DiSCwise Pilot report Portugal

V1.2

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Portuguese pilot report

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Portuguese Pilot Report

Vision and Objective

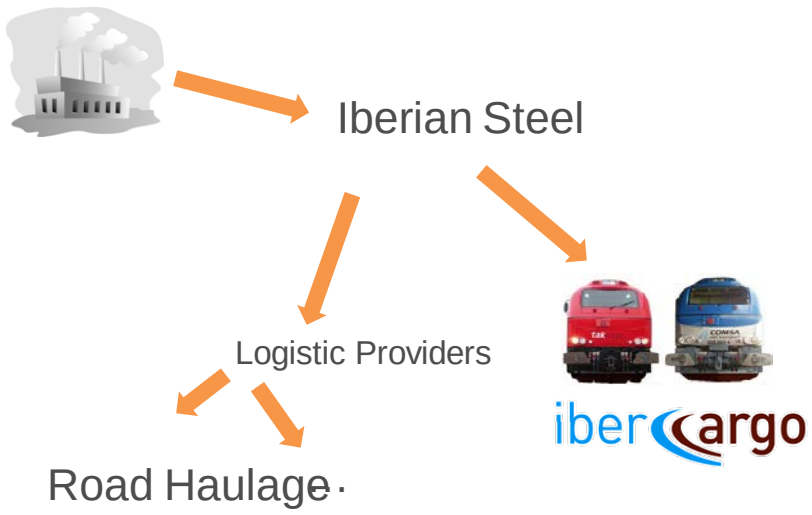
Delivering co-modal door-to-door transport services requires a significant amount of information to be exchanged among the involved actors. Many different actors are involved and the role of who plans and coordinates the transport service is anything but simple and fast.

A large volume of paper work, many confirmations, and documents must be exchanged between the parties contributing for delays. For the success of these services it is necessary to coordinate all involved actors and information into one fluent transport process.

In the case of the transport chain in focus, all this communication is at present supported exclusively by standard productivity tools like spreadsheet and document editors combined with e-mail, Fax and Telephone. This situation is still today very common in this sector, where IT investments are still seen as justifiable only on high volume and long duration chains. This is mainly because of the costs associated with traditional solutions for integration like EDI.

The chain where we will implement the Portuguese Demonstrator of DiSCwise is actually an Iberian case, since it involves partners and customers in Portugal and Spain and as the main carriage is executed regularly by rail between these two countries.

The main actor, the one at the top of the transport chain handling the direct relation with the costumers, is a company resulting from a joint venture called Iberian Steel. This company associates a leading provider for transport services for steel coils, Spanish Tramesa with another group called IberCargo composed of the first Portuguese and Spanish private rail operators, TAKARGO and COMSA.



A set of logistic services providers which support the modal change, warehousing and the first and last mile services, will also be integrated in this demonstrator.

[1]

Figure 1 -Cargo Flow

The main cargo owners are industrial companies and freight forwarders that will be treated in any case as transport users.

Objective

The objective in this pilot is to use the common framework to establish a new platform for integration and communication among actors using these services. The work will be focused on a close partnership with the transport integrator (Iberian Steel) to establish an architecture involving the current partners while assuring a flexible and future proven platform.

This platform is an element that allows seamless booking and management of services, by providing advanced communication means among transport users, transport integrators and logistic service providers throughout the logistic transport chain.

Participating industrial stakeholders

The following list of industrial stakeholders is currently considered. most of them are SMEs.

Name	Country	Role
Tramesa	ES	Logistics service provider
Takargo	PT	Transport Provider
Ibercargo	ES	Transport Provider
SPC	PT	Logistics service provider

[1] *Suppressed in some cases, where the cargo owner has the ability to directly load the train.[1]

Iberian Steel	ES	Intermodal service provider
Ciserpo	ES	Logistics service provider
Tradiba	ES	Logistics service provider
Prosimed	ES	Cargo Owner
Arcelor	ES Sagunto	Cargo Owner
Arcelor	ES Vigo	Cargo Owner
Altri	PT	Cargo Owner
Palmetal	PT	Logistics service provider
Thyssen	ES	Cargo Owner
ADIF	ES	Logistics service provider

*- Blue shaded lines represent SME's

TRAMESA

Role: Logistics service provider

Partner description:

Since its inception in 1973, Tramesa, as integrated logistics operator, is committed to the consolidation and strengthening of a global transport offer. Including:

Rail mode. Large Volume-wagon or container.

Road Mode. Agency of Transportation.

Maritimee Mode. Short Sea Shipping.

The offer is also complemented by Warehouse facilties with rail and road access and Container Depots that allow Just in Time deliveries.

