



Automation, integration and interoperability along the supply chain:
Concrete opportunities of building terminal optimization and International
Fast Trade Lanes

Luca Abatello – Log@Sea & Circle CEO



Tallinn, September 28-29
Baltic Sea Ports & Shipping 2017

Starting point

Need of **simplification and harmonization** of processes are supported by:

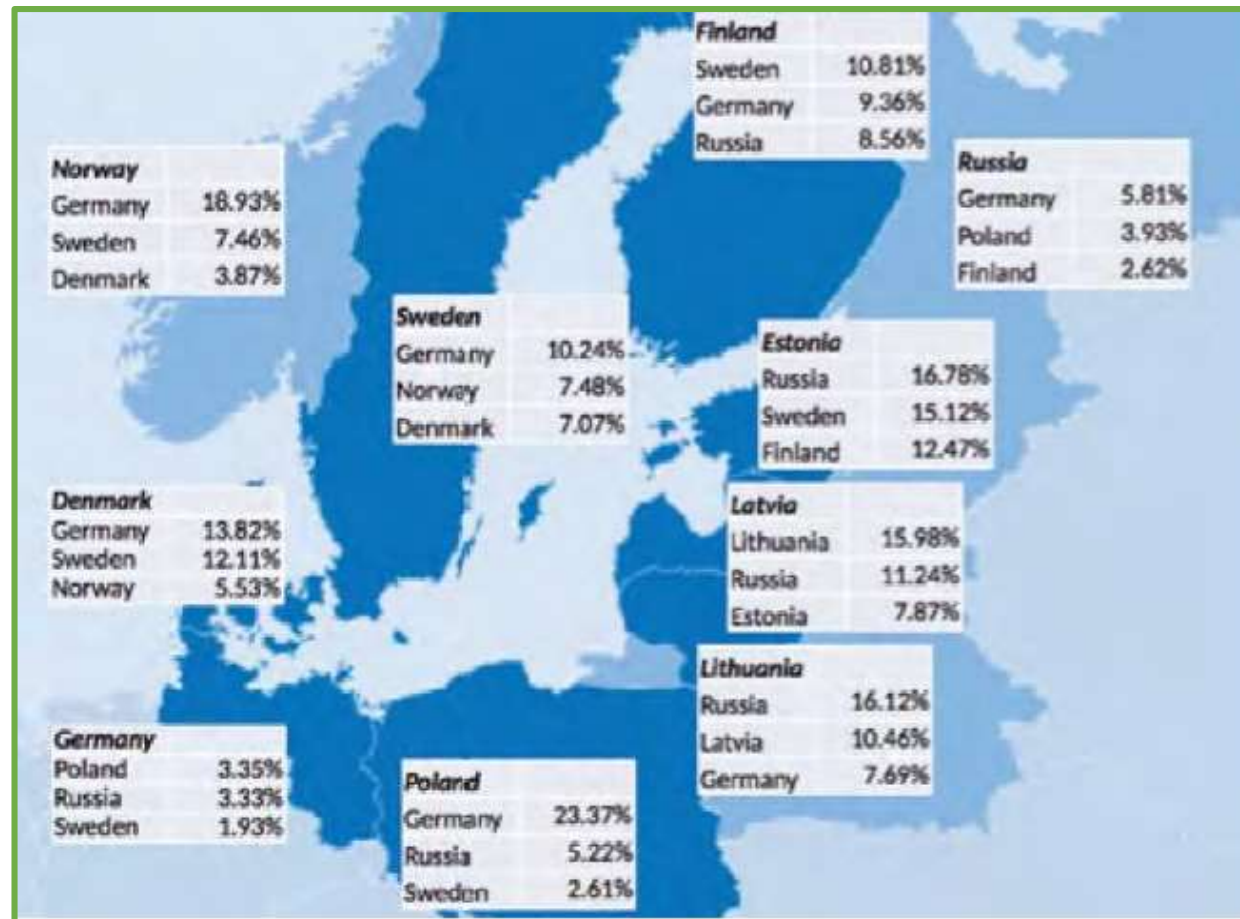
- *Strong ongoing **automation** roadmap*
- Upcoming "**Dematerialization**" processes
- **Internet of Things**
- Considering armonization objective: *European **Maritime Single Window** for all ships arriving from or going to **Extra EU** (from 1st June 2015)*
- New *European **Union Customs Code** (from 1st May 2016)*

Specific steps forward are needed on **Customs and Maritime procedures between Baltic Sea Area vs Extra EU** and there are **big opportunities of PROCESS OPTIMIZATION**

Baltic Sea market situation

During the 2016 the largest ports of Baltic area handled **containers for 7.8 million TEU**. In the Baltic Sea **economic growth of commercial shipping** can be **mainly attributed to increasing trade volumes of Russia**.

