



Multipurpose Terminal Operating Systems

20 Aprile 2021

- TOS - Definition
- TOS – Main Modules
- TOS – Added Value Modules
- TOS – Federative Services



Terminal Operating System

The terminal operating system (TOS) is the primary instrument of record-keeping, planning, control, and monitoring for the modern marine and inland terminal.

The TOS serves, and is served by, labour, planners, supervisors, managers, liners, truckers, railroads, visitors, regulators, and analysts.

The TOS will have profound impacts on both the tactical performance and strategic viability of the terminal, its customers, and its operator.



PORT INTERMODAL TERMINAL

Intermodality:

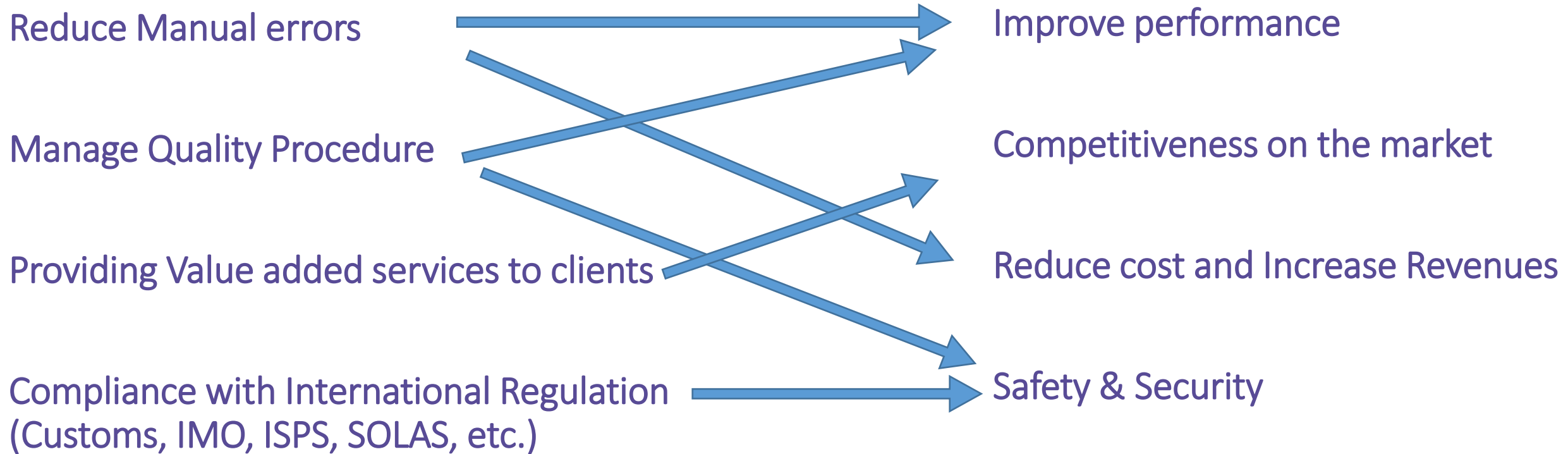
- Maritime transport
- Road Transport
- Rail Transport



INLAND INTERMODAL TERMINAL

Intermodality:

- Road Transport
- Rail Transport
- Barge transport



TOS Multipurpose – which cargo traffic?