TAKARGO

Role: Transport Provider

Partner description:

Takargo develops its activity in three business areas that add value and increase competitiveness, including: Intermodal Transport (Maritime based), to support the hinterland of the ports concession by Mota-Engil; Iberian Combined Transport, which makes use of more modern equipment (mobile boxs) to support major shippers (Lactogal, Altri, Renova, SAIC), and specialized Transport (sand, gravel, ballast, clinker, iron, cars, scrap), using dedicated containers that support door-to-door services.

IBERCARGO

Role: Transport Provider

Partner description

Created in 2009, it results from Rail IBERCARGO business involvement with TAKARGO and COMSA, with the main objective of making International traffic between Spain and Portugal a reality with the use of interoperable rolling stock.

This partnership allows for an agile response to the Iberian market through various logistical solutions, with the efficiency feature. This venture has the potential to jointly create train regular services within the peninsula, managed by a single entity.

SPC

Role: Logistics service provider

Partner description

SPC is a reference in Portugal in the logistic support, intermodality and transport using its network of logistic and railway terminals/platforms.

The concept of Multipurpose Platform developed by SPC grants the possibility to offer in a single location a wide range of services which complement each other.

CISERPO

Role: Logistics service provider

Partner description

S.L. Ciserpo is a company in constant evolution and movement, which rises in line with the industrial growth of Vigo, in response to the logistical needs that arisenowadays, especially in the automotive sector.

The specific features of the industrial zone Vigo raise the need for advanced storage and logistics platforms to ensure optimal storage and delivery of large factories and plants.

PALMETAL

Role: Logistics service provider

Partner description

PALMETAL - Storage and Services SA, is located in the Industrial Park AutoEuropa and acts primarily in the area of logistics. Palmetal owns about 15,000 square feet of warehouse, a private rail spur, lifts up to 40 tons, forklifts, dollies for transportation, etc..

The company's activity focuses primarily on the reception, control, storage and shipment of coils for sheet metals, raw materials and components for the automotive industry.

AS IS versus TO BE situation

The Iberian Steel, as intermodal service provider, had problems with planning and management of trips, as these operations involved the constant contact with the terminal operators, road operators, cargo owners and often the end customers awaiting the arrival of cargo.

The process began with the request for carriage of goods by the customer, making telephone contact with the service provider and later sending an email to the provider to indicate the data load as well as the intended date of travel.

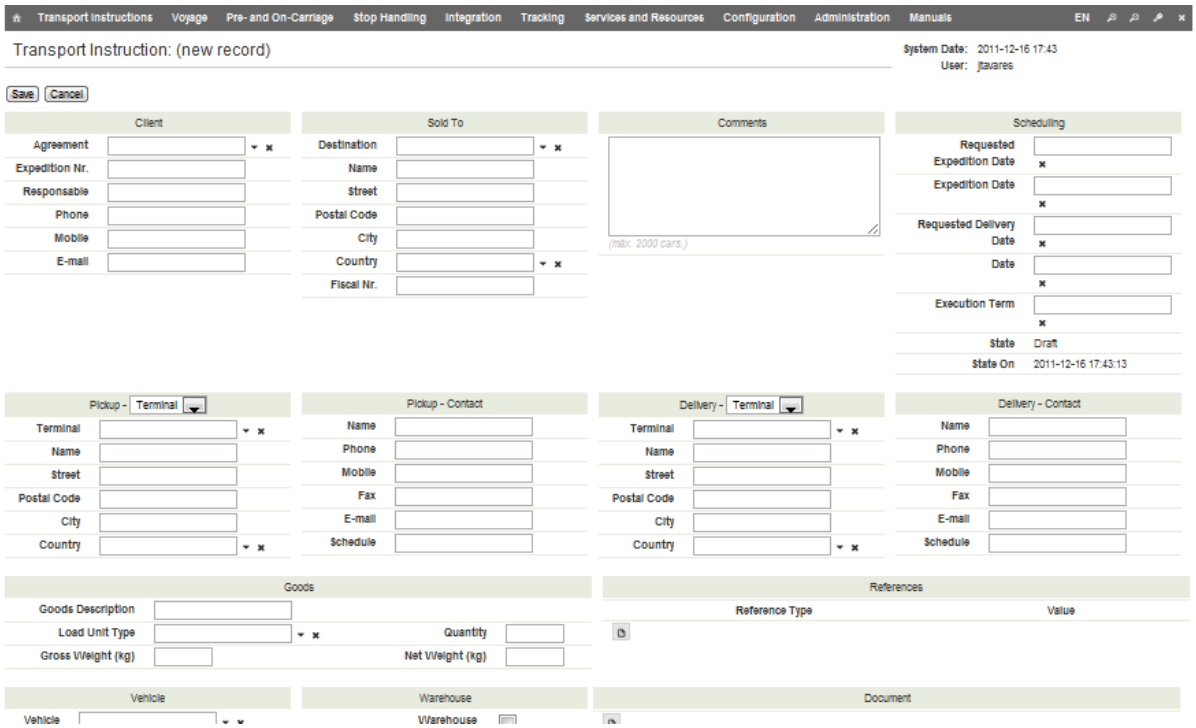
The operator of the service provider, after full charge initiates a series of contacts with either the road transport operators if needed and/or the terminal operators and destination in order to schedule the loading and unloading of the material being carried.

