority was founded by the Croatian Government Resolution on February 13, 1997, for the purpose of management, development and use of the Port of Ploce. It is a public institution, directly responsible to the Ministry of the Sea, Transport and Infrastructure of the Republic of Croatia and is a public institution competent and responsible for governing, development and utilisation of port of Ploce, and therefore is a socioeconomic driver.

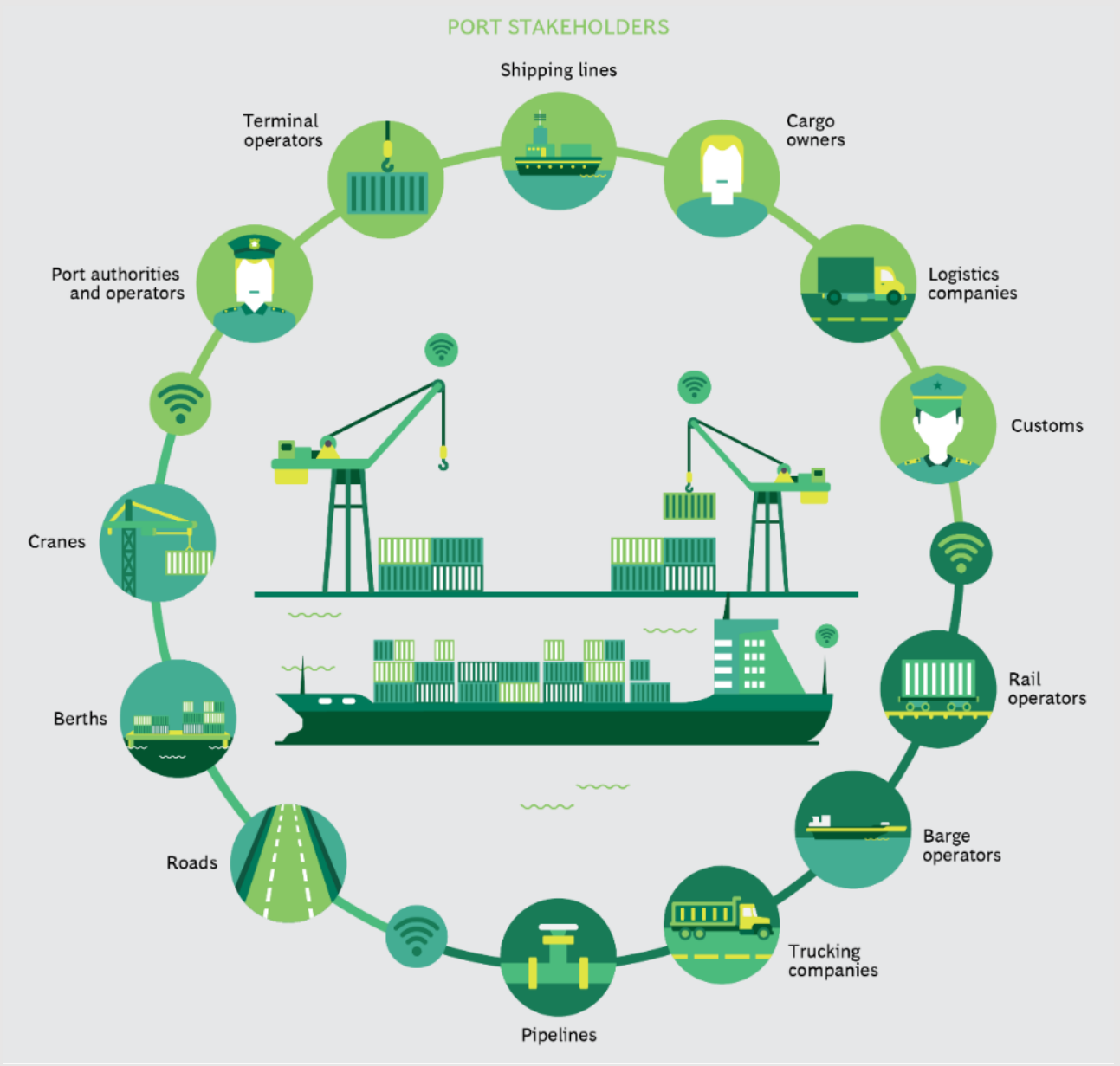
INTRODUCTION

Port of Ploče Authority

- According to its purpose, the port of Ploce is a port open for international public traffic, and according to its size and significance it **has been proclaimed as a port of outstanding national economic interest for the Republic of Croatia**.
- The Port Authority's mission is to **create all the necessary conditions for the development of the port of Ploce and turning it into a competitive location that will satisfy the port users regarding the speed, quality, reliability, safety, cost-effectiveness and productivity of the services provided in the port. Special care is placed on direct and indirect effects that the port service generates within the local community's economy and the state in general.**

State of play of the project

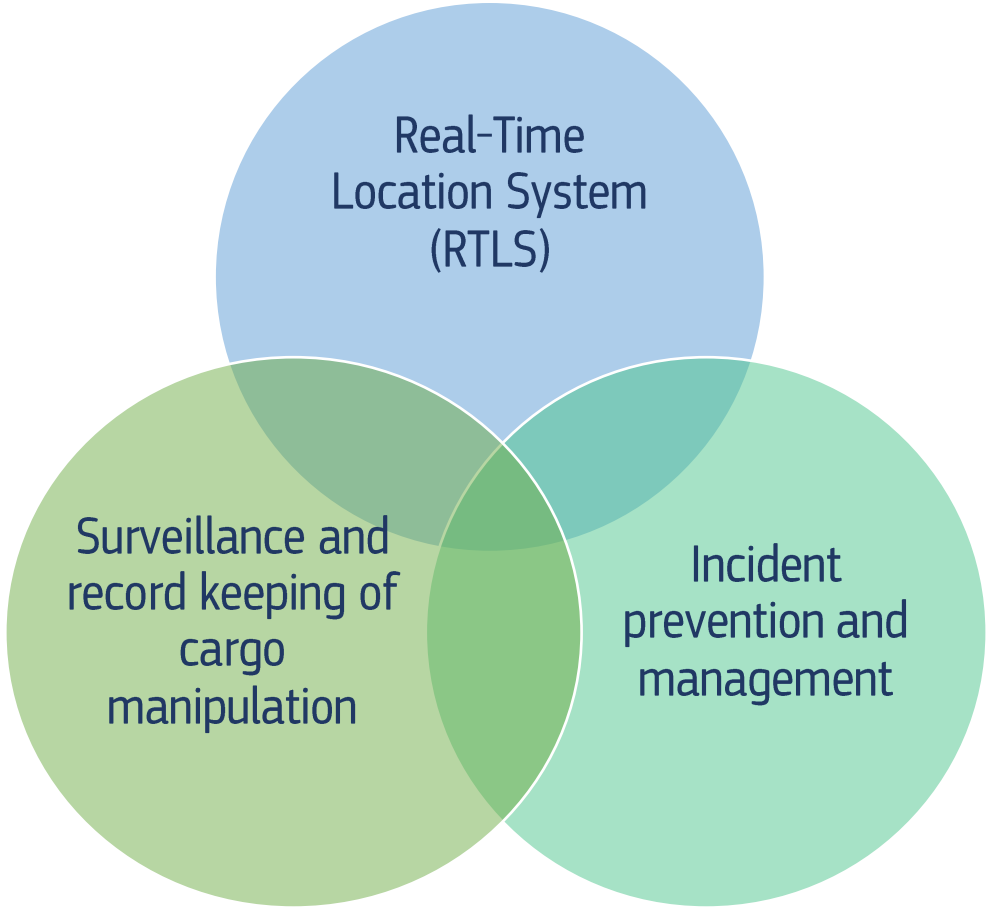
- The overall objective of this project **is to enhance the level and quality of public services provided by the Port of Ploce Authority by deploying dedicated private 5G network in the Port of Ploce area.**
- The objective will be achieved by **deploying 5G infrastructure in Port of Ploce in order to establish leading-edge connectivity capable of large data processing, sharing and analytics which will allow the modernisation of traffic and logistic processes in the port area governed by the Port of Ploce Authority.**
- **Implementation of three innovative data intensive use cases** to demonstrate benefits of modern technology and possibilities for the port of Ploce to enter **Intelligent Transportation System**. Implementing 5G network and state of the art technology within three use cases will enable the Port of Ploce authority to provide **better public service to its concessionaries, users, stakeholders and consequently to the general public.**



