

5G business opportunities for port and logistics operators

Lessons learnt from 5G-LOGINNOV and feedback from stakeholders

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NETWORK EUROPE SME WG Meeting
16/01/2023



5GLOGINNOV

Project Fact Sheet



H2020 Innovation Action with 36 months duration (started September 2020)

- **15 partners** (BE, ES, FR, IT, RO, GR, SI, DE)
- **Sectors involved:** Logistics, Automotive and Telecom Industry, Infrastructure operators, Research Institutes, SMEs and Start-Ups
- **3 LLs** (Hamburg, Athens-Piraeus, Koper), **11 Use Cases**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 957400



5G LOGINNOV

Highlights



5G-LOGINNOV SUPPORTS

- New generation of 5G-CAD/CAM and IoT-5G devices;
- Deployment of new connected CAD/CAM and logistics services in port-city areas.



5G-LOGINNOV INTEREST

- The emergence of new market players, such as SMEs and start-ups.

5G-LOGINNOV CENTRAL INNOVATION

- To build a first-class European industrial supply side for 5G core technologies and new IoT-5G devices.



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5G-LOGINNOV CONTRIBUTES

- To the emergence of global standards and globally harmonised frequency bands for 5G.

5G-LOGINNOV IMPACT

- The project impacts the Logistics industry for which tests are developed and 5G-enabled services are evaluated.



5G-LOGINNOV & THE 5G PPP PHASE

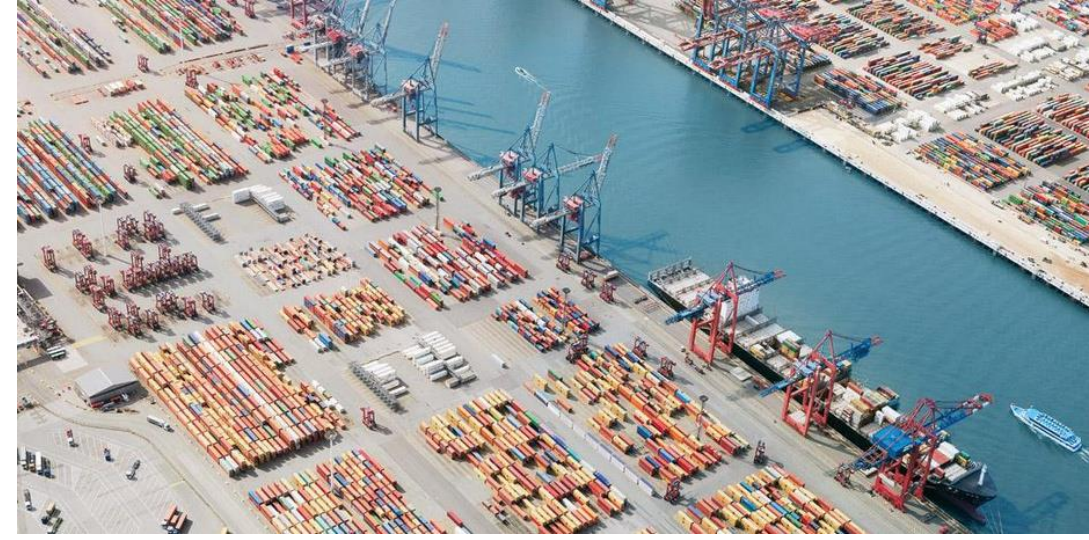
- Being part of the third 5G PPP phase implies supporting the development of a "lead" market involving cooperation models with key vertical sectors.



5GLOGINNOV

LL Hamburg Germany

5G to improve port operations, connecting Hinterland to Hamburg's port facilities



Partners involved: T-System, Continental, Swarco, Tec4U



Floating Truck and Emission Data (FTED) for improved monitoring of vehicle emissions



5G GLOSA and Automated Vehicle Platooning (GTP) avoiding collisions by 5G ultra-reliable Low Latency Communication



Dynamic control loop for environment sensitive traffic management actions (DCET)



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LL Piraeus-Athens Greece

Real-time tracking and enhanced visibility of 5G yard-trucks for service optimization, job allocation and predictive maintenance



Partners involved: ICCS, PCT, VODAFONE



Real-time tracking and enhanced visibility of 5G yard-trucks for service optimization, job allocation and predictive maintenance



5G enabled video analytics targeting safety/security and logistics applications, orchestrated as NFV-MANO services



Real-time monitoring of the logistics supply chain with live tracking/positioning of 5G connected trucks



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LL Koper Slovenia

5G to improve logistic processes automation in ports and mission critical services with continuous business & technical-related 5G system optimization.



Partners involved: ININ, Telecom Slovenia, Luka Koper



5G and cloud infrastructure design and deployment assuring novel virtualization and cloud-based principles.



Automation for ports through 5G: port control and logistics process.



5G supporting mission critical services in port (drone-based video surveillance, AI-assured video analytics).



