



# Clusters 2.0

## LL1 - Proximity Terminal Network & Cluster Community System

CluCs Demo

*Virtual meeting, 3rd June 2020*



# CluCS concept

- › IT platform supporting the governance of the Proximity Terminals Networks and their aggregation (Clusters);
- › Boosts the visibility of the services offered by each Nodes and LSPs
- › Enables efficient management of information (cargo flows and assets);
- › Allows coordinated management of multiple hubs with different specializations;
- › Enables involvement of manufacturing and value added service providers;
- › Creates synergies and allows to link Clusters to TEN-T corridors;
- › Permits the coordination and collaboration between neighbouring and regional terminals.



# CluCS components

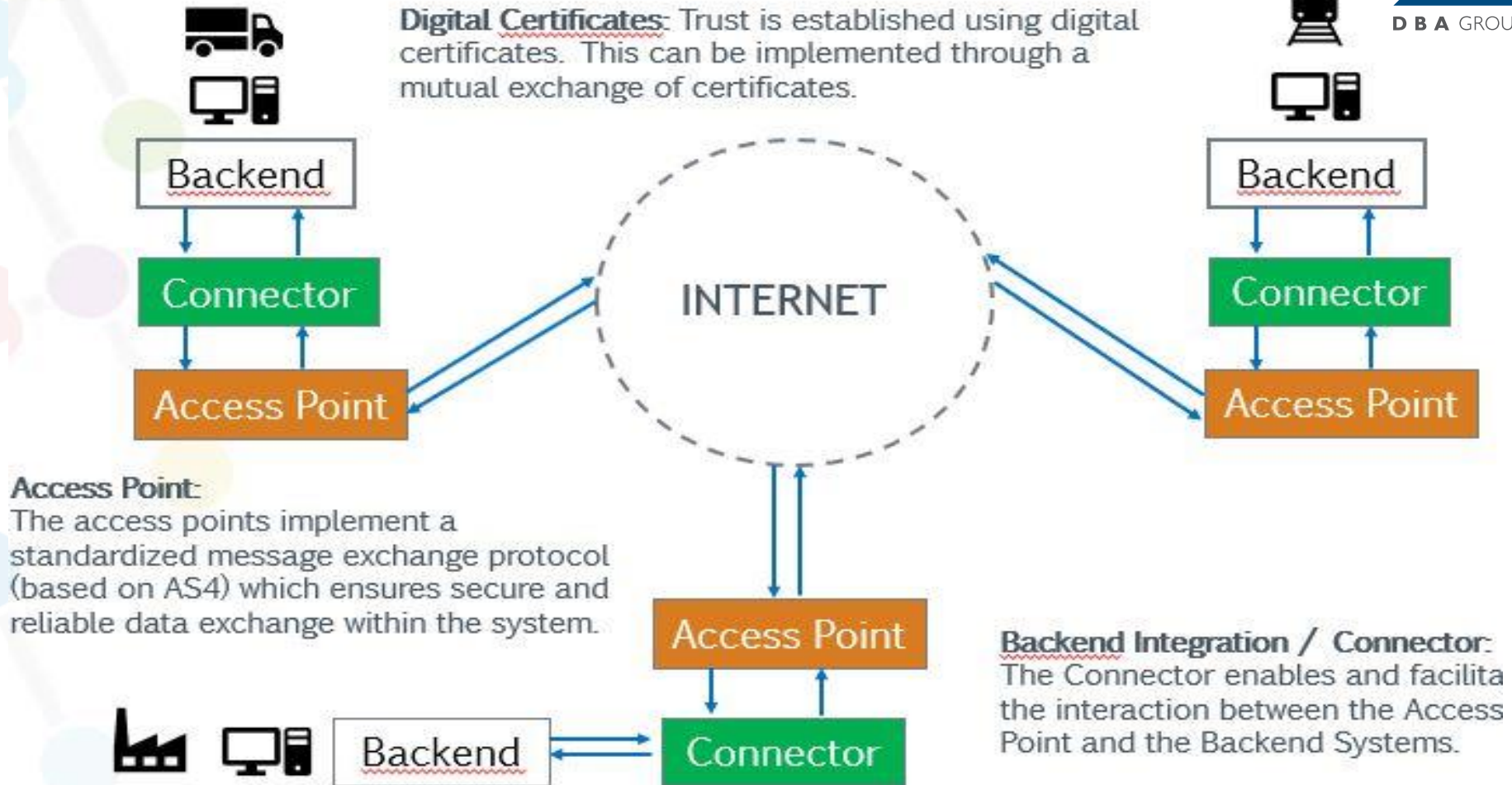
## Communications infrastructure

- Secure Message Exchange between Cluster participants establishing Trust
- Easy user's back-end integration through development of Connectors