Project name: Enhancing public services of Ploče Port Authority via implementing 5G connectivity (Number: 101133835)

22-HR-DIG-SmartPortPloče

State of play of the project



Project name: Enhancing public services of Ploče Port Authority via implementing 5G connectivity (Number: 101133835)

22-HR-DIG-SmartPortPloče

State of play of the project

Real-Time Location System (RTLS)

- The Real-Time Location System will allow for **precise and efficient tracking of vehicle traffic within the port (especially trucks) from their entrance, movement and parking**. The process of arrival notification will be **automatised.**
- Described **automatised processes will optimise work processes within the Port of Ploce**, while real time **tracking of the vehicles and prevention of their remaining in unwanted or forbidden areas** will increase the level of security within the port.

State of play of the project

Real-Time Location System (RTLS)

- This use case also includes employing sensors at the seaside of the port and will provide information that will be helpful at **ship berthing, geolocating ship position at berthing or at anchorage/roadstead outside the terminal (at bay) and use of sensors to provide information on weather, wave range, tides, etc.**
- Information acquired will be promptly delivered to the port operator/central IT unit which will be able to promptly **provide assistance and advice for berthing, loading/unloading, etc. which will enhance the coordination of all actions concerning berthing and mooring.**
- This will **optimise work processes and increase the level of security.**

Surveillance and record keeping of cargo manipulation

Project name: Enhancing public services of Ploče Port Authority via implementing 5G connectivity (Number: 101133835)

22-HR-DIG-SmartPortPloče

State of play of the project

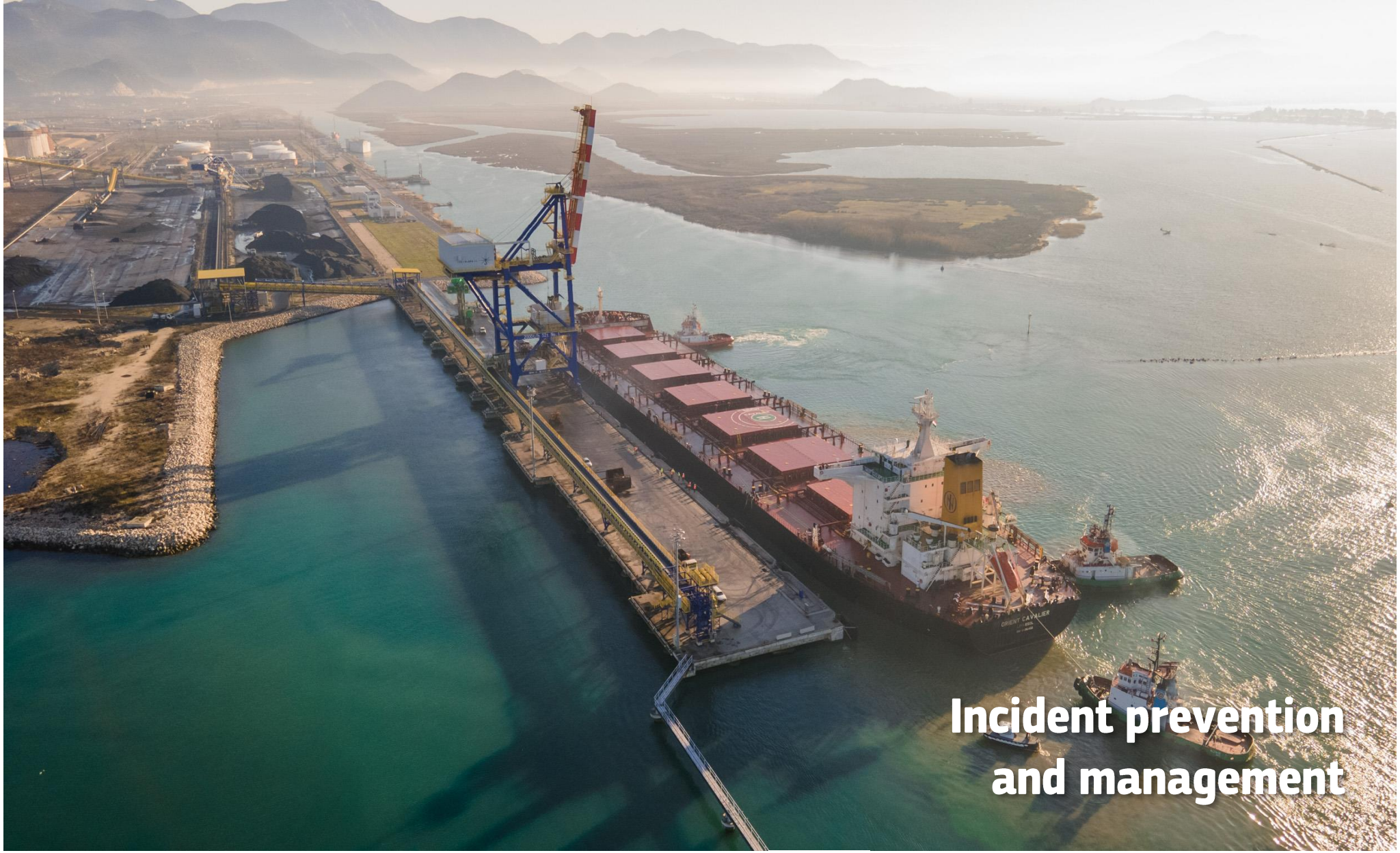
Surveillance and record keeping of cargo manipulation

- This use case includes implementing the advanced system of sensors and smart cameras that **allow video analytics in the port of Ploce that will provide information for more efficient and more accurate daily operations within the port** regarding cargo manipulation and storage, as well as more accurate record and data keeping and the increase of the overall security as well.
- Some benefits and possibilities of such a system are the installation of sensors at cranes and vehicles used for cargo manipulation that will enable remote cargo identification (type, quantity, weight, owner, destination...) which will ensure that each cargo is stored at proper intended place. This will prevent the unwanted mixing of different types of cargo and prevent incidents (in case of dangerous cargos that require special procedures) and contribute to the overall security.
- For keeping records of cargo loaded and unloaded, a drone with sensors and camera will also be employed which will be able to recognise and keep record of bulk cargo and measure its quantity.