Due to all these contacts before and after the trip, much resource involvement is needed for management and planning over the medium term, because the time spent during the day with these constant contacts does not provide time for other operations.

After the beginning of the trip, the operator responsible for planning, would have to remain contactable and available to handle any situation that occurred throughout the journey the train was running. Briefly, any tracking information on the moving charge was provided by the operator. If this is not currently known to give accurate information of the load or the train would have to contact the other train operators to obtain the necessary information.

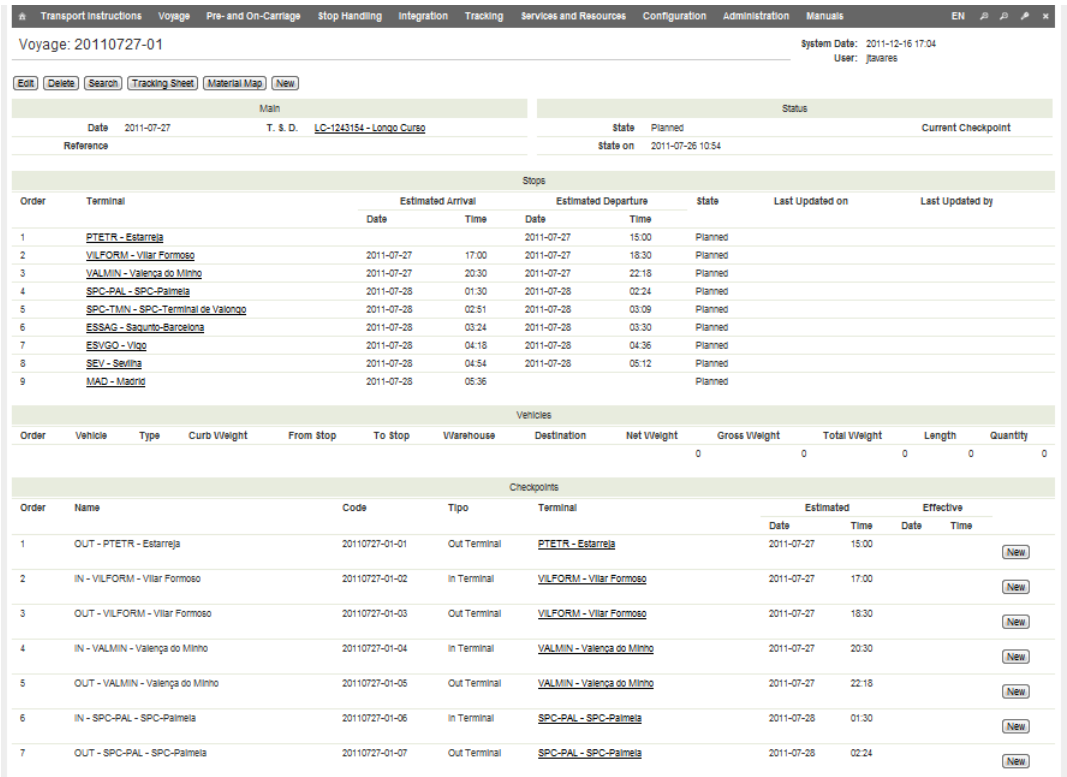
Today, following the implementation of the system TAGUS, the operator is freed to perform tasks more valuable to the growth of the company where he works.

Requests are made directly to its customers, using the application TAGUS, using your private data to access the system. In the system, it is possible to upload shipping instructions using the editor for this specific operation, or the importer of specific shipping instructions in Excel format.

