



RAM
S.p.a.
Logistica · Infrastrutture · Trasporti

HubTelematica



4e-bridge

November 27th, 2023

Project evolution & update

- ✓ Amendment to the Grant Agreement signed in August 2023
- ✓ Project extended until December 2024
- ✓ New beneficiary (Hub Telematica)
- ✓ New implementing bodies (RAM & inland terminals supporting actions)
- ✓ Ongoing synergy with Italian Transport Minister Supply Chain Digitalisation Roadmap and e-FTI implementations

Updated partnership

| | |
|--------------|-----------------|
| Total budget | 12'185'050.00 € |
|--------------|-----------------|

| Beneficiaries |
|-------------------------------------------------------------------|
| Ministero delle Infrastrutture (MIT) |
| Autorità di Sistema Portuale del Mar Ligure Occidentale (ASPMALO) |
| digITALog S.p.A. |
| Circle S.p.A. |
| Hub Telematica S.R.L. (new) |
| Implementing Bodies |
| PSA Genova Prà S.p.A. |
| Ignazio Messina & C S.p.A. |
| Terminal Contenitori Porto di Genova S.p.A. |
| Spinelli S.R.L. |
| Terminal San Giorgio S.R.L. |
| Bettolo S.R.L. |
| Vado Gateway S.p.A. |
| Logtainer S.R.L. |
| Hannibal S.p.A. |
| Mercitalia Intermodal S.p.A. |
| Medlog Italia S.R.L. |
| Truck Rail Container S.p.A. |
| Interporto di Padova S.p.A. (new) |
| Rail Hub Europe S.p.A. (new) |
| TRI S.p.A. (new) |
| Luigi Cozza Trasporti S.R.L. (new) |
| RAM S.p.A. (new) |

Updated gantt

| ID | Description | Timeline |
|-------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A1 | E-bridge design and system architecture | October-18 November-18 December-18 January-19 February-19 March-19 April-19 May-19 June-19 July-19 August-19 September-19 October-19 November-19 December-19 January-20 February-20 March-20 April-20 May-20 June-20 July-20 August-20 September-20 October-20 November-20 December-20 January-21 February-21 March-21 April-21 May-21 June-21 July-21 August-21 September-21 October-21 November-21 December-21 January-22 February-22 March-22 April-22 May-22 June-22 July-22 August-22 September-22 October-22 November-22 December-22 January-23 February-23 March-23 April-23 May-23 June-23 July-23 August-23 September-23 October-23 November-23 December-23 January-24 February-24 March-24 April-24 May-24 June-24 July-23 August-24 September-24 October-24 November-24 December-24 |
| A2 | Smart port buffer areas management module | M1 |
| SA2.1 | Processes and systems re-engineering (study) | M2 |
| SA2.2 | Prototype development and test | M3 + M4 |
| SA2.3 | Pilot | M5 |
| A3 | Innovative digital last mile rail management module | M6 |
| SA3.1 | Processes and systems re-engineering (study) | M7 + M8 |
| SA3.2 | Prototype development and test | M9 |
| SA3.3 | Pilot | M10 |
| A4 | Advanced road port gates system | M11 + M12 |
| SA4.1 | Processes and systems re-engineering (study) | M13 |
| SA4.2 | Prototype development and test | M14 |
| SA4.3 | Pilot | M15 |
| A5 | Project management, Communication and Dissemination | M16 M17 M18 M19 |