Container



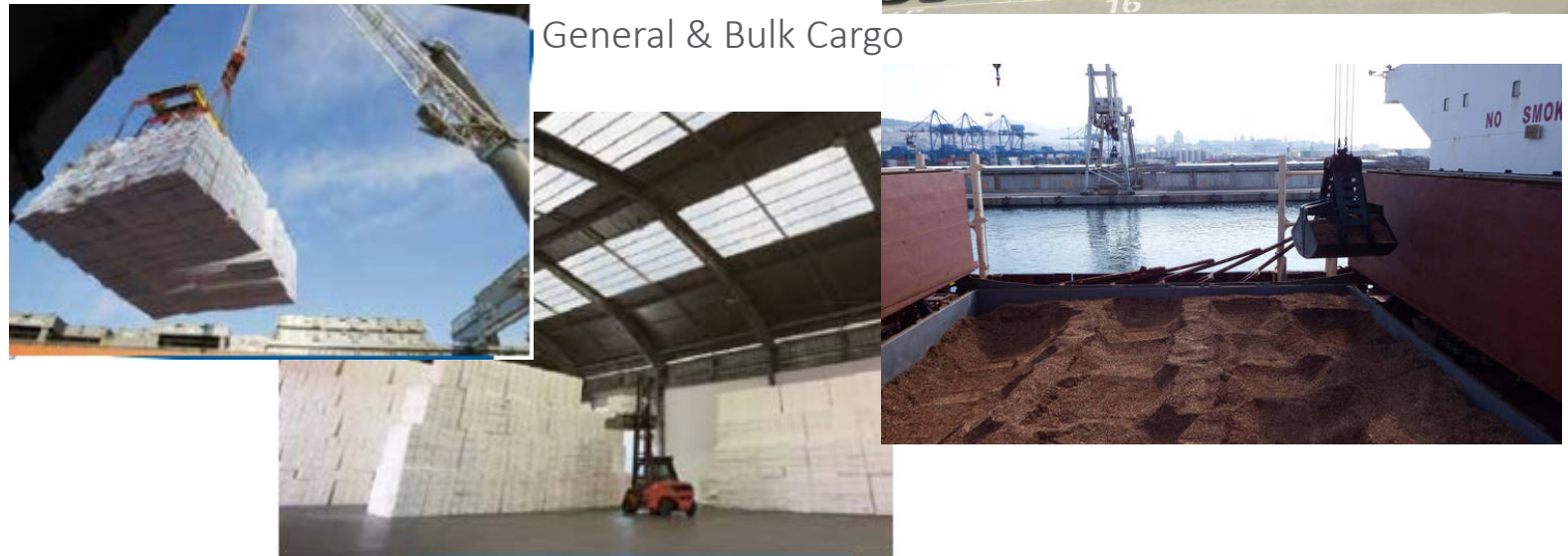
Vehicles



Ro-Ro



General & Bulk Cargo



TOS Multipurpose – which cargo traffic? Impacts

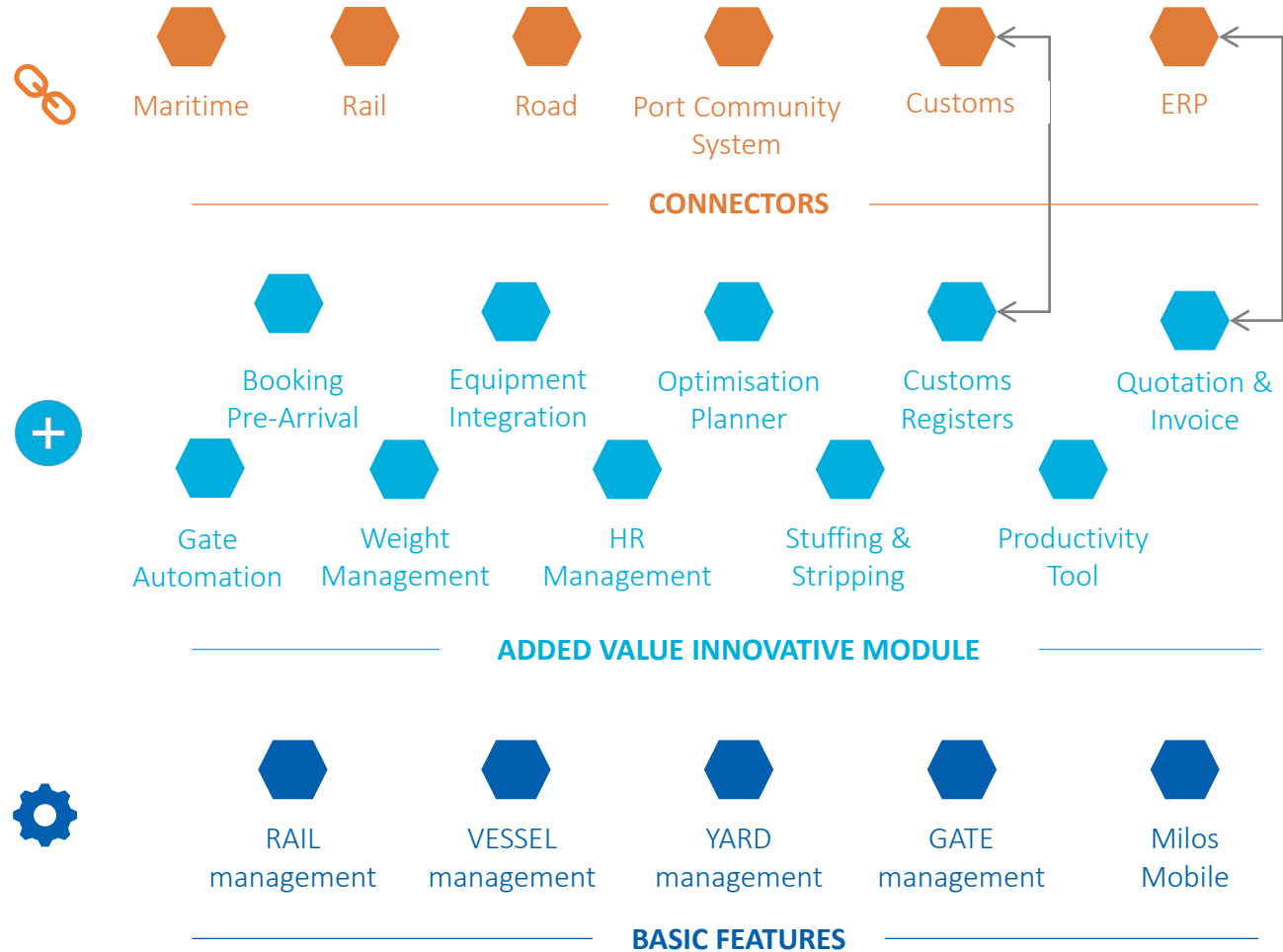


- INTEROPERABILITY STANDARD (EDIFACT, EDIGES, etc.)
- Easy Cargo / ITU identification
- Possible automation (OCR)



- NOT INTEROPERABILITY STANDARD (EDIFACT, EDIGES, etc.)
- NOT Easy Cargo / ITU identification
- NOT EASY Possible automation (OCR)

TOS - Solution and interconnected systems



- TOS - Definition
- TOS – Main Modules
- TOS – Added Value Modules
- TOS – Federative Services



Configure terminal and yard areas for:

- Type of Cargo;
- Dangerous goods;
- Client;
- Service;
- Final destination;
- Vessel / Train.

Check real – time Yard Areas and Warehouses Inventory

Check real – time Yard Areas and Warehouses Capacity in order to plan optimal allocation

Prioritize, categorize, and schedule work activities, create 'To Do' tasks on containers and cargo.

The berth planning is a graphical allocation system, allowing a real-time view of the berths.

Once the arrival schedules are created a graphical view enable to create a schedule.



Based on load and discharge information the system will be able to predict the berthing or track position based on driving distance of the handling equipment and stocking areas.

Vessel Management

Vessel Planning



ARRIVI_NAVE

Lingua: Italiano Benvenuto, vessel Sede selezionata: clip Logout

FILTRI

Nave/mo Codice Viaggio ETA ETD Stato

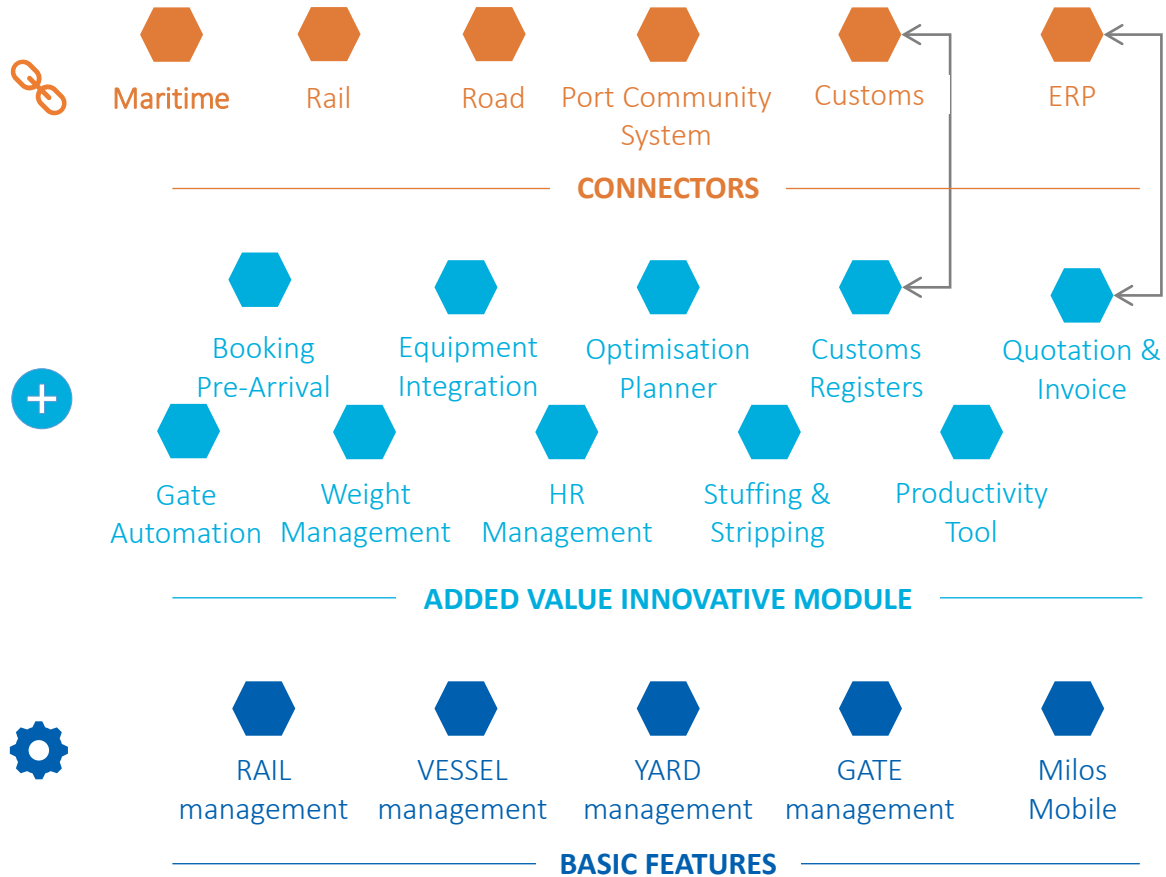
+ Crea (6 OF 26)

	NAVE	CODICE	VIAGGIO	IMO	ETA	ATA	ETD	ATD	STATO	DATA APERTURA	DATA CHIUSURA	DATA CHIUSURA DOGANALE	MMA
Edit Tools Report	POSEIDON LEADER	180030	084	9335965	27/07/2018 02:00:00		28/07/2018 19:30:00		PREVISTA	31/07/2018 20:41:00			✓
Edit Tools Report	HOEGH PUSAN	180072	013E	9153783	25/07/2018 02:00:00		25/07/2018 02:00:00		CHIUSURA	31/07/2018 20:41:01			✓
Edit Tools Report	HOEGH TRIGGER	180070	16	9664968	24/07/2018 02:00:00		24/07/2018 02:00:00			31/07/2018 20:41:01			✓
Edit Tools Report	LUCIE SCHULTE	180071	160718	9301926	24/07/2018 02:00:00		24/07/2018 02:00:00			31/07/2018 20:41:01			✓
Edit Tools Report	PEGASUS HIGHWAY	180077	061A	9078830	23/07/2018 02:00:00		23/07/2018 02:00:00		CHIUSURA	31/07/2018 20:41:01			✓
Edit Tools Report	HOEGH INCHON	180069	002E	9088249	20/07/2018 02:00:00		21/07/2018 02:00:00		CHIUSURA	31/07/2018 20:41:01			✓

Vessel Planning allows to manage and monitor the real time status of vessel arrivals.