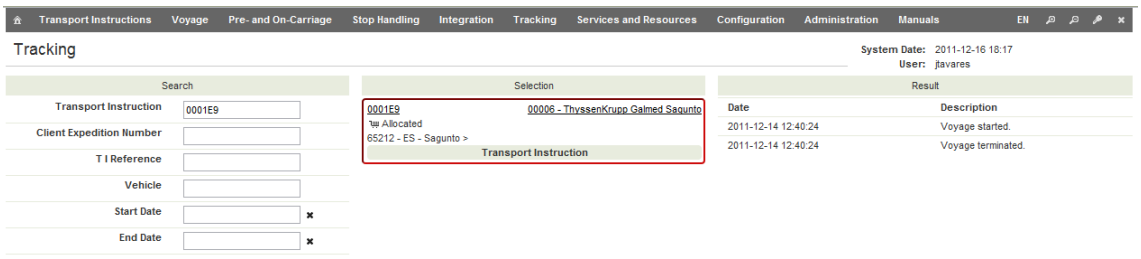


	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Client Expedition Number	Requested Expedition Date	Agreement	Load Unit Type	Gross Weigh	Net Weight	Quantity	Pickup Type	Delivery Type	Delivery Sold Name	Pickup Termina	Goods Descriptior	Warehouse
2	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	20950	20950	1	Terminal	Address	Ford	PALMETAL	76915503	
3	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	20170	20170	1	Terminal	Address	Ford	PALMETAL	7690492	
4	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	10480	10480	1	Terminal	Address	Ford	PALMETAL	765084701	
5	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	20770	20770	1	Terminal	Address	Ford	PALMETAL	77057702	
6	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	20750	20750	1	Terminal	Address	Ford	PALMETAL	76312156	
7	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	10380	10380	1	Terminal	Address	Ford	PALMETAL	765083702	
8	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	16790	16790	1	Terminal	Address	Ford	PALMETAL	76915502	
9	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	16930	16930	1	Terminal	Address	Ford	PALMETAL	77057500	
10	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	5400	5400	1	Terminal	Address	Ford	PALMETAL	765538701	
11	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21770	21770	1	Terminal	Address	Ford	PALMETAL	76915203	
12	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	6380	6380	1	Terminal	Address	Ford	PALMETAL	767911700	
13	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21770	21770	1	Terminal	Address	Ford	PALMETAL	76915202	
14	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19770	19770	1	Terminal	Address	Ford	PALMETAL	76915302	
15	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19750	19750	1	Terminal	Address	Ford	PALMETAL	76915501	
16	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	10400	10400	1	Terminal	Address	Ford	PALMETAL	765083703	
17	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19230	19230	1	Terminal	Address	Ford	PALMETAL	76550756	
18	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	10460	10460	1	Terminal	Address	Ford	PALMETAL	765084700	
19	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19430	19430	1	Terminal	Address	Ford	PALMETAL	77057600	
20	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19500	19500	1	Terminal	Address	Ford	PALMETAL	7719061	
21	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	6740	6740	1	Terminal	Address	Ford	PALMETAL	767911703	
22	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	19500	19500	1	Terminal	Address	Ford	PALMETAL	76430756	
23	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	20930	20930	1	Terminal	Address	Ford	PALMETAL	76312056	
24	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21170	21170	1	Terminal	Address	Ford	PALMETAL	76771022	
25	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	7380	7380	1	Terminal	Address	Ford	PALMETAL	76501056	
26	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	16200	16200	1	Terminal	Address	Ford	PALMETAL	7690512	
27	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	16460	16460	1	Terminal	Address	Ford	PALMETAL	76312256	
28	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	7320	7320	1	Terminal	Address	Ford	PALMETAL	76501058	
29	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21090	21090	1	Terminal	Address	Ferrodisa	PALMETAL	11511053	
30	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	9180	9180	1	Terminal	Address	Ferrodisa	PALMETAL	11511054	
31	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21000	21000	1	Terminal	Address	Ferrodisa	PALMETAL	11510735	
32	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21280	21280	1	Terminal	Address	Ferrodisa	PALMETAL	11511055	
33	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	9350	9350	1	Terminal	Address	Ferrodisa	PALMETAL	11510733	
34	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	22450	22450	1	Terminal	Address	Ferrodisa	PALMETAL	11511046	
35	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	21620	21620	1	Terminal	Address	Ferrodisa	PALMETAL	11511069	
36	EXP_PLMTL_20111001	01-10-2011	Regular Iberian Stee	BOB	8310	8310	1	Terminal	Address	Cortichapa	PALMETAL	11633110	

