



## **Global Supply Chain visibility**

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Automation, integration and interoperability along the supply chain: Concrete opportunities of building optimisation, international fast trade lanes integrating IOT & blockchain

**Constanta, July 10th 2019**

**8<sup>th</sup> Black Sea Ports & Shipping**

# Agenda

1. The impact of digitalization and the automation on the Global Supply Chain models;
2. Our vision of International Fast & Secure Trade Lanes;
3. Circle International Projects.

# 1. The impact of digitalization and the automation on the global supply chain models



## Main topics:

- *Global Supply chain models*
- *Federated Platform and approach*
- *Internet of Things in logistics field*
- *IoT, blockchain and smart contract*

# Global Supply Chain Visibility

**Global Supply chain visibility** is the capacity to **track and trace** parts, components or products in transit from the manufacturer to their final destination. This includes logistics activities and transport as well as the state of events and milestones that take place before and during transit.

**Global logistics leaders** are using a variety of mechanisms, such as

- **Electronic Data Interchange** integration with ocean carriers
- **Web portals** for other service providers

*Improve*

**Real-time visibility**



**Data timeliness**

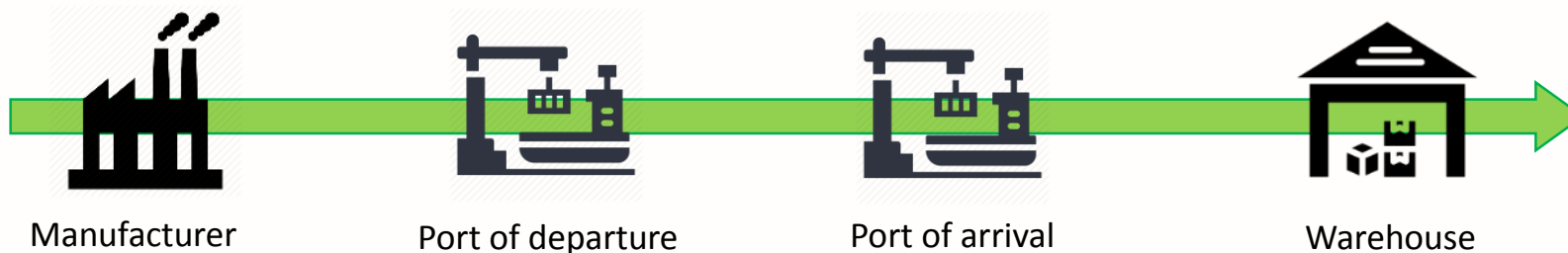


**Accuracy**



**Full visibility**

\*Example of supply chain



# The impact of “Internet of Things” in logistics field

The **IoT** promises far-reaching payoffs for **logistics operators, public authorities** and their **stakeholders**. These benefits extend across the entire logistics chain including: yard, gate-in, gate-out operations and last-mile delivery.

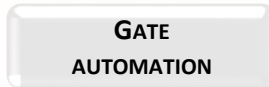
A report by IDC and SAP predicts that **IoT will lead to a 15% productivity increase in delivery and supply chain performance**, many logistics experts are using these new resources to improve systems and supply networks, **reduce costs** and the **transit-time**.

## The Benefits

- An **increased Security and Safety** level of logistics operations;
- **Optimization of operations**, thanks the data obtained by IoT devices, it is possible analyze the overall performance improving the level of safety, security and productivity;
- **Tracking and Tracing**, IOT instruments and RFID tags can connect to the cloud and share data regarding the location and the status of goods shipped . According to Auburn University 96% of retailers are planning on adopting RFID technology.