Cofinanziato dal meccanismo per collegare
l'Europa dell'Unione europea

eBRIDGE event

27th november 2023

eBridge Project

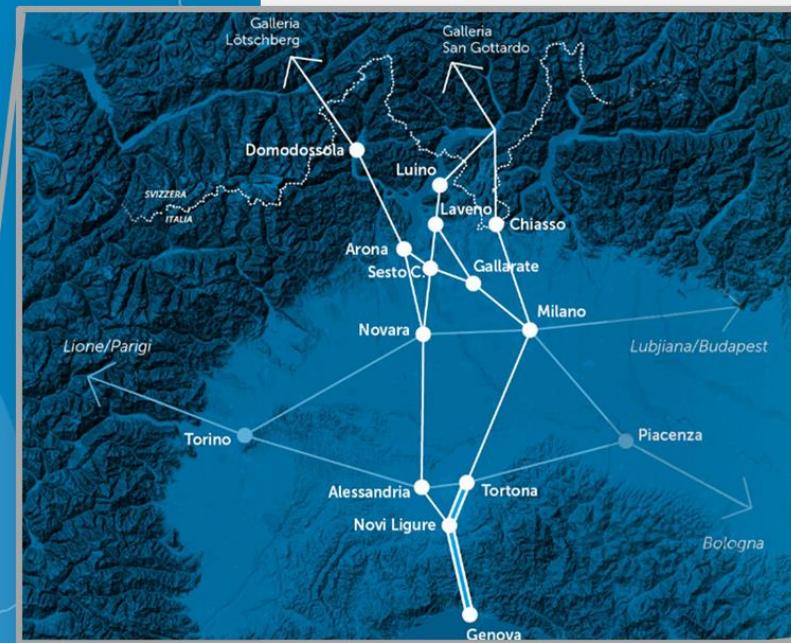
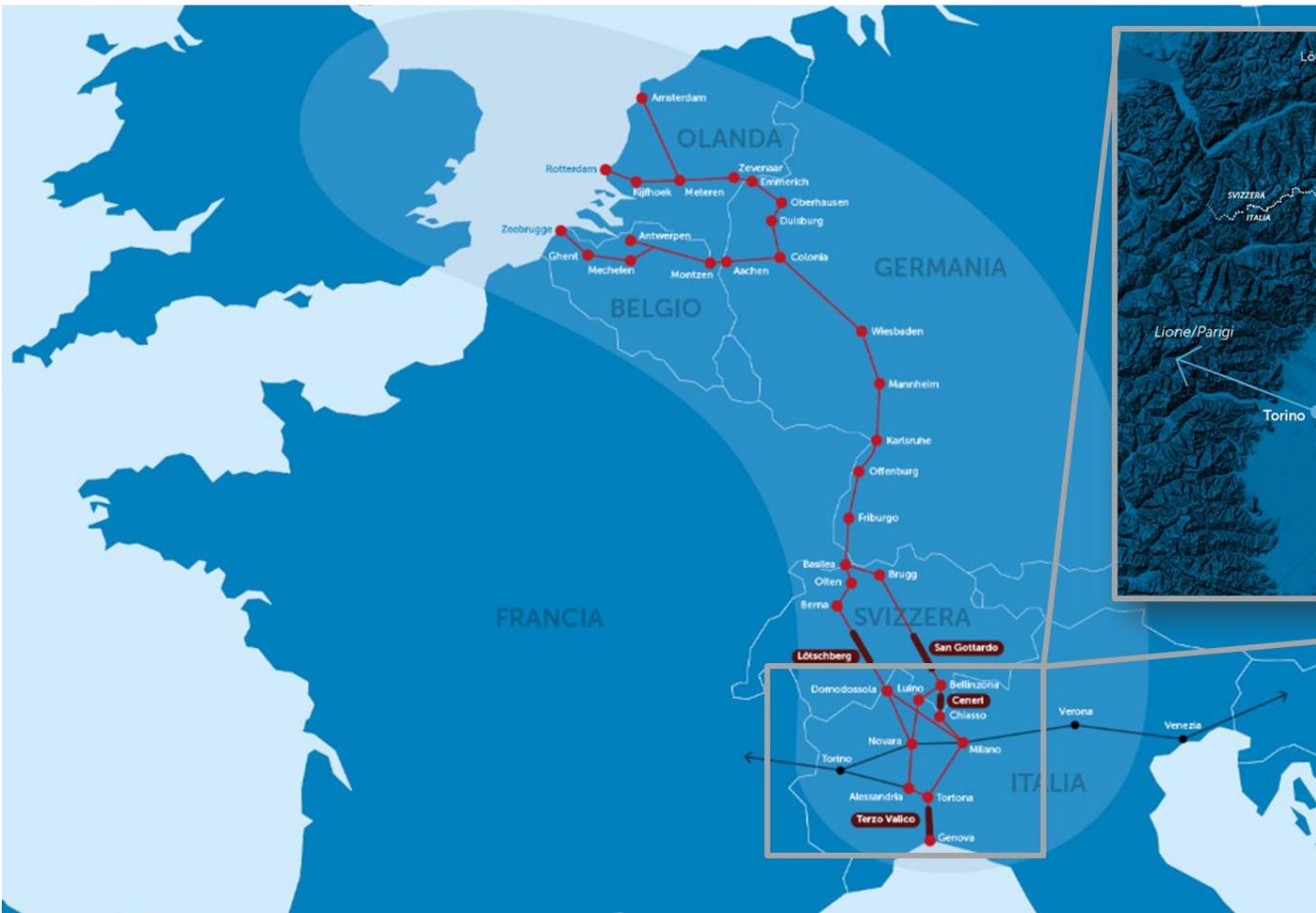
*Optimizing the management of rail flows
between Port and Inland Areas: innovative
technologies and federative services*