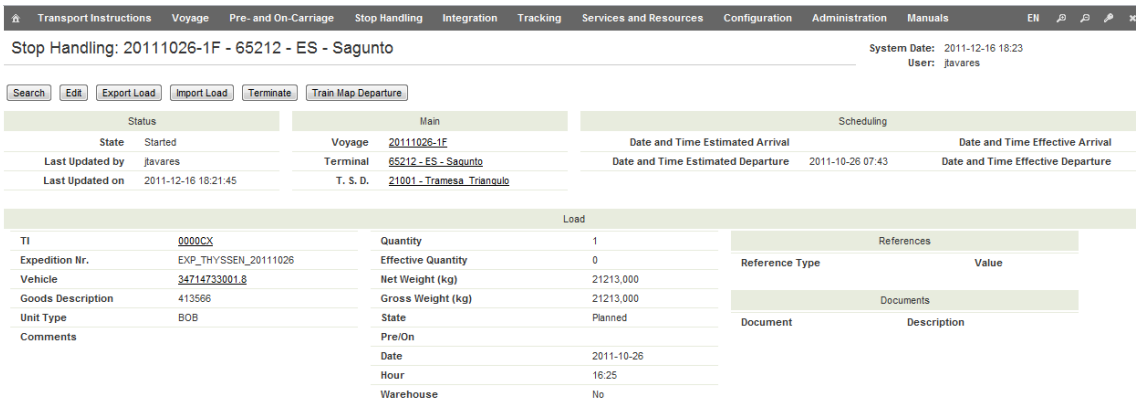
The operator of logistic services, plans trips to be performed using TAGUS. Trips may be created for any date range, provided that the contract with the customer is valid.



After the beginning of the trip,the client has access to information tracking regarding the train and its load. This information is available from anywhere with internet access.



Terminal operators can manage all loading and unloading operations on TAGUS using the system.



Transport Instructions | Voyage | Pre- and On-Carriage | Stop Handling | Integration | Tracking | Services and Resources | Configuration | Administration | Manuals | EN

Stop Handling: 20111026-1F - 65212 - ES - Sagunto

System Date: 2011-12-16 18:23
User: jtavares

Search | Edit | Export Load | Import Load | Terminate | Train Map Departure

Status		Main		Scheduling			
State	Started	Voyage	20111026-1F	Date and Time Estimated Arrival		Date and Time Effective Arrival	
Last Updated by	jtavares	Terminal	65212 - ES - Sagunto	Date and Time Estimated Departure	2011-10-26 07:43	Date and Time Effective Departure	
Last Updated on	2011-12-16 18:21:45	T. S. D.	21001 - Tramesa Triangulo				

Load

				References	
TI	0000CX	Quantity	1	Reference Type	Value
Expedition Nr.	EXP_THYSSEN_20111026	Effective Quantity	0		
Vehicle	34714733001.8	Net Weight (kg)	21213,000	Documents	
Goods Description	413566	Gross Weight (kg)	21213,000	Document	Description
Unit Type	BOB	State	Planned		
Comments		Pre/On			
		Date	2011-10-26		
		Hour	16:25		
		Warehouse	No		

Departure - Wagons / Vehicles composition

Date: 2011-10-26
Voyage Ref.: 20111026-1F
Ref.:
Terminal: 65212 - ES - Sagunto

Order	Wagon / Vehicle	Type	Curb Weight	UTI	Serie	Unit	From	To	Warehouse	Sold To	Net Weight (kg)	Gross Weight (kg)	Total Wg (kg)	Length (m)	Qty.
1	34714733010.9	⊃ TKG 65' - PN	23,000.00				65212	22308						0.00	
						BOB	65212	22308	No	Citroen	20,610.00	20,610.00			0,00
						BOB	65212	22308	No	Citroen	18,660.00	18,660.00			0,00
										Sub-Total:	**39,270.00**	**39,270.00**	**62,270.00**	**0.00**	**0.00**
2	34714733012.5	⊃ TKG 65' - PN	23,000.00				65212	22308						0.00	
						BOB	65212	22308	No	Citroen	20,650.00	20,650.00			0,00
						BOB	65212	22308	No	Citroen	20,570.00	20,570.00			0,00
										Sub-Total:	**41,220.00**	**41,220.00**	**64,220.00**	**0.00**	**0.00**
3	34714733005.9	⊃ TKG 65' - PN	23,000.00				65212	22308						0.00	
						BOB	65212	22308	No	Citroen	20,950.00	20,950.00			0,00
						BOB	65212	22308	No	Citroen	20,562.00	20,562.00			0,00
										Sub-Total:	**41,512.00**	**41,512.00**	**64,512.00**	**0.00**	**0.00**
4	34714733008.3	⊃ TKG 65' - PN	23,000.00				65212	22308						0.00	
						BOB	65212	22308	No	Citroen	21,130.00	21,130.00			0,00

Performance indicators

KPI drivers

This document describes the KPIs identified that measure the results of the Portuguese and Spanish Pilot services. The KPIs were identified and described in cooperation with the pilot partners.

The KPIs can be grouped in 3 main drivers or objectives that are identified by the industry partners:

- Improved visibility of door-to-door shipments
- Reduced effort related to transport coordination

- Improved billing capabilities

Improved visibility of door-to-door shipments

This group of KPIs is related to improvements introduced by enabling the transport integrator to have visibility over all the relevant events in the service. And also by having the possibility to selectively share information about these events with the other actors in the transport chain.

