

# LL #12 Terminal Track and Trace System

## FACTSHEET

10 MARCH 2022

### A. GENERAL (Business case)

#### 1. Objectives

- Transport and cargo tracking,
- Terminal track and trace system for real-time railway monitoring
- Enhancing intermodal transport planning - location of the driver, his time of arrival, feedback messages, time slots, status updates
- IoT tool to provide a steady flow of information about both the wagons and the loading units travelling on the railway network
- Asset and infrastructure use optimization
- CO2 reductions

#### 2. Main emphasis

To improve the daily arrangement of the loading units in the buffer area, to reduce the empty running, to decrease the CO2 emissions as well as to enhance the overall terminal efficiency. To sum up, the main scope of the Living Lab 12 is to maximise the potential of an intermodal chain, optimising the resources available.

The aim is to define and develop an IoT (Internet of Things) based system operability enabling to obtain data about position of intermodal loading unit in the yard and the status of the trains in the network (currently there is no visibility). The data will be collected and exchanged between the various actors in the chain to foster interoperability.

The possibility to gather data coming directly both from the wagons and the loading units (that are the “real actors” of the chain) can create an integrated IT tool open to all the players involved in the chain. In this way, it is possible to foster the exchange of data and enhance the transparency.

#### 3. Challenges

- Developing and implementing system requirements generating specific data regarding the position of the loading unit within the terminal yard,

- System interoperability to enable real time data exchange on the railway stock and the goods being transported between Zailog and Codognotto.

#### **4. Transport mode**

Road (Codognotto), rail (Verona terminal) : intermodal transport.

#### **5. EU Map Focus**

Italian part of Scandinavian - Mediterranean corridor.

#### **6. Geographical coverage**

Northern Italy: Salgareda (Treviso) and the Verona freight village. Destinations to Germany and UK.

#### **7. Actors/SMs**

- Zailog scarl,
- Terminali Italia,
- Quadrante Servizi and
- Codognotto.

#### **8. Forecast scaling outside LL**

The terminal track and trace system developed can be applied in each terminal - any buffer area - to improve the arrangement of the inbound and outbound flows of heavy vehicles. The system enables smoother data exchange among the players operating in the intermodal chain, speeding up the daily operations. Its implementation will reduce the waste of resources and enhance the overall efficiency.

### **B. TECHNICAL SETTING**

#### **9. ICT vs physical**

The technical setting is based on:

- Codognotto installs IOT Devices on their Boxes and Trailers to receive and share real- time GPS positions.
- The GPS data will be shared and federated with the Verona Terminal to test a pilot on the new Zailog's Terminal Track & Trace system based on IOT technology.

- The IOT Devices with Standard technology are installed on Codognotto’s Boxes. These devices transmit a steady flow of information to the data center on the Codognotto Headquarters. Then, Codognotto will share data received by the IOT devices through a standard API technology. In this way, all the players of the intermodal chain will be aligned with a consequent increase of the efficiency and a reduction of waste.

This Living Lab deals with the following FEDeRATED global feature:

- Access

### 10. DTLF implementation option:

- a. Single Platform

## C. ORGANISATIONAL ASPECTS

### 11. Success factors

- Real time data on slots availability
- Train status
- Train composition
- Analysis of the railway wagons available on the network

### 12. Risks

- Lack of cooperation from the actors involved
- Company regulations on data exchange
- Lost signal due to poor internet coverage

### 13. Timing

LL#07	2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preparations	[Solid blue bar]																			
Planning and scoping	[Dashed blue bar]																			
Stakeholder engagement	[Solid blue bar]																			
LL infrastructure development	[Solid blue bar]																			
Testing & piloting	[Solid blue bar]																			
Iteration & process analysis	[Solid blue bar]																			
Operational trials	[Solid blue bar]																			
Feedback & scaling	[Solid blue bar]																			

## 14. Contact

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