Luca Abatello, President & CEO
Veronica Asta, AI & Optimisation Manager
Circle Group





Rhine-Alpine Corridor – e-Bridge Project



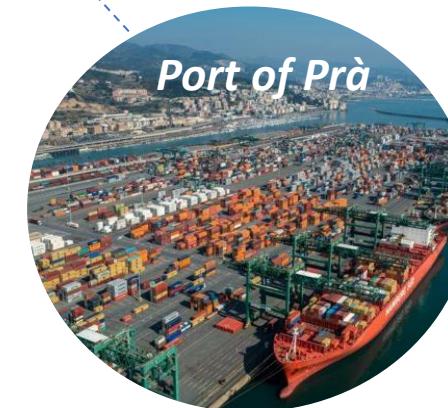
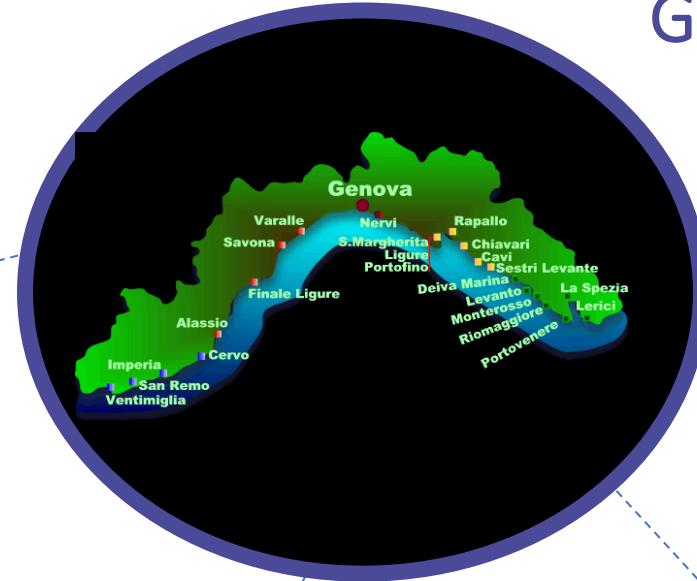
RAM Sp.a
Logistica · Infrastrutture · Trasporti

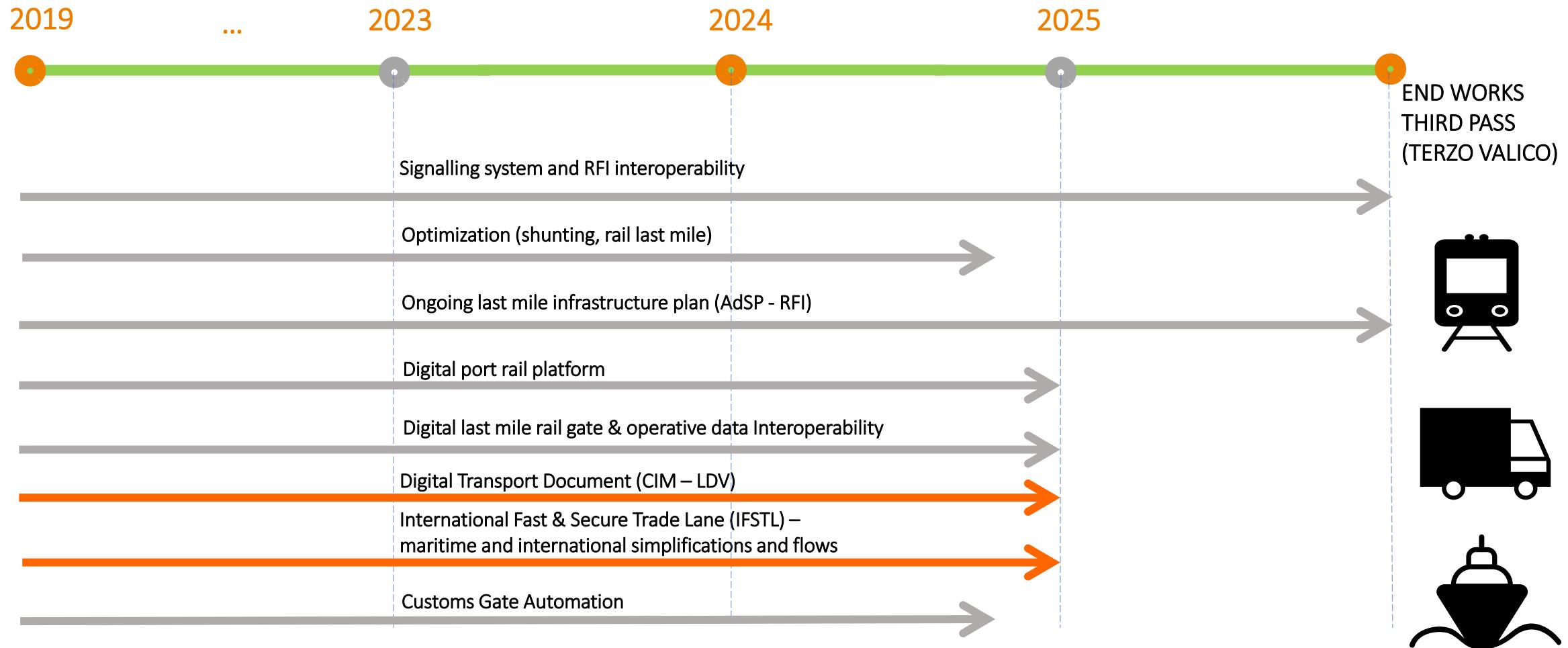
PORTS of GENOA
VADO LIURE • SAVONA • IPRA • GENOA