# Rail Ecosystem: global view of the process



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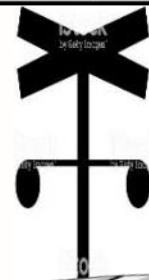
Vessel



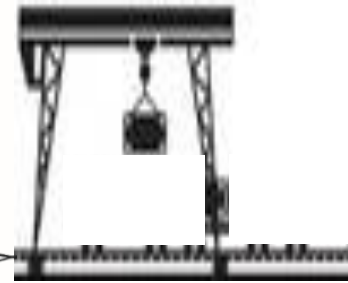
Port Terminal



Shunting



Rail  
Station



National Railway

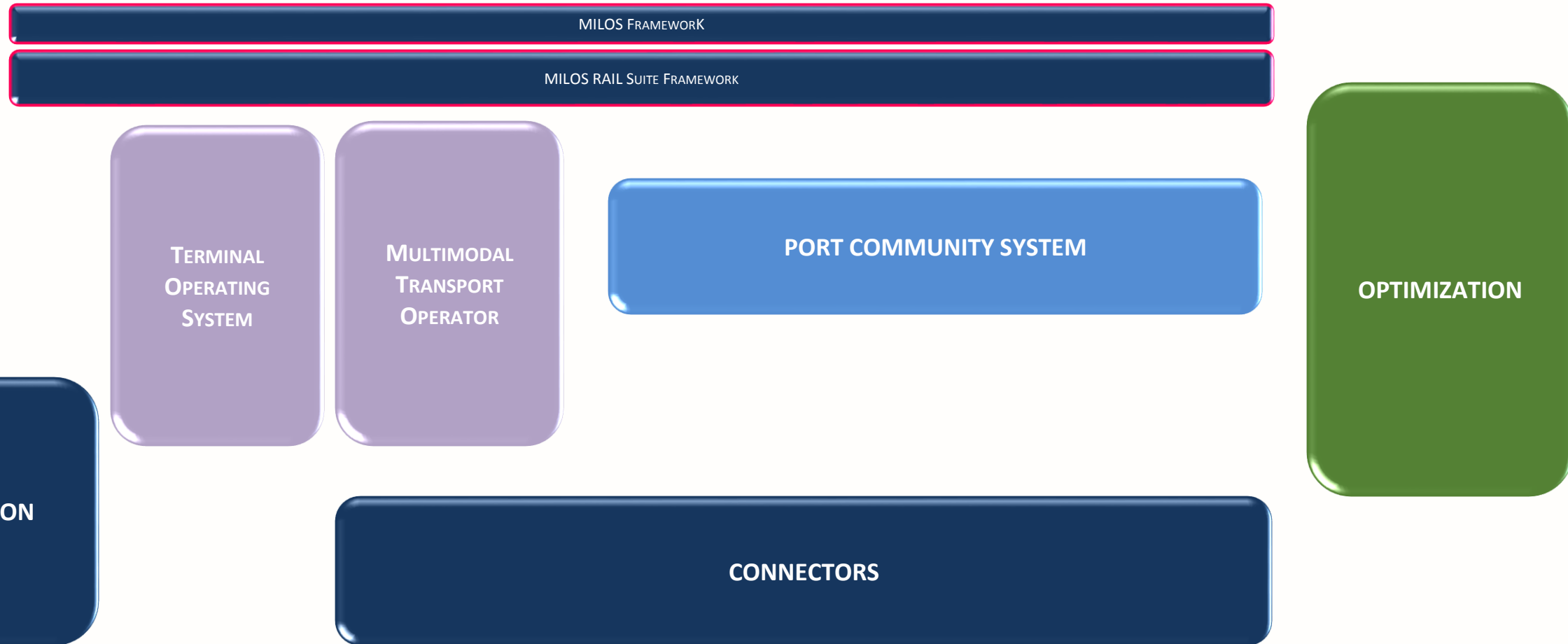


Inland Port



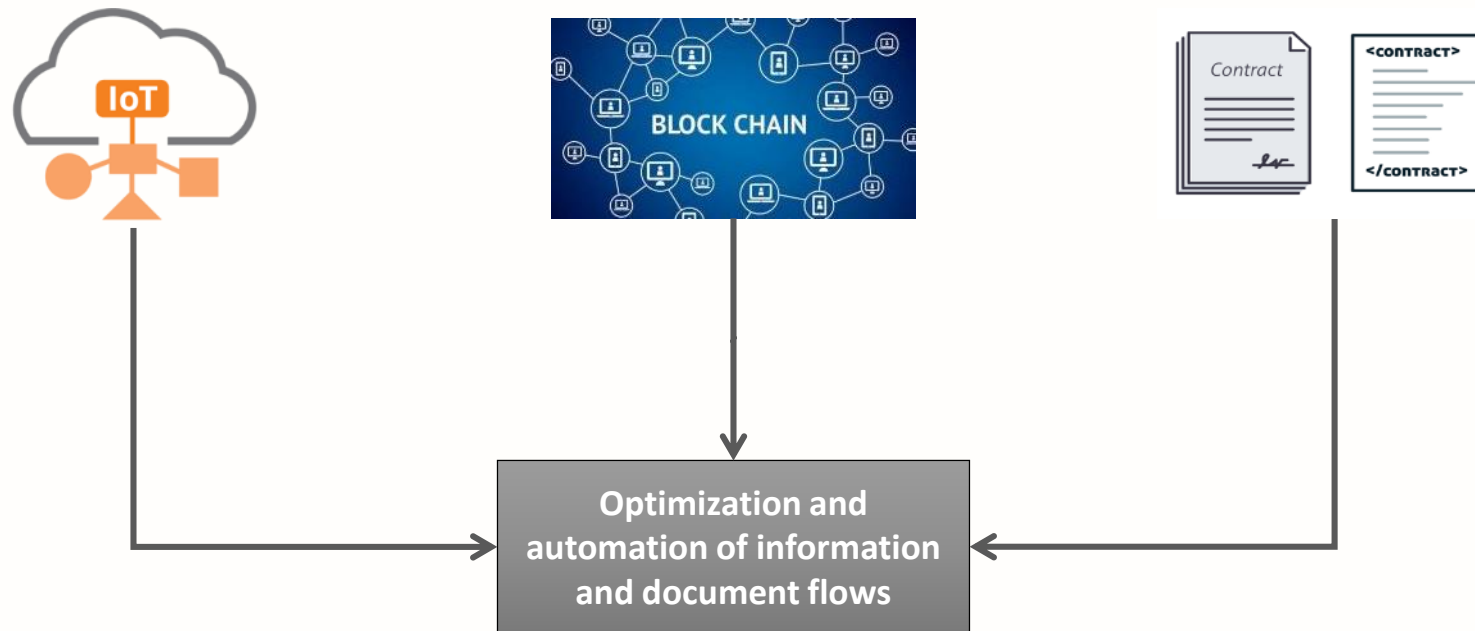
Road

# Rail Ecosystem and Rail suites



# Integration of IoT, Blockchain and Smart Contract

The combined use of smart devices **IoT** and digital tools such as **Blockchain Platforms** and **Smart Contracts** has the purpose to dematerialize the transport procedures and relative contracts leaving traces of all operations and events occurring within the Logistics Chain.



MILOS IOT & Blockchain is a solution designed to integrate these innovative solutions