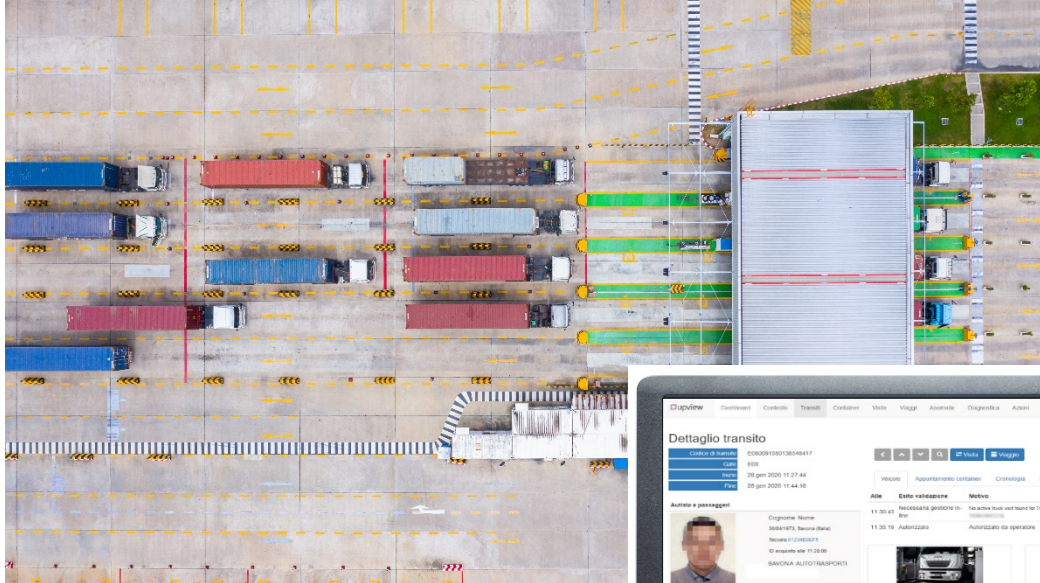
Vessel Planning is able to receive booking relating terminal operations both by web thanks to restricted access and directly from shipping lines through dedicated connectors (Shipping Line Connector).

Vessel Planning allows to perform Loading and discharging plan

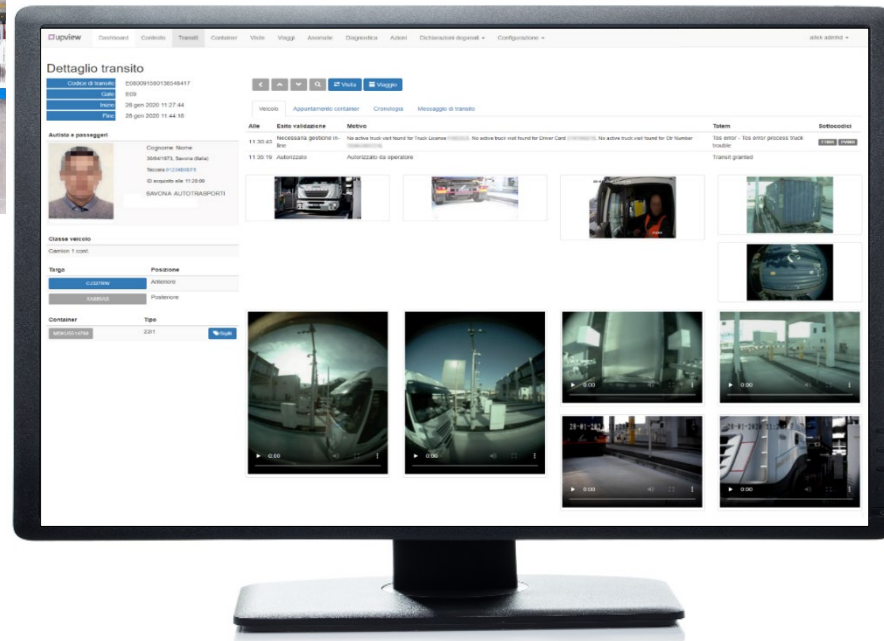


Maritime Transport

- Shipping Agencies
- Shipping Companies
- Port Authorities



Gate Management allows to manage gate-in and gate-out operations and to store information relating goods and drivers that passes through the terminal gate.



The pre-Interchange is delivered to the driver with information which allows the stoker to identify the correct cargo.

The final interchange is delivered to the driver with detailed information of all goods picked-up or delivered

Consorzio Imprese Lavoratori Produttori s.r.l. Via San Giovanni, 14 47124 Urbino (UR) - IT Capitale Sociale di € 100.000.000,00 P.IVA n. 0286 870117 - Tel. (+39) 0749 847000					
PRE-INTERCHANGE N. 2018-CL-000-0009 del 11/05/2018 16:57					
N. mission ID 130 Valore S.T.C. Servizio Trasporti Comenati S.p.a. IT0195346091					
Autista Mario Pigo Targa mezzo part11202					
MERCE TRATICO					
GATE_2 Via di Spoleto, 1 07123 LIVORNO LI 0584047157					
Delivery Number 2018000029-1					
Release Order					
Delivery Order Agenzia					
ID	Polizza	Produttore	Peso	Magazzino	Viaggio name
	AS082019	Ford Motor	20	mag 01	Jaguar Active - 180118
		Ford Motor			Garage
Note					
					
2018-CL-000-0009					

Rail Park Planning

- Planning of rail park occupation (see graphical views below) based on train voyages schedules.



Rail Train Planning

- Planning of train discharging and loading operation with **automatic controls** on weight and dimension rules for rail wagons.

Partenze

Codice/Codice esterno/Nome Destinazione ETD Da ETD a Targa carro Codice UTI

CODICE	CODICE ESTERNO	NOME	TRACCIA	DESTINAZIONE	ETD ↑	VIAGGIO PREC	VEETTORE	MTO	NUM. CARRI	CARICHI	CIRCOLAZIONE	LAVORAZIONE
P00560	7014366	I5236		Paladina	04/03/2021 16:50				11	24/20	PROGRAMMATO	INLAVORAZIONE
P00563	7012955	I5231		Pradamano	04/03/2021 16:04				18	18/20	PROGRAMMATO	INLAVORAZIONE
P00548	7014203	I5233		Misano Adriatico	04/03/2021 14:49				21	4/4	PARTITO	CHIUSO

