



Towards a Shared European Logistics Intelligent Information Space

# Living Labs

## Overview

IPIC 2019

London 10 July 2019

Makis Kouloumbis

# Agenda

## Presentation Sections

### SUMMARY

Scope of this presentation is to provide an overview of SELIS Living Lab's, briefly covering for each LL it's scope, key achievements and what has been the impact, along with a brief insight on the developed solutions.

01

#### **Project Overview**

Strategies, Living Labs & key SELIS components

02

#### **Living Labs Scope / LL**

Business case, Envisioned Solution, Business Benefits & KPIs

03

#### **Major Achievements & Impact / LL**

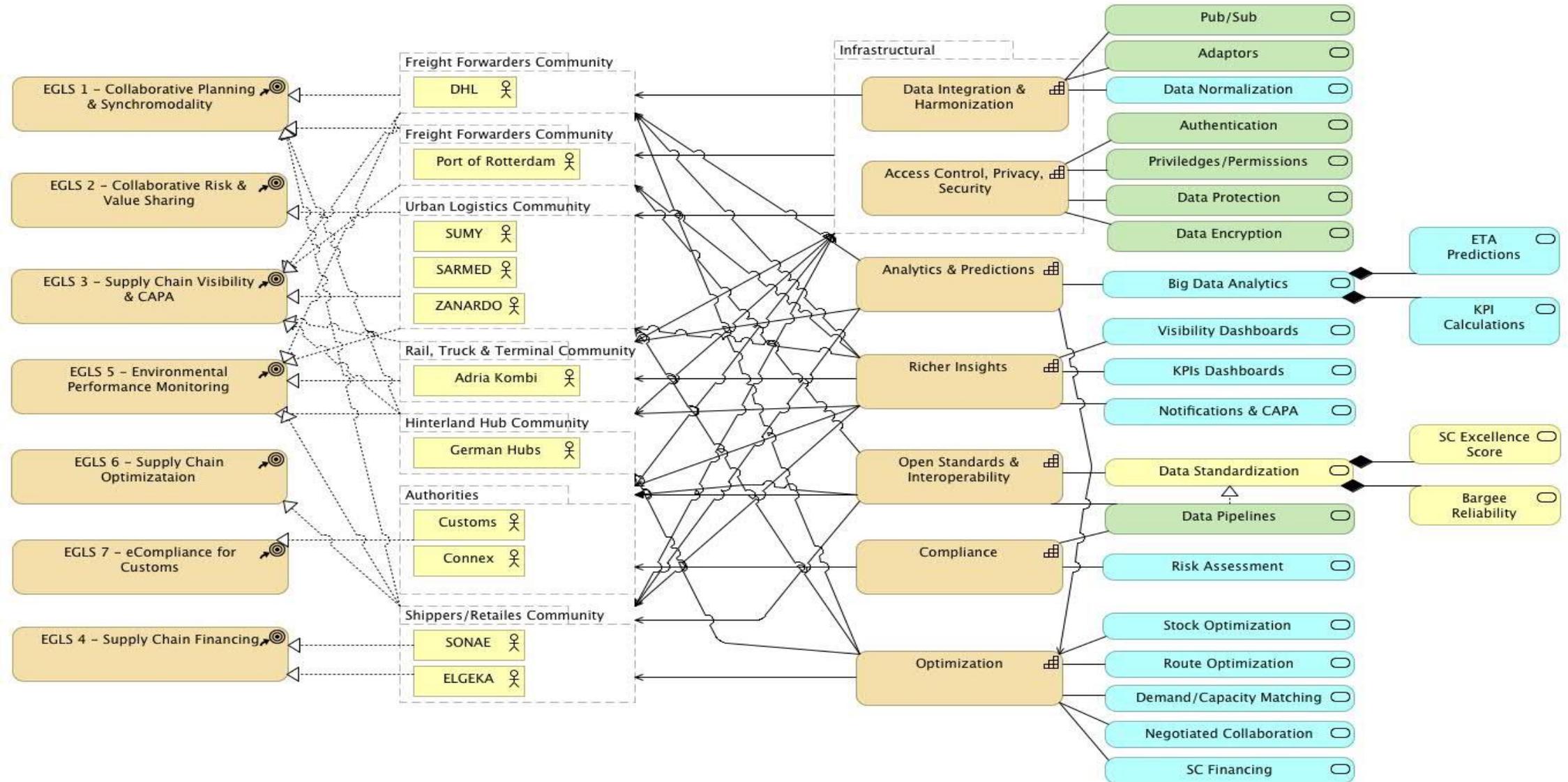
LL Highlights

04

#### **Software Solutions / LL**

Applications Insight

# Living Labs – Strategies & Key Components





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# Living Lab 1 – Freight Forwarders

DHL

# LL1 DHL - Scope

Use Case 1 & 2 – Data Consolidation & Visualization and Strategic DSS

## Business Problem(s)

- **Complex and time-consuming integration and consolidation of historical & real-time data** coming from different sectors and customers
- **Lack of visibility** on the overall transport service for the stakeholders involved in the Supply Chain: DHL, DHL customers and Hauliers
- **Inefficient Route planning** due to lack of holistic SC visibility, hindering strategic decision capability

## SELIS Solution

- SELIS provided seamless **integration, consolidation, data restructuring** and visualization capabilities
- **Route and Truck load Optimization** over DHL business operations to facilitate the prediction of how a new situation could affect the overall cost structure

# LL1 DHL – Achievements & Impact

## Major Achievements

- **Normalization Engine** tested and validated (Machine Learning)
- **Communication Infrastructure** (inc. Adaptor to DHL's AM+)
- Data Analytics Implemented
- **KPIs & CAPA Dashboard**
- **Route Visualization Prototype**
- **Planning and Route Optimization Prototype**

## Business Impact

- **Increased internal and external visibility**, improved service quality, customer satisfaction (through reduced response time) and resource utilization.
- Facilitates **strategic decision-making**, improving cost management and CO2 footprint
- **KPIs improvements:**
  - >5% CO2 reduction
  - >5% Increase in round trips
  - >20% reduced man-effort for optimized route planning

# LL1 DHL– Configuring Data Normalization Engine

The screenshot displays the 'Normalisation Dashboard' interface. At the top, there are logos for SELIS and DHL. The dashboard is divided into several sections:

- TMS File Selection:** A form with checkboxes for selecting files to normalize. Selected options include Centiro, TMS Portugal, Planilla Corga, and TRNet. Other options include .xls (M), .xls (E), Roadtech, and TMS FTL. A 'Normalise' button is present.
- Normalisation Suggestions:** A table listing suggested normalized addresses.
 

Existing Address	Normalised Address	TMS File	Suggestion Date	Approve / Edit
Carrefour Arenal de Penagos	Carrefour Arenal de Penagos MC 1100	Centiro	09/03/2018	<input checked="" type="checkbox"/>
Carretera Local de Coria a Montehermoso	Carretera Local de Coria a Montehermoso 06360 Fuente Del Mastre	Centiro	09/03/2018	<input checked="" type="checkbox"/>
Superbox Murcia	Superbox Murcia 30001	TMS Portugal	09/03/2018	<input type="checkbox"/>
Distribuciones Pecero Pecero CL	Distribuciones Pecero CL 13421	TMS Portugal	09/03/2018	<input checked="" type="checkbox"/>
- Normalisation Final Results:** A table showing the final normalized addresses.
 