## Web Interface

- Planned Cargo Flows - **paths & time tables** (by train, road and maritime - pilot)
- Intermodal Logistic Services - **free slots & booking** (e.g. train slot booking and real-time availability update - pilot)
- Identification of *Cargo Consolidation* (goal: reduce road traffic in benefit of rail traffic) (enabled)
- Identification of *Cargo Pooling* (enabled)

# CluCS communication infrastructure

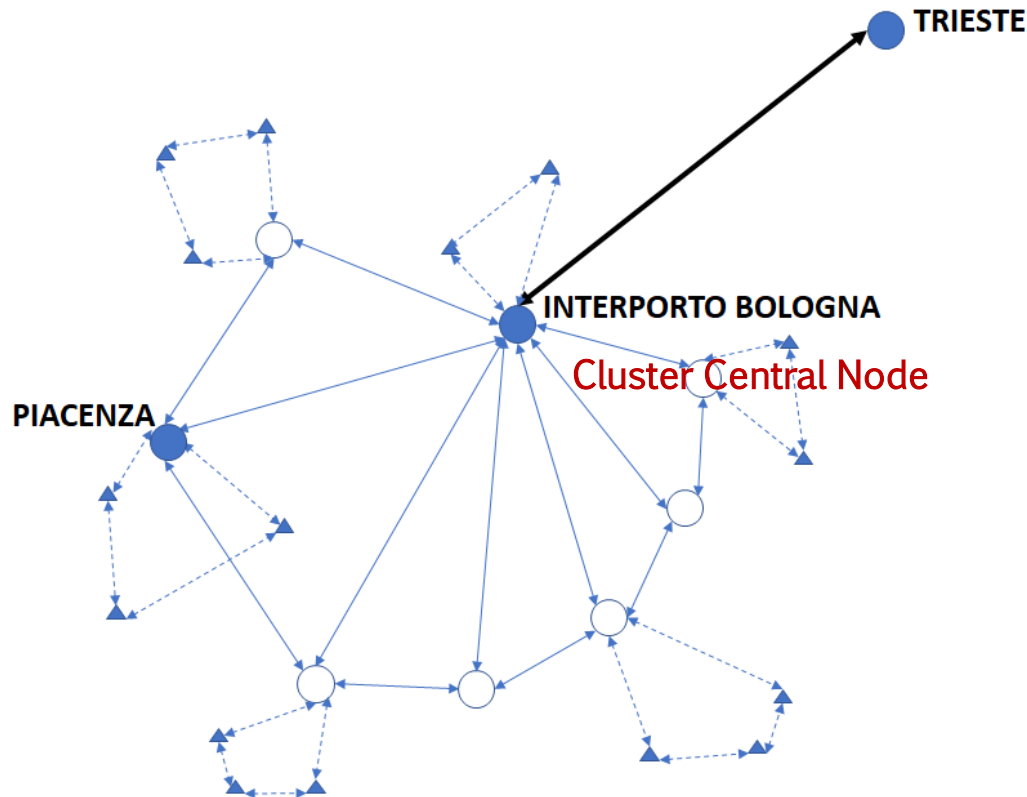


**Digital Certificates:** Trust is established using digital certificates. This can be implemented through a mutual exchange of certificates.

**Access Point:** The access points implement a standardized message exchange protocol (based on AS4) which ensures secure and reliable data exchange within the system.

**Backend Integration / Connector:** The Connector enables and facilitates the interaction between the Access Point and the Backend Systems.