An important data is related about **number of ships navigating through the Baltic Sea** has decreased highlighting a **trend towards larger vessel sizes**. The future consequence will be the needs of **improve the performance and the level of efficiency of ports and terminals**, called to process always bigger vessel.



A Digital Region

The Challenge of Intermodal Supply Chain 4.0

The **Baltic Region** is one of top area relating to the **research of new technologies** and in particular about concept of **interconnection** and **digitalization of process**. **Ports in the Baltic Sea have to prepare for larger ships** and provide access as well as appropriate infrastructure and services for loading/ unloading and the **digitalization shall be one of main the key actors**.

MAIN CHALLENGES:

- improving **efficiency, automation** and **optimization** performance in order to meet customer requirements and satisfy **security standards**
- **technological innovation**
 - enhancing **visibility and security** of goods in order to offer better services to the port community and to its customers
 - **interoperating** with regulation compliant systems such as National Single Windows and National Customs Systems
 - Create the conditions to transfer every information related the Logistics Chain within a **digital platform**.

The Added value of Smart Customs

The creation of **intelligence customs system** able to dialogue with the different Stakeholders and Operators **can be an important add- value** for the Baltic ports compared with their Russian counterparts:

- **Shippers prefer to move goods through ports in Estonia, Lithuania, Latvia, and even Gdansk, Poland**, and use trucks to have/get boxes into Russia (Avoiding customs processes and higher costs at Russian ports)
- The **interoperability with national Maritime Single Window / Customs Single Window** process by allowing the **filing of customs procedures in a digital way**
- The **digitalization and the share of informations** can increase the opportunity to attract shipping companies and shippers.