State of play of the project

Surveillance and record keeping of cargo manipulation

- The described system of sensors and cameras will acquire data that will be sent to the central platform operator **via the 5G network which will allow much more precise record keeping of cargo in terms of cargo type and quantity**.
- Smart cameras will be able to recognise **damages on containers or other freights and will be able to count entrance and exits of cargo objects in and out of storages.**
- All this **will increase efficiency and precision of record keeping and surveillance of the key port operations which contribute to the overall efficiency and security**.



Project name: Enhancing public services of Ploče Port Authority via implementing 5G connectivity (Number: 101133835)

22-HR-DIG-SmartPortPloče

State of play of the project

Incident prevention and management

- This use case includes the installation of fire detection sensors and termovision cameras with smart analytics, sensors for measuring the quality of the air and water (sea) and the installation of local weather stations for measuring wind and humidity.
- **Fire detection** sensors and cameras add to security (allow for quicker and location accurate response in the event of fire), and the drone equipped with a camera can easily and accurately identify the fire that may arise, as well as certain locations of localised sea pollution, even at inaccessible areas.
- **Air and sea pollution** management contributes to security, environment and health protection since they allow for timely and more precise reaction in case of an incident (in case of sea pollution the use of a camera equipped drone will facilitate precise location and intensity of the polluted area to be enclosed, while in the event of strong wind that can cause air pollution from bulk cargo storage, adequate measures e.g., timely spraying of coal and bulk cargo can be undertaken in advance).
- **All data can be transferred in real time via the 5G network which will ensure prompt reaction and decision making.**

State of play of the project

Incident prevention and management

- All data acquired by this system of sensors and cameras could easily, promptly and in their full range be shared with other public service providers (fire department, police, custom office, ambulance service, etc.) as key stakeholders, using 5G network.
- The above specified use cases, when implemented, **will enhance the level of public services provided by the Port of Ploce Authority.**

State of play of the project

Exchange of Data through **a private 5G network** with the **aim of creating accurate and valid information**, and their **exchange through an electronic exchange system**, **real-time data exchange** will ensure **quick reaction and decision-making**, as well as **better coordination and management of resources**.

State of play of the project

All data collected by the systems could be easily, quickly and in full range shared with other public service providers (fire, police, customs, ambulance, etc.) as key stakeholders, using the 5G network.

The mentioned use cases will increase the level of public services provided by the Port of Ploče Authority.


Specific
objectives

State of play of the project

Specific objectives

- **Enable leading edge internet connectivity in the Port of Ploce**
  - Preparatory activities required for 5G setup
  - 5G setup and deployment
- **Improve public service of Port of Ploce Authority**
  - 5G network setup will enable the Port Authority to provide 5G connectivity to all operators/entities within the port, including ships.
  - Use cases will allow to collect, process and analyse large amounts of valuable data which the Port Authority can share with key stakeholders and thus provide better public service in terms of data accuracy and timely delivery.

State of play of the project

Specific objectives

- **Optimise work processes and levels of security within the Port of Ploce**
  - 5G setup and use case implementation are precondition for large data collection and transfer which allow for better communication among port operators and stakeholders needed to optimise work processes.
- **Enable large data share and analytics with other key public service providers**
  - 5G network setup and use case implementation.
  - 5G is the only network capable of facilitating large data transfer, and use cases allow to collect and process valuable data that needs to be transferred.
- **Port Stakeholders will be encouraged to participate in the project, use case design and future utilisation of data.**

Example of use case

Sensors and stations for monitoring noise, air and water quality to measure concentrations in port areas and to display measurements with related development of IT platform to support data exchange within subsystems.

The dashboard visualisation of an example port

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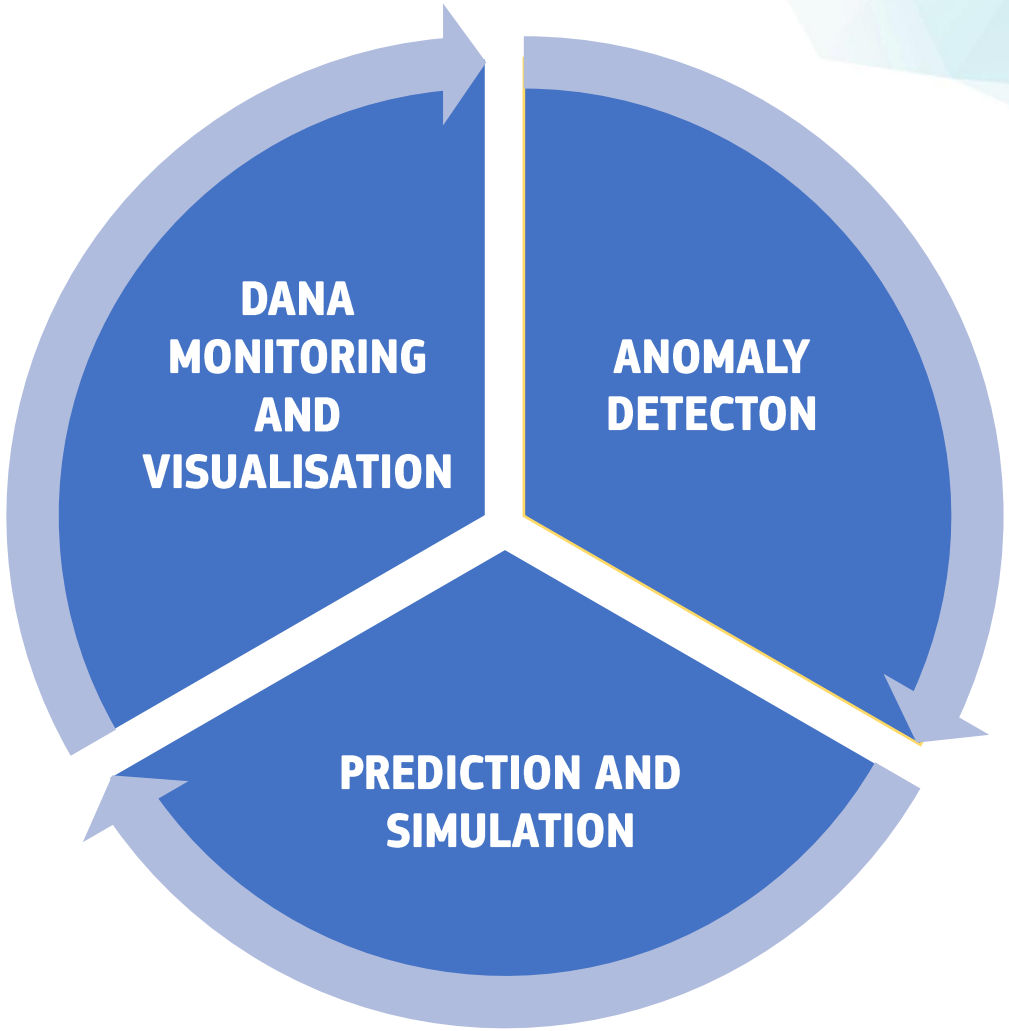
22-HR-DIG-SmartPortPloče