# CluCS platform and its stakeholders (Pilot)



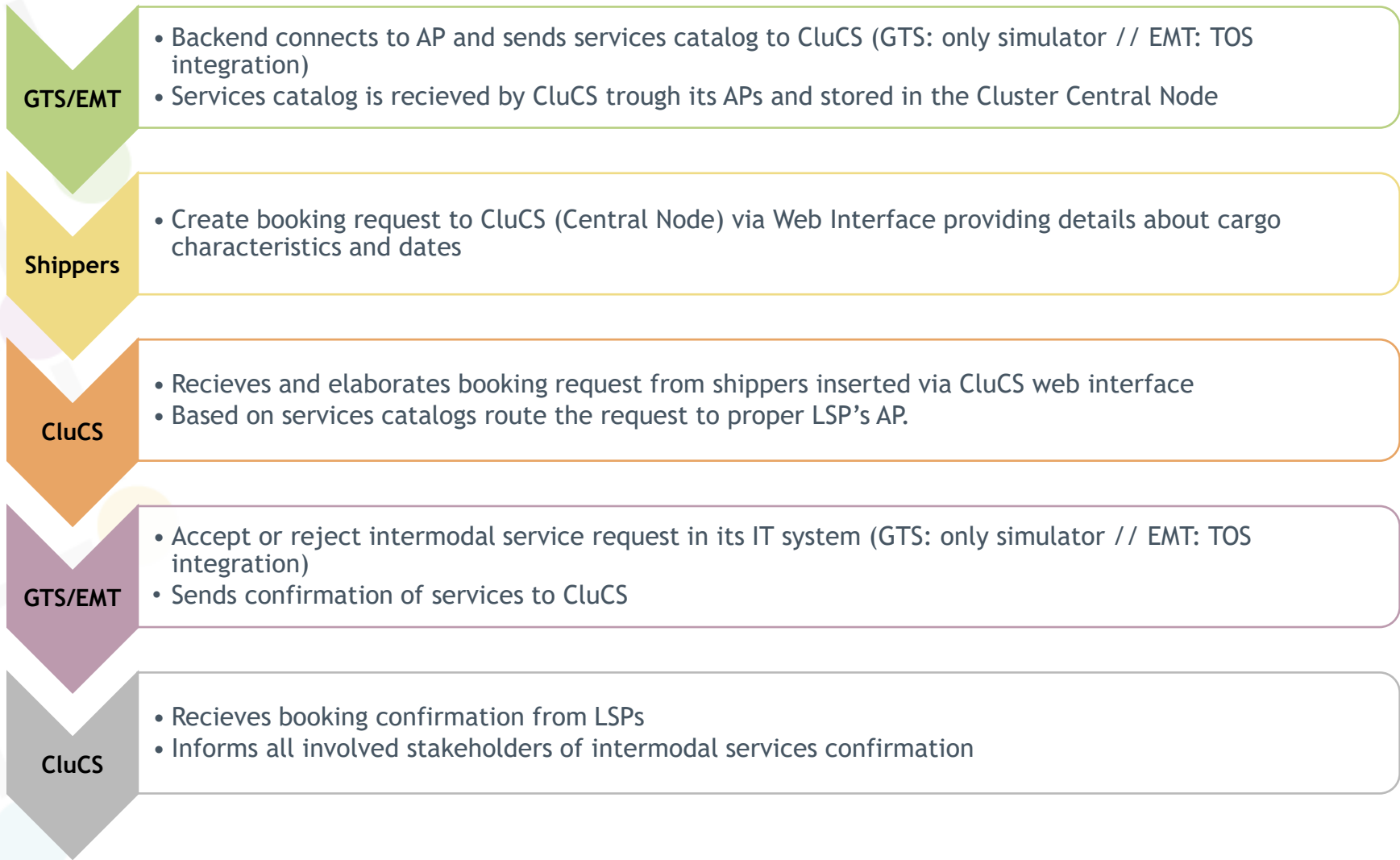
Users:

- Shippers
- Terminal operators
- Logistics Service Providers
- MTO

**CluCS** in its pilot version is an IT platform supporting the governance of the Piacenza-Bologna-Trieste network (PTN).

CluCS also **aggregates data** from shippers, LSPs and MTO **enabling** the full or partial **sharing** of these data **with** other Platforms that works at an upper level (Inter-cluster).

# GTS and EMT services management



# Collaboration of CluCS with PTV X-Intermodal

- X-Intermodal visualizes intermodal connections.
- X-Intermodal provides a better understanding on intermodal market.
- X-Intermodal provides a quick overview on intermodal lanes, which are often tough to find.
- X-Intermodal calculates and compares alternative routes (road, rail and barge).
- X-Intermodal calculates and compares indicative costs and CO2 emissions.
- X-Intermodal synchronizes all data provided by intermodal operators.