EU Dir 2010/65 & European Union Customs Code



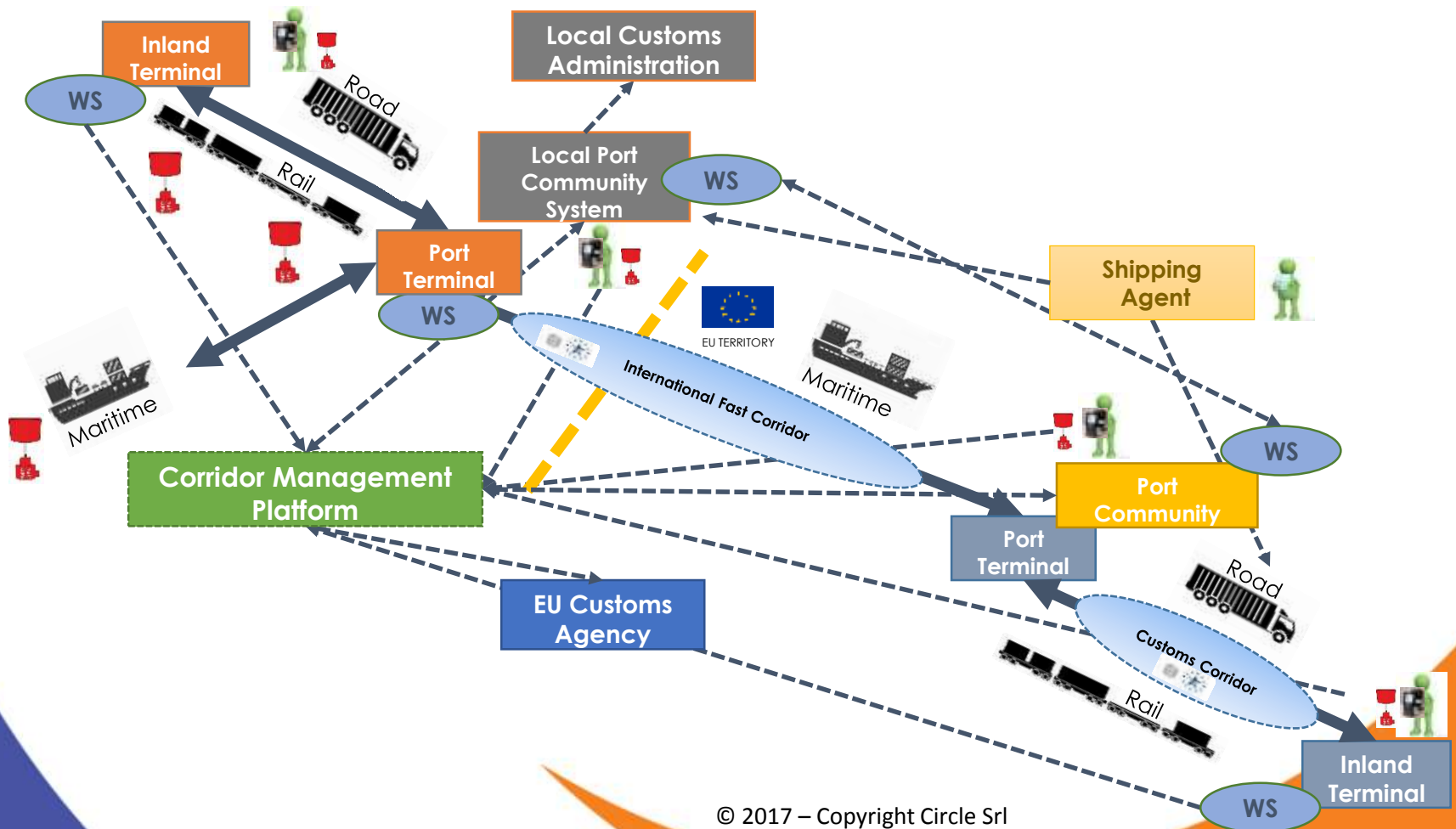
ANNA
MARITIME SINGLE WINDOW



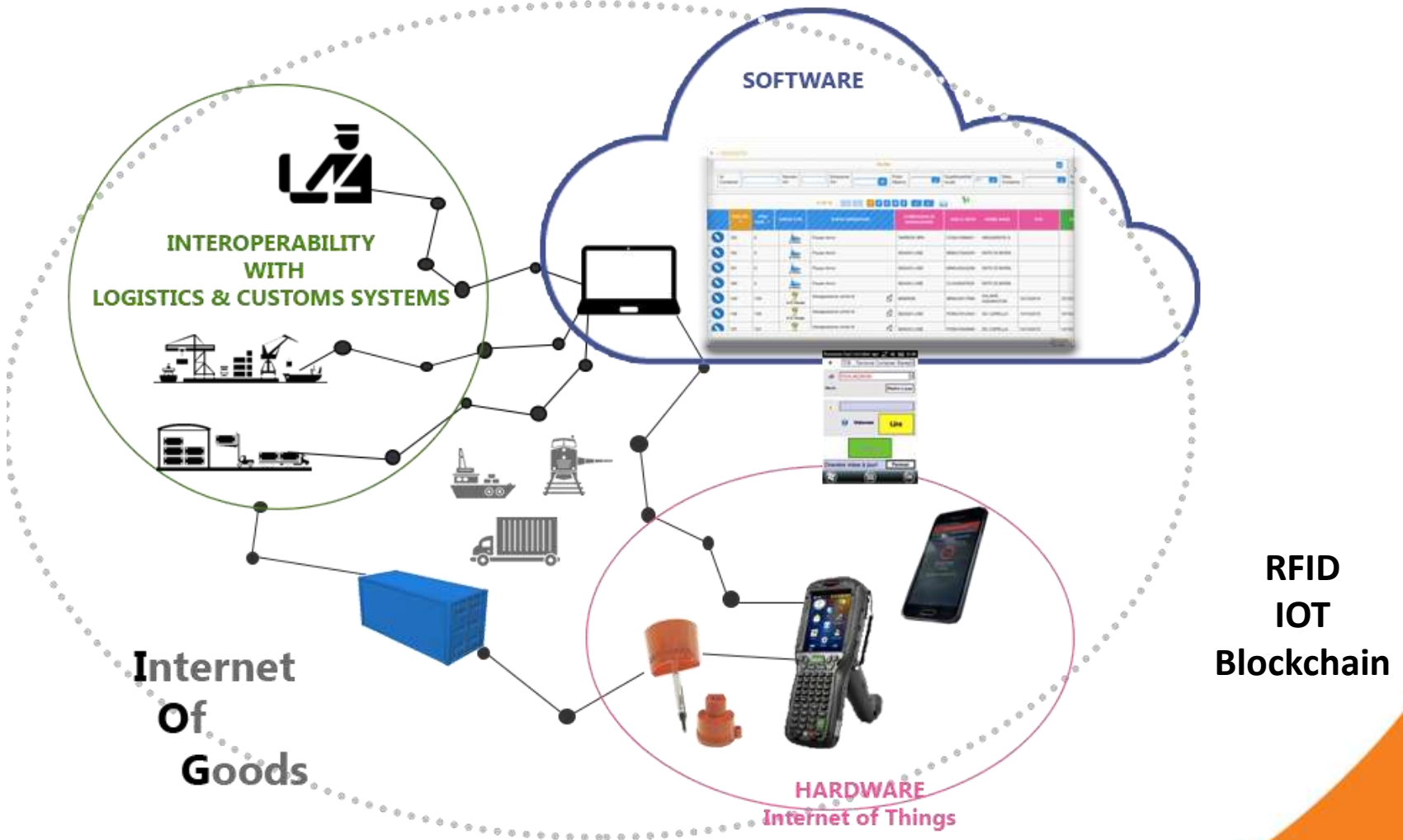
IOT, Big Data Digitalization & Port Automation Smart Port & Logistic Chain

Log Fast Trade Lane model

Solutions for monitoring goods along intermodal corridors thanks to the Corridor Management Platform, integrating Internet of Things solutions (RFID esels and tags) and exploiting innovative customs procedures.