Pre-Plan

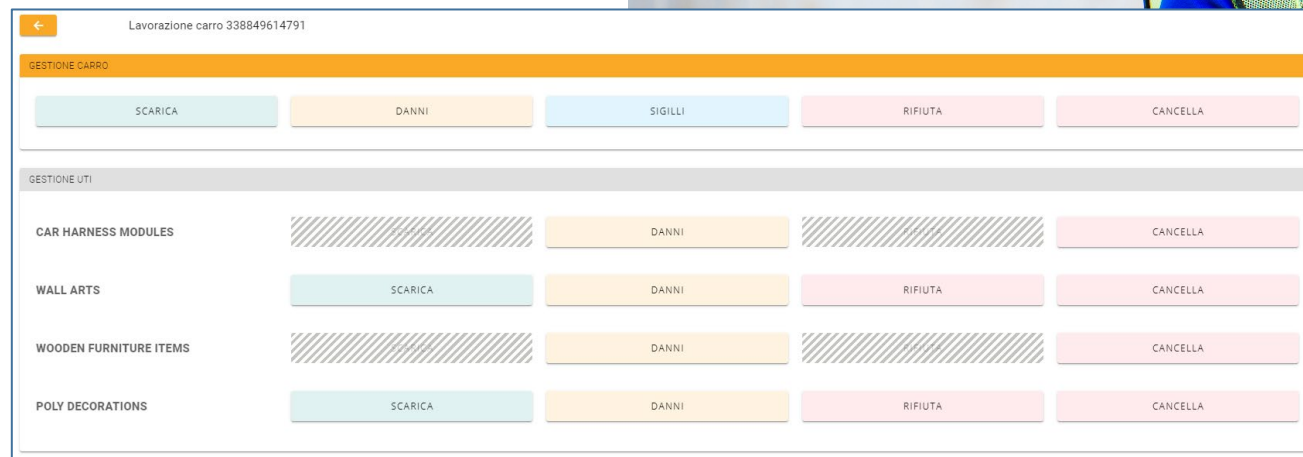
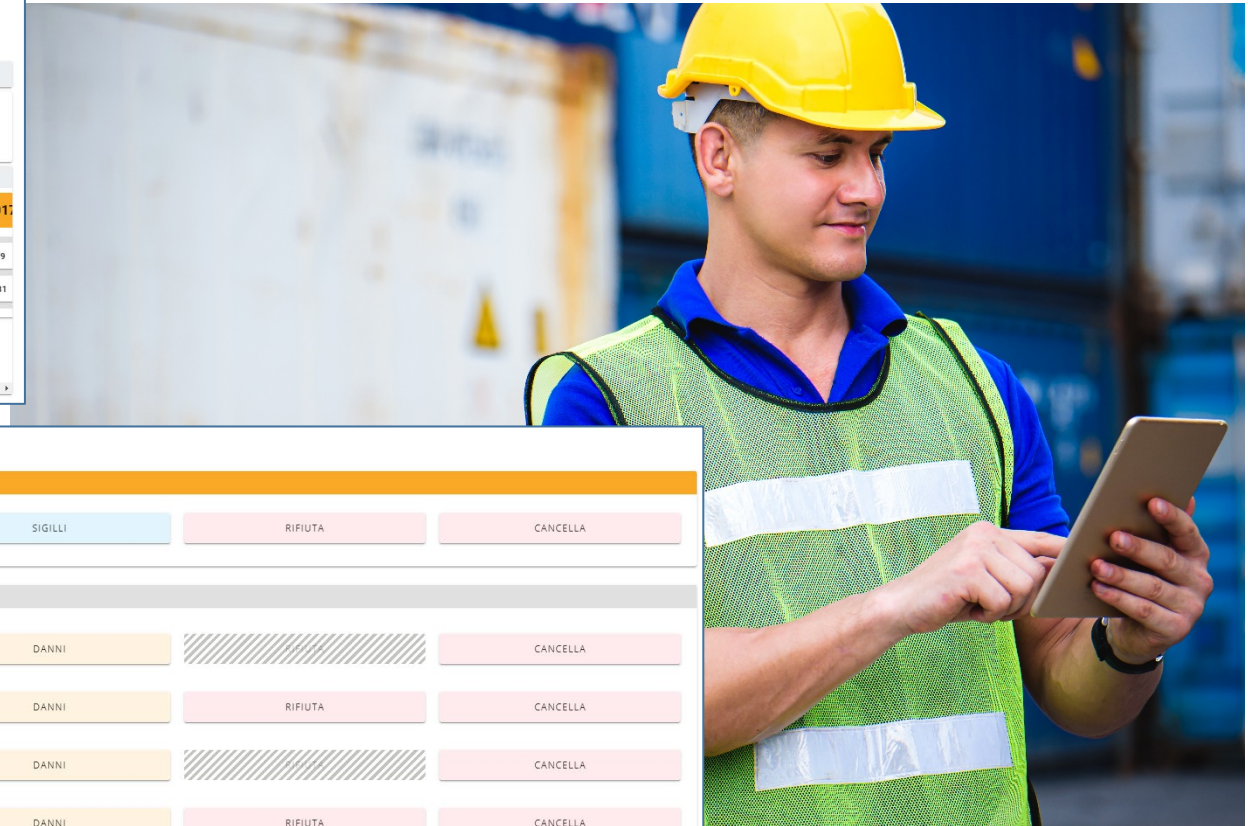
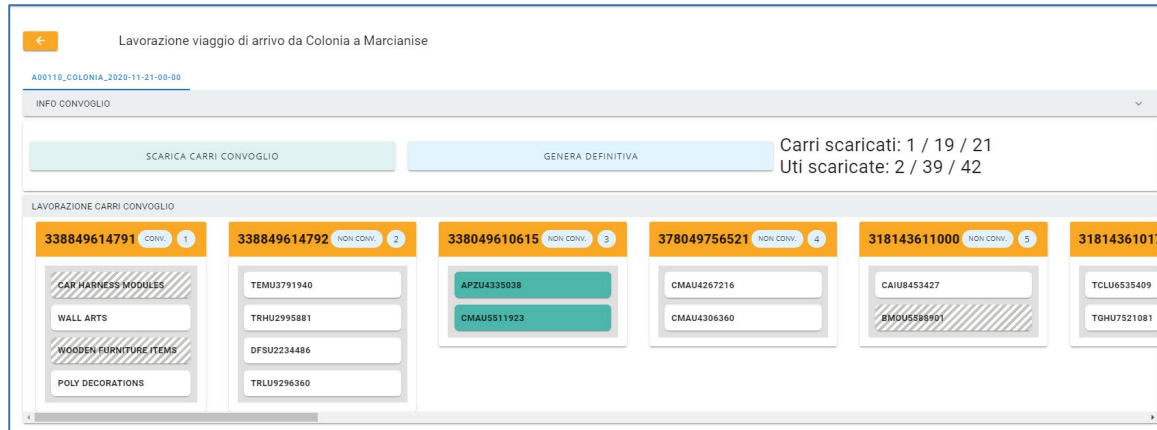
The Pre-Plan interface shows a 'GESTIONE CARRI' window. At the top, there is a search bar labeled 'Cerca per Tipo / Unit id'. Below it, a list of wagons is displayed with columns for 'Tipo' and 'Unit id'. A red box highlights the search bar and the list. A green circle highlights a specific wagon in the list. A red arrow points from the 'ASOCIA CARRI' button in the previous window to this interface.

Loading Plan

The Loading Plan interface shows a 'GESTIONE CARRI' window. At the top, there is a search bar labeled 'Cerca per Tipo / Unit id'. Below it, a list of wagons is displayed with columns for 'Tipo' and 'Unit id'. A red box highlights the search bar and the list. A green circle highlights a specific wagon in the list. A red arrow points from the 'ASOCIA CARRI-CONVOGLIO' button in the previous window to this interface.