The screenshot displays the X-Intermodal software interface. The main window is titled 'Intermodale Planung' and 'IM Routenplanung'. It features a 'Routen' (Routes) table with columns for transport mode, country, city, PLZ, location, day, time, distance, duration, terminal, line, and provider. Below this is a summary table with columns for arrival, departure, waiting time, halt time, cost, and CO2 emissions. At the bottom, an 'Ergebnisüberblick' (Overview) table summarizes the routes with columns for route name, color, distance, cost, duration, and CO2 emissions.

Transport...	Land	Stadt	PLZ	Ortsbezeich...	Tag	Zeit	Entfernung	Dauer	Terminake...	Linie	Anbieter
R1_Road	DE	Stuttgart	70184	Start	0	14 h 59 min	164	2 h 25 min			
R2_Rail_SSV	DE	Ludwigshafen	67065	Ludwigsha...	0	17 h 24 min	0	0 min	T_455		
R3_Rail_SSV	DE	Ludwigshafen	67065	Ludwigsha...	0	22 h 09 min	688	12 h 00 min	T_455	ECL_Ludwigshafen_Lübeck-T...	European ...
R4_Rail_SSV	DE	Lübeck-Tra...	23570	Lübeck-Ska...	1	10 h 09 min	0	0 min	T_453	ECL_Ludwigshafen_Lübeck-T...	
R5_Rail	DE	Lübeck-Tra...	23570	Lübeck-Ska...	1	23 h 59 min	278	9 h 00 min	T_453	STENA_LINE_Lübeck-Travem...	Stena Line...
R6_SSV	SE	Malmö	21124	Malmö RoRo	2	8 h 59 min	0	0 min	SEMAL	STENA_LINE_Lübeck-Travem...	
R7_SSV	SE	Hälsstad	30594	Ende	2	11 h 26 min	0	0 min			

Ankunft	Abfahrt	Wartezeit	Haltezeit	Kosten	CO2 [kg]
	Sonntag, 18. September 2016...	0 min	0 min	270 €	135,9

Route	Farbe	Entfernung	Kosten	Dauer	CO2 [kg]
R1_Road	Red	1220,00 km	1.621 €	18 h 01 min	1.182,9
R2_Rail_SSV	Blue	1276,00 km	749 €	1 d 20 h 27 min	681,6
R3_Rail_SSV	Green	1276,00 km	749 €	1 d 08 h 27 min	681,6
R4_Rail_SSV	Purple	1278,00 km	777 €	1 d 06 h 29 min	727,3
R5_Rail	Cyan	1304,00 km	1.014 €	4 d 06 h 14 min	891,9
R6_SSV	Brown	1213,00 km	1.407 €	1 d 00 h 57 min	1.186,4