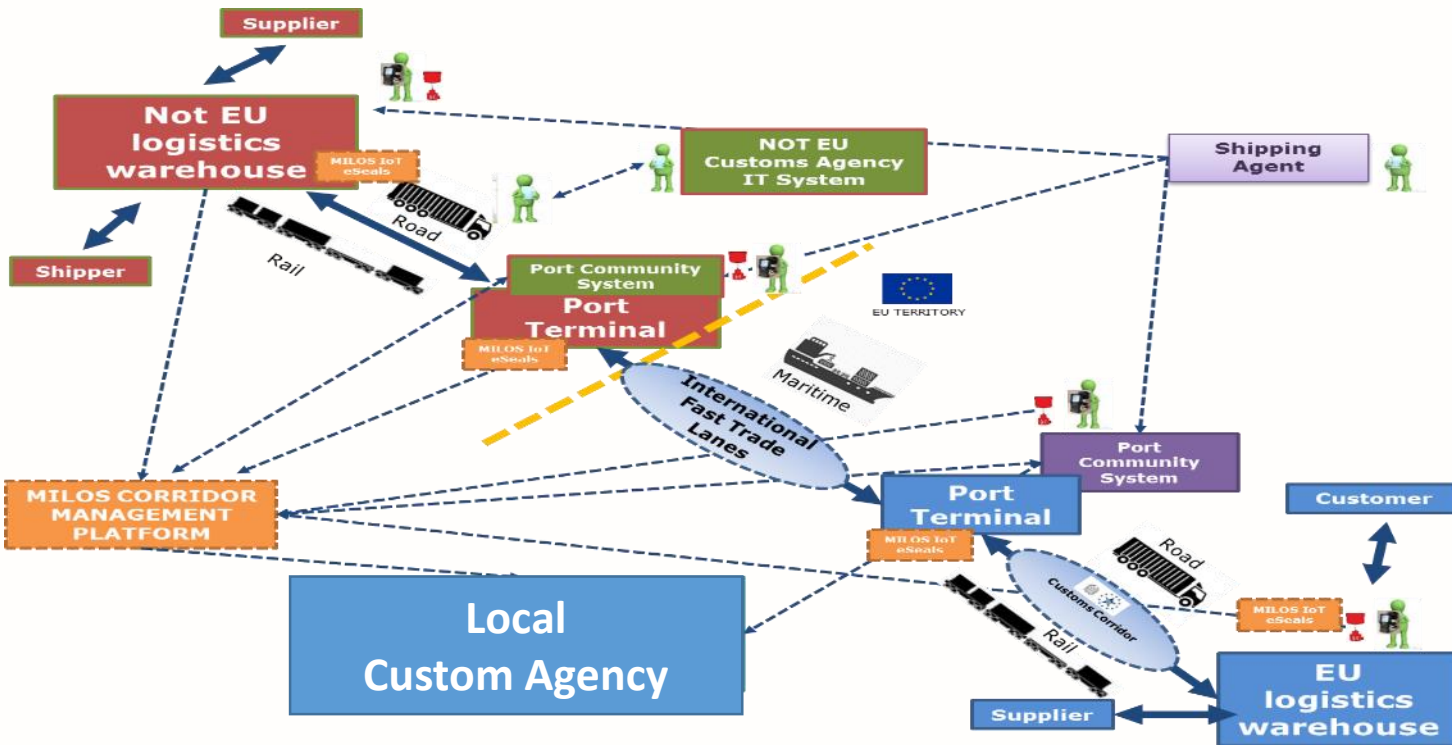
## 2. International Fast & Secure Trade Lanes Concept



### Main topics:

- Introduction about the “International Fast & Secure Trade Lanes” Concept
- IoT devices used along an international corridor
- Automated port gate
- Benefits for logistics actors

# International Fast & Secure Trade Lanes - Corridor Perspective



## Main component:

1. Digitalization of the information and documents flows (Bill of Landing, transport documents, road haulage documents, etc.)
2. Use of the CMP interchange platform
3. Exploitation of simplified customs procedures
4. IoT exploitation

# RFID tags and e-seals used along International Fast Trade Lane models



**Active RFID seal**



**Passive RFID seal**



**Passive RFID seal**



**Passive RFID tag**



**Passive RFID label**

# Manual RFID readers used along International Fast Trade Lane models



**Wearable RFID reader  
with RFID antenna**



**Handheld with RFID reader  
and RFID antenna**



**Wearable RFID reader  
with RFID antenna**

# Example of an automated port gate by RFID technology



RFID infrastructure near a port gate.



Example of automated port entry using RFID technology. The system consists of two readers and two antennas per reader. When the container crosses the gate, the reader reads the tag / e-seal rfid

# IoT devices and tags used along International Fast & Secure Trade Lane models

## 1) Shipper/Stuffing area



Baptism in compliance with the most common passive RFID eSeals



\* The Data collected by IoT device can be stored inside Blockchain Platform

## 2) Gate Terminal



Automatic Gate-in at the terminal thanks to RFID antennas



## 3) Port Terminal of departure



Digital check of loading operation with handheld + eManifest data integration

## 4) eManifest sent to Port of destination



## 5) Port Terminal of Destination

Digital check of discharging operation with handheld



Automatic Gate-out at the terminal thanks to RFID antennas

## 6) Final destination

Proof of delivery

## 3.Circle International Projects.



- ***B2MOS pilot project – trailers EU MED country with Tunisia***
- ***Turkey (Mersin and Pendik) – Trieste experience***
- ***La spezia - Casablanca international fast and secure trade lane project***