HubTelematica

Circle
Group

Genoa Ports ongoing activities





Digital last mile rail gate & operative data interoperability



Signalling
project



Shunting
Optimization pilot



Gate
Interoperability



2020-25



2021-24



2021-24





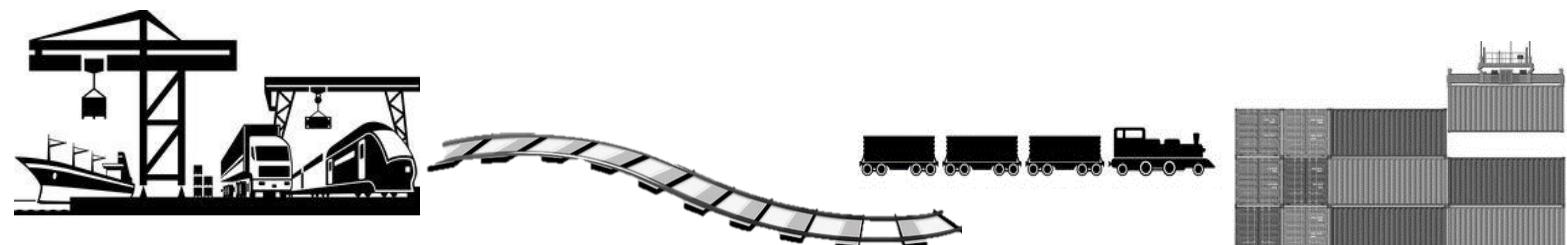
<https://www.youtube.com/watch?v= RH6ipSM65w>

Rail Last Mile digital services for the operators



Interoperability model between the parties involved for the organization and optimal management of the last railway mile:

- RFI PIC information flows to/from port node
- Integration of shunting operator – railway paths
- «Recomaf/M53» digitalization
- Tracks occupation management and last mile mile optimization models