# Collaboration of CluCS with PTV X-Intermodal

## > Integration with CluCS

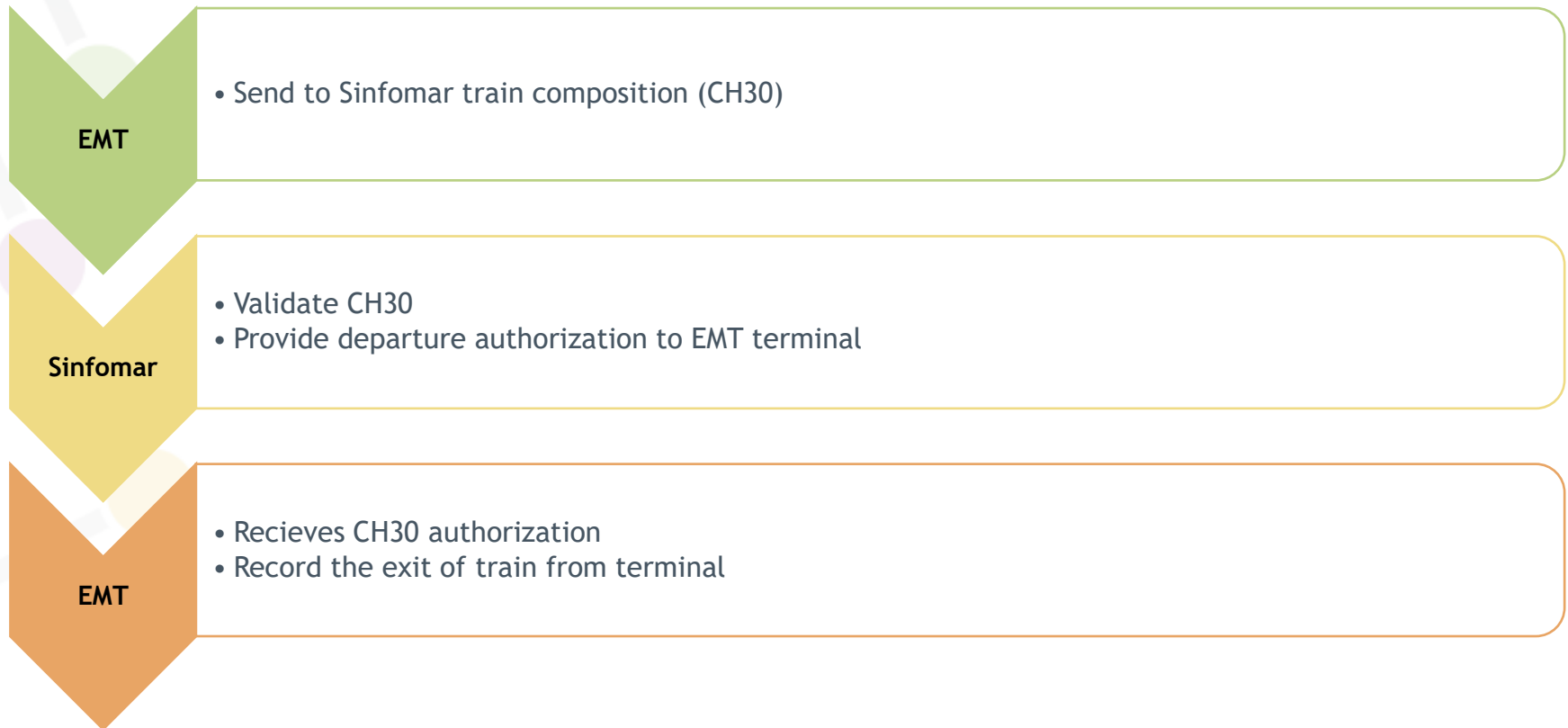
At this stage, CluCS is able to send train time tables data through Web Service (it is also available a data extraction in CSV format).

So far, X-Intermodal remains an external component to CluCS, however, in future, it could be activated a potential bilateral flow between the two platforms through which CluCS may receive data from X-Intermodal if X-Intermodal adopts CluCS Access Point technology.















This potential integration will benefit both platforms: on the one side X-Intermodal will allow CluCS to have more visibility intra and extra-Cluster, while on the other side, CluCS will give the possibility to X-Intermodal users not only to find the best transport solution, but also to have updated information and to book and monitor different solutions.



# EMT node: interoperability with Sinfomar



# EMT node: Interoperability with Sinfomar

N.Pratica	Data	Traccia	Tipo	Nome conv.	Naz.	Origine / Destinazione	A/P	Terminal	Varco	IG	Stato	Vag. tot.	Vag. pieni	Nr. cntr	Nr. mezzi	Massa netta	Dichiarante
P.10.3.20	10/03/2020	99999998		DCT-KRAILLING		KRAILLING	←	DEPOSITI COSTIERI TRIESTE				15	15	0	0	704.289	DCT
<b>USCITA MUTA VUOTA 10-03</b>	10/03/2020	22		USCITA MUTA		TRIESTE	←	SAMER SEAPORTS TERMINALS	10/03/2020 18:17			15	0	0	0	0	SAMER
1583427623534	10/03/2020	48229		VUOTI DCT INRAIL		SCHWECHAT	→	DEPOSITI COSTIERI TRIESTE				15	15	0	0	0	INRAIL
<b>test41852 10-03-2020 12:44:00</b>	10/03/2020	41852		LUDWIG		LUDWIGSHAFEN	←	SAMER SEAPORTS TERMINALS				1	1	1	0	5.000	<b>E.M.T.</b>
TRS.DNJ	10/03/2020	40862		DUNAJSKA STREDA		DUNAJSKA STREDA	←	TRIESTE MARINE TERMINAL	10/03/2020 12:47			20	17	43	0	689.627	TO DELTA
TRM2.0127P	10/03/2020	41878		BETTEMBOURG2		BETTEMBOURG	←	SAMER SEAPORTS TERMINALS	10/03/2020 10:30			16	14	0	27	358.208	SAMER
TRS-BUD	10/03/2020	42180		BUDAPEST		BUDAPEST	←	TRIESTE MARINE TERMINAL	09/03/2020 20:15			20	20	52	0	753.918	TO DELTA