# Successful case

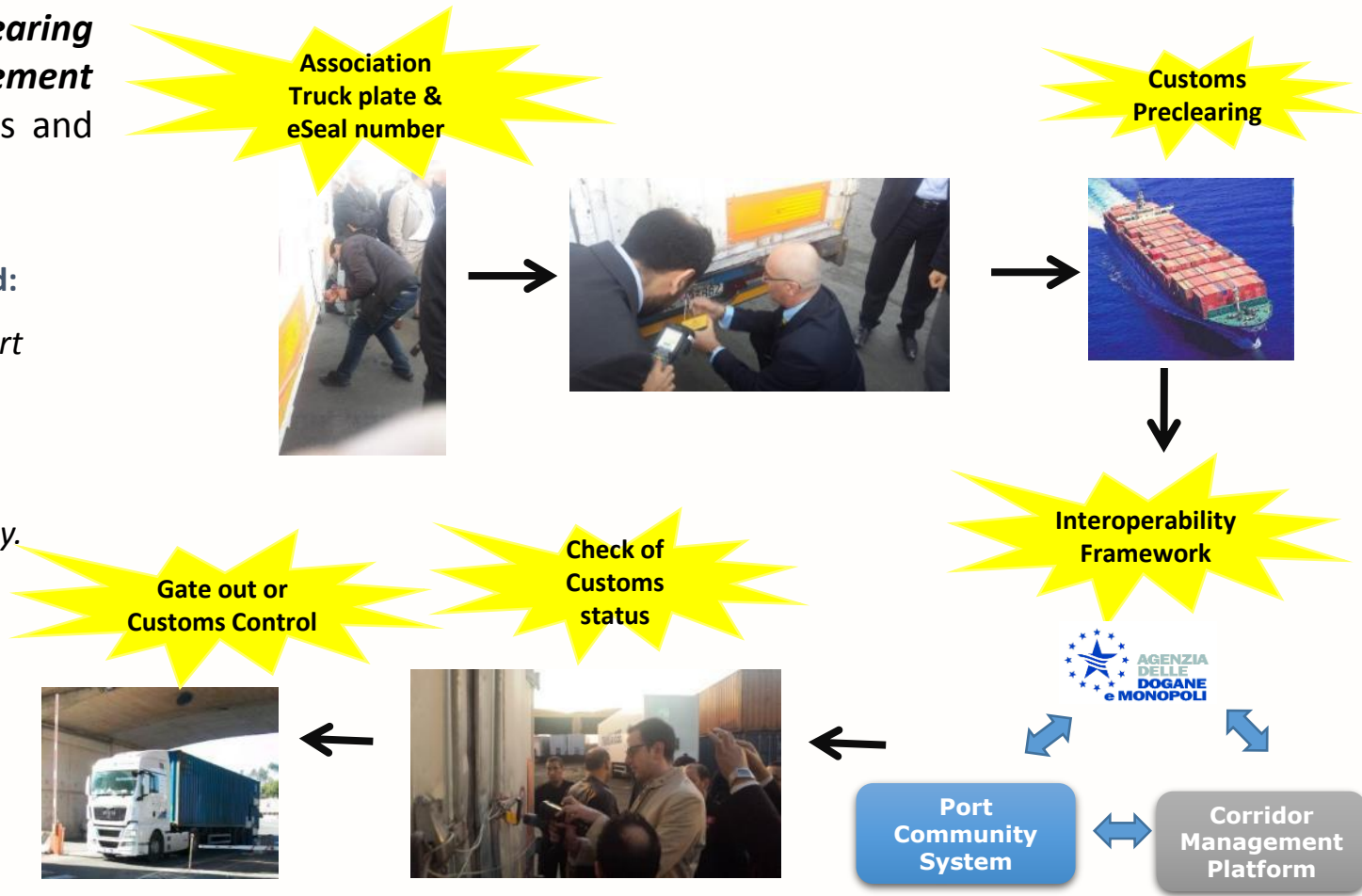
The pilot involved an international **RoRo transport** of trailers between the ports of **Rades** and **Leghorn**. A **preclearing procedure** using passive **eSeals** and a **Corridor Management Platform** were tested for the first time, integrating logistics and Customs aspects.

## Private actors involved:

- Port Terminals of Leghorn and Rades;
- Importers;
- Exporters;
- Shipping Company;
- Shipping Agency;
- Freight Forwarders.