Previously Used Address	Normalised Address	TMS File	Normalisation Date
Dia Antequera Antequera Malaga	Dia Antequera Malaga 29200	Centiro	07/03/2018
DrFleming P395 DrFleming Talavera de la Reina	DrFleming P395 Talavera de la Reina	Centiro	07/03/2018
Calle De Gregorio Marañón	Calle De Gregorio Marañón 12459	TMS Portugal	07/03/2018
Avenida De Galileo Galilei, 11	11 Avenida De Galileo Galilei, 25541	TMS Portugal	07/03/2018
Calle Del Arroyo De Valdegrullas, 5	5 Calle Del Arroyo De Valdegrullas, 29980	TMS Portugal	07/03/2018
Hipercoor Getafe MC	Hipercoor Getafe MC, 26691	TRNet	01/03/2018
Corte Ingles Leganes Arroyosur Leganes Mc	Corte Ingles Arroyosur Leganes MC, 23321	TRNet	01/03/2018
Hipercoor Getafe Mc, Getafe	Hipercoor Getafe MC, 26675	TMS FTL	01/03/2018
Hermanos Ayala Sousa Hermanos Si Utrera Mc	Hermanos Ayala Sousa Si Utrera MC	TMS FTL	01/03/2018
Hotelera Almaraz Arroyo Mc	Hotelera Almaraz Arroyo MC, 26601	TMS FTL	26/02/2018

# LL1 DHL – Route & Transport Events Visualization

**Velocity Dashboard**

**SEARCH**

Route Number:   
 Vehicle Type:   
 Search Reset

**Search Results**

Route Number	Vehicle Type
725822	LONA
725899	LONA

Items per page: 1 - 2 of 2 items

**Map**

Map showing route visualization from Toledo to Madrid. Key locations include Getafe, Fuenlabrada, Humanes de Madrid, Parla, Pinto, and Parque Warner Madrid.

**Route Info**

Route Number	Vehicle Type	Supplier Name	Customer Name	Origin City	Origin Address	Destination City	Destination Address	Purchase Order	Order KGs	Loading Date	Delivery Date
725822	LONA	MC-SAMSUNG-CBL	SAMSUNG (MC-251)	TOLEDO	DHL SAMSUNG ONTIGOLA (MC)	MADRID	Calle del Vestro de Mambino	8395790001	20.9	25-09-17	29-09-17
725822	LONA	MC-SAMSUNG-CBL	SAMSUNG (MC-251)	TOLEDO	DHL SAMSUNG SESENA NUEVO (MC)	MADRID	ALC S.L. MM CASTELLANA-28996 GETAFE	8395798299	94	25-09-17	29-09-17
725822	LONA	MC-SAMSUNG-CBL	SAMSUNG (MC-251)	TOLEDO	DHL SAMSUNG ONTIGOLA (MC)	PALENCIA	Avenida de Castilla 77	8395605299	24.4	25-09-17	29-09-17
725822	LONA	MC-SAMSUNG-CBL	SAMSUNG (MC-251)	TOLEDO	DHL SAMSUNG ONTIGOLA (MC)	VALENCIA	COMERCIALIZADORA ELECTRODOMESTICOS - #6210 - RICANYA	8395790154	430	25-09-17	29-09-17

Items per page: 1 - 4 of 4 items



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## Living Lab 2

Port of Rotterdam

# LL2 PoR – Scope

Use Case 1 & 2 – Reliability Standards & Measurement & Inland Barge Visibility Solution

## Business Problem(s)

- **Reliability** is critical in choosing transport solutions by shippers and logistics service providers
- Reliability (of transit time) impacts **shippers' inventory costs**, ordering costs, shortage costs and excess costs
- **No standards** available for measuring inland transport reliability, which makes comparison between supply chains and transport providers difficult
- **Lack of visibility of intermodal** alternatives and lead times for inland barge transport

## SELIS Solution

- Developed the **standards** as well as the necessary **application** for the Port of Rotterdam container community to **measure inland reliability** and **enhance mode selection**
- Utilized Big Data Analytics to further increase reliability of **KPI predictions**
- Inland **Barge Visibility solution** for **predictive modelling** based on real-time data and **decision support for booking**

# LL2 PoR – Achievements & Impact

## Major Achievements

- **Set-up of real corridors:** workshops held for each corridor with business stakeholders
- **KPIs Dashboard**
- Integration with SCN
- Big Data Analytics: developed a **predictive model for inland reliability**
- Utilized **AIS data** to do analytics on KPIs
- Realized simulation model
- **Dashboard with visibility** on (past) **reliability and predictive model** on future reliability in inland barge
- Integration with local Port Community Systems
- Predictive modelling based on real-time data and **decision support for booking**

## Business Impact

- Inland Reliability dashboards, to facilitate:
  - **Benchmarking**
  - **Promote intermodality**
  - Predictive analysis and better aligning supply chains
  - Efficient operations
- **Improved use of barge capacity** , supporting modal shift from road to barge
- **KPIs**
  - Modal shift (%): >10 %
  - Occupancy rate increase: 5–10%
  - CO<sub>2</sub> Reduction: 5 – 10%

# LL2 PoR – UC1 – Deviations Dashboard

Terminal

ECTDDE

[Please Select]

- APM-1
- APM-2
- RSTNO
- RWG
- ECTDDE**

Barge Operator

ProLog

Start Date

01/01/2017

End Date

31/12/2017

**5.73** Hours

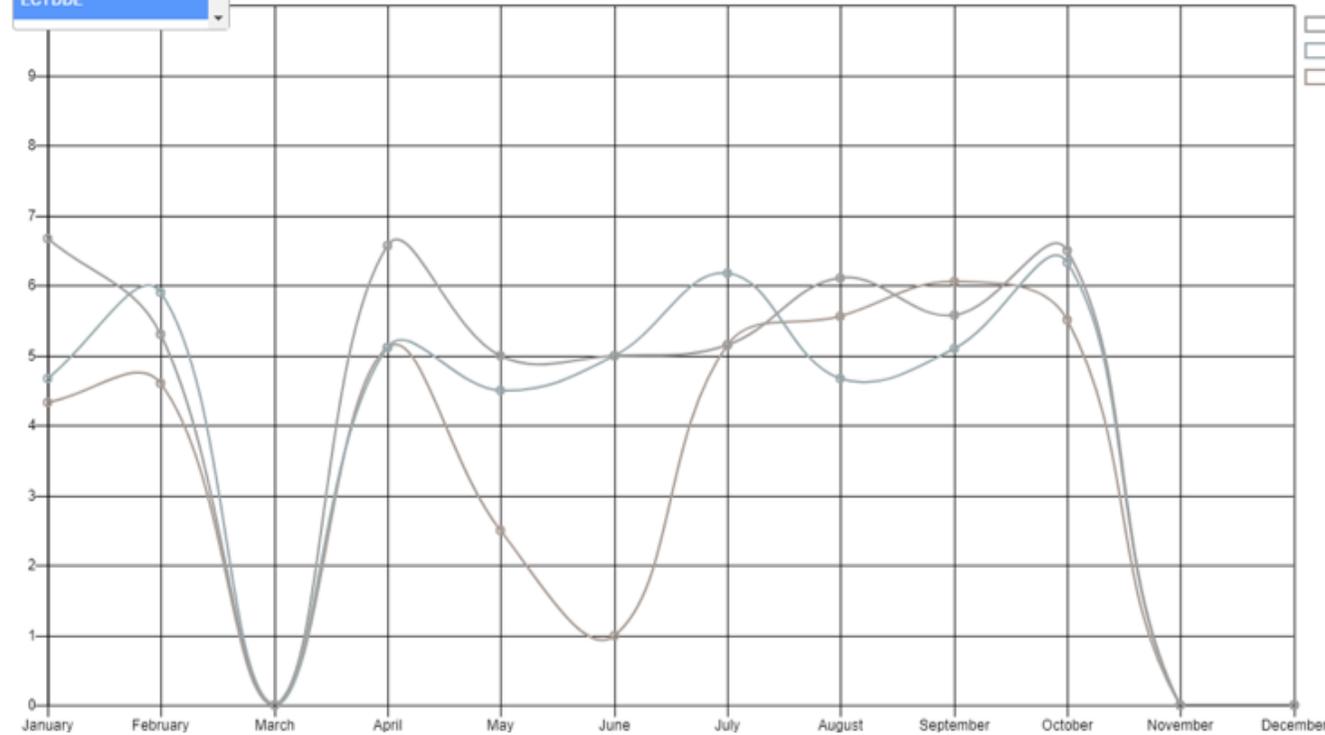
Average of Planning deviation

**5.36** Hours

Average of Execution deviation

**5.30** Hours

Average of Actual deviation



Planned Deviation in %  
(PD)