List of departing/arriving trains

# EMT node: Interoperability with Sinfomar



Salva Chiudi Riep.Treno Pre Carico Ch-30 Ch-30 E Dist.carri Ch-30 no PF Gen.statistiche Dist.manovra Conferma Sopprimi XML XML da ftp XML to RCA XML MIR XML

**Gestione treni**

- Riepilogo
- Riepilogo stati
- Gestione treni
- Gestione shuttle
- Gestione Corridoi Transfrontalieri
- Taric merce sensibile
- Elenco treni**
- Gestione vagoni
- Gestione tracce
- Ricerche arrivi/partenze
- Esci
- Utente connesso
- vboschian@porto.trieste**
- Ditta
- AUTORITA' PORTUALE DI TRIESTE**

**Generale** | Vagoni | Mercè | Imp. dati | Excel

**Testata**

**N. pratica**  
test41852 10-03-2020 12:44:00

**Data / Ora TSCM**  
10/03/2020 12:44

**Dichiarante**  
EUROPA MULTIPURPOSE TERMINALS (EMT) S.P.A.

**Terminalista**  
SAMER SEAPORTS AND TERMINAL

**Traccia**  
41852 | IN PARTENZA PER LUDWIGSHAFEN | RAIL TRACTION COMPANY SPA

**ATT Varco**

**ETT Varco**  
10/03/2020 12:59

**MTO**  
KOMBIVERKEHR DEUTSCHE GESELLSCHAFT FÜR

**Terminal**  
1 SAMER SEAPORTS TERMINALS

+ Aggiungi vagoni    ↺ Inverti ordine vagoni    ☰ Cambia visualizzazione    ✖ Elimina vagoni vuoti

Non associati	Vagone
<p>+ CNEU9594969 4.000 Kg (5.000 Kg)</p>	<p>↑ ↓ ✖ 9032017</p> <p>Mt: 34,0 Kg: 35.500</p> <p>+ CNEU9594969 4.000 Kg (5.000 Kg)</p>

Train composition

# EMT node: Interoperability with Sinfomar



Salva Chiudi Riep.Treno Pre Carico Ch-30 Ch-30 E Dist.carri Ch-30 no PF Gen.statistiche Dist.manovra Conferma Sopprimi XML XML da ftp XML to RCA XML MIR

**Gestione treni**

- Riepilogo
- Riepilogo stati
- Gestione treni
- Gestione shuttle
- Gestione Corridoi Transfrontalieri
- Taric merce sensibile
- Elenco treni**
- Gestione vagoni
- Gestione tracce
- Ricerche arrivi/partenze
- Esci
- Utente connesso
- vboschian@porto.trieste**
- Ditta
- AUTORITA' PORTUALE DI TRIESTE**