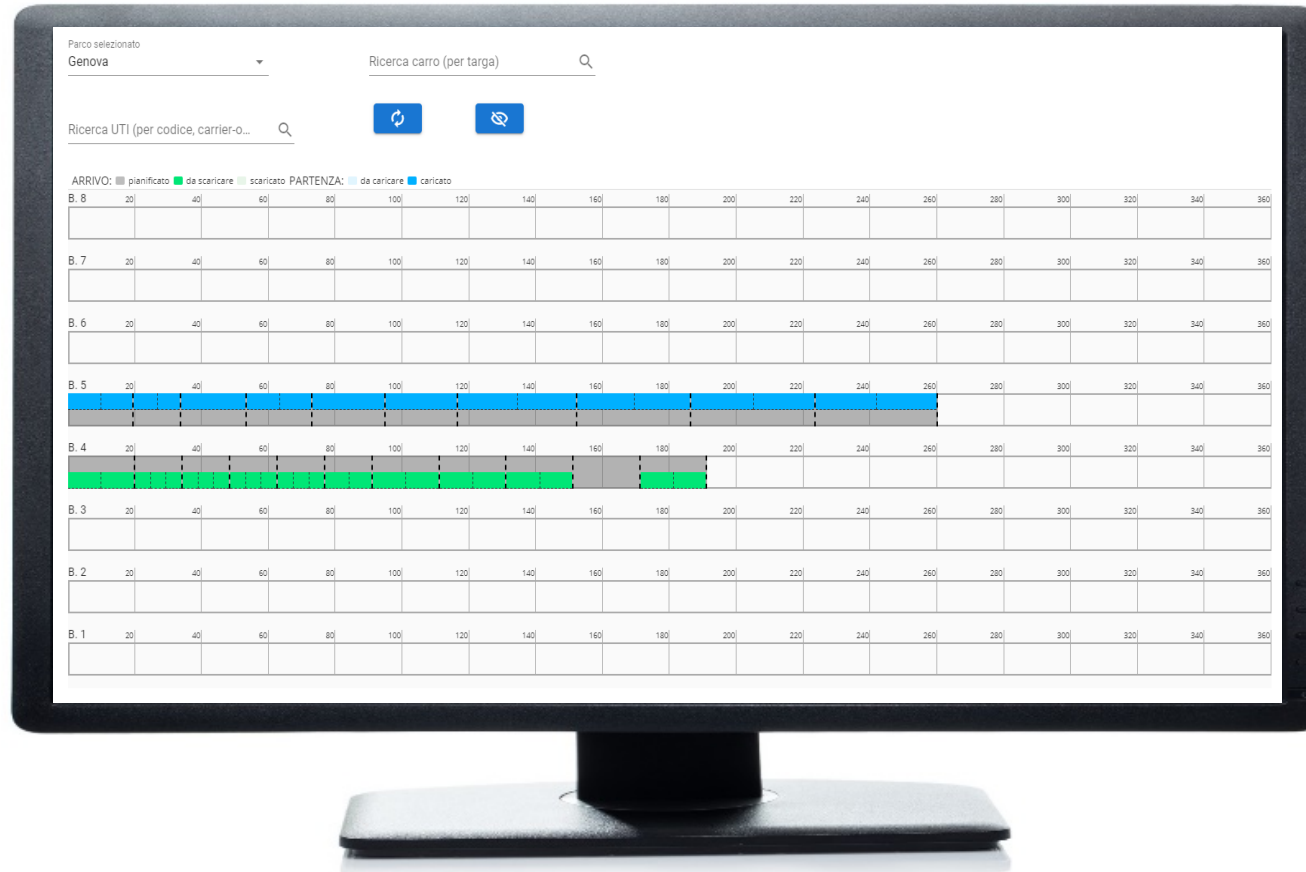
Rail Execution

- The rail loading and discharging **execution** can be easily performed also thanks to **mobile App** (see views below).

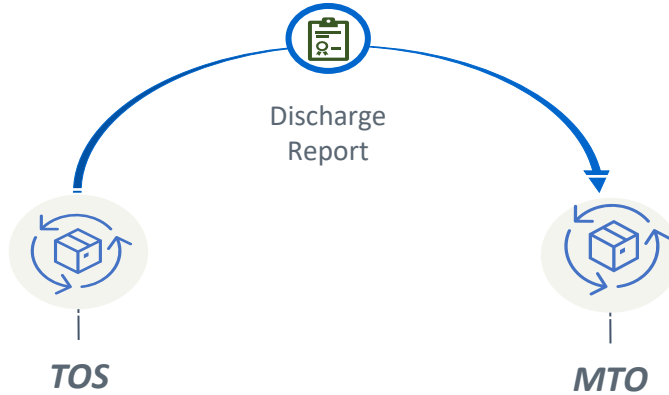
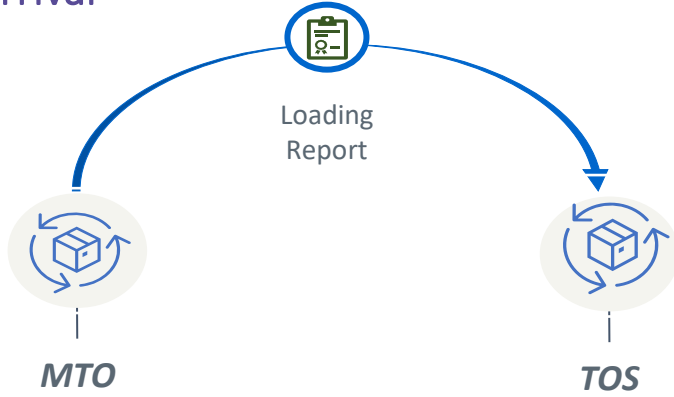


Rail Park - Real Time View

- Control operations in **real time**, see **graphical views** below of rail parks.



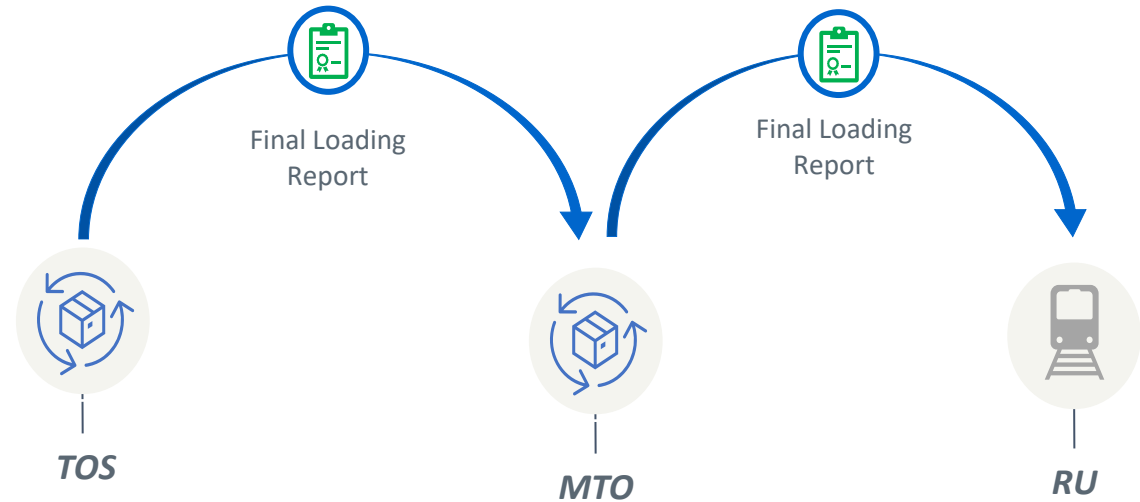
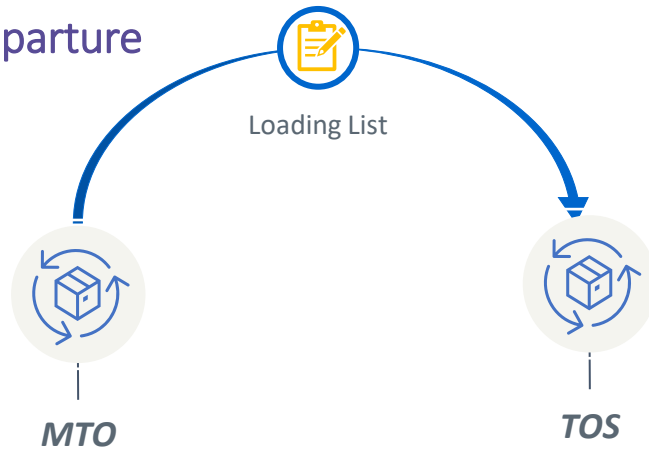
Arrival