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AREA AND MAIN FACTS OVERVIEW

- Port of outstanding national economic interest for the Republic of Croatia.
- Situated in the south east part of Croatia in Dubrovacko – Neretvanska County.
- Located on the eastern coast of the Adriatic Sea along the European route E-65.
- Strategic position along the 5C branch of the Fifth-Pan-European Corridor.

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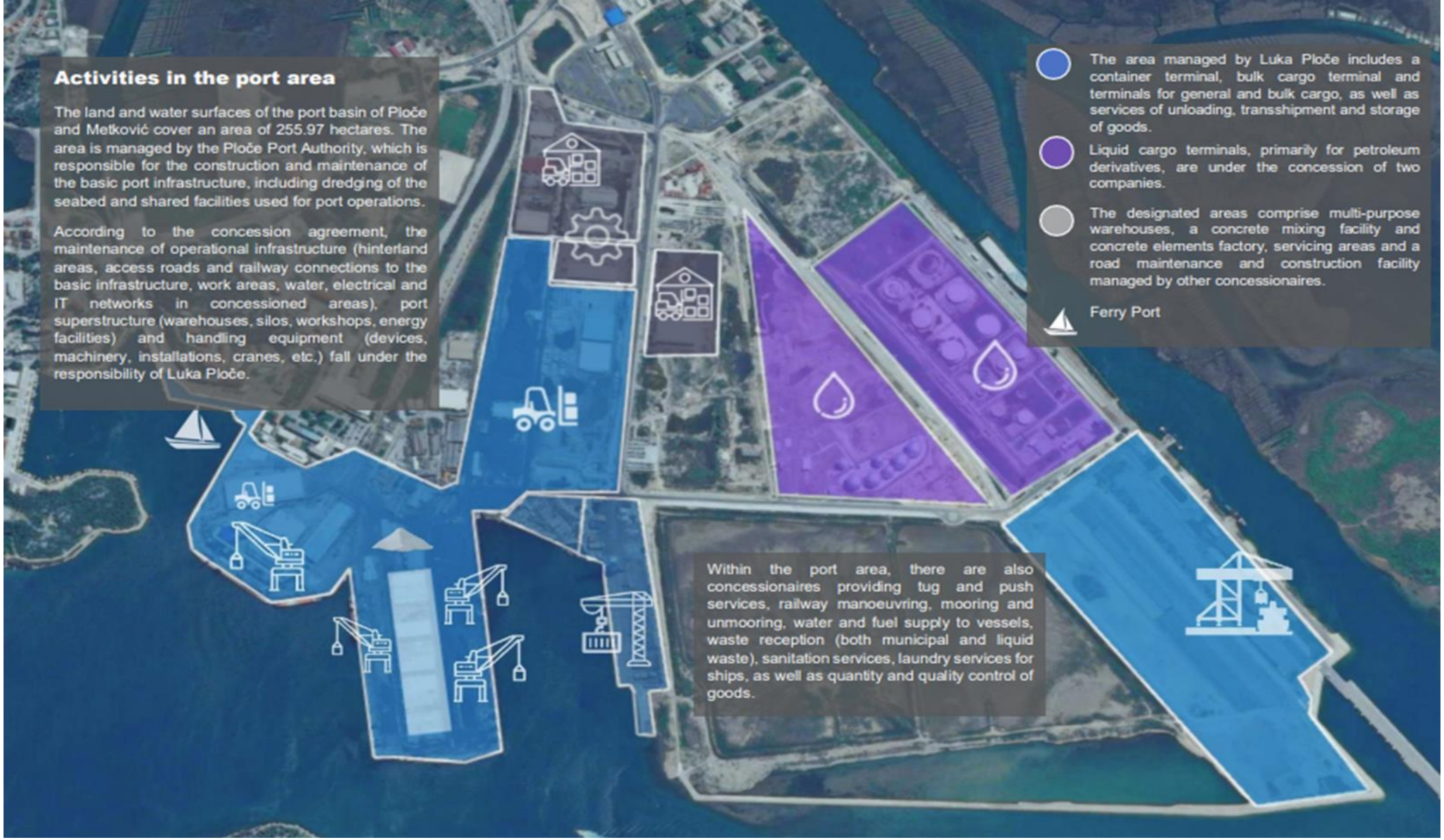
Activities in the port area
The land and water surfaces of the port basin of Ploče and Metković cover an area of 255.97 hectares. The area is managed by the Ploče Port Authority, which is responsible for the construction and maintenance of the basic port infrastructure, including dredging of the seabed and shared facilities used for port operations.
According to the concession agreement, the maintenance of operational infrastructure (hinterland areas, access roads and railway connections to the basic infrastructure, work areas, water, electrical and IT networks in concessioned areas), port superstructure (warehouses, silos, workshops, energy facilities) and handling equipment (devices, machinery, installations, cranes, etc.) fall under the responsibility of Luka Ploče.
The area managed by Luka Ploče includes a container terminal, bulk cargo terminal and terminals for general and bulk cargo, as well as services of unloading, transshipment and storage of goods.
Liquid cargo terminals, primarily for petroleum derivatives, are under the concession of two companies.
The designated areas comprise multi-purpose warehouses, a concrete mixing facility and concrete elements factory, servicing areas and a road maintenance and construction facility managed by other concessionaires.
Ferry Port
Within the port area, there are also concessionaires providing tug and push services, railway manoeuvring, mooring and unmooring, water and fuel supply to vessels, waste reception (both municipal and liquid waste), sanitation services, laundry services for ships, as well as quantity and quality control of goods.

SMART PORT AND 5G

- Smart ports can be considered ports which autonomously conduct port operations and optimise the logistics chain by applying new and advanced technologies

Features of the smart port:

- Management of technological processes
- Digitisation
- Increasing the efficiency of port activities
- Integration of the port with the city
- Use of renewable energy sources

SMART PORT AND 5G

- **5G:** The only communication standard that long-term meets all the needs of the port and can replace and integrate other current communication technologies

Why 5G?