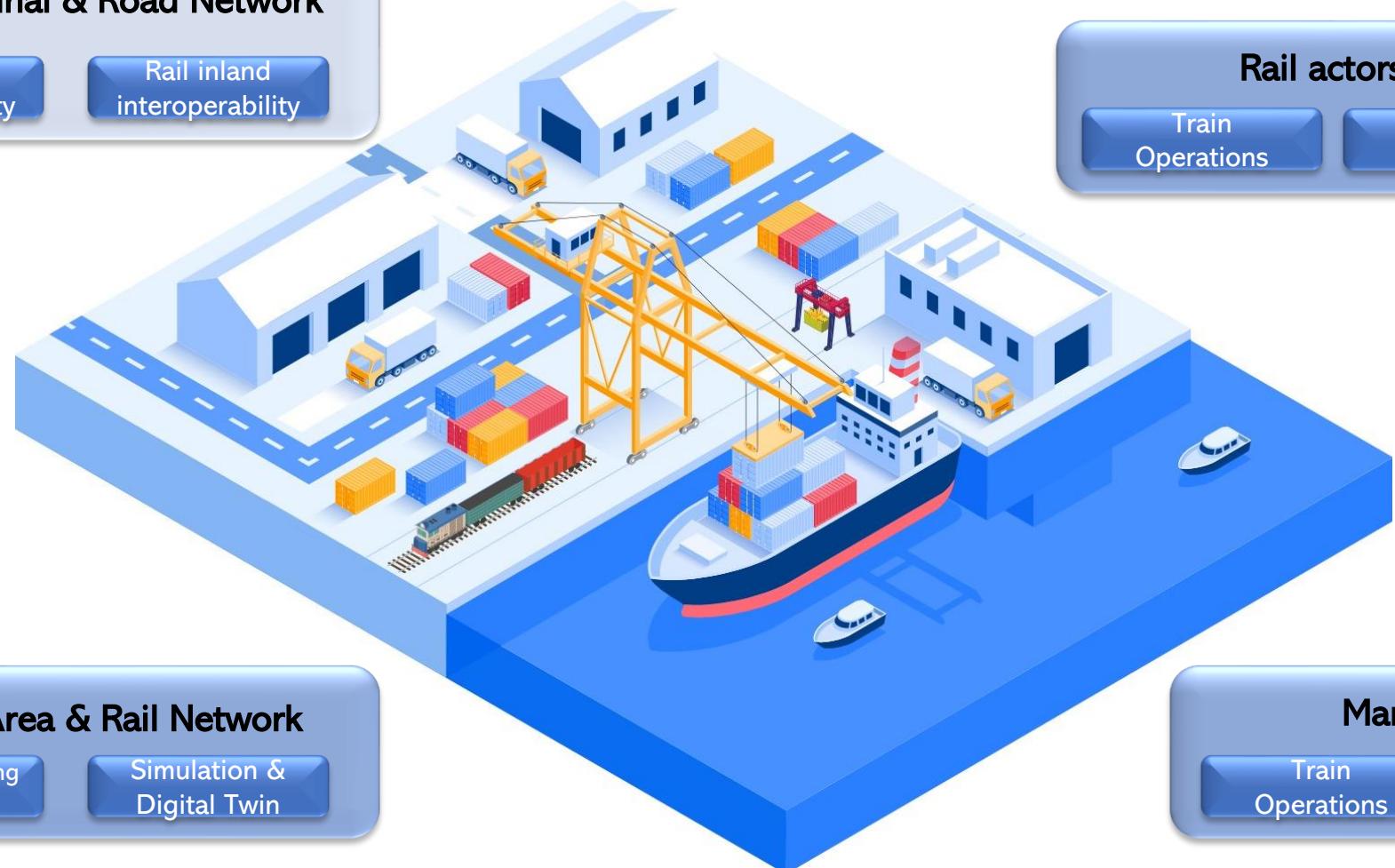


OPTIMIZATION & RAIL LAST MILE VIEW

Inland Terminal & Road Network

MTO
interoperability

Rail inland
interoperability



Rail actors & RFI

Train
Operations

Track & trace

Shunting Area & Rail Network

Port Rail Shunting
Optimisation

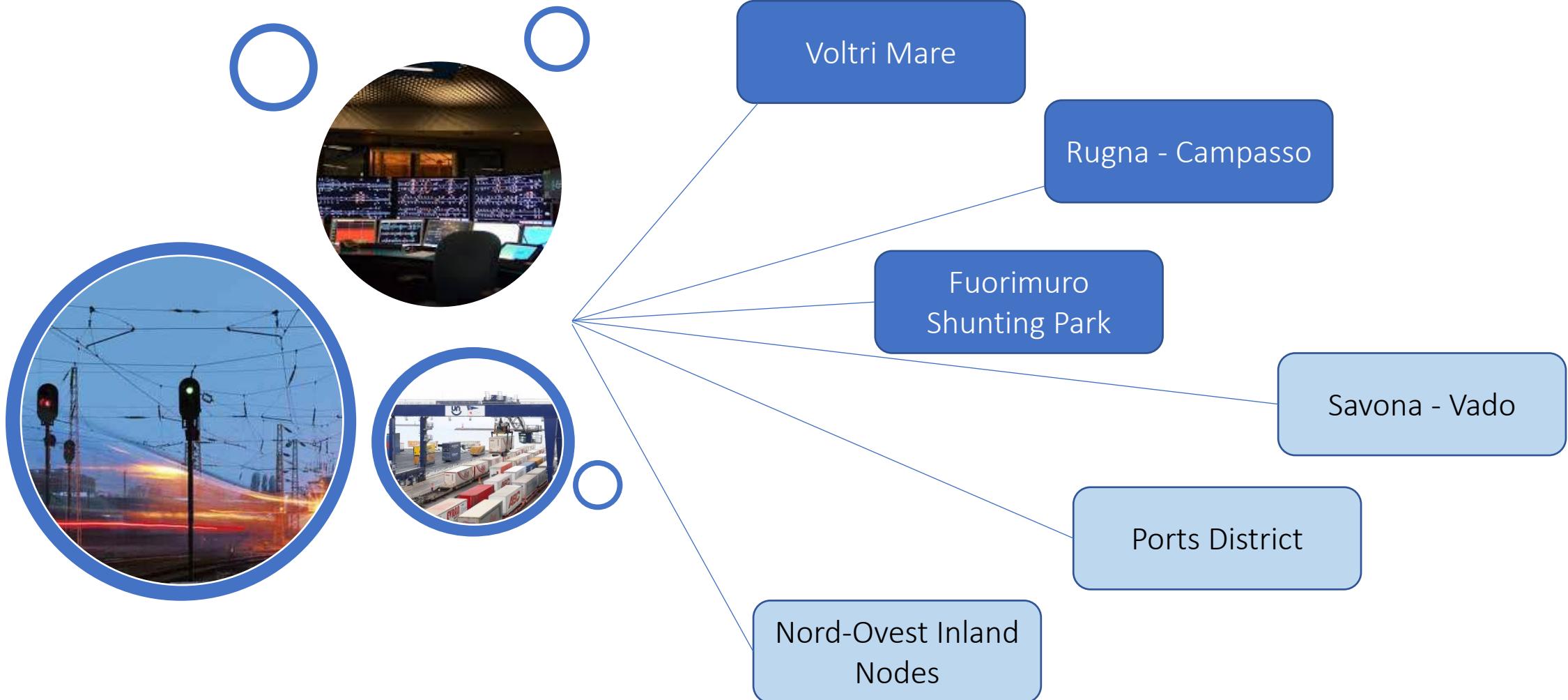
Simulation &
Digital Twin

Maritime Terminal

Train
Operations

Digital Twin

Signalling systems & RFI interoperability - Port nodes & more



(Customs) Gate Automation



ADM national services development



Implementation within AdSP & PCS team





RAIL (RFI) PIC Dashboard

RAIL DASHBOARD

· PIC connector ·



Gestione operativa treni



MELZO SCALO



25/11/2023 23:33:00

PIANIFICATO



BS EST F. MERCI



25/11/2023 23:28:00

SOPPRESSO



Marzaglia



25/11/2023 23:25:00

PIANIFICATO



Marzaglia



25/11/2023 23:11:00

PIANIFICATO



Rivalta Scriv.



25/11/2023 21:52:00

PIANIFICATO



PD INTERPORTO



25/11/2023 17:37:00

PIANIFICATO



PD INTERPORTO



25/11/2023 17:22:00

PIANIFICATO



PD INTERPORTO



25/11/2023 16:52:00

PIANIFICATO



MELZO SCALO



25/11/2023 16:29:00

PIANIFICATO



Marzaglia



25/11/2023 14:09:00

PIANIFICATO

RAIL DASHBOARD

RFI Dashboard

Gestione operativa treni

RAIL Dashboard

Lista di carico

Composizione treno

Distinta treno

Viaggi treno