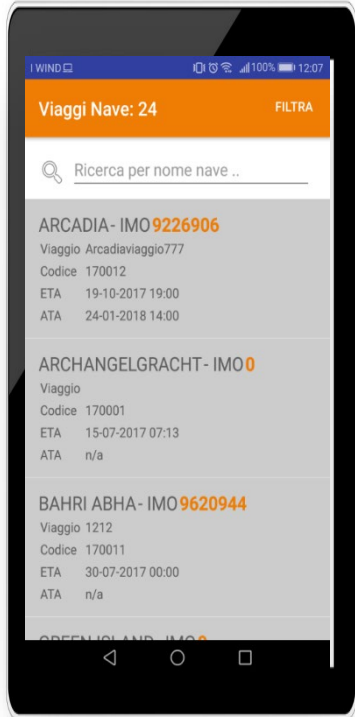


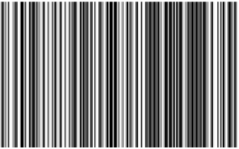
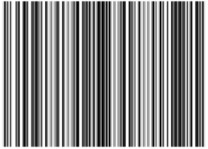

Rail Transport

- Railway Undertaking
- MTO
- Shunting companies

Departure

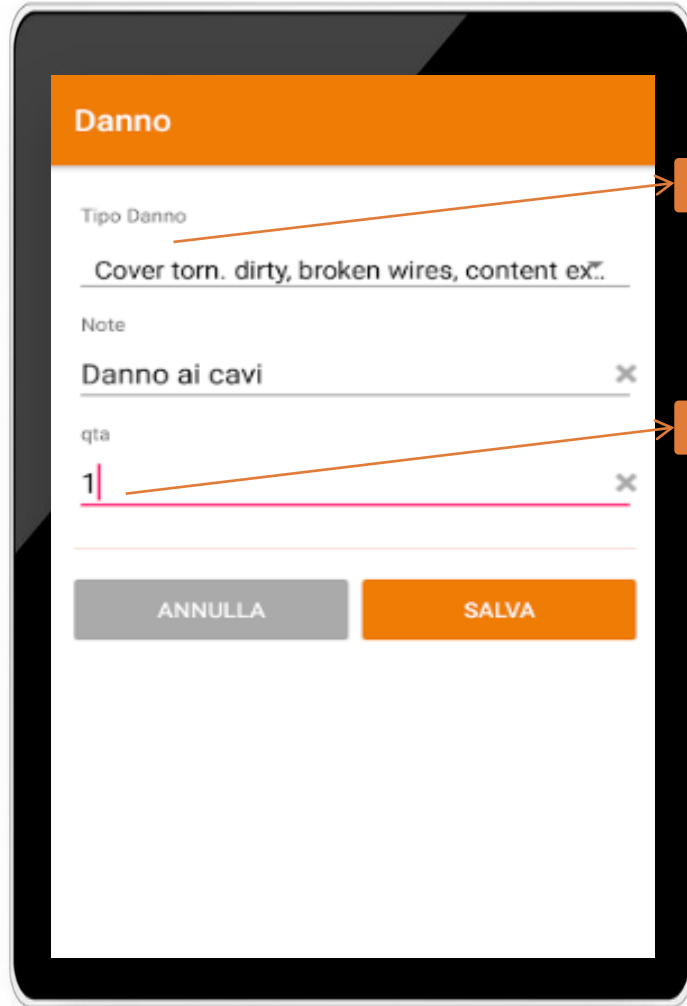




DISTINTA SMARCATURA SOTTOBORDO		
Nave: STAR HIDRA IMO: 9071569 VIAGGIO: 202001		
SBARCO	6000	KLABIN EUCALYPTUS
 KLABIN EUCALYPTUS		
SBARCO	750	KLABIN PINACEL
 KLABIN PINACEL		
SBARCO	1499	GUAIBA LOT2
 GUAIBA LOT2		



The mobile App allows terminal operators (operative del terminal) to perform Vessel and Rail Loading/Unloading activities, yard operations relating stocking activities, **Delivery/Receipt of goods**, advanced IoT functionalities



Type of Damage

Quantity

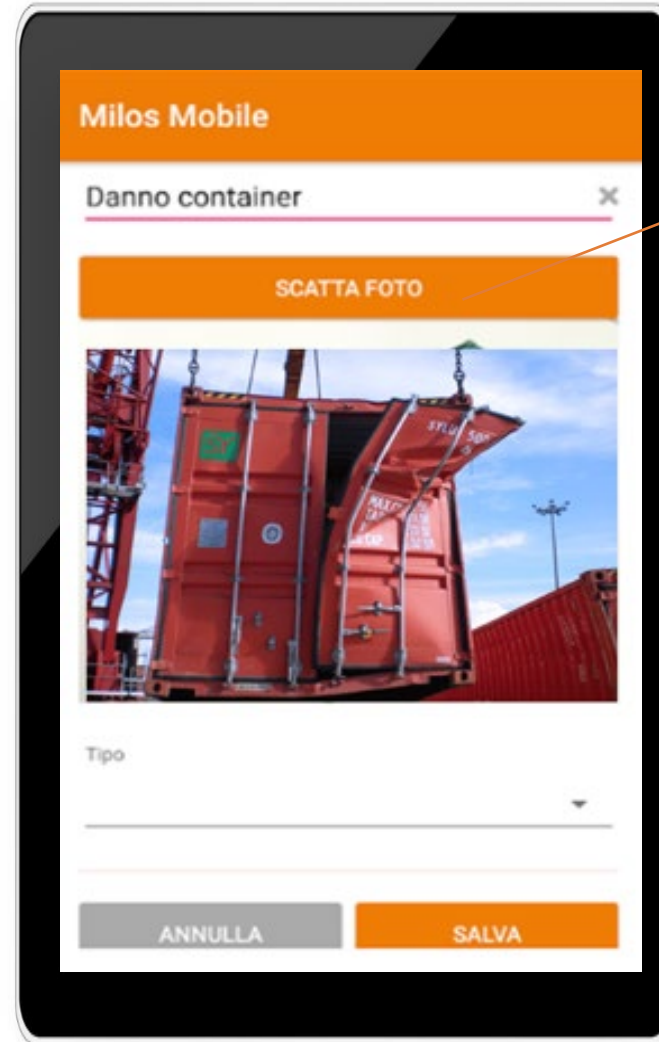


Image of damage



Report Veline

Name IRIS ACE Voyages trips 032E Internal code 200313
 Start date 28/08/2020 End date 29/08/2020

Unloading Movements

Ship Company	Ship Agency	Receiver	Goods	UTI Type	F/E	Manufacturer	Shift Date	Shift	Stocking area	Handling	Quant	Weight	Meters
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	AUTOTRAD E & LOGISTICS SPA	AU74 - AUTO NISSAN	auto a pezzo		NISSAN	28/08/2020	Turno 1 - 1	LIV. EST GENERICO		28	36.160,76	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	BERTANI SPA	AU75 - AUTO DACIA	auto a pezzo		DACIA	28/08/2020	Turno 1 - 1	LIV. EST GENERICO		780	910.637,16	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	AUTOTRAD E & LOGISTICS SPA	AU74 - AUTO NISSAN	auto a pezzo		NISSAN	28/08/2020	Turno 3 - 1	LIV. EST GENERICO		40	51.533,32	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	BERTANI SPA	AU75 - AUTO DACIA	auto a pezzo		DACIA	28/08/2020	Turno 2 - 1	LIV. EST GENERICO		62	70.509,83	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	AUTOTRAD E & LOGISTICS SPA	AU74 - AUTO NISSAN	auto a pezzo		NISSAN	28/08/2020	Turno 2 - 1	LIV. EST GENERICO		797	1.029.290,9	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	BERTANI SPA	FU01 - FURGONE L=7 mt. <=3,5 tons. W=2,30 mt	auto a pezzo		RENAULT	28/08/2020	Turno 2 - 1	LIV. EST GENERICO		61	117.191,55	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO	BERTANI SPA	FU01 - FURGONE L=7 mt. <=3,5 tons. W=2,30 mt	auto a pezzo		RENAULT	28/08/2020	Turno 3 - 1	LIV. EST GENERICO		106	203.644,44	