**0.11**

Average of PD < 3 hours

**0.48**

Average of PD < 6 hours

**0.82**

Average of PD < 9 hours

Actual Deviation in %  
(AD)

**0.20**

Average of AD < 3 hours

**0.51**

Average of AD < 6 hours

**0.85**

Average of AD < 9 hours



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## Living Lab 3 – Urban Logistics

SUMY

# LL3 SUMY- Scope Overview

UC1,2 & 3: Collaborative Planning, Monitoring and Strategic Assessment

## Business Problem(s)

- Lack of **information sharing** infrastructure between collaborating parties
- Demand for **real-time monitoring of transport events** from multiple stakeholders and information sources
- Limited **awareness of the actual incurred costs** and risks segmented per individual partner

## SELIS Solution

- Timely and securely **publish order data to the subscribed Service Providers** and utilize this information to improve route planning
- Real-time feeding, consolidation and exposure of **transport events** to interested parties
- **SELIS collaborative cost model** and calculation mechanism for valuing risks and gains per shipper

# LL3 SUMY - Achievements & Impact

## Major Achievements

- Implemented and tested **monitoring prototype**
- Implemented the automated **Transport Demand-Capacity Matching** prototype
- Experimented with **Cost Allocation models**
- Integrate solutions with production data
- Engaged **publish/subscribe communication** infrastructure
- Implemented **KPIs Dashboard** (utilizing EGLS5 on Environmental Reporting)
- **Global Optimization** (route and truck load for multiple transport requests and capacity)

## Business Impact

- Improved visibility on execution to facilitate collaborative planning of urban platform operations and **increased load factor**
- **Increased transport reliability** and Customer satisfaction
- **Reduced CO2** emissions (improving public image)
- **Improved cost and risk allocation** between individual partners

# LL3 SUMY - Collaborative Planning & Optimization

## Demand/Supply Dashboard

### Demand for Service

Departure Date	Shipper	Departure Point	Arrival Point	Total Volume	Priority
30/11/2017	Selecto Restaurant	Paul Boulangerie	Selecto Restaurant	1	
08/01/2018	Ocean Marée	BXL Chocolates	Sumy	2	
26/01/2018	Sumy	Paul Boulangerie	Sumy	1.5	

### Available Services

Departure Time	Operator	From	To	Total Volume	Average Load
01/12/2017	Sumy	Sumy	Sumy	10	14%
03/02/2018	Sumy	Sumy	Sumy	100	0%

## Optimized solution

 Shipment from : Halve Man Brewery to Waterloo handled by Halve Man Brewery

Duration of Trip	From
1h23min	Halve Man Brewery - Walplein, 8000 Brugge, België
0h10min	Paul Boulangerie - Rue de l'Enseignement 2, 1000 Bruxelles, Belgique
0h10min	BXL Chocolates - Rue de l'Homme Chrétien 1, 1000 Bruxelles, Belgique
0h14min	Selecto Restaurant - Rue de Flandre, 1000 Bruxelles, Belgique
0h31min	Paul Boulangerie - Rue de l'Enseignement 2, 1000 Bruxelles, Belgique
Total: 2h29min	

Free Space	To
 60%	Paul Boulangerie - Rue de l'Enseignement 2, 1000 Bruxelles, Belgique
 10%	BXL Chocolates - Rue de l'Homme Chrétien 1, 1000 Bruxelles, Belgique
 0%	Selecto Restaurant - Rue de Flandre, 1000 Bruxelles, Belgique
 50%	Paul Boulangerie - Rue de l'Enseignement 2, 1000 Bruxelles, Belgique
 40%	Waterloo - Waterloo, Wallonie, Belgique

# LL3 SUMY – Configuring Cost Allocation per Shipper

Select the weights for the cost calculation

Volume	<input type="text" value="25"/>
Service Points	<input type="text" value="25"/>
Synergies of the route	<input type="text" value="50"/>

Allocate Costs

Cost Per Shipper

Total Cost: 696.93 €

Shipper	Cost
Ocean Marée	499.66 €
Paul Boulangerie	197.27 €



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## Living Lab 3

SARMED

# LL3 SARMED – Scope

Use Case 1 & 2 - Collaborative information sharing & Optimized RA deliveries

## Business Problems

- **Information of goods** that are shipped through Regional Agencies lacks consistency and is not timely delivered.
- The client-assignor, the LSP-shipper and the End customer-receiver do not have prompt information for shipment
- Limited and late awareness for both RAs as well as LSPs of preferred delivery dates per final point, and low to none **capability to influence the delivery dates** in an efficient way.

## SELIS Solution

- **Information** fed from **all Supply Chain stakeholders to the SCN** seamlessly transformed and integrated, to formalize the accurate real-time **awareness** of the current delivery status.
- **Collaborative planning** and **value sharing** through an SCN-facilitated negotiation on transport-price and delivery date among the Regional Agent and the LSP

## LL3 SARMED – Achievements & Impact

### Major Achievements

- **Adapter** implemented to pull information from SARMED's WMS system
- **Visibility Dashboard** Prototype
- **Real-time Monitoring** Dashboard
- **Negotiation Workflow** Prototype
- Enhance prototype usability functionality based on user feedback
- **Implemented KPIs** Monitoring
- **KPIs Dashboards**
- Tested Workflow and Negotiation process in production environment

### Business Impact

- 30% reduced information delivery lead time
- Over 30% less man-effort for trucking deliveries
- >8% reduction of operational costs
- >7% Improved **Load Factor**
- 5% Reduction on **travel distance** to collect
- Reduce delivery points per truck 10%
- 10% reduction of CO<sub>2</sub> footprint

# LL3 SARMED – Collaborative Planning Negotiation

Finalized

### Original Version Revision Initial Template

Origin:  Destination:

Truck Plate Number:

Days Of Week:

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

#### Pricing

Fixed Price:

Τιμή ανά κιλό:  Price Per Pallet:

Price Per Cubic Meter:

Effective From:  Evergò έως:

Total Available Capacity (Laden):

Total Available Capacity (KG):

Total Available Capacity (M3):

Requested Reserved Capacity (Laden):  Percent of Total:

Requested Reserved Capacity (KG):  Percent of Total:

Requested Reserved Capacity (M3):  Percent of Total:

### Route Under Negotiation Revision 1

Origin:  Destination:

Days Of Week:

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

#### Pricing

Fixed Price:

Τιμή ανά κιλό:  Price Per Pallet:

Price Per Cubic Meter:

Effective From:  Evergò έως:

Total Available Capacity (Laden):

Total Available Capacity (KG):

Total Available Capacity (M3):

Requested Reserved Capacity (Laden):  Percent of Total:

Requested Reserved Capacity (KG):  Percent of Total:

Requested Reserved Capacity (M3):  Percent of Total:



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## Living Lab 3

ZANARDO

# LL3 Zanardo - Scope

UC1 – Information Sharing & Capacity Optimization

## Business Problem(s)

- Lack of **visibility** of transport operations and **unused capacity**, resulting in underutilized resources and increased operational costs.
- Lack of real-time shared information about the delivery status and **available truck capacity**, resulting in waste of loading/unloading related resources and delays.

## Envisioned Solution

- Created an **Information Sharing Hub** consolidating information flows from multiple systems aiming to **streamline management of truck capacity**, warehouse working processes, shipments status and **trip planning**
- Integrated trips real time data, warehouse working processes, shipments status and trip planning/schedules.