Action queues

Anagrafiche

Utenti

Compagnie

Lista di carico

MTO ▾ Numero viaggio MTO Numero treno RFI Data treno RFI

Booking Unità

🔍 CERCA 🚫 AZZERA

| MTO | Numero viaggio MTO | Terminal partenza | Terminal arrivo | Numero treno RFI | Data treno RFI | Compagnia ferroviaria | Definitivo | Azioni |
|---------------|--------------------|-------------------|-----------------|------------------|----------------|-----------------------|------------|--------|
| IT02716640103 | 2023_1734 | | | 1734 | 16/11/2023 | IT06663350723 | | ⋮ |

Rows per page: 10 ▾ 1 - 1 of 1 < >

RAIL DASHBOARD

RFI Dashboard

Gestione operativa treni

RAIL Dashboard

Lista di carico

Composizione treno

Distinta treno

Viaggi treno

Action queues

Anagrafiche

Utenti

Compagnie

Composizione treno

MTO ▾ Viaggio Numero treno RFI Data treno RFI

Booking Unità

| MTO | Viaggio | Numero treno RFI | Data treno RFI | Parte | Parti totali | Ettr | Locode destinazione | Definitivo | Azioni |
|---------------|-----------|------------------|----------------|-------|--------------|------|---------------------|-------------------------------------|--------|
| IT02716640103 | 2023_1734 | 1734 | 16/11/2023 | 1 | 1 | | ITRNE | <input checked="" type="checkbox"/> | ⋮ |
| IT02716640103 | 2023_1734 | 1734 | 16/11/2023 | 0 | | | ITRNE | | ⋮ |

