BOOSTLOG

Digital Technologies in Logistics Cloud Report

SCOPE

Digital technologies such as Digital Twins, Internet of Things (IoT), Automated Transport, 5G, Artificial Intelligence (AI) and Blockchain have enabled innovative solutions to facilitate and optimise transport and logistics operations. Furthermore, they have enabled new applications and services that address key challenges the logistics sector faces; how to increase efficiency and reduce emissions of the freight transport.

Boostlog analysed and acknowledged project's whose results and outcomes have contributed to further commercialization or tangible demonstration of the above digital technologies. As the selected technologies are in general applicable to many domains and have a strong overlapping character, the scope concerns logistics applications where projects tend to cover more than one technology. CEF projects are not included in this overview.

PROJECTS INCLUDED IN THE CLOUD REPORT

MAIN OUTCOMES

Given the complementary nature of certain technologies, the outcomes have been group into 3 domains. The main 4 implementation cases and outcomes can be found below

(Semi) automated decision support systems

- COREALIS
- LOGISTAR
- PIXEL
- KNOWLEDGE
- LOGIMATIC
- AWARD
- ARCC
- CARGO ANTS
- GREEN EFFORTS
- SHOW
- ENSEMBLE
- LEVITATE

Sensors and Networks for interconnected logistics

- 5G HEART
- 5G BLUEPRINT
- 5G LOGINNOV
- 5G VICTORI
- 5G CARMEN
- 5G CROCO
- 5G META
- VITAL 5G
- 5G SOLUTIONS

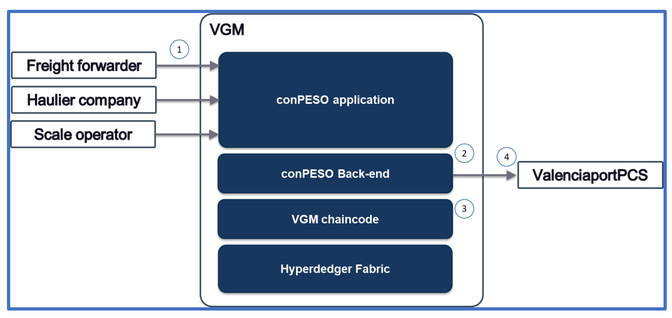
Decentralized agreements and governance

- ICONET
- COGLO
- DATAPORTS

IMPLEMENTATION CASES

DATAPORTS – VGM Blockchain

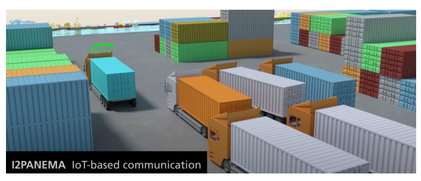
Container transport operations need a complete management of the lifecycle of container weight requests in order to comply with the Convention on the Safety of Life at Sea (SOLAS) from International Maritime Organization (IMO). The shipper became the responsible for obtaining the **Verified Gross Mass (VGM)** of a full container and communicating it to the shipping company, with a VGM certificate.



In this regard the DataPorts platform offers an effective solution to allow containers to arrive at the port with the verified gross weight, reducing last minute incidents or delays at container terminals or the appearance of congestion situations. The solution provides more added value than existing solutions by having a verifiable and immutable information on shared data through the entire chain to all concerned business participants serving as a so**implementation at the** urce of truth and providing transparency and non-repudiation process. The **VGM Blockchain Port of Valencia** serves as a single source of truth and providing transparency and non-repudiation process, assuring that the weight cannot be altered at any point in the process.

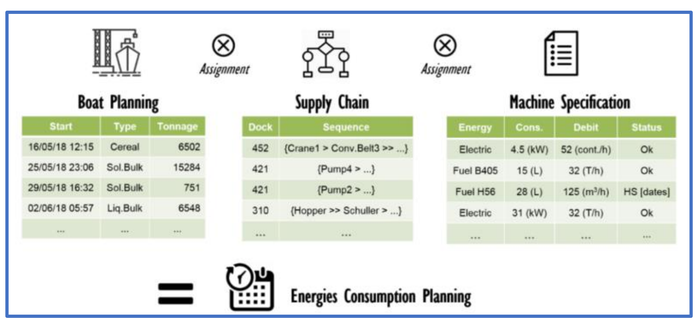
I2PANEMA – IoT implementation for RoRo localization

TI2PANEMA (co-funded by the EUREKA innovation cluster ITEA 3) has developed an IoT system for the location and control of RoRo operations (roll-on, roll-off) with the aim of significantly reducing turnaround times. It consists of high-precision positioning sensors and a **Narrow-Band IoT network for location transmission**; providing an overview of the locations of the RoRo vehicles and drivers. The system was implemented at Safi Port (Turkey) and **integrated into the port management system of VTEK**, an industry partner in the project.



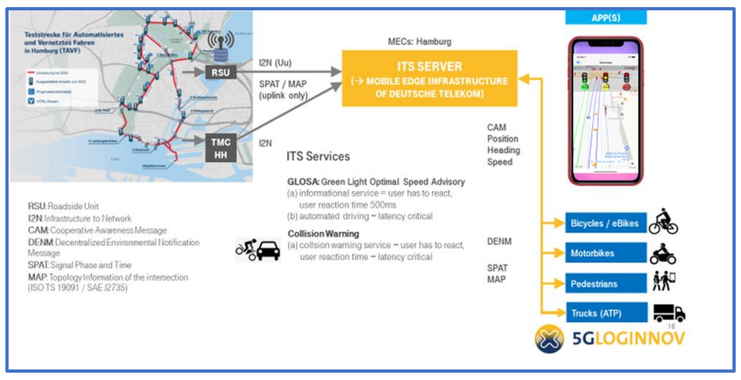
PIXEL – Port Activity Scenatio (PAS) product

As far as predictive AI algorithms and IoT technology are concerned, PAS provides data to various models (air pollution, energy, etc) that calculate operating schedules of the port. It **predicts** the type of machinery will be used and for how long, allowing for assessing what-if scenarios. PAS uses the vessel calls, available machinery and the chain of operations for each cargo (supply chain) and prioritizes them after which the machinery operations are distributed across time. **The solution has been implemented by the Ports of Bordeaux, Thessaloniki and Monfalcone**



5G LOGINNOV – 5G functionalitities as Mobile Edge Computing (MEC)

The Hamburg Living Lab demonstrated new functionalities of 5G as MEC, and that providing precise positioning via uRLLC (low latency communication) can improve the efficiency of logistic operations. On the other hand, it also proved that improved 5G network functionalities as mMTC (Massive Machine-type Communications) and eMBB (Enhanced Mobile Broadband) are essential for any future mobile network applications. **The case expanded the services of Skylark and the Deutsche Telekom.**



IMPLEMENTATION PATHS

- Identify real problems and build technology that is fit for purpose
- End users and innovation seekers need to be actively involved
- Trust the process and commit to it. Keep the market in mind for scalability/transferability
- An interdisciplinary setting breeds innovation. Bring different backgrounds together

Link to Cloud Report

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