# LL3 Zanardo – Achievements & Impact

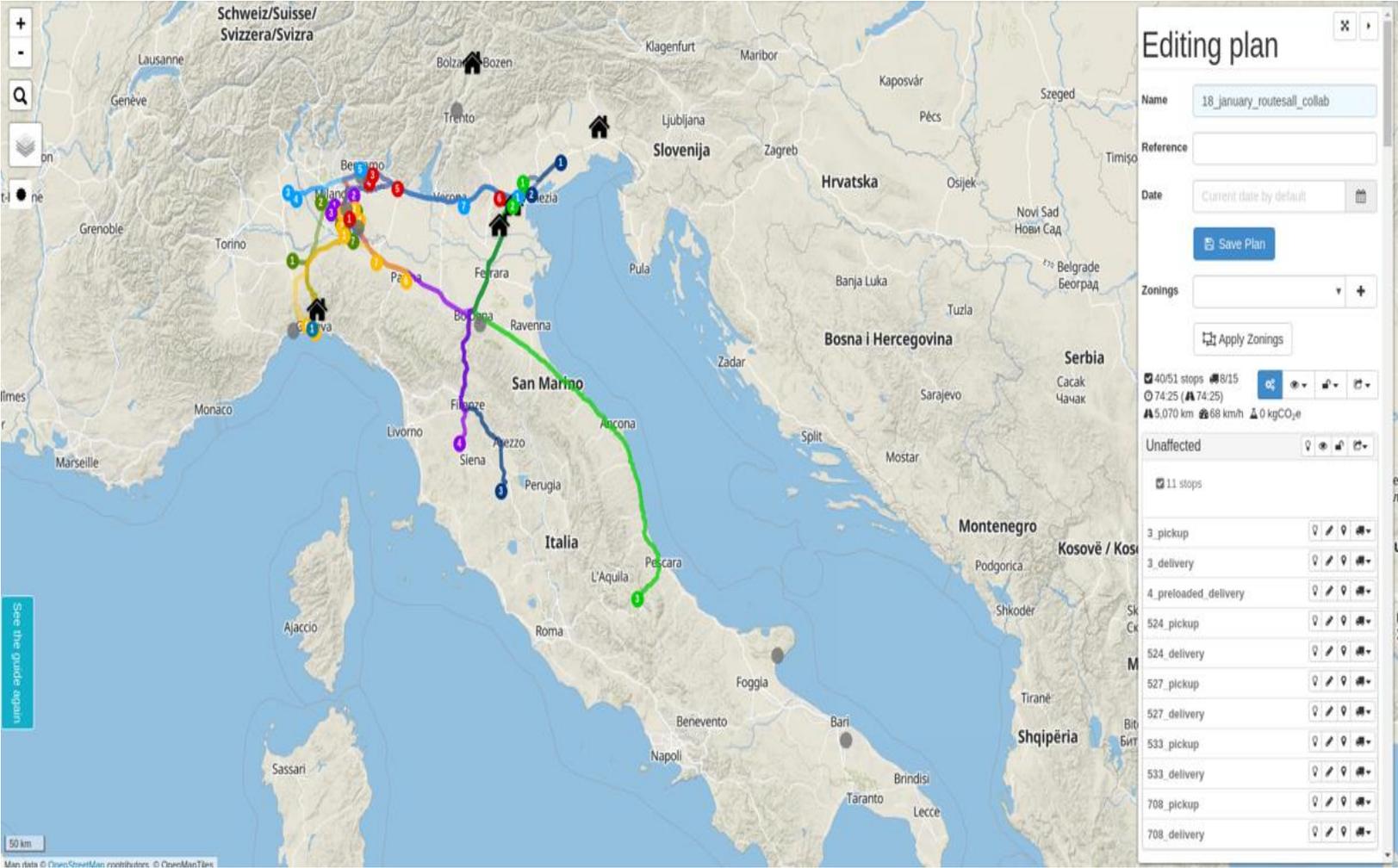
## Major Achievements

- **Adaptor** designed to pull information from Zanardo's **WMS** system
- Successfully tested the requirement to load/unload the truck in less than 2 hours
- Implemented Data Workflows for the KPIs
- KPIs Dashboard prototype
- Urban Logistics Transport **Demand/Supply mapping and Global Optimization**

## Business Impact

- **Improved visibility of unused capacity** and cost efficient transport operations and warehouse management
- KPI improvements
  - **15% increase in Load Factor,**
  - 15% reduce in warehousing handling times and
  - **>15% decrease in CO2 emissions**

# LL3 Zanardo – Route Optimization Total Collaboration





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## Living Lab 4

ISL

## LL4 ISL - Scope

Use Case 1, 2 & 3 – Visibility Services, Dashboard & KPIs, Optimized Capacity Planning

### Business Problem(s)

- Actual or perceived lack of **operational reliability** for **Inland Water Transports (IWT)**
- **No integration** with external systems generating relevant logistics events, **limiting end-to-end visibility**
- **Sub-optimal capacity utilisation** and **labour-intensive manual planning** activities due to unreliable or uncertain planning constraints, both in terms of **transport volumes** and in terms of **operational issues**

### SELIS Solution

- **SC Visibility services** to enable cooperative solutions, utilizing
  - Status of container bookings
  - Deep-sea data, vessel schedules, container availability, and handling status
- A **Dashboard** build on top of the visibility services and data fed by external information sources, providing real-time KPIs and **operational status overview**
- An **Advanced Capacity Planning tool** providing feasible alternatives based on time and capacity constraints

# LL4 ISL – Achievements & Impact

## Major Achievements

- **3 independent SCN Data Services** (linked to existing TMS) for Barge position, Vessel Sailing status and Container status
- Integration of data services with LL-Applications
- Implemented **adapters** to legacy systems to allow access to transport order data and planning data
- **Dashboard to monitor data quality, coverage and forecast or transport volumes**
- Visibility functions and API for customers and terminal operators
- **Applied Connectivity Infrastructure**
- **Capacity Planning & Forecasting of transport volumes**
- Real **CO2 emissions calculation**

## Business Impact

- **Optimization of planning & operational processes**
- **Increase of capacity use** through improved planning capabilities
- **Cost & CO2 reduction**
- Increase competitiveness
- Effective and efficient monitoring and better control of capacity utilization of all IWT services and quality measures
- Automatic, fast and effortless **calculation of available options**
- **Modal shift promoted**

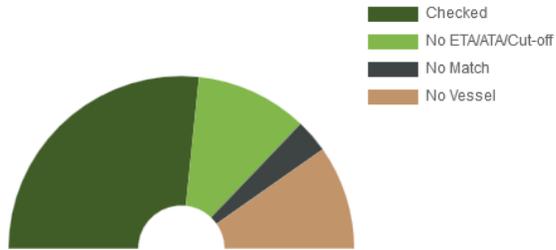
# LL4 ISL - Visibility Platform (Dashboard Perspective)

## Booking Data Check

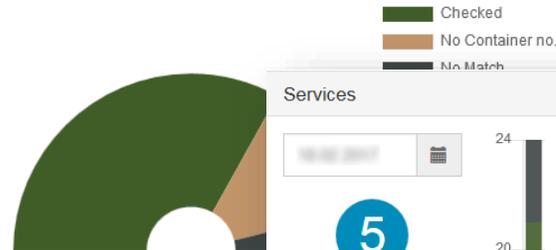
400  
Containers booked

36  
Vessels in bookings

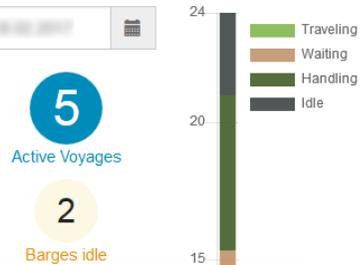
### Ocean Sailing Status



### Terminal Container Status



### Services

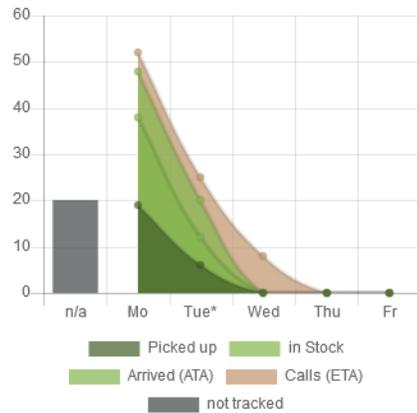


Voyage	Itinerary	From	Next Port	Load	Delay
5010	Bremerhaven	Bremerhaven	Bremerhaven	0	30
5011	Bremerhaven	Bremerhaven	Bremerhaven	0	24
5012	Bremerhaven	Bremerhaven	Minden	6	0
3096	Bremerhaven	Bremerhaven	Minden	6	0
5013	Dörpen	Dörpen	Antwerpen	54	0
5015	Dörpen	Dörpen	Antwerpen	54	0
5016	Antwerpen	Antwerpen	Amsterdam	0	40
5017	Eemshaven	Eemshaven	Dörpen	60	0
5018	Eemshaven	Eemshaven	Dörpen	60	0
5019	Rotterdam	Rotterdam	Dörpen	59	0
5014	Rotterdam	Rotterdam	Dörpen	59	0