Rows per page: 10 ▾ 1 - 2 of 2 < >

RAIL DASHBOARD

-  RFI Dashboard
-  Gestione operativa treni
-  RAIL Dashboard
-  Lista di carico
-  Composizione treno
-  Distinta treno
-  Viaggi treno
-  Action queues
-  Anagrafiche
-  Utenti
-  Compagnie

Distinta treno

MTO Viaggio Terminal partenza Terminal arrivo

Numero treno RFI Data treno RFI Compagnia ferroviaria Booking

Unità

 CERCA  AZZERA

| MTO | Viaggio | Terminal partenza | Origine | Terminal arrivo | Destinazione | Numero treno RFI | Data treno RFI | Compagnia ferroviaria | Definitivo |
|---------------|-----------|-------------------|---------|-----------------|--------------|------------------|----------------|-----------------------|------------|
| IT02716640103 | 2023_1734 | | | | ITRNE | 75648/56122/5612 | 16/11/2023 | IT06663350723 | |

Rows per page: 10 ▾ 1 - 1 of 1 < >

RAIL DASHBOARD

RFI Dashboard

Gestione operativa treni

RAIL Dashboard

Lista di carico

Composizione treno

Distinta treno

Viaggi treno

Action queues

Anagrafiche

Utenti

Compagnie

Viaggi treno



| | Lista di carico | Composizione treno | Distinta treno | Tipo processo | MTO | Viaggio | Numeri treno RFI | Data treno RFI | Impresa ferroviaria |
|--|-----------------|--------------------|----------------|---------------|---------------|-----------|------------------|----------------|---------------------|
| | | | | IMPORT | IT02716640103 | 2023_1734 | 75648/56122/5612 | 16/11/2023 | IT06663350723 |

- TRAIN NUMBER NOTIFICATION
- DEPARTURE STATION NOTIFICATION
- TRACK ASSIGNMENT
- TRACK ASSIGNMENT RESPONSE
- RAIL MATERIAL READY
- SECONDARY MANEUVER START
- TRAIN GATE OUT
- SECONDARY MANEUVER END
- MANEUVER RESPONSE
- PRIMARY MANEUVER START
- PRIMARY MANEUVER END
- RAIL MATERIAL READY RESPONSE
- TRAIN DEPARTURE
- TRAIN ARRIVAL
- TRAIN GATE IN
- TRAIN UNLOADED