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Marketplace and new actors



- WP4 deals with business-related aspects of 5G innovations in WP4 «Marketplace and new actors»
- Main purpose is providing opportunities to new actors (start-ups) and established actors (SMEs) to create new businesses and emerge in the market:
 - Define the gaps between the current and future market scenarios
 - Involve start-ups and SMEs in the proposition of new products and services based on 5G core technologies
 - Provide a market strategy for new stakeholders
 - Facilitate the introduction of 5G core innovation technologies in logistics operations

Involvement of new actors: Open Call for start-ups and SMEs



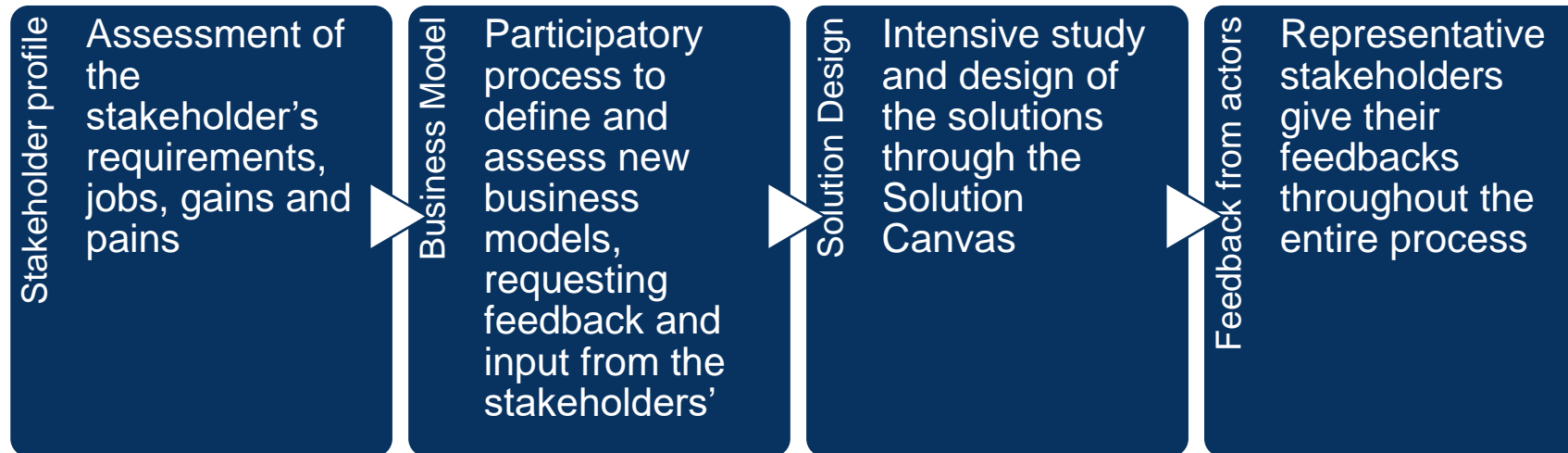
- Engagement of 5 innovative start-ups/SMEs through cascade funding

Acronym	Full Title	Applicant	Athens LL	Hamburg LL	Koper LL
TRITON	auTonomous dRones for marITime OperatioNs	Hellenic Drones			X
RESONATE	Real timE drowSiness detectiON, AlerTing and rEporting	Libra AI	X		
5G4A	5G-Loginnov-4-Amazon	eShuttle		X	
TAADD	TAXi-AD Data	TAXi-AD GmbH		X	
ITGS	Intelligent Traffic Guidance System	Roads.AI		X	

Market strategy for new actors: methodology



- The GUEST methodology for business modelling is designed to control the process, from the original idea to its implementation. It provides a conceptual and practical tool to the various stakeholders, enabling them to communicate their vision



- In 5G-LOGINNOV the GUEST methodology is used to develop new business models collaboratively

Survey of recent/ongoing projects



- The main purposes of assessed projects are: full digitalization and automation of terminals, autonomous vehicles and improved efficiency and safety
- 5G networks are usually supported by a massive adoption of Artificial Intelligence and Machine Learning technologies, widespread deployment of sensors and Augmented Reality/Virtual Reality tools
- While the initiative of these projects is taken by both private and public bodies, the **funding is mainly public**. Two main gaps have been identified:
 - **Few projects have running solutions or a specified product fully operational after the pilot phase. Thus, a greater attention to the design of the business model and its scalability is needed**
 - **Port-terminal logistics needs to be better aligned with an urban freight transport and city logistics perspective**

Survey of Living Labs' stakeholders



- 5G-LOGINNOV has developed a survey addressed to Living Lab actors, with the aim of assessing the level of knowledge and adoption of innovative technologies related to Industry 4.0 and Logistics 4.0 in the project consortium. 44 responses have been received (15 from Athens LL, 16 from Hamburg LL, 13 from Koper LL)
- The analysis of the results of the survey mainly highlighted:
 - **A high interest of the stakeholders to improve the effectiveness of the logistics processes**, with direct connections with continuous monitoring and optimisation of the resource usage, to improve service quality and reduce costs
 - These objectives can be reached through **continuous data collection and analysis between different actors of the supply chain**, in the perspective that the improvement of the effectiveness of the overall process will bring benefits to all the actors involved
 - All the stakeholders involved in the survey declare a **very high level of knowledge and implementation of the enabling technologies**, but the **low trust in data sharing technologies** can act as a barrier to the development of collaborative business models for the implementation of innovative services



High-level preliminary remarks



- Recommendations:
 - the financing and revenue models for the new solutions shall **consider not only 100% public, but also public-private forms of funding, so that the investment risk is shared**, but the commitment of the involved parties remains clear
 - the port area has to be considered as part of the wider urban environment: the **inclusion of non-port actors and other non-industry actors representing different urban categories may bring an added value** in terms of innovative and inclusive design thinking when the business models are discussed
- The proposition of new 5G enabled products and services must focus on the definition of collaborative environments within the Living Labs, at the same time ensuring **a high level of data protection**:
 - The new actors that have been involved in Living Labs through the Open Call shall collaborate to address the needs for data sharing. The already involved actors, on the other side, shall define a strategy to include new actors also in terms of data sharing infrastructure to enhance a smooth data sharing process
 - The new actors and the old actors may be trained to improve the knowledge on the respective tools for data exchange and data collection at the very beginning of Living Labs iterations

Thanks for your attention

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