- Unique network - easy upgrade and long-term
- 5G + MEC >> low end-to-end latency
- Network Functions Virtualisation (NFV)
- Network slicing
- High data transfer speeds
- Data security
- Connecting different sensor technologies
- Link to other technologies

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CONCLUSION

Specific objectives of the project

1. Enable leading edge connectivity in the area under governance of the Port of Ploce Authority
2. Improve public service of the Port of Ploce Authority
3. Optimise work processes and the level of security within the Port Authority
4. Enable large data share and analytics with other key public service providers

Main expected outcomes and results

- Private 5G and network deployed and set-up in the Port of Ploce Authority area
- Three (3) innovative use cases, based on large data collection and transfer implemented

Main result: Improvement of the overall services provided by the Port of Ploce Authority

CONTACT US

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www.ppa.hr

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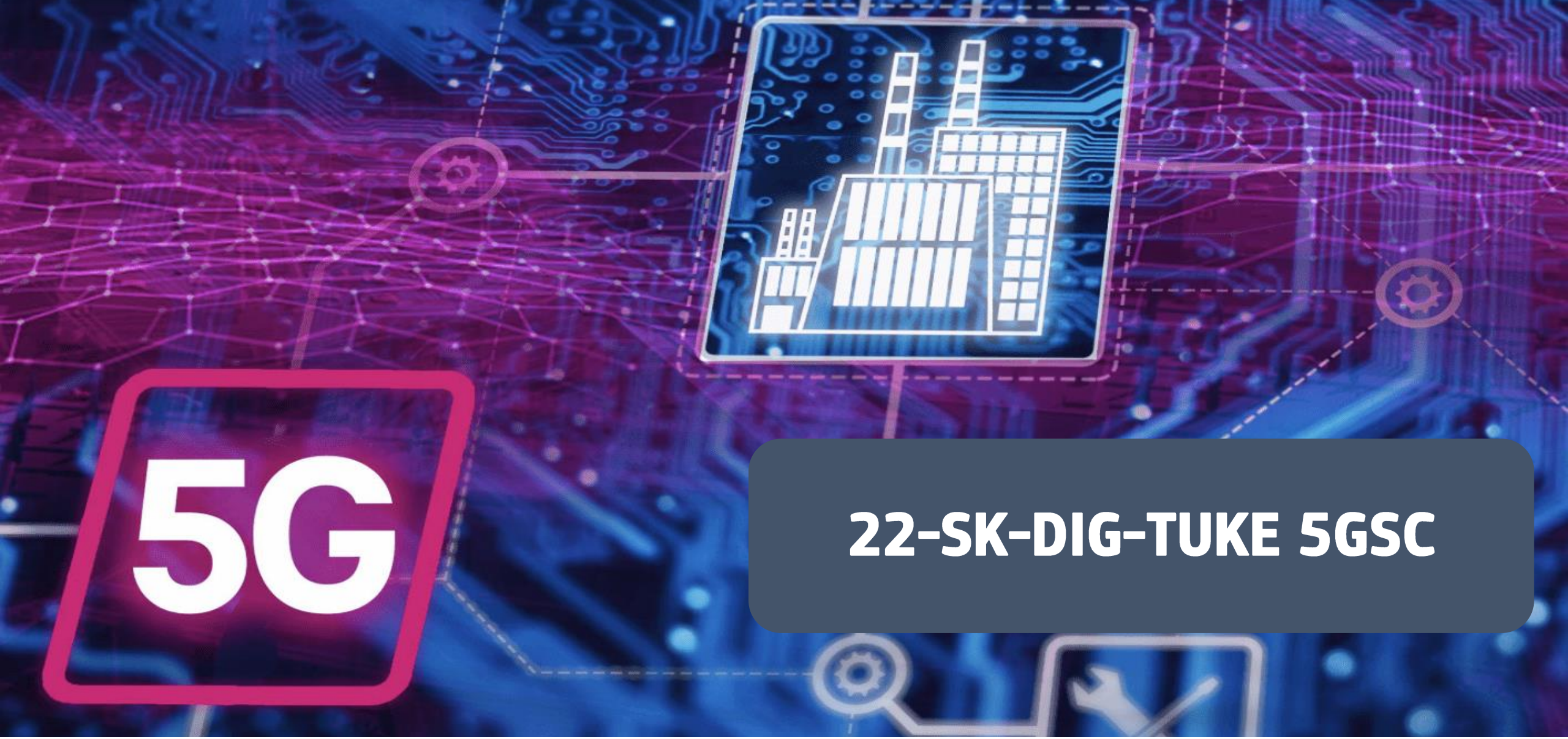
22-SK-DIG-TUKE 5GSC