Loading Movements

Ship Company	Ship Agency	Receiver	Goods	UTI Type	F/E	Manufacturer	Shift Date	Shift	Stocking area	Handling	Quant	Weight	Meters
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO		AU83 - AUTO RENAULT	auto a pezzo	EMP	RENAULT	28/08/2020	Turno 2 - 1	LIVEST AREA C		56	72.046	
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO		RM02 - ROTABILE MARCIANTE L=12 mt. <=20 tons. W=3,80 mt	Rotabile	EMP	ROTABILE MARCIANTE	28/08/2020	Turno 2 - 1	LIVEST	MEDITERRANEO	1	12.700	8,31
EURO MARINE LOGISTICS NV	SAIMARE LIVORNO		RM01 - ROTABILE MARCIANTE L=7 mt. <=10 tons. W=2,6 mt	Rotabile	EMP	ROTABILE MARCIANTE	28/08/2020	Turno 2 - 1	LIVEST	MEDITERRANEO	1	6.800	7

Vessel, Yard, Gate & Rail Operative Reports can be automatically generated

Remarks report - Forestale

Vessel CIELO DI IMO 9595151 Voyage 202007 Voyage 200300 End operation date 11-Aug-2020

Bill of landing	Goods	Manufacturer	Model	Damage	Items	Unit
CDC032020L QN10LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	PACIFICO		14	
CDC032020L QN42LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	SANTA FE'	Sporco	7	
CDC032020L QN10LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	PACIFICO	wet	14	balle
CDC032020L QN41LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	SANTA FE'	wet	52	balle
CDC032020L QN42LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	SANTA FE'	wet	180	balle
CDC032020L QN14LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	PACIFICO	wet	11	balle
CDC032020L QN40LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	SANTA FE'	wet	18	balle
CDC032020L QN14LV	PF01 - WOOD PULP UNITIZED	CMPC PULP S.A.	PACIFICO		11	
Total					307	

Damage Reports can be automatically generated

- TOS - Definition
- TOS – Main Modules
- TOS – Added Value Modules
- TOS – Federative Services

Pratica

Salva pratica | Chiudi quotazione | Nuova pratica | Stampa report cliente | Report ADM | Stampa documento | Invio documento | Import Dati

Generale | Altre inf. merce | XLS/Documents | Stati pratica | Anagrafiche | Nodi

Testata

Rif.pratica: Q-99-00023-812MEX | Status: **NON CONFERMATO**
 Data emissione: 28/12/2018 | Data fine validità: 31/12/2018
 Tipo Servizio: M | Imp./Export: EXPORT
 Vessel: | Identificativo: |
 Booking: |

Clienti/resa

Service: | Servizio destino: |
 Cliente: IT00918410325
 INFO.ERA
 VIA SAN NICOLO 15
 34121 TRIESTE ITALY
 Contatto: |

Informazioni merce totali

Peso (Kg): 0.000
 Colli: 0
 Nota: |

AGGIUNGI | Elenco Dettagli Merce 0 | RICARICA | ELIMINA TUTTO

Marche	Descr	Colli	Peso	Misure	Volume	P/T	IN	Rif.Cli.	HBL
asdsd	descrizione	0 SHELTER	0 kg/0	0 cm/0	0 cm/0	0	IN	Value	
	M.S.		0 kg/1	0 cm/0	0 cm/0			0.00	v/B
	UNDO			0 cm/0				0.00	v/F EUR(-)

AGGIUNGI | Elenco nodi spedizione 0 | Crea da template | RICALCOLA | ELIMINA TUTTO

Attività

Attività	Descr	Fornitore	Valore	IVA	Netto
1	ORIGIN	Fornitore:INFO.ERA	23.000	0.00	23.000
2	POL	Fornitore:Name	0.000	0.00	0.000
3	POD	Fornitore:Name	0.000	0.00	0.000

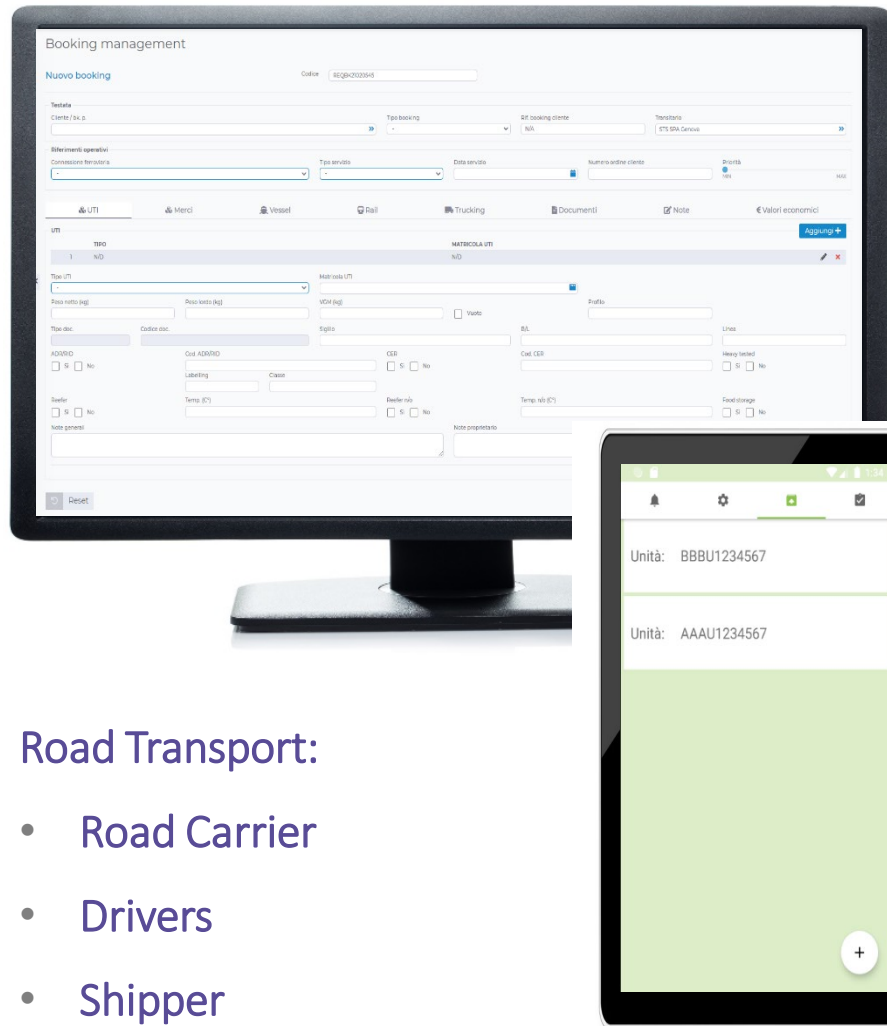
NOTE:
Q_NOTECLI

Valori economici

← INVOICE is a smart link between the operative and the administrative side.

← The module create the document and performs a preventive check of the adequacy and validation of the data before transfer of the same to the ERP connector for the creation of the accounting records.





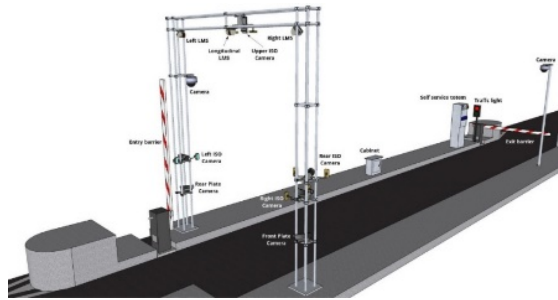
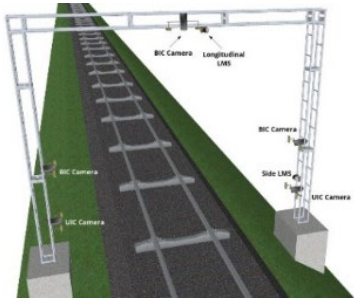
The **Pre-Announcement (PA)** module allows hauliers to make a booking of delivery and/or pick-up to the Terminal, by providing information relating ITU and goods delivered and uploading the mandatory documentation in order to receive the authorization from the terminal itself.