**Generale** **Vagoni** **Merchi** **Imp. dati** **Excel**

**Testata**

**N. pratica**  
test41852 10-03-2020 12:44:00

**Data / Ora TSCM**  
10/03/2020 12:44

**Dichiarante**  
EUROPA MULTIPURPOSE TERMINALS (EMT) S.P.A.

**Terminalista**  
SAMER SEAPORTS AND TERMINAL

**Traccia**  
41852 | IN PARTENZA PER LUDWIGSHAFEN | RAIL TRACTION COMPANY SPA

**ATT Varco**

**ETT Varco**  
10/03/2020 12:59

**MTO**  
KOMBIVERKEHR DEUTSCHE GESELLSCHAFT FÜR

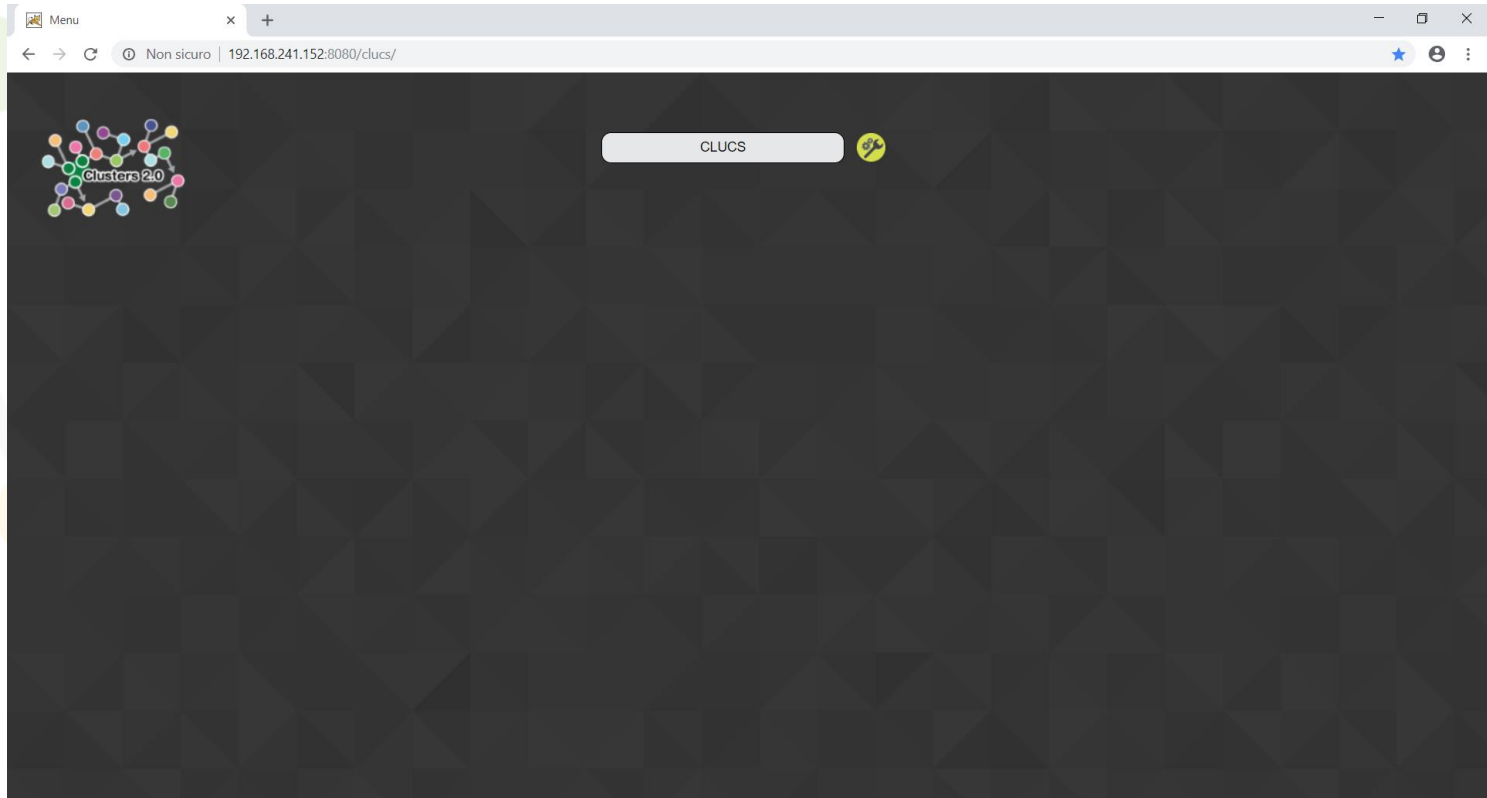
**Terminal**  
1 SAMER SEAPORTS TERMINALS

+ Aggiungi merce x Svuota merci

Targhe/Sigla n.	Tipo cont./rot.	Documento	Vagone	Merce	Peso (Kg)	Q.ta	Corr.	Stato	D		
<u>CNEU9594969</u>	L2V1		non associato	Non definita	0,000	0		■		🗑️	✖️
	L2V1		1 9032017	Non definita	0,000	0		■		🗑️	✖️

## Goods details

# CluCS - Demo



# Stakeholders' reaction to CluCs

## Potentiality

- Increased visibility for the services offered by the LSPs enabling the widening of the market served.
- Easiness in sharing information and collaborate with other stakeholders/nodes in a flexible way.
- Optimization of the use of resources thanks to cargo consolidation and cargo pooling.



## Weaknesses

- Willingness of transport/supply chain stakeholders to collaborate.
- Reputation of such platforms must be pushed to engage a large number of LSPs and Shippers.
- Costs related to IT integration.

## WP5/LL1 Next Steps

### CluCS next steps:

CluCS TRL at the beginning of the project:

**TRL2 Technology Formulation.** Concept and application have been formulated.



CluCS TRL at the end of the project:

**TRL5 Large scale prototype** tested in Bologna-Trieste Cluster.



# Clusters 2.0

## Thank you for the attention

dallasta@bo.Interporto.it

+ 39 051 29 13 019

Palazzina Doganale

Interporto Bologna

Bentivoglio - Italy