22-SK-DIG-TUKE 5GSC

TECHNICAL UNIVERSITY OF KOŠICE

SOVA DIGITAL
Digital Transformation of Industry Companies

Co-funded by the European Union

INTRODUCTION

CONSORTIUM

Slovak Telekom

5G campus

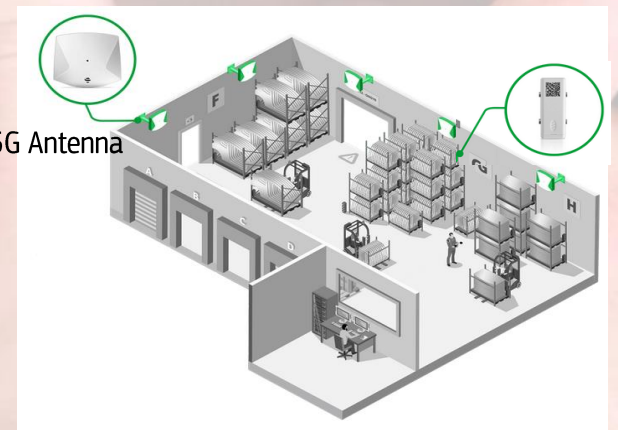
Tech. Partners

SOVA DIGITAL
Digital Transformation of Industry Companies

Universities

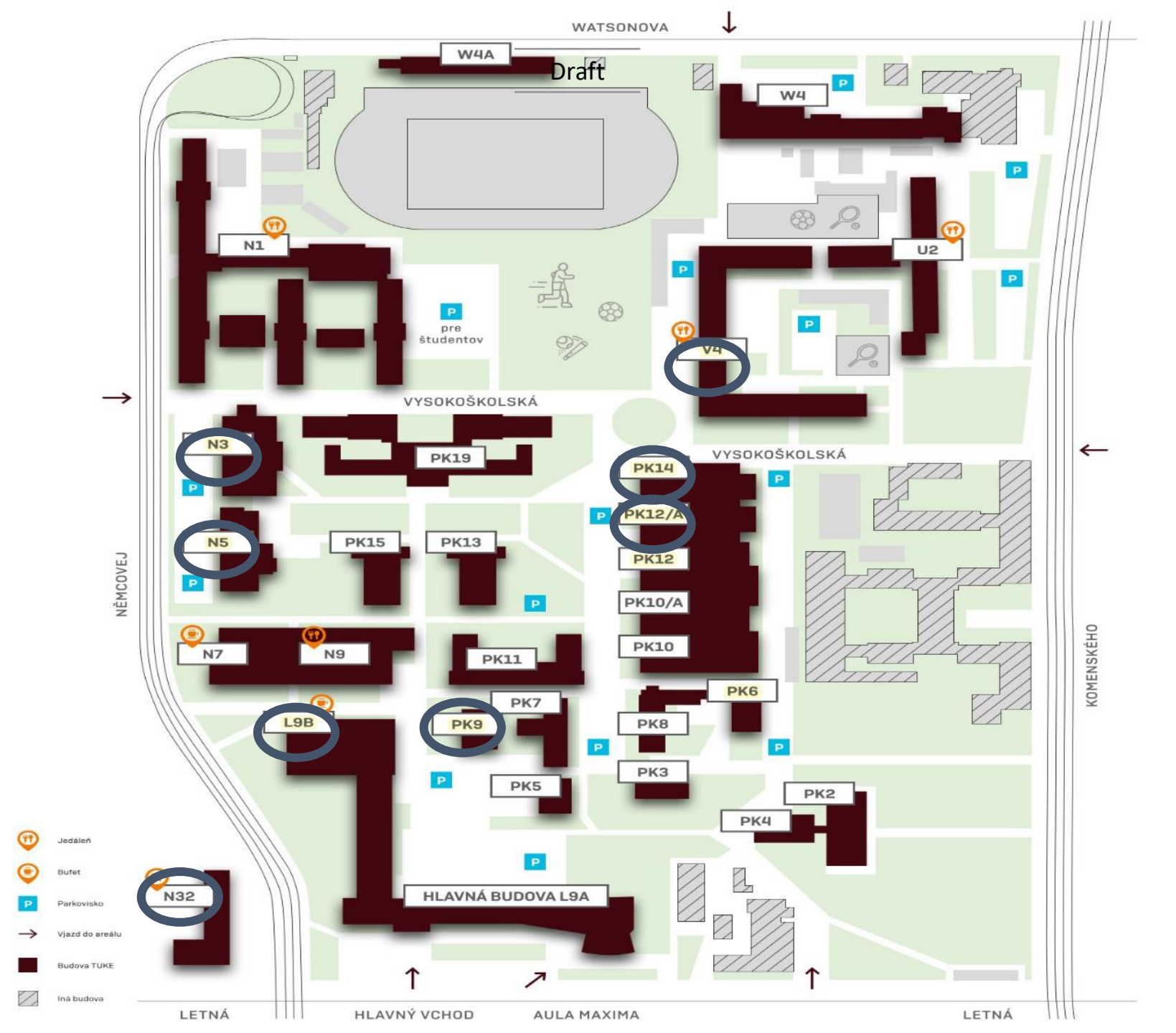
TECHNICKÁ UNIVERZITA V KOŠICIACH

SMART LOGISTICS

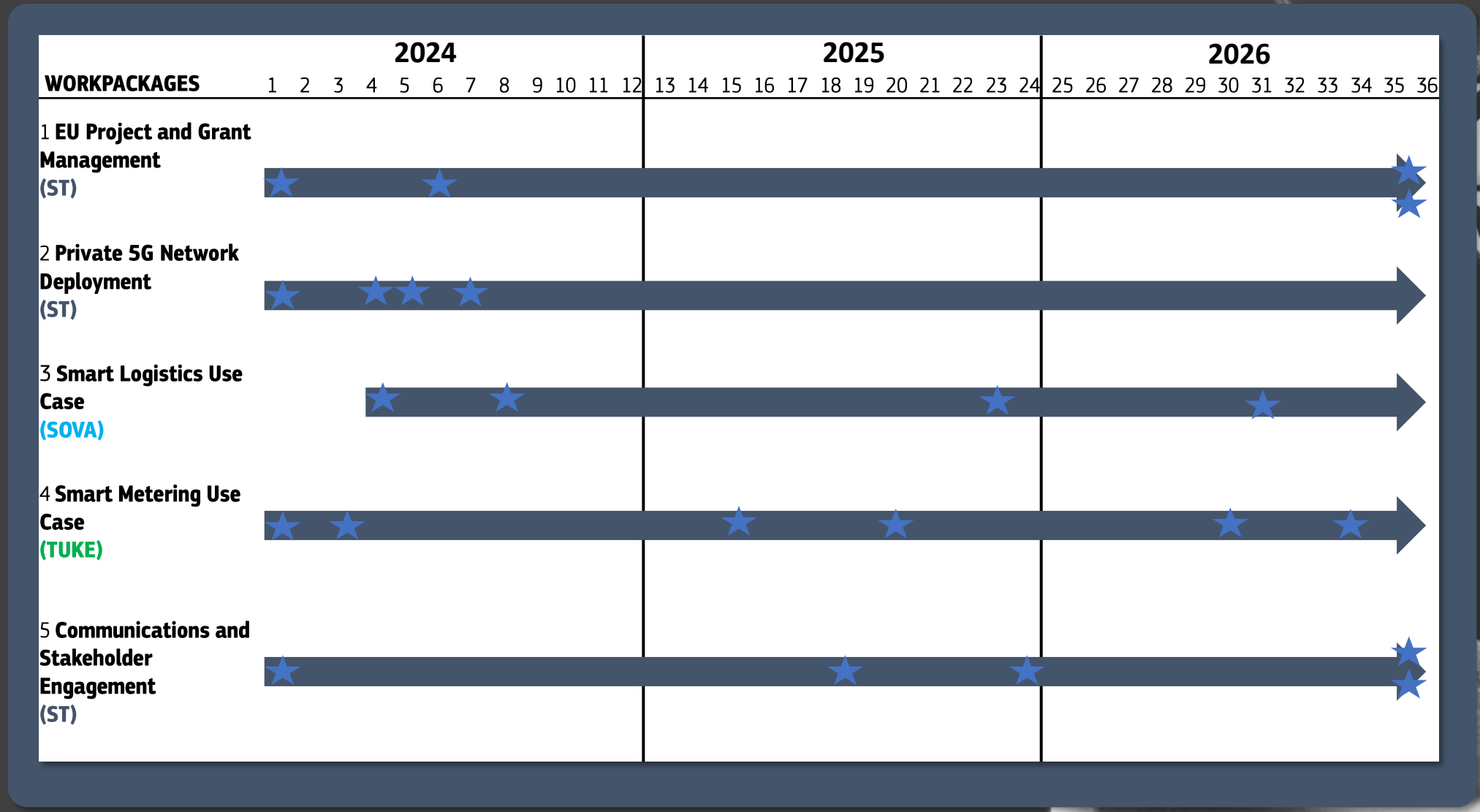


SMART METERING

LOCATION

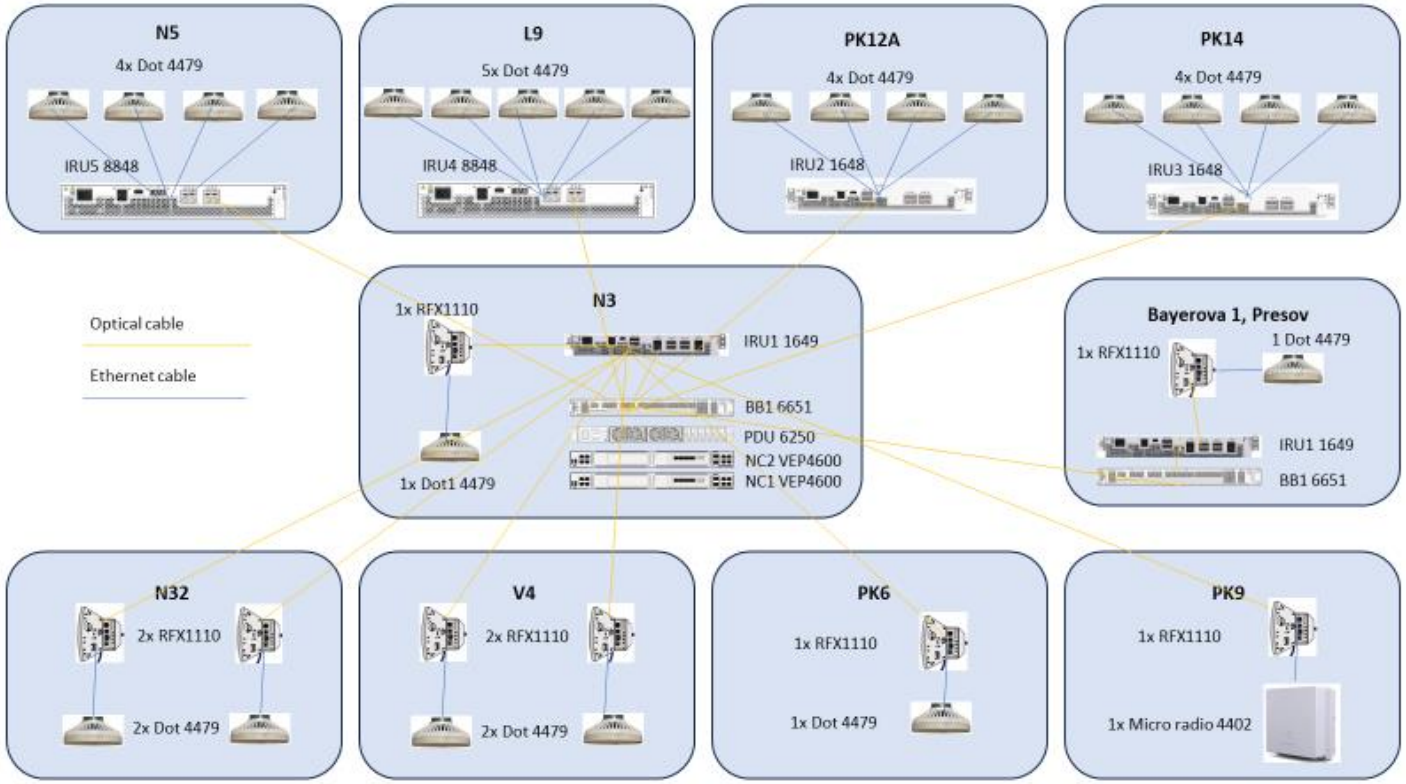

Draft
WATSONOVA
W4A
W4