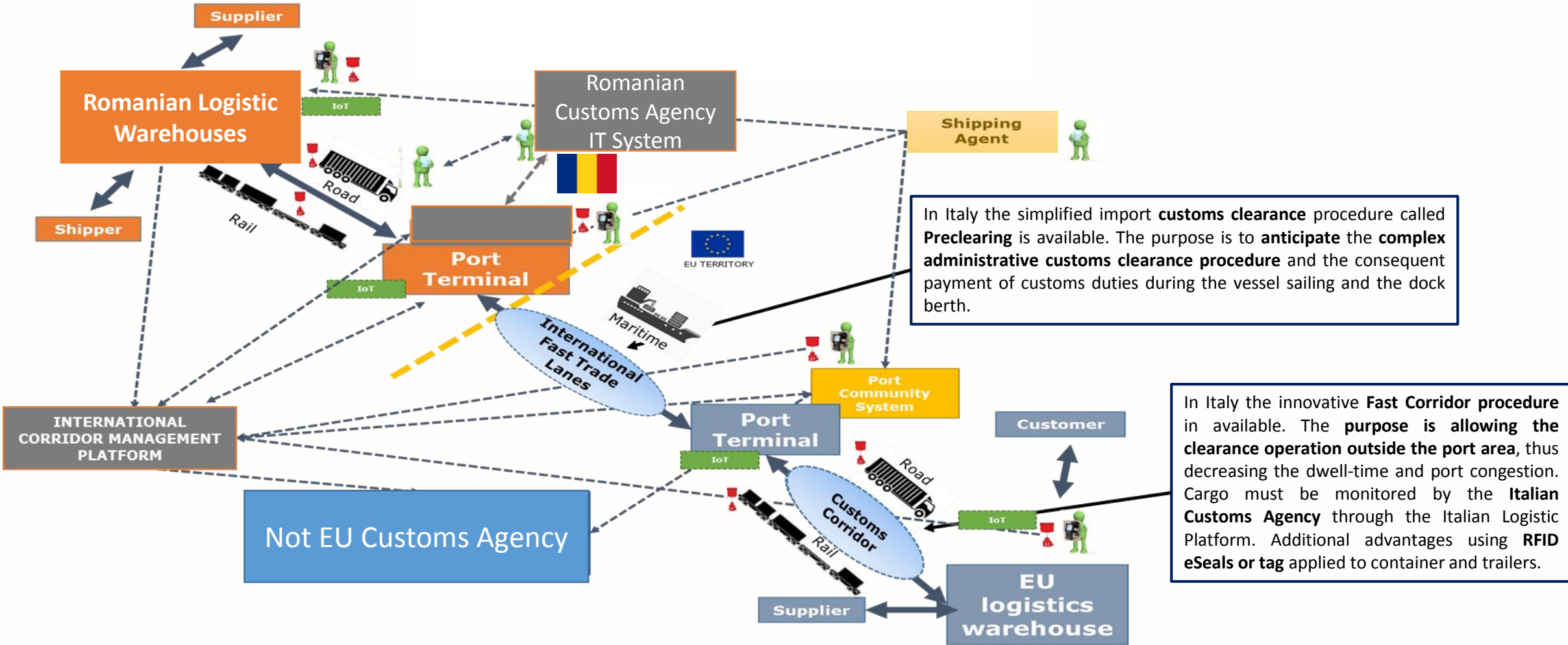
## Public Institution involved:

- Leghorn and Rades Port Authorities;
- Italian Port Captaincy;
- Italian Customs Agency.





# International Fast & Secure Trade Lane: Romania & Black Sea countries



## Concrete opportunity

Within the next few months the  
***International Fast & Secure Trade Lane model and the usage of IOT***  
are further used and tested in ongoing Med and Black Sea projects and other EU pilot  
projects

***More than 33 international actors*** of the Door-to-Door logistics Chain have already  
signed an Expression of Interest

There are concrete opportunities for ***Romanian ports and logistic actors.***

**Deadline for joining as stakeholder 30.09.2019**

**Contact us:**

[abatello@circletouch.eu](mailto:abatello@circletouch.eu)

Or

**You can find  
us at booth  
23**



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