The following KPIs have been identified:

- Lead time to react to deviations (in hours)
- Punctuality
- Deviation analysis for management control
- Real time knowledge of cargo in transit
- % of status information provided to the customer electronically, without human interference

Reduced effort related to transportation

This group of KPIs focuses on the reduction of resources and efforts by the transport integrator to coordinate the transport service.

The following KPIs have been identified:

- Man-hours spent by the transport integrator for setting up and planning one train voyage.
- Man-hours for transport coordination per service
- Ability to assess the performance of transport subcontractors
- Number of voyages that can be simultaneously planned
- Maximum nr. of future voyages that can be planned

Improved billing capabilities

Automating invoicing procedures represents a tremendous benefit for the transport integrator, in terms of resources spent and the costs of capital associated to reducing the number of days to get paid.

The following KPIs have been identified:

- Invoicing man-hours spent
- Invoicing lead time

KPI definitions

KPI 1.1: Lead time to react to deviations

Background

Currently there are many unpredictable events and deviations that can occur in the execution of the service. The most common of all is delays.

In many of the cases the transport integrator is not informed right away when something not planned takes place. And therefore it is not able to respond immediately to those events that may compromise the performance of the service.

By allowing full transport chain visibility, the DiSCwise approach helps transport integrators to receive alerts when deviations occur, thus having a better capability to react immediately.

Definition

This KPI reflects the reduction in the time lapse between the moment a deviation occurs and the moment the transport integrator is alerted to the occurrence, by make using of the DiSCwise framework.

How to measure

Measurement of the KPI can be achieved by:

- On the AS IS version it was measured based on the records from the transport integrator
- On the TO BE version it will be measured directly by the TAGUS system

Baseline

Task list:

- The service provider is notified of a deviation or the client detects a delay on the delivery
    - the logistic service operator contacts the terminal operators to understand where the train is;
    - After finding the train, he is informed of the reason of the deviation
    - Connects is client to give him a state of the merchandise

Although it may seem a quick operation, sometimes people are not immediately reachable. All this information exchange is usually done by telephone.

Baseline measurement

Baseline task	Baseline duration

Lead time to react to deviations	3 Hours

DiSCwise services

Task list:

- Tagus system informs all stakeholders through the screen tracking.
- The logistic operator has information tracking of all merchandise that circulates on the railroad.
- The cargo owners only have information about the state of charge.

KPI goal

DiSCwise task	DiSCwise duration
Lead time to react to deviations	1 Hour

KPI 1.2: Punctuality

Background

By providing the capability to better plan and monitor the execution of services as well as the performance of transport subcontractors, one of the main benefits of the DiSCwise framework will be related to increased punctuality of the service.

Definition

This KPI assesses the percentage of cases where the service is concluded within n the agreed time slot.

How to measure

Measurement of the KPI can be achieved by:

- On the AS IS version the transport integrator doesn't have records that enable him to compute this KPI.
- On the TO BE version it will be measured directly by the TAGUS system. With the system running it will be possible to record this information.

Baseline

Baseline task	Baseline duration

Punctuality	Records not available

DiSCwise services

Task list:

- Because the system reports the exact time of departure and arrival, it is possible to know how the logistics operator is behaving in terms of punctuality.
- With this information online is always possible to make improvements in punctuality, calling on all stakeholders in the transport chain more dedication in fulfilling the tasks so that the load arrives on time to the end customer.

KPI goal:

DiSCwise task	DiSCwise duration
Punctuality	TBD

KPI 1.3: Deviation analysis for management control

Background

The DiSCwise framework provides an important benefit to the transport integrator, by enabling it to have transport service performance management information and the possibility to analyze deviations.

Train voyages are analyzed at the end by collecting all mail and phone information that actors provide. If some data is missing it's necessary to check it again.

Supporting this type of analysis is a major step to continuously improve the performance of the service.

Definition

This KPI assesses: Availability or not of tools to perform analysis for management control, including Time needed to compile a train and all cargo information (tons and wagons by pickup, delivery, terminals and storage destinations).

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline it is not possible to measure because at the present time the transport integrator doesn't perform any deviation analysis, unless some unpredictable event takes

place. The only data that is collected is for billing purposes and is not based on transport events but in several emails.

- With the DiSCwise system, it will be possible to give management control of all the measures based on the transport executions, transport status events and goods itinerary that are produced during the voyage.