Internet of Things approach



Starting from EU project pilots experience...

The European Union funded project aimed to provide a suitable array of measures in order to facilitate the development of **TEN-T Motorways of the Sea network connecting Europe**.

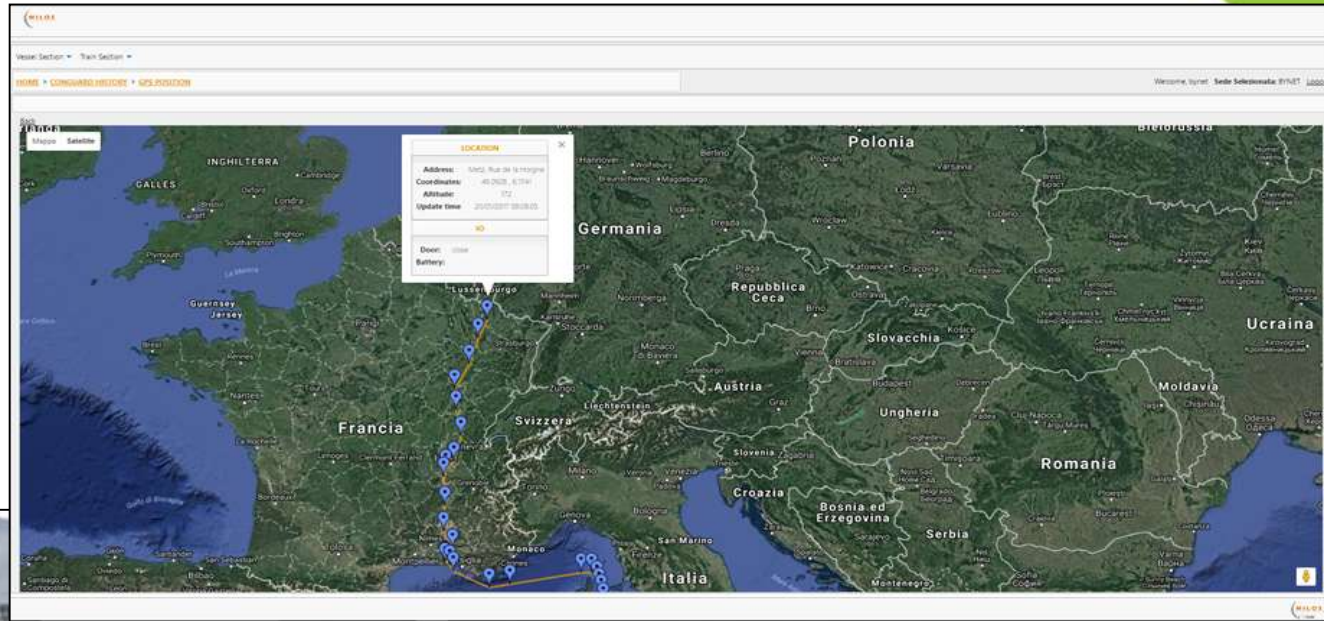
Two innovative procedures were tested in cooperation with partner:

- **Pre-clearing** in a **Ro-Ro** international freight transport using **passive eSeals** from Africa to Leghorn.
- **International Fast Corridor model** (and RoRo preclearing) using **active** (and passive) **eSeals** (in Morocco and Turkey).



MILOS IoT solutions

The **MILOS Representation Map** allows graphically representing on a map the geographical coordinates of tracked objects.



The IoT solutions utilized inside the single nodes (i.e. warehouses, terminals, etc.) make easier and faster the import and export procedure, thanks to OCR and RFID technologies

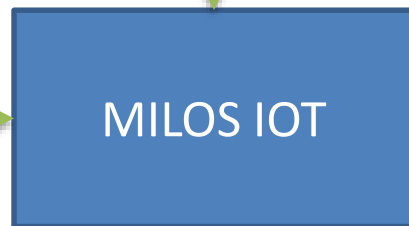
MILOS IOT solutions: cars, trailers, containers



Compliance with the most common RFID and bar code tags used by car producers



Automatic Gate-in and Gate-out at the terminal thanks to RFID antennas



Automatic check of loading/unloading operation

The solution is compliant with every type of traffics:

- Cars;
- Trailers;
- Container;
- General cargo.