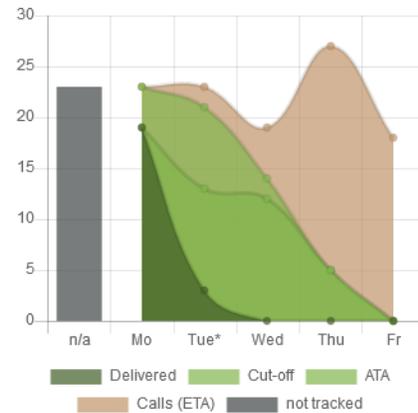
## Sea Port Quantities



## Port Volumes (Import Containers)



## Port Volumes (Export Containers)



# LL4 ISL – Control Map with geo-fenced information (Planning Perspective)

The screenshot displays a web-based control map interface for MOIN. The top navigation bar includes 'MOIN', 'Dashboard', 'Control Map', and 'Transport Orders', along with user information 'Logged in as ISL Development' and a 'Logout' button. The main area is a map of Europe, primarily focusing on the Netherlands and Germany, with various ports and vessels marked. The map shows several vessels with circular icons containing numbers, indicating their status or location. The sidebar on the left provides a search bar for 'Ocean Vessel' and a list of vessels for specific dates: Wednesday 20.09.2017 (Colombo Express), Friday 22.09.2017 (OTTAWA EXPRESS, NYK Adonis, MSC RITA), and Saturday 23.09.2017. The interface also includes a search bar, a date selector, and a list of vessels with their respective departure times and destinations.



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## Living Lab 5

Adria Kombi

## LL5 AK - Scope

Use Case 1&2

### Business Problem(s)

- **Time consuming, manual** process for collecting and **broadcasting** Container status to involved stakeholders
- **Hard to predict delays** in rail transport, their **impact** to overall wagon-set planning, and propose alternative wagon-set utilization when a delay is materialized

### Envisioned Solution

**Consolidate container status** information (such as container location and **ETA to final destination**) from multiple sources and “publish” to the appropriate channels (either **via P/S** Communication Infrastructure, or through a simple web-interface using the unique container id)

**Propose optimized wagon-set utilization**, based on ETA predictions

# LL5 AK – Achievements & Impact

## Major Achievements

- **“Container Visibility Dashboard”** portal implemented, consolidating and visualizing container data (ETA, delays, CO<sub>2</sub> reduction) from multiple sources.
- **Communication between AK Legacy systems and the SCN** through RESTful APIs, and defined the XML structure of the exchanged message.
- **“Notifications Service”** implemented to provided custom notifications of transport events or irregularities
- **Multiple transport legs ETA Calculation** and the respective GUI
- Implementation of **KPIs Monitoring Dashboard**
- **Wagon-set proposed corrective actions mechanisms** when disrupting incidents occur

## Business Impact

- Minimized manual communication overhead to keep business partners updated
- Reduced planning effort and time by minimum 10%
- **Optimized wagon-set utilization** by 15%, reduced delays at terminals by 10%, reduce CO2 emissions by 10-20% due to modal shift

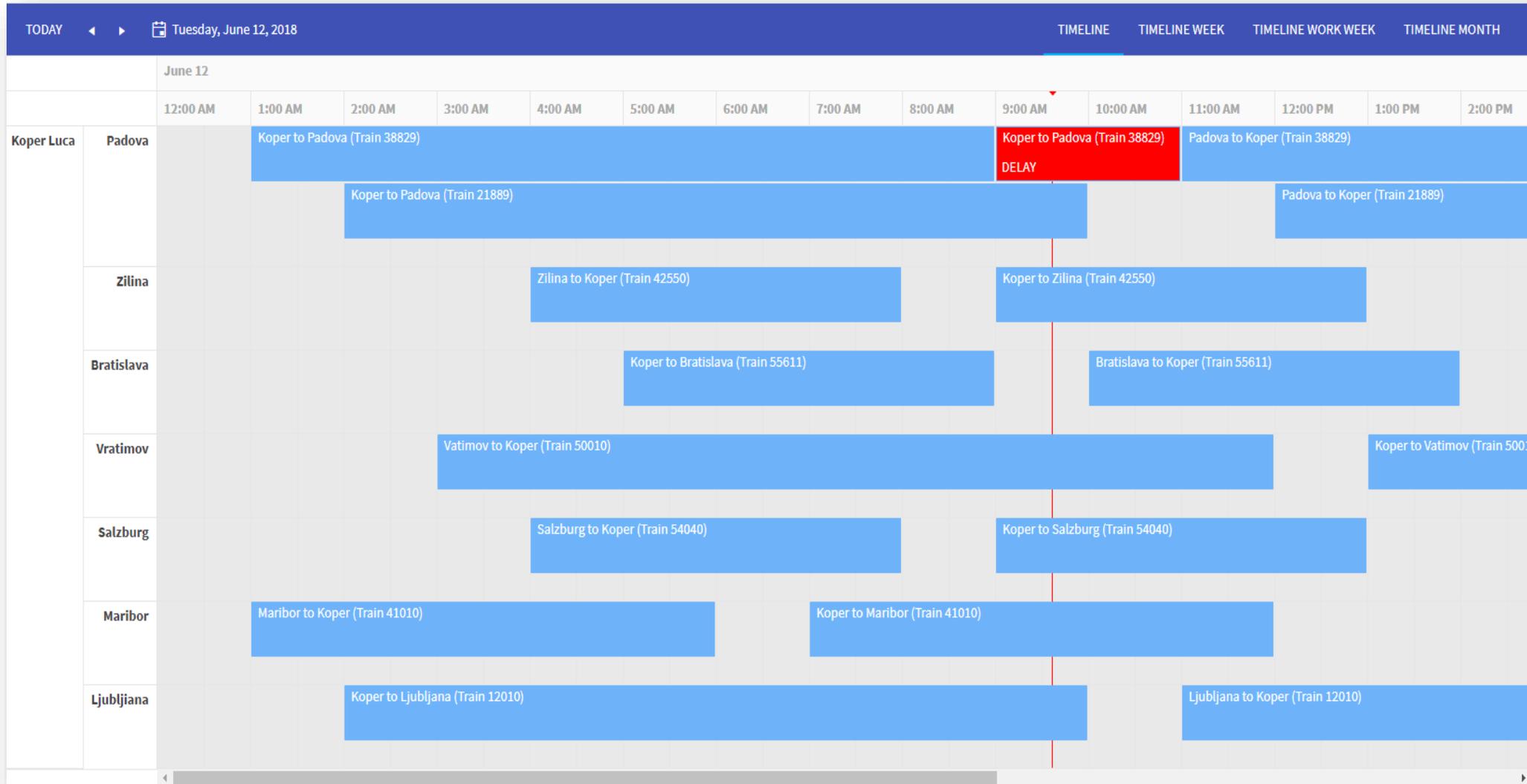
# LL5 AK - Search & Notifications Front End