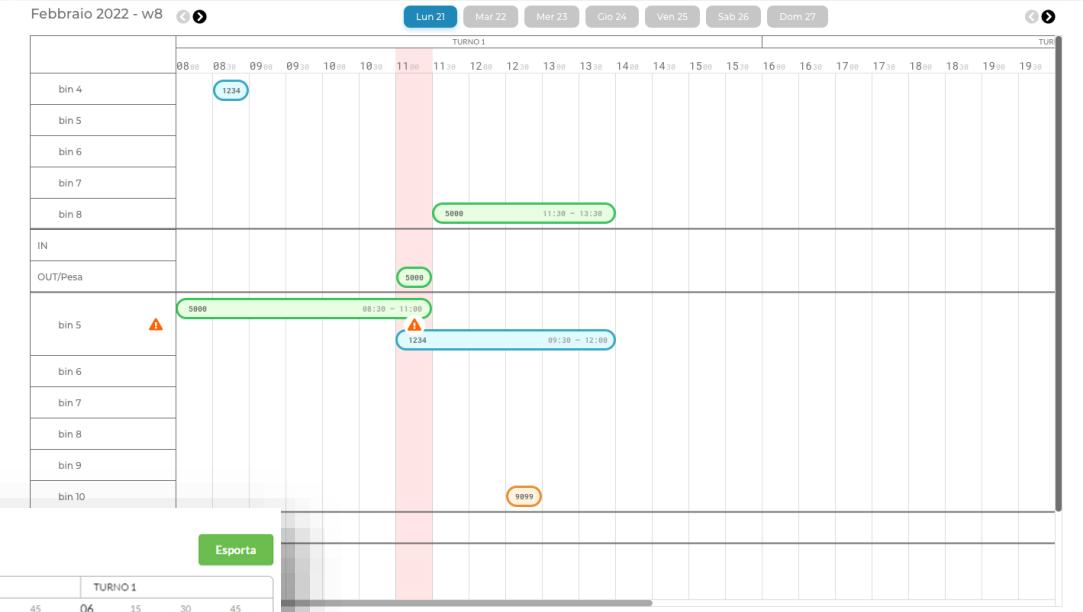
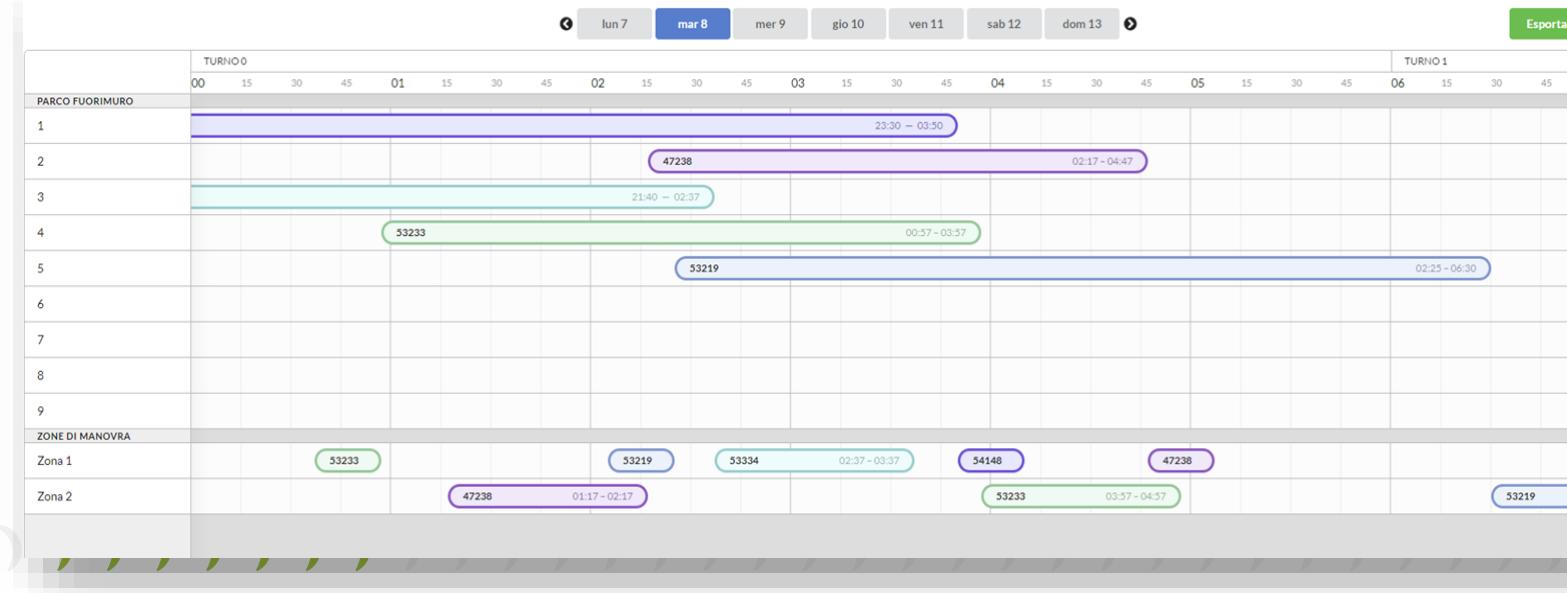
IRAIL - ADM
Train Manifest
Security control (GdF)

PORT RAIL SHUNTING PLANNING & OPTIMIZATION

Ottimizza Selezionati Mostra ultimi ottimizzati Mostra tutti

| □ Traccia | Orario | A/P | Terminal | Luogo | Giorni di Circolazione | Lunedì | Martedì | Mercoledì | Giovedì | Venerdì | Sabato | Domenica |
|-----------|--------|-----------|----------|-------|------------------------|--------|---------|-----------|---------|---------|--------|----------|
| □ 90001 | 18:00 | arrival | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90002 | 14:00 | departure | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90003 | 7:00 | arrival | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90004 | 4:00 | departure | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90005 | 20:00 | departure | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90010 | 12:00 | departure | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90011 | 12:00 | arrival | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |
| □ 90012 | 12:00 | arrival | | | 1 2 3 4 5 6 7 | □ | □ | □ | □ | □ | □ | □ |

Input



Output
Graphical representation



PORT RAIL SHUNTING SIMULATION & DIGITAL TWIN