Corridor Management Platform

Dry Port



**Rail & Truck
Transport**

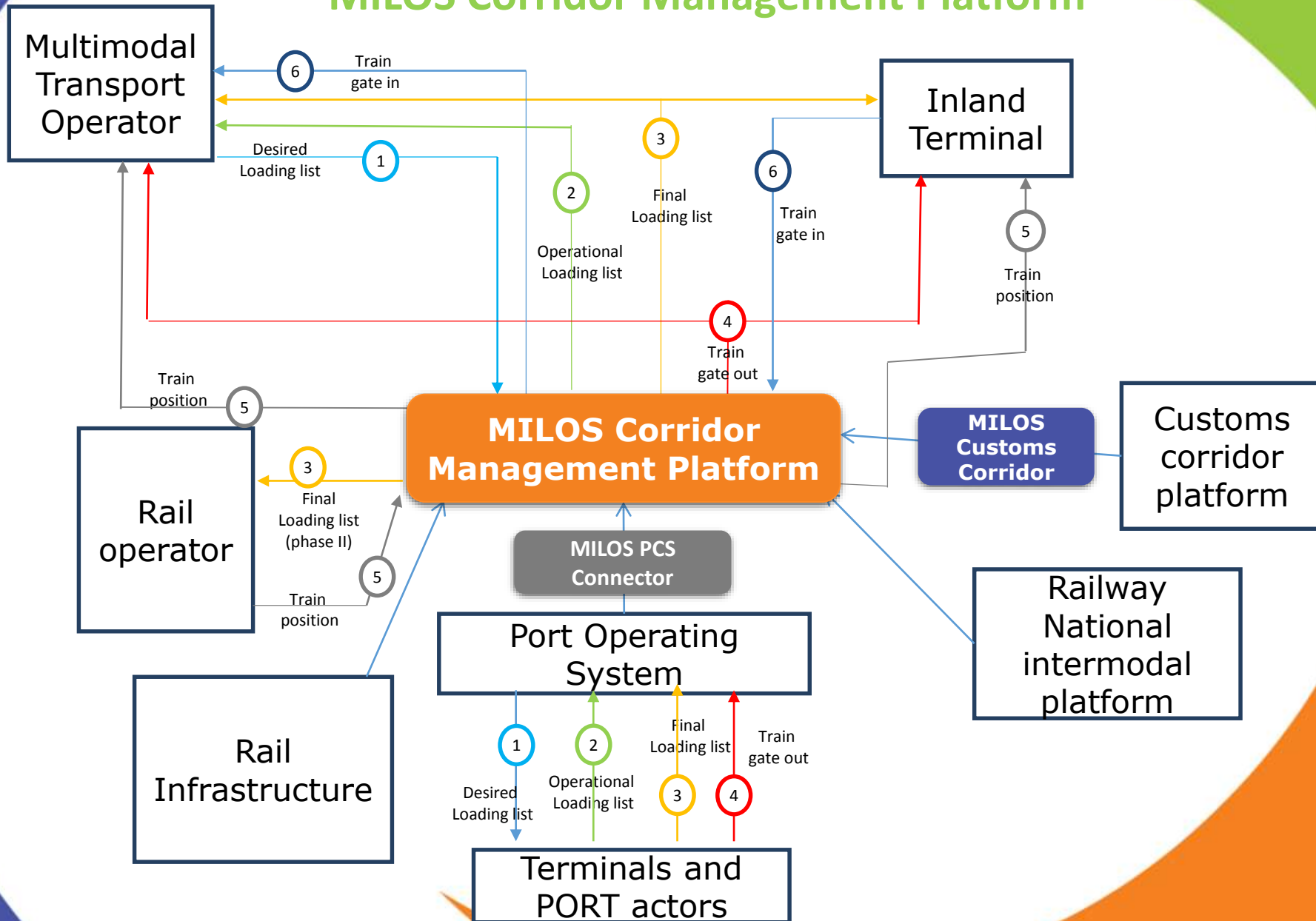
Port



Terminals



MILOS Corridor Management Platform



MILOS - Automation & Digitalization (1)

Management of external information:
 Port Community System
 Customs IT System
 National Logistics Platforms

The screenshot shows a software interface with several sections:

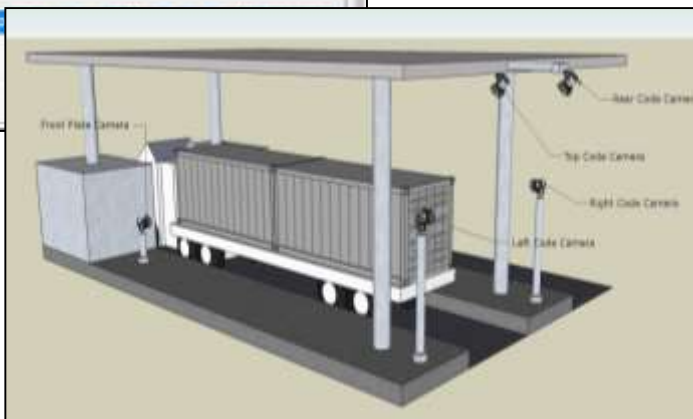
- Form Fields:**
 - AGENZIA:** Agency information fields (Azienda, Partenza, Indirizzo, Comune, Provincia, Nazione, Parente, Cognome, Nome, N. Abete, Badge).
 - MEZZO:** Vehicle information fields (Targa Matricola, Targa Rimontato, Placca).
 - NOTE:** A text area for notes.
- Table:**