The screenshot displays the SELIS ADRIA KOMBI web application interface. At the top, there is a navigation bar with the SELIS logo and ADRIA KOMBI branding. The main content area is divided into several sections:

- Container Visibility Dashboard:** Located on the left, it includes a 'Container Search' section with a text input for 'Container Number' (containing 'MSCU887597') and 'Search'/'Reset' buttons. Below this is a 'Filtering Results' table showing one result: Container Number 'MSCU887597' and Departure Terminal 'Koper Luka/KT'.
- Notifications Dashboard:** The central and largest section, featuring a 'Notification Search' area with filters for 'From Date' (01/10/2017), 'To Date' (22/10/2017), 'Notification Type' (All), 'Train No' (All), 'Departure Terminal' (All), 'Wagon No' (All), 'Destination Terminal' (All), and 'Arrival Terminal' (All). It includes 'Search' and 'Reset' buttons.
- Train Notifications:** A table listing notifications for trains, including Train Number, Notification Description, and Notification Date.
- Wagon Notifications:** A table listing notifications for wagons, including Wagon Number, Notification Description, and Notification Date.
- Container Tracking History:** Located at the bottom left, it shows a list of tracking events with 'Date' and time stamps.

At the bottom of the page, there are navigation arrows and a page number '34'.

# LL5 AK – Rescheduling





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## Living Lab 6

**MARINETRAFFIC & DFDS**

# LL6 DFDS - Scope

Use Case

## Business Problem

- **Lack of visibility, during maritime transport** – hindering collaborative planning
- Inaccurate Time of Arrival of ships
- Inadequate communication infrastructure to facilitate ship-port-trucks synchronization

## Envisioned Solution

- Provided **algorithms**, implemented as SCN recipes, for calculating updated ETAs based on real time ship-location data
- Constructed SCN Shipping Services to support Supply Chain Actors synchronization

# LL6 DFDS – Achievements & Impact

## Major Achievements

- **Accurate ships ETA Calculation** on the SCN based on **real time AIS data**
- **Shipping services Community Node** supporting a standard process for Ship-port-trucks synchronization
- **Interfaced with external data sources and third party data providers.**
- **Synchronization model** based on an SCN built **Knowledge Graph**, with key information entities of the Common Information Exchange Model mapped to the data models of enterprise systems

## Business Impact

- **Maximized operational efficiency** and environmental performance for door to door services.
- Increased visibility of shipments to facilitate more collaborative planning.
- Enabled the end customer **track the status of an entire shipment** (including land and maritime legs)



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## Living Lab 7

CONEX

## LL7 Conex - Scope

Standardising SC data, creating **Pipeline Data Exchange Structures** and demonstrating their uses

### Business Problem(s)

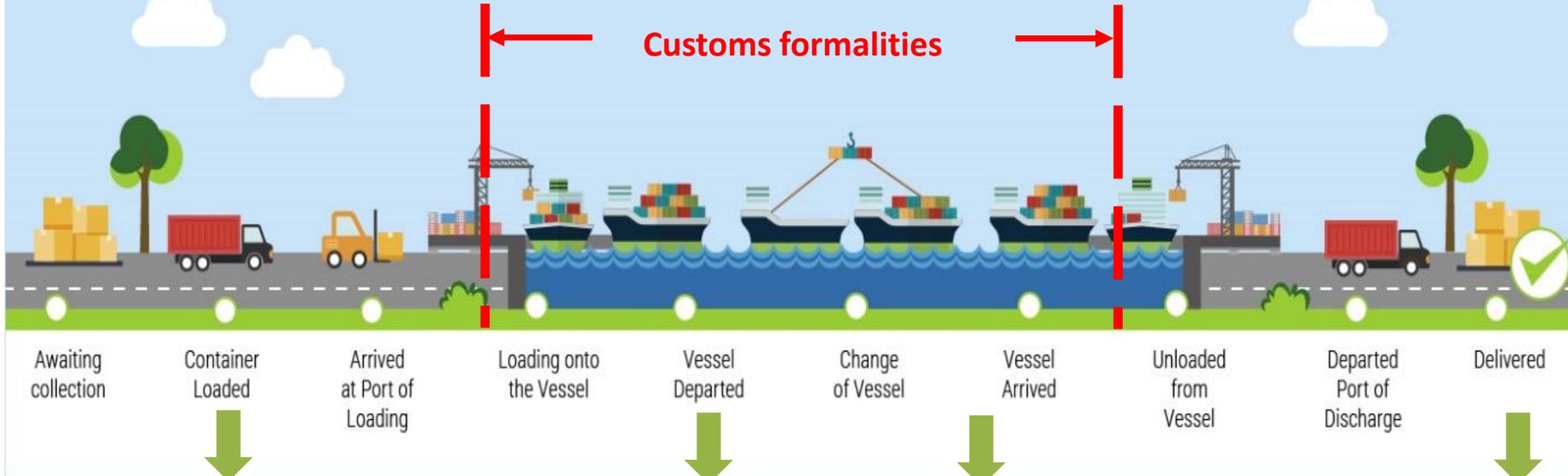
- **Data** sent to **cross-border agencies** for goods entering a new customs territory is often of **low quality** or **incomplete** as it is not always provided by the original data source, or is received **too late** for agencies to carry out effective or **timely risk analysis**. This leads to:
  - consignments being **unnecessarily inspected**,
  - monopolizing cross-border agency resources needlessly
  - significantly **slowing down** the movement of legitimate trade
  - lack of visibility leading to increased risk and cost for the importer

### Envisioned Solution

- Explore the concept of **Pipeline Data Exchange Structures (PDES)** and the extraction and transmission of **standardized data** in the context of cross-border movements and regulatory compliance, utilizing global **standards** such as **UN/CEFACT Reference Data Models**.
- **Decision Support System (DSS)** with **risk indications** and suggestions
- Multiple-filing: data provided by original sources enabling increased data quality and consistency

# LL7 Conex – Waypoint Data

Improving cross-border management through enhanced pre-arrival data availability



**Waypoint 1**

Parties

- Buyer
- Seller
- Loading Party
- Ship To

Goods

- No. of Packages
- Country of Origin
- HS Code
- Value of Goods
- Description of Goods

Container Details

- Container and Seal No

**Waypoint 2**

Parties

- Carrier
- Planned Delivery

Goods

- Country of Export
- Country of Destination

References

- Master Bill Number

**Waypoint 3**

Routing

- Port Call(s)
- Port of Entry to EU / UK
- Estimated Arrival Date
- Arrival Location