Baseline

Baseline measurement:

Baseline task	Baseline duration
Deviation analysis for management control	Not available

DiSCwise services

KPI goal:

DiSCwise task	DiSCwise duration
Deviation analysis for management control	Available

KPI 1.4: Real time knowledge of cargo in transit

Background

The ability to have real time information about the relevant events related to transport execution, supported by the DiSCwise framework, is a major benefit for all the actors of the transport chain.

Definition

Ability to have real time information about the main milestones of transport execution shared among the main actors. This KPI simply has two possible values: NA (Non Available) or Available.

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: it was already defined with the Transport Integrator that the value for this KPI is NA

- On the DiSCwise solution the objective will be to shift to Available, thus it will be extremely simple to measure it

Baseline

Task list:

- The transport integrator didn't have this kind of information available.

Baseline measurement:

Baseline task	Baseline duration
Real time knowledge of cargo in transit	Not available

DiSCwise services

Task list:

- Information is provided by the tracking screen. All the information available on this particular screen is enough to have the sufficient knowledge of the cargo in transit.

KPI goal:

DiSCwise task	DiSCwise duration
Real time knowledge of cargo in transit	Available and being used. It can only be considered available if all the events (milestones) mapped in the model for transport execution are reported 95% of the cases 1 hour after their occurrence

KPI 1.5: % of status information provided to the customer electronically, without human interference

Background

The DiSCwise framework allows many information items to be moved from traditional communication channels (e-mail, fax) to online information exchange.

This is translated into important benefits for the entire transport chain in terms of resources saved, decreased number of errors, etc.

Definition

To the transport integrator, cargo owners and terminal operators: % of tracking information that can be provided by TAGUS online (as a % of the total number of shared documents).

At the end the % of statistical information that can be obtained by all actors.

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: it was already defined with the Transport Integrator that the value for this KPI is currently zero

- In the DiSCwise solution the project team is determining with the actors in the business case the total number of documents that can be transferred into electronic format as a % of the total number of documents circulated.

Baseline

Task list:

- Reactive notification of the late declarations by customs authorities
- Establish the root cause of the case with logistics partners
- Frequent status tracking with customs representative on declaration status.

Baseline measurement:

Baseline task	Baseline duration
% of status information provided to the customer electronically, without human interference	0

DiSCwise services

Task list:

- Proactive notification by DiSCwise platform services of possible late declaration
- Proactive status notification of open declarations
- Establish the root cause of the case with logistics partners
- Measurement by time reporting

KPI goal:

DiSCwise task	DiSCwise duration
% of status information provided to the customer electronically, without human interference	31-60% - 0-30% better - 31-60% good performance improvements - 61- 90% excellent performance > 90% over the top performance

KPI 2.1: Man-hours spent by the transport integrator for setting up and planning one train voyage

Background

The DiSCwise framework enables several transport planning activities to be automated, thus decreasing the amount of resources needed to setup and plan services. This represents an extremely relevant benefit for the actors in the transport chain, particularly the transport integrator.

Definition

This KPI measures man-hours spent by transport integrator doing the following tasks:

- Receiving Transport Instructions from cargo owners and verifying all legal documentation
- Planning the storage of all cargo in wagons for clients that don't have their terminals
- Harmonizing all the load and unload instructions in each terminal in order to optimize the train voyage
- Producing the train plan (wagon content and order) verifying that trains respect transport rules, like height of each wagon, train balance and length.
- Preparing and delivering the train plan with pickup and delivery order to each LSP.

How to measure

Measurement of the KPI can be achieved by:

- On the AS IS: based on internal records from the transport integrator the project team was able to determine average man-hours spent for setting up and planning services
- On the TO BE the transport integrator will keep records of the new situation, using the DiSCwise framework to identify improvements.

Baseline

Task list:

- The trip was always planned after the arrival of material to make the trip.
- All management of wagons in the train was made just before the departure of the train.

Baseline measurement:

Baseline task	Baseline duration
Man-hours spent by the transport integrator for setting up and planning one train voyage	2 man / hour

DiSCwise services

Task list:

- The trip is planned in advance with the wagons.
- In the act of associating the loads to travel, they are already correctly parameterized with the wagons, so that management has also been made previously.

KPI goal:

DiSCwise task	DiSCwise duration
Man-hours spent by the transport integrator for setting up and planning one train voyage	1 man / hour

KPI 2.2: Man-hours for transport coordination per service

Background

The DiSCwise framework enables several transport execution coordination activities to be automated, thus decreasing the amount of resources needed to coordinate and manage services. This represents an extremely relevant benefit for the actors in the transport chain, particularly the transport integrator.

Definition

This KPI reflects Man-hours spent by the transport integrator for coordinating the service (by train voyage).

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: based on internal records from the transport integrator the project team was able to determine average man-hours spent for transport coordination

- In the DiSCwise solution the transport integrator will keep records of the new situation, using the DiSCwise framework to identify improvements.