| ID | N. LINEA | REF. CLIENTE | TIPO | VITE | PESO NETTO | PESO LORDO | DOSAGIA | USM | COMMITTENTE | DESTINATARIO |
|----------------------|----------|--------------|-----------------------------|--------------|------------|------------|---------|-----|--------------|--------------|
| 2017-100-SHT-00012-1 | 185-1 | | CASSA BOM MULTIFUNZIONE 30' | VERBU TENVES | 100,000 | 1.300,000 | N | N | LOGISTIC SRL | |



Complete integration with Terminal Operating System functionalities

AUTOMATIC DATA ACQUISITION from Gate lanes hardware (OCR, RFID, etc.)



MILOS - Automation & Digitalization (2)

The **new MILOS Rail Management - graphic version** allows performing the train planning activities easily and quickly with the maximum efficiency thanks to graphic tools.

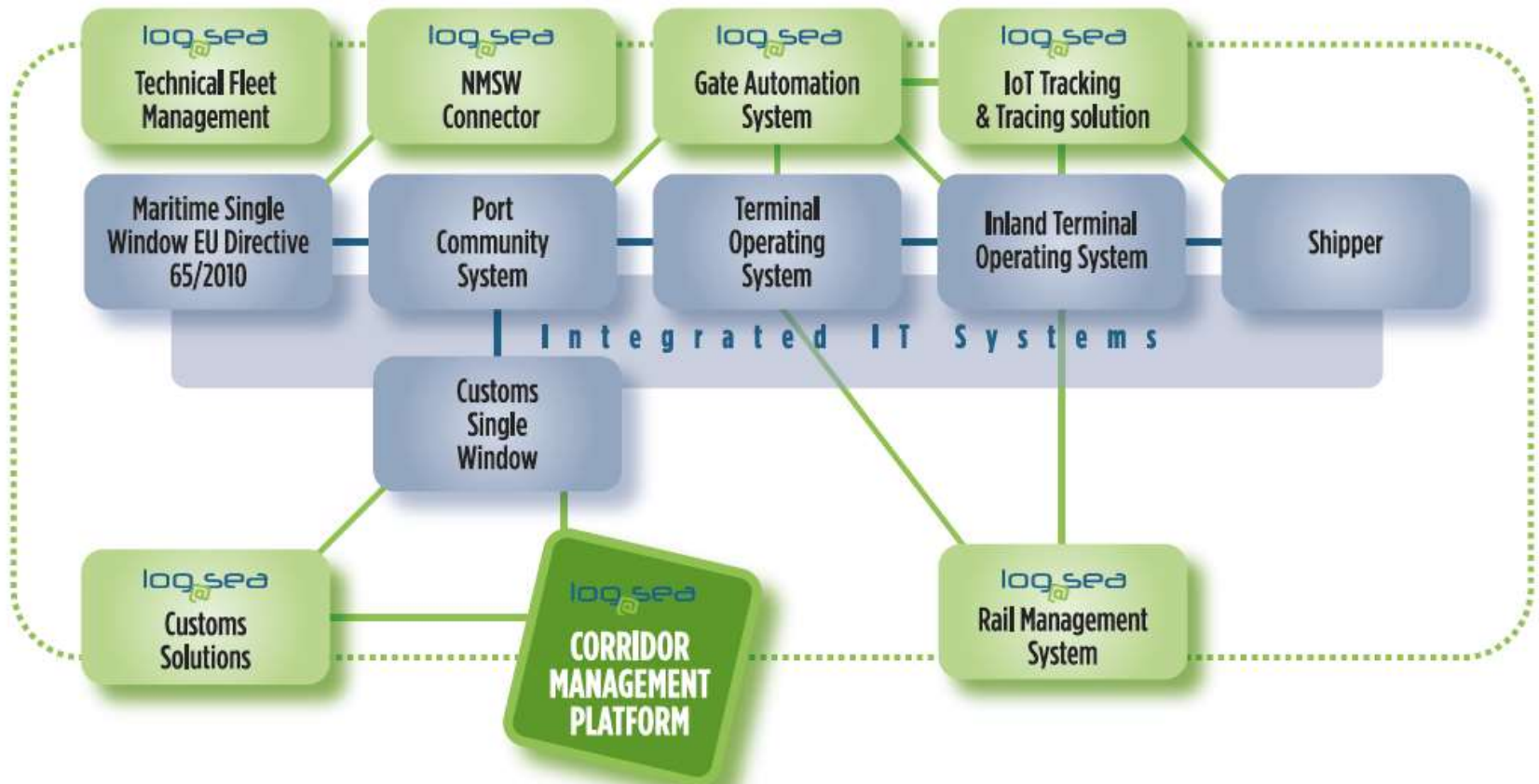
The screenshot displays the MILOS RGM software interface. At the top, there is a menu bar (File, Edit, Tools, About) and a user information area (User: admin, Sede: Lugo Terminal). The main area shows a train layout with various units and their weights (e.g., 3200 Kg, 32370 Kg). A callout box with a green background and a white arrow points to a unit, stating: «Drag & Drop» functionality. Below the train layout, there is a table of bookings. A red box highlights the table, and a callout box with a green background and a white arrow points to it, stating: A list of all available bookings for prompt ITU selection. The table has the following columns: B. In., Client, Load Unit, Gross Weight, Unit type, Cov., Status, Full route, Prev., F/E, Goods, RID. The table contains several rows of booking data.