N1
U2
pre
študentov
V4
VYSOKOŠKOLSKÁ
N3
PK19
PK14
PK12/A
N5
PK15
PK13
PK12
PK10/A
NÉMCOVEJ
N7
N9
PK11
PK10
PK6
PK7
L9B
PK9
PK8
PK3
PK5
PK2
PK4
HLAVNÁ BUDOVA L9A
N32
KOMENSKÉHO
Jedáleň
Bufet
Parkovisko
Vjazd do areálu
Budova TUKE
Iná budova
LETNÁ
HLAVNÝ VCHOD
AULA MAXIMA
LETNÁ

HIGH-LEVEL SCOPE & TIMELINE



Work package 2: 5G Private Campus Infrastructure

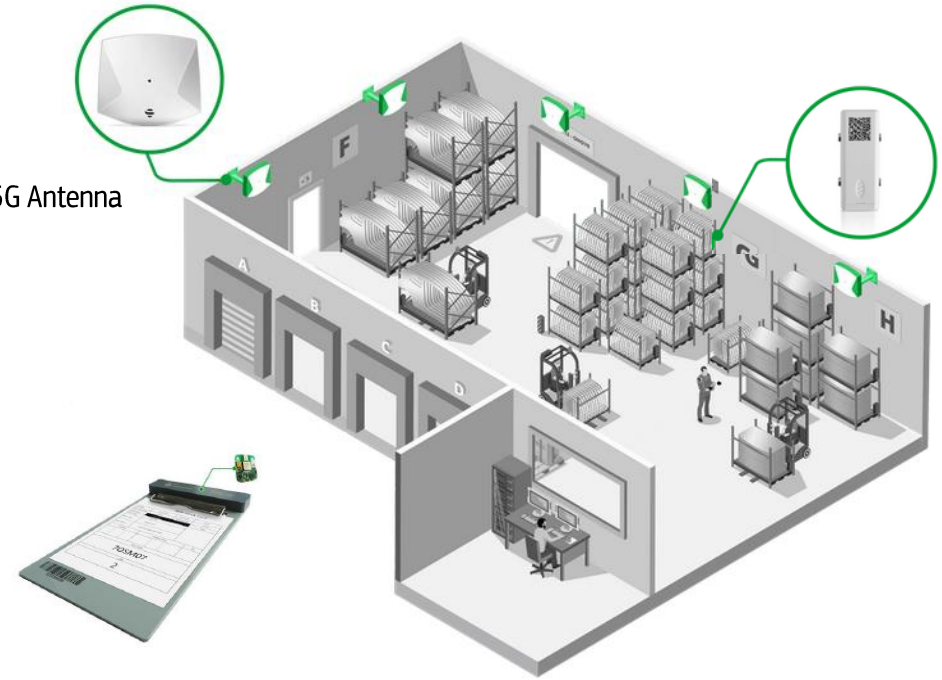
- Activities in WP 2 :
  - T2.1 – Design and Development of Campus Architecture
  - T2.2 – Deployment and Integration
  - T2.3 – Testing and Optimisation