The **Truck Appointment System** is a module that allows to enrich the PA module with the possibility for the Haulier to book the delivery and/or pick-up of ITU in time slots configured by the Terminal.

Thanks to this interface between Hauliers, Terminal and Drivers, all of them can optimize the allocation of Yard Operation and Booking Orders during the day.

Road Transport:

- Road Carrier
- Drivers
- Shipper



upview Dashboard Controlli Transiti Container Visite Viaggi Anomalie Diagnostica Azioni Dichiarazioni doganali Configurazione - atek admin -

Dettaglio transito

Codice di transito: E09091580138548417
 Canale: E09
 Inizio: 28 gen 2020 11:27:44
 Fine: 28 gen 2020 11:44:18

Autista e passeggeri:
 Cognome Nome: [redacted]
 Carta: 30641973, Savona (Italia)
 Tessera: 012345678
 ID acquisto alle: 11:28:00
 SAVONA AUTOTRASPORTI

Classe veicolo: Camion 1 cont.
 Targa: C2277HW (Anteriore), X885AS (Posteriore)
 Container: M800554780 (Tipo: 2211)

Alle	Esito validazione	Motivo	Totem	Sottocodici
11:30:43	Necessaria gestione in-line	No active truck visit found for Truck License [redacted]. No active truck visit found for Driver Card [redacted]. No active truck visit found for Ck Number [redacted].	Tos error - Tos error process truck trouble!	[Error]
11:35:19	Autorizzato	Autorizzato da operatore	Transit granted	[Success]

Gate Automation is a hardware (OCR, RFID, etc..) and software solution which allows automating gate operations and exchange both operative and customs data with stakeholders involved in the logistics process, also exploiting innovative Customs simplified procedures by using IOT devices in compliance with EU Customs Code.



Compliance with the most common RFID tags including inkjet RFID printing solutions used by producers of goods to be exported



Automatic Gate-in and Gate-out at the terminal thanks to RFID tags and chipless markings



Digital check of loading/unloading operation with mobile APP



Warehouses of final destination



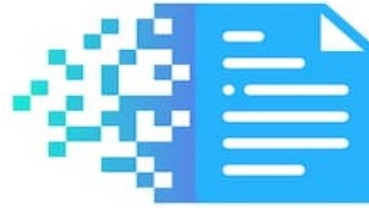
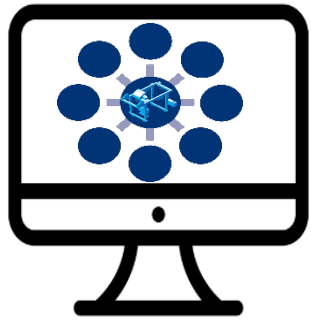
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Rail & inland
Integration



Interchange
Notarisation





Terminal qualified signature



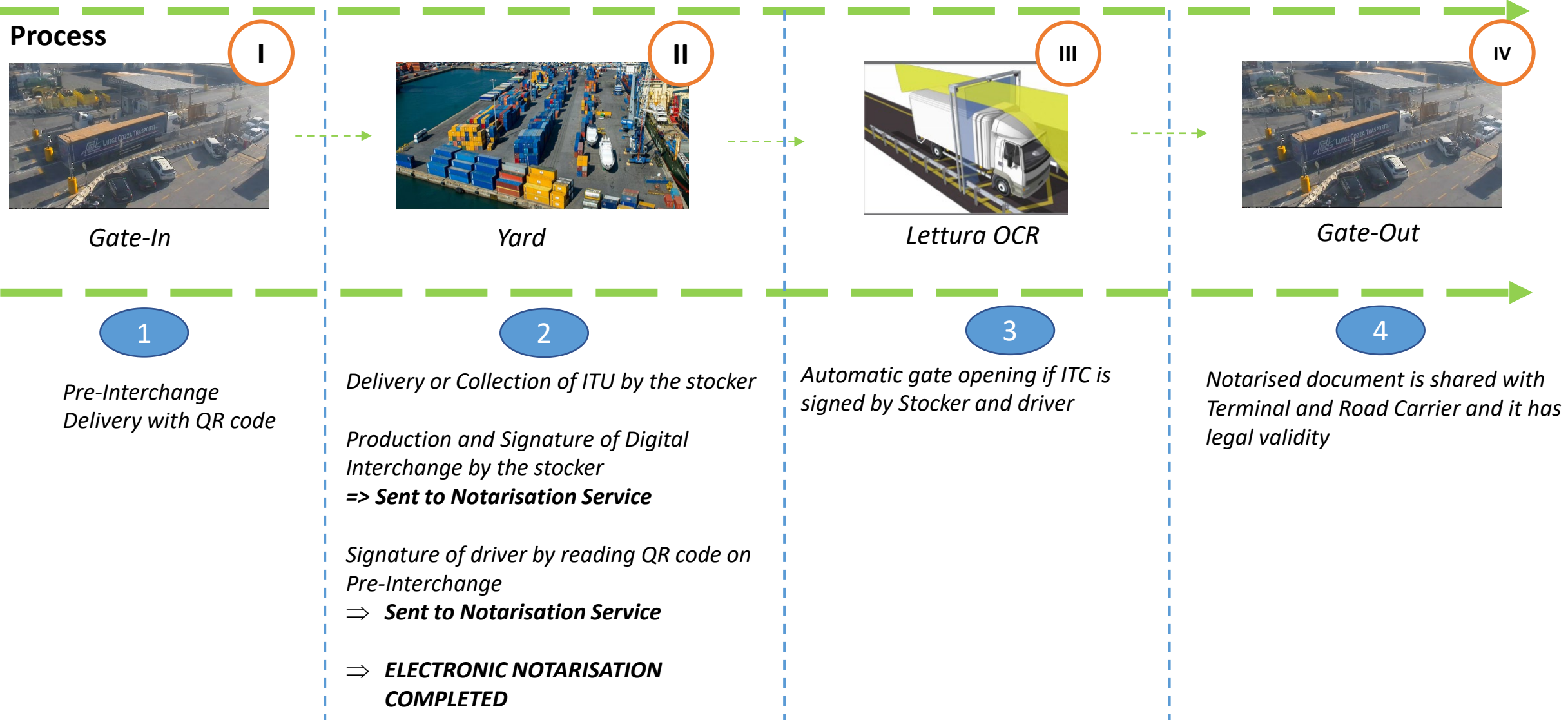
*Time stamp
(time/data)*



Carrier qualified signature

- **Digitization** of a document signed and shared between the parties, accessible on a certified server;
- **Certification** of document with legal validity;
- Reduce transit time of driver at gate;







TOS



MTO, RU and
Shunting Companies



RFI PIC



PCS RAIL





TOS



MTO, RU and
Shunting Companies



RFI PIC



PCS RAIL



Processes



Import



Export













Rail Track Port Area





Tracking Rail voyages (PIC)

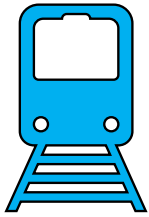


	IMPORT		EXPORT	IMPORT/EXPORT
Actor	Loading List	Final Loading Report	Loading report	Tracking Rail Voyages
MTO				
RU				
Terminal				
PCS RAIL				

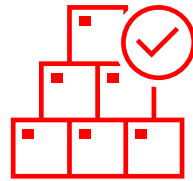
Legenda

 Sender
  Receiver





**Last Mile
Shunting Company**



**Interoperability Goods
Customs status**



**Customs Gate
Automation**



Thank you



Simone Siria

LOB Terminal Coordinator



www.circletouch.eu



siria@circletouch.eu



Circle



simone.siria