| B. In. | Client | Load Unit | Gross Weight | Unit type | Cov. | Status | Full route | Prev. | F/E | Goods | RID |
|--------|---------------|-------------|--------------|-----------|------|-----------|---------------------|-------|-----|--------------|-----|
| 266-2 | GUIDO BER. | GBTU0020801 | | CASSA BOX | No | ARRIVATO | FIORENZUOLA-LUGO-GL | 31804 | EM. | No | No |
| 266-8 | GUIDO BER. | GBTU0021686 | | CASSA BOX | No | ARRIVATO | FIORENZUOLA-LUGO-GL | 31804 | EM. | No | No |
| 266-12 | GUIDO BER. | GBTU0016289 | | CASSA BOX | No | RICHiesto | FIORENZUOLA-LUGO-GL | 37804 | EM. | No | No |
| 266-4 | GUIDO BER. | GBTU0020440 | | CASSA BOX | No | RICHiesto | FIORENZUOLA-LUGO-GL | 37804 | EM. | No | No |
| 266-6 | GUIDO BER. | GBTU0020442 | | CASSA BOX | No | RICHiesto | FIORENZUOLA-LUGO-GL | 37804 | EM. | No | No |
| 267-1 | F.LLI DI GRE. | TRLU9041203 | 12050.000 | CONTAIN. | No | ARRIVATO | LUGO-GIOVINAZZO | | | FULL TRONCHI | No |
| 267-2 | F.LLI DI GRE. | TOLU4043572 | 9550.000 | CONTAIN. | No | ARRIVATO | LUGO-GIOVINAZZO | | | FULL TRONCHI | No |
| 267-3 | F.LLI DI GRE. | TRLU9030111 | 12050.000 | CONTAIN. | No | ARRIVATO | LUGO-GIOVINAZZO | | | FULL TRONCHI | No |
| 267-4 | F.LLI DI GRE. | TOLU4593776 | 16050.000 | CONTAIN. | No | ARRIVATO | LUGO-GIOVINAZZO | | | FULL TRONCHI | No |

Unit type: CASSA BOX MULTIFUNZIONE 30'
Int. code: 30
Tare mass: 3200.000 Kg
Capacity: 54.990 Kg
Max weight: 38000.000 Kg
Length: 8.125 m
Height: 2.750 m
Width: 2.350 m
Rail profile: C30

Log@Sea integrated approach

Circle, IB and Aitek, through the strategic partnership **Log@Sea**, are combining their respective experiences and know-how acquired in the fields of marine services, road and rail traffic management systems, gate automation and tracking and tracing services for providing innovative solutions which cover the intermodal