**Waypoint 4**

Parties

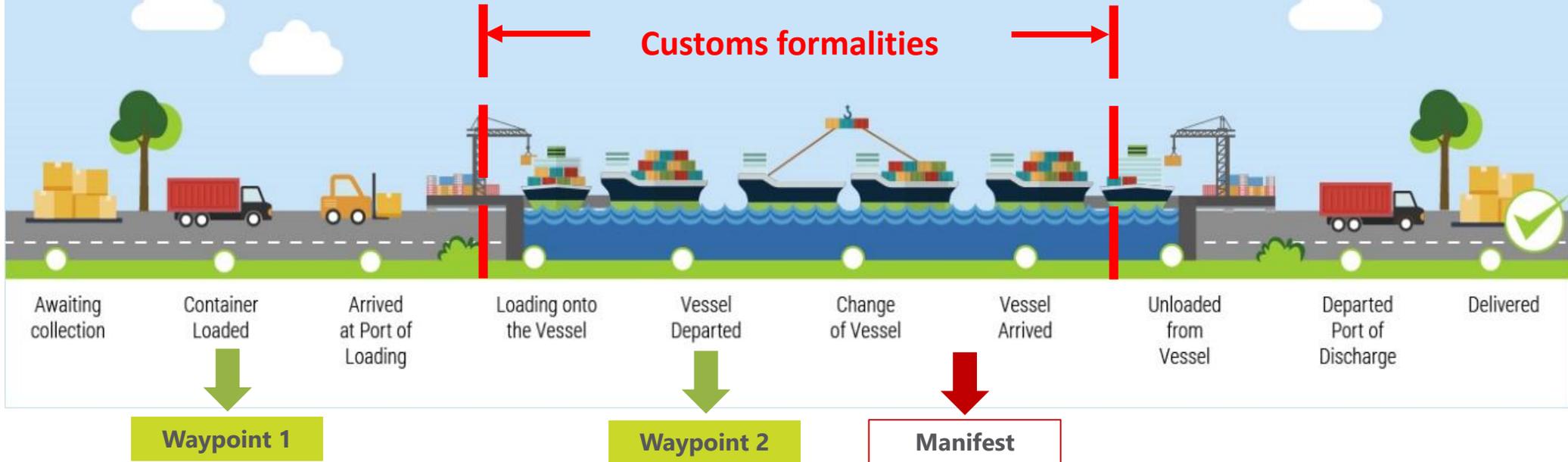
- Actual Delivery Date

Goods

- No. of Packages
- Declared Amounts (if different)

# LL7 Conex - Demonstrator 1

Improving cross-border management through enhanced pre-arrival data availability



## Pipeline Data

- Available up to 30 days earlier
- Accurate, as originates directly from supply chain
- Complete, containing commercial sales contract data:
  - Buyer
  - Seller
  - HS Code
  - Country of Origin
  - Goods description

*Versus*

## Manifest Data

- Available late - maximum 48 hours pre arrival
- Poor quality data as often "diluted" due to
  - work load constraints,
  - insurance needs
  - commercial sensitivity issues
- Missing key data for effective risk analysis

SELIS London IPIC 2019

## LL7 Conex – Achievements & Impact

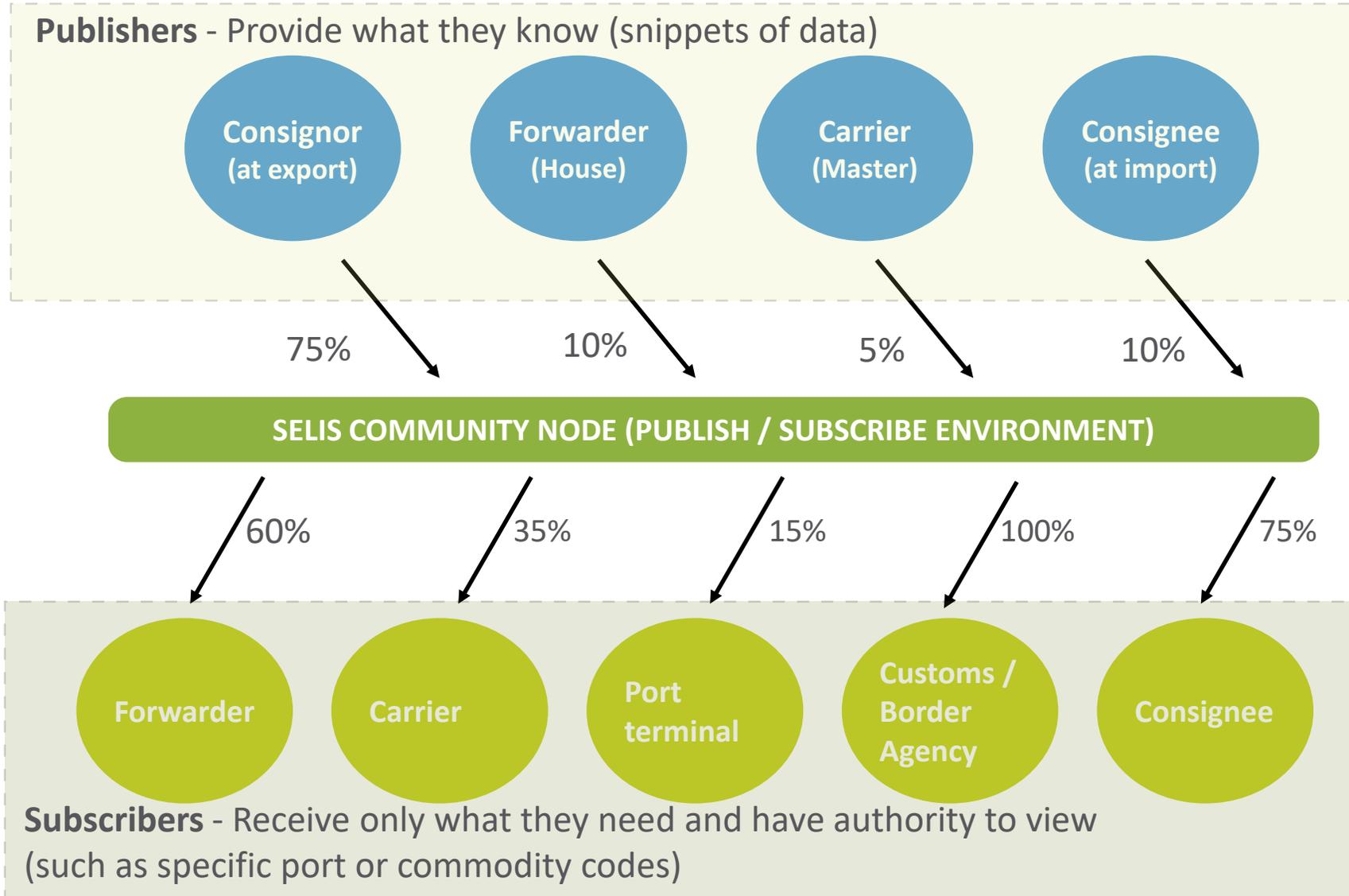
### Major Achievements

- Identification of **required data elements** per scenario and **per Waypoint** and definition of **information flows**
- Investigated **risk analysis engine** interaction and additional dashboard requirements
- **KPI Dashboard** (based on Data Analytics)
- Established **SCN Data Repositories**
- **Pipeline Data Exchange Structure** extraction creation and mapping
- **Risk Analysis Engine** Prototype tested with data and rules
- Positive feedback from cross-border agencies