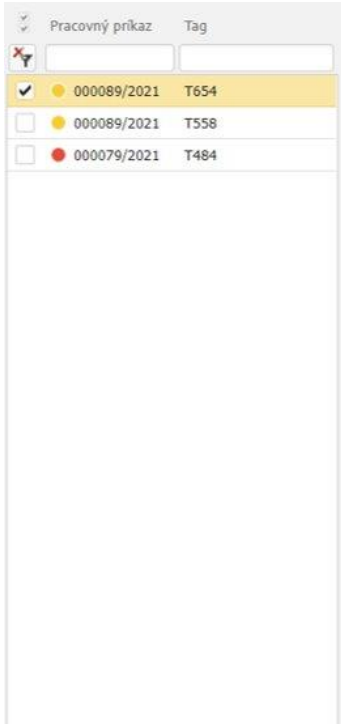
Deployment time – May 2024

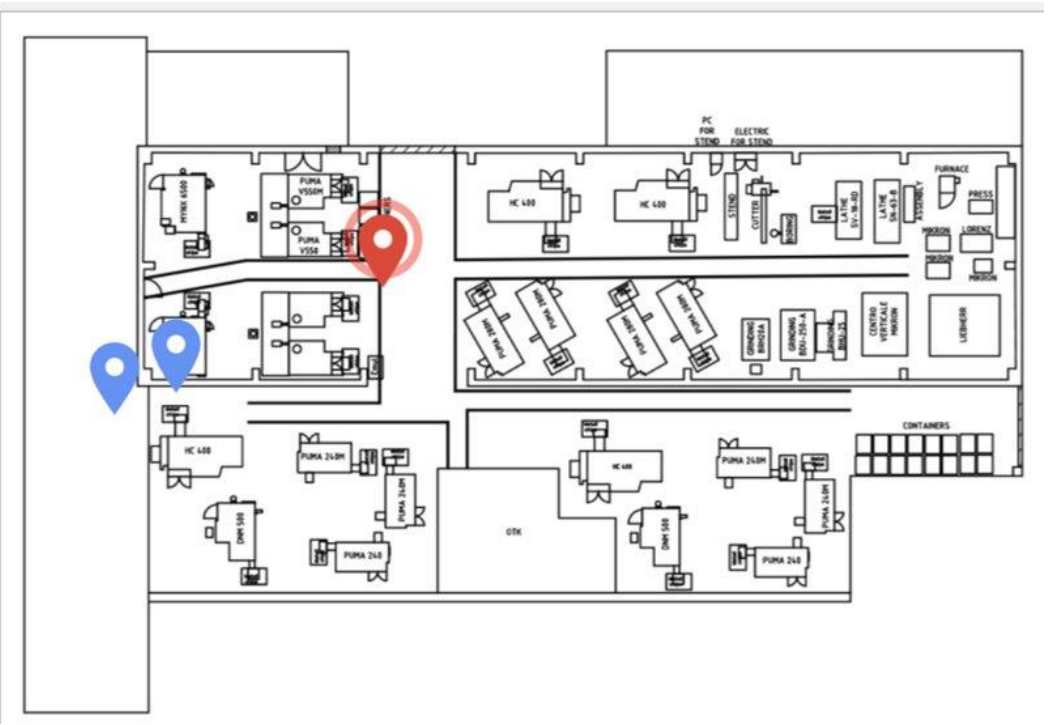
Work package 3: Smart logistics use case

5G Antenna



5G Tag

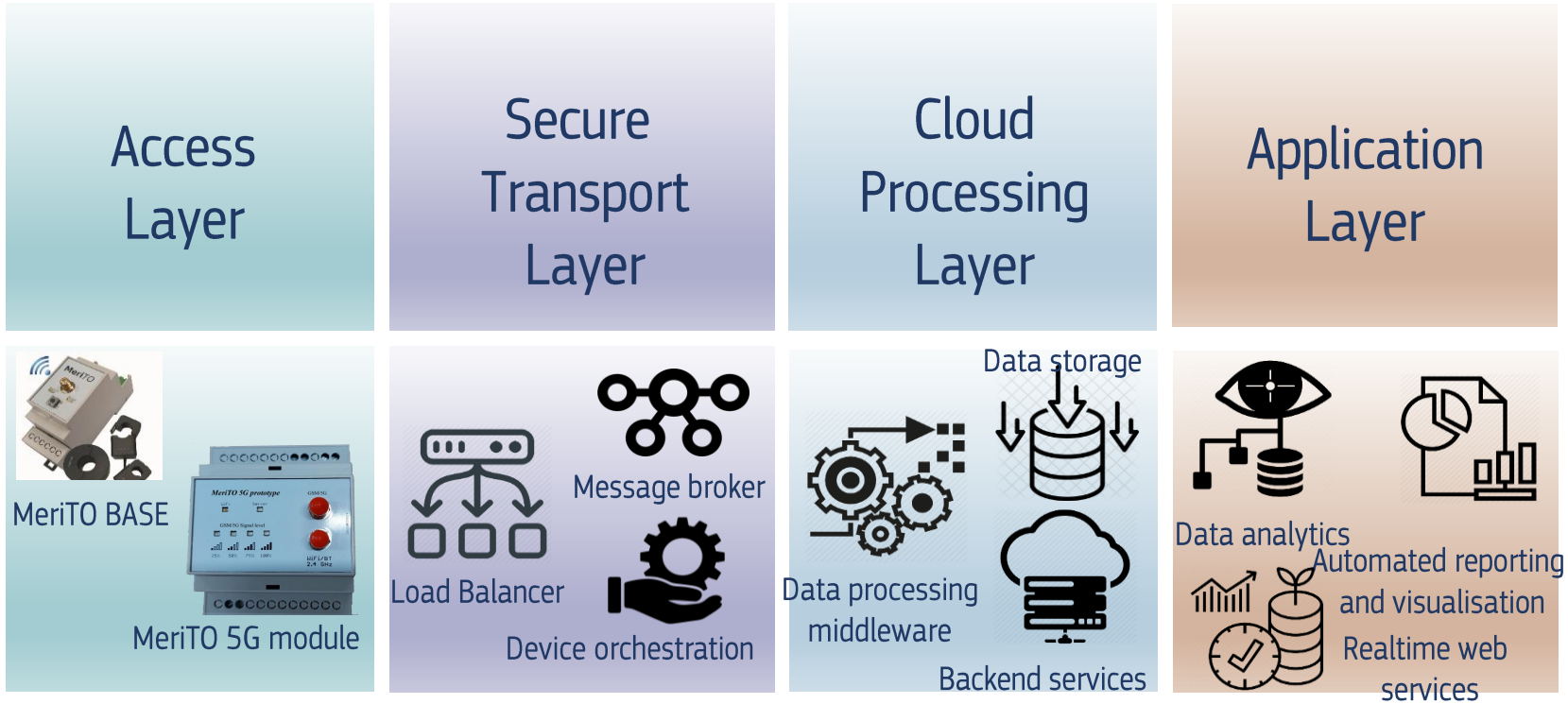




Work package 4: Smart metering use-case

Outcomes:

- 5G **Smart metering platform** capable of processing different information sources in very **high density with the goal of real-time analytics** on top of the collected data to optimise energy consumption patterns at the TUKE university campus.
- **Hardware prototype** with 5G support.
- **Optimisation of the 5G network** and parameter tuning.
- **Automated reporting** on energy utilisation.
- **Linkage with the existing data-sets** (lectures & training calendar).



Smart metering Architectural design and planed Prototype

Questions and Answers

Conclusion

Mr Franco ACCORDINO,

Head of Unit, Unit B.5. - Investment in High-Capacity Networks

DG CONNECT, European Commission

CONNECT UNIVERSITY