Log@Sea marine and port solutions

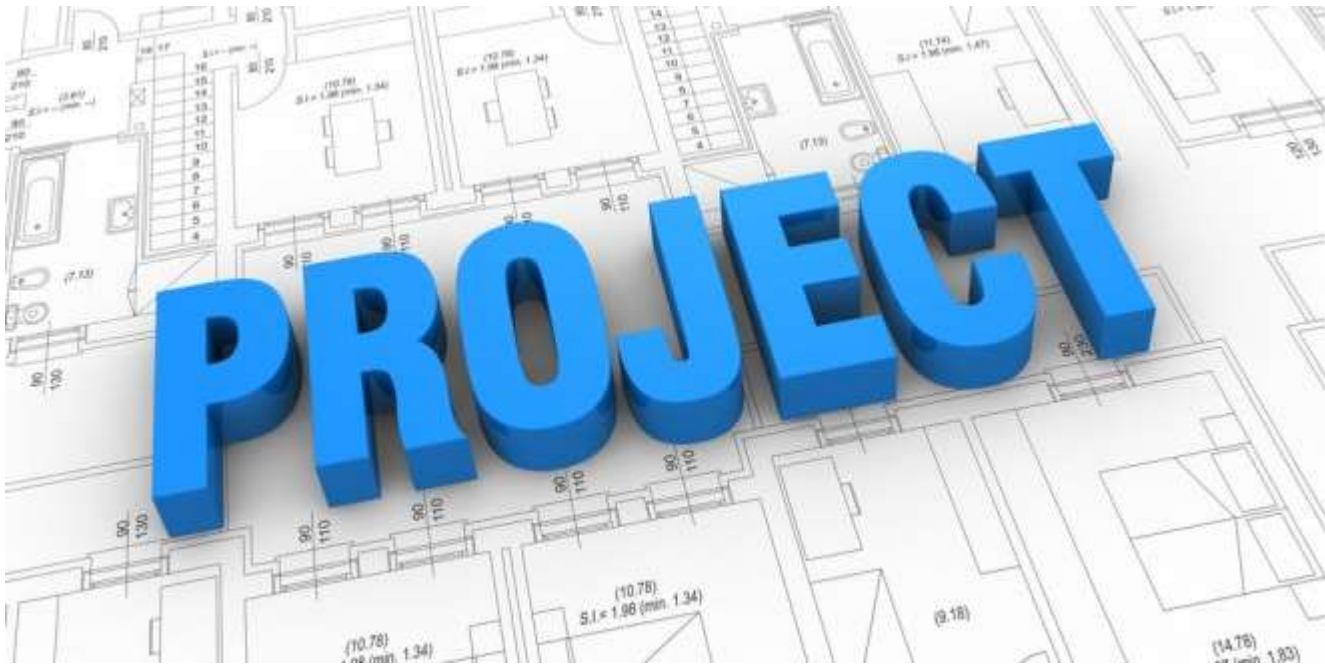
Starting from the Marine market

- solutions and tools to satisfy the widest technical management needs, such as the innovative **Marine Technical Fleet Management**.

to the Port community

- solutions and tools for an **integration with Maritime Single Window Platform** – Directive 65/2010 – and interoperability with port Community Systems and the Customs Administration IT Systems (e.g. in Italy with AIDA)
- solutions and tools for a **full integration with Terminal Operating System and Port Community System** for accessing at value-added services
- solutions for automating **gate operations** by using OCR, ANPR, laser and RFID technologies and streamlining the intermodal process thanks to the integration with third systems (Terminal operators, Port Authorities, rail operators, inland carriers, shippers, Customs Administration, etc.).
- solutions for managing **rail operations** inside logistics terminals and **rail planning** activities with an advanced graphic interface (drag & drop functionalities, graphic rail park management, etc.).

Experiences and ongoing projects



Some Shipping references



InfoSHIP EGO installations

- 14** Costa Crociere and ex Ibero (Data Collector module only)
- 1** tanker d'Amico + 1 bulk carrier + 14 in progress
- 1** ferry Grimaldi Napoli + 1 roro cargo + 5 in progress
- 3** ferries GNV + 4 in progress
- 1** container ship MSC + 120 in progress
- 1** ferry Moby in progress



InfoSHIP ELB installations

- Costa – starting on the entire fleet, ORB, GN part III, Garbage Record Book, Waste Delivery, Injury, GN Part II
- 3** roro cargo Grimaldi Napoli – MIELE research project activities
 - 1** ferry GNV – SIS-TEMA research project activities
- V&F for 3 ferries GNV + other 7 in progress



Shipper, terminal & Corridor references

Terminal Management

14 Port &/or Inland Terminals

Port Authorities

8 Port Community Systems integrated

MTO / rail companies

8 Multimodal Transport Operators /
Rail Companies / Shunting Companies

Public Authorities

9 Public Authorities / Customs / Minister

Lots of innovative **intermodal fast corridor** procedures and **international trade lanes** were launched



Concrete Opportunities



Baltic Sea Countries Opportunity

Why digitalization of documents and procedures and the use of new technologies are important for Baltic sea Countries :

Possibilities of building **Fast Trade Lane** between EU and NON EU countries

- Providing services to the actor of the chain (**Tracking and tracing, proof of delivery**) – IOT
- **Reducing administrative burdens** - Blockchain
- **Moving and concentrating Customs procedures** – Customs 4.0
- **Reducing time and costs on the full door to door chain**

Call 4 Stakeholders

Within the next few months the ***international fast trade lane model and the usage of active and passive RFID e-seals (IOT) + Blockchain tech*** are further used and tested in ongoing EU projects

More than 20 international actors of the Door-to-Door logistics Chain have already signed an Expression of Interest

Concrete opportunities for ***Baltic Sea ports and logistic actors.***

Deadline for joining as stakeholder: 31/10/2017

Contact us at abatello@circletouch.eu Or

**visit us @
booth 18**



Automation, integration and interoperability: Concrete opportunities of terminal optimization and building International Fast Trade Lanes

Luca Abatello
abatello@circletouch.eu
Mobile: +39 348 8877609



Tallinn, September 28-29
Baltic Sea Ports & Shipping 2017