### Business Impact

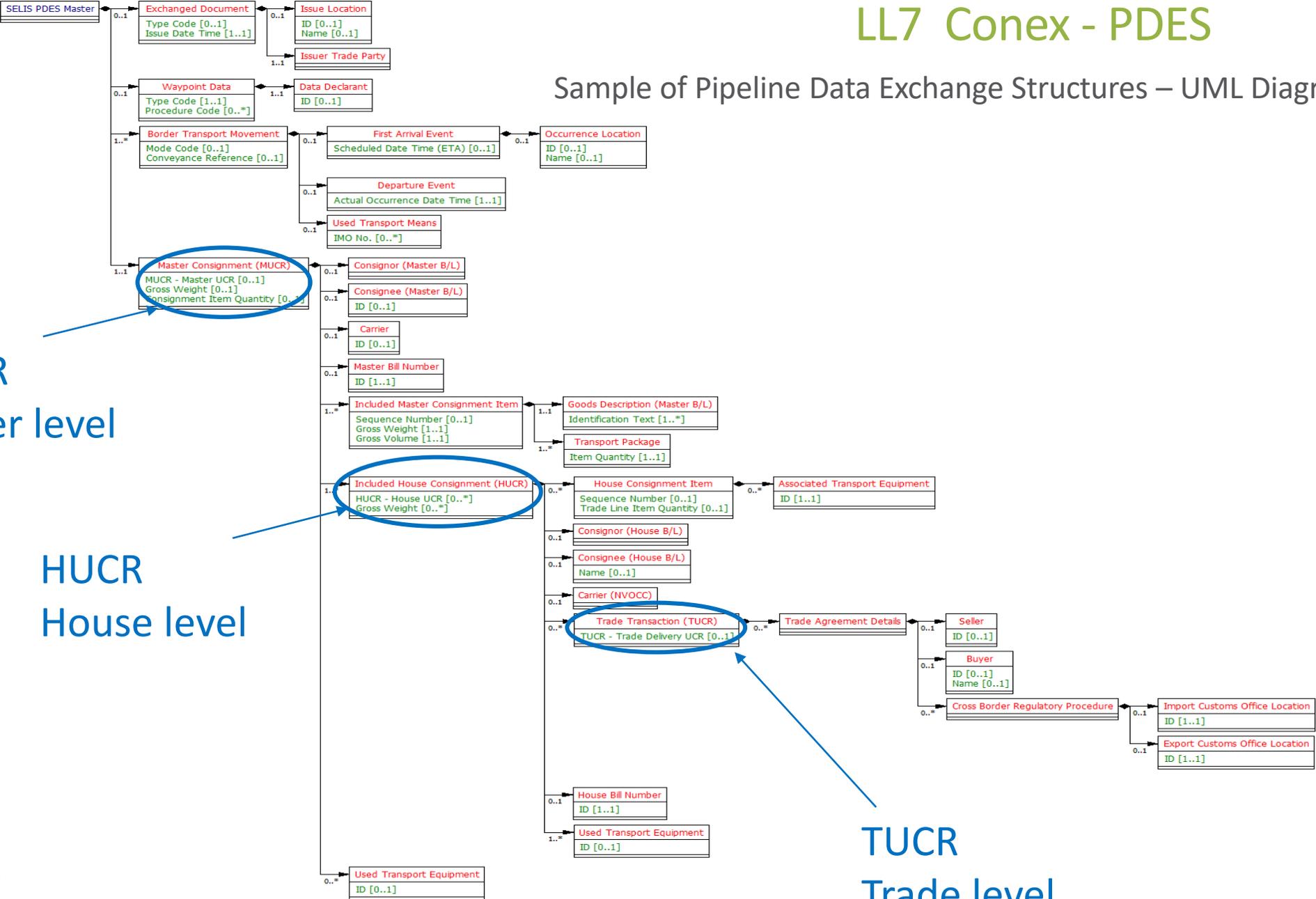
- More **accurate cross-border control decisions**, minimizing unnecessary inspections
- More **fluid cross-border movements** for legitimate trade, increasing transparency and reducing delays
- Greater **ETA-ATA visibility**
- Optimization of time and costs related to cross-border control and inspection planning
- Timely identification of reliable transport means and carriers

# SCN Publishers & Subscribers



# LL7 Conex - PDES

Sample of Pipeline Data Exchange Structures – UML Diagram with use of UCRs



MUCR  
Master level

HUCR  
House level

TUCR  
Trade level



# LL7 Decision Support System

## Comparison of two instances of Advance Security Declarations (ENS) at two Waypoints

Waypoint Visibility 

### Customs - Way Points

Waypoint	DateTime	Locat...	ShippingAg...	TotalConsignm...	DirectConsignm...	TranshipmentConsignm...	TotalEquipeme...	FullEquipeme...	EmptyEquipeme...
WP2-ARNICS	Fri, 18 Jan 2019 09:48:10 GMT	FRMRS	MONT VENTOUX	20	20	0	40	30	10

1 10 items per page 1 - 1 of 1 items 

### Customs - Way Point Risks

Consignment	Cargold	RiskTypeId	RiskScore	Severity	Details	Suggestions
TNTUN1501181	MFTU1234567	DOCUMENT	2.3	HIGH	Invalid Date	DOCUMENT CORRECTION

1 10 items per page 1 - 1 of 1 items 



Towards a Shared European Logistics Intelligent Information Space

## Living Lab 8

ELGEKA

# Living Lab 8 Scope

ELGEKA Use Cases

## Business Problems

- **Limited visibility on the delivery status** of the orders.
- Expected Time of Arrivals (**ETA**) not updated
- High **Cost for obtaining Working Capital** (situation further affected by the economic crisis)
- Risk of uncollectable transactions

## SELIS Solution

- A SCN-based solution that enables **SC visibility and collaboration** for the entire supply chain, facilitating orders accessing and tracking without manual effort
- SCN calculated **Supply Chain Excellency Score** utilizing SC Visibility to support the assessment of the financial risk from buying receivables from a supplier
- **SC Financing solution** to facilitate the selling of supplier's receivables to financial investors

# LL8 ELGEKA – Achievements & Impact

## Major Achievements

- **SCN-facilitated workflows:**
  - Electronical receipt of Delivery Notes
  - Automated PoD from End customer
  - SC excellency score required Data
- **SC Excellency Score calculation recipe** through SCN Big Data analytics on SCV data
- **Granted SC excellency Score Patent**
- Engaged Financial Institutions as prospect users

## Business Impact

- **Increased Visibility**
- Reduced lead time
- Reduced stock outs
- **Reduced operational cost for information exchange**
- Lowered CO2 emissions (15-30%)
- Improved transportation agility
- Reduced transportation cost
- **Lowered Working Capital cost** for ELGEKA
- Better credit rating with less costs in the supply chain
- Improved ELGEKAs relationship with own customer

# Living Lab 8 Scope

SONAE Use Case

## Business Problems

- **Little or no visibility** and collaboration between Sonae and its suppliers, companies work in silos – severe for SME's
- This is a widespread challenge within the food retail sector
- **Sub-optimal Supply Chains** due to “guessing” that leads to significant buffering
- Highly **complex challenges of privacy**, sensible information, and competitors positioning
- +1Bn€ Orders, +50K SKU's, +10K Suppliers
- **Open-book business processes non-existent**

## SELIS Solution

- A **third-party independent platform**, where conditions are right for **sharing information** from all parties
- Sonae and suppliers **share sensible data to the SELIS Community Node & Ecosystem**
- **Algorithms identify/predict alarming situations** of under and of overstocking
- Value-added actions are taken in **an iterative workflow**
- **One-stop-shop for SME's Supply Chain Collaboration**
- **Network effects apply** for reaching the market

## LL8 SONAE – Achievements & Impact

### Major Achievements

- **SCN-facilitated workflows**
  - Forecasted Orders to Supplier
  - Suppliers Stock Availability
- **SCN Transformation of forecasted sales to orders**
- **Dashboard for 1-2-1** visibility and collaboration, with implemented workflows
- **Simulation environment & models for a many-2-many** scenario of multiple stakeholders

### Business Impact

- **Minimized stock-outs**
- **Decreased production costs by levelling production and demand**
- Increased supply chain agility due to common planning
- Created a greener supply chain by decreasing waste
- **Strengthened the relationships** among producers, suppliers, and retailers

# LL8 SONAE – Order Forecast

SonaeDSS | Dashboard | KPIs | Order Forecast | Agreements | Suppliers

Filters: FROM: 06/10/2018 To: 03/11/2018

Order Forecasts: Recalculate Send

**1 Select an Order Forecast**

Sales to	Latest Status	Created By	Created At
20/10/18	New	Administrator	22-Oct-2018 10:17
06/10/18	New	Administrator	9-Oct-2018 10:46

Supplier Capacity over Order Forecast

Stock Levels

**2 Select an Order Forecast Detail**

SKU	Item Description	Warehouse	Recommended Order Date	Coverage Days	Forecasted Quantity	Order Distribution
2729135	AGRIÃO 150 GR VITACRESS	ENT. AZAMBUJA FRES.	06/10/2018	1	306	SCN Calculated
2729135	AGRIÃO 150 GR VITACRESS	ENT. MAIA FRES.	06/10/2018	1	178	SCN Calculated
3800325	BATATA SC CAL.35/45 EMB.1KG	ENT. AZAMBUJA FRES.	08/10/2018	1	52	SCN Calculated

**3 Click "SCN Calculated"**

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# LL8 SONAE – One Retailer to Many Suppliers via SCN