Baseline

Task list:

- Measure the time spent by the logistic service operator to coordinate a service.

Baseline measurement:

Baseline task	Baseline duration
Man-hours for transport coordination per service	1 man / hour

DiSCwise services

Task list:

- Measure the time spent by the logistic service operator to coordinate a service with TAGUS solution.

KPI goal:

DiSCwise task	DiSCwise duration
Man-hours spent by the transport integrator for setting up and planning one train voyage	0,5 man / hour

KPI 2.3: Ability to assess the performance of transport subcontractors

Background

The DiSCwise framework enables transport integrators to assess the performance of transport subcontractors, by providing transport execution performance information.

This is very important feature, since it's a driver for continuously improving the service.

Definition

This KPI represents the existence (or not) of IT tools that enable the transport integrator to assess the performance of transport subcontractors. This KPI simply has two possible values: NA (Non Available) or Available

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: it was already defined with the Transport Integrator that the value for this KPI is NA

- On the DiSCwise Solution the objective will be to shift to Available, thus it will be extremely simple to measure it. The ability to have this tool available represents a great benefit for the transport integrator, clearly recognized by him.

Baseline

Task list:

- It was not possible to the pilot to measure this KPI.

Baseline measurement:

Baseline task	Baseline duration
Ability to assess the performance of transport subcontractors	Not Available

DiSCwise services

Task list:

- Due the fact that the TAGUS system shows the exact time of pickup / delivery of the cargo, it is possible to measure the performance of the subcontractors.

KPI goal:

DiSCwise task	DiSCwise duration
Ability to assess the performance of transport subcontractors	Available

KPI 2.4: Number of voyages that can be simultaneously planned

Background

In the Portuguese/Spanish business case, because of the lack of an integrated system, Iberian Steel plans each train in sequence, and this process can only be performed by one person that manages all train transport orders in Madrid. This scenario leads to serious business limitations, because Iberian Steel has a limited number of technicians involved.

With the implementation of the DiSCwise framework this situation has changed.

Definition

This KPI assesses the Number of voyages (rail & road) that can be planned by the main logistic integrator at the same time enabling it to optimize all the transport chain and the resources involved (transport technicians).

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: The transport technicians are able to plan only one voyage at a time
- In the DiSCwise Solution the objective will be to have several users planning train voyages at the same time in Portugal and Spain.

Baseline

Task list:

- The planning of a trip would be subject to the request from the client.
- After loading the application, all the planning was done by the operator managing all wagons in time for the train.
- These operations do not allow you to manage future trips.

Baseline measurement:

Baseline task	Baseline duration
Number of voyages that can be simultaneously planned	1

DiSCwise services

Task list:

- TAGUS allows planning multiple trips simultaneously.
- Trips are created through the editor Description of transport services available on TAGUS.

KPI goal:

DiSCwise task	DiSCwise duration
Number of voyages that can be simultaneously planned	>10

KPI 2.5: Maximum nr. of future voyages that can be planned

Background

If the main transport Integrator is able to know in advance the pickups and deliveries associated with each train stop, he is able to optimize his own asset utilization by adjusting train loads and composition and maximizing cargo capacity on train round-trips between Portugal and Spain.

With the DiSCwise framework implemented this becomes a possibility.

Definition

This KPI assesses the Maximum number of future voyages that can be planned (rail & road) by the main logistic integrator, enabling it to optimize all the transport chain and future operations.

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: Because of the lack of an integrated system Iberian Steel plans each train with a time scope of one week and based in regular trains, this planning process leads to lack of equilibrium between supply and demand. Trains with empty wagons followed by trains that are overbooked leading in the first case to excess of capacity or in the second case to delays on deliveries.

- In the DiSCwise Solution the objective will be to have user planning voyage based in regular and occasional trains.

Baseline

Task list:

- Like the previous KPI, the logistics operator had problems in planning and managing more than one trip at a time.
- The planning of a trip would be subject to the request from the client.
- After loading the application, all the planning was done by the operator managing all wagons in time for the train.
- These operations do not allow you to manage future trips.

Baseline measurement:

Baseline task	Baseline duration

Maximum nr. of future voyages that can be planned	1

KPI 3.1: Invoicing man-hours spent

Background

The DiSCwise framework enables Invoicing to be automated.

Automating invoicing procedures translates into an important benefit for the transport integrator, because it represents savings in terms of resources spent and in the costs of capital associated to decreasing the number of days to get paid.

Definition

This KPI assesses the man-hours spent by the transport integrator to produce billing plan, including the following activities:

- Collecting all delivery information (by Client) in tons and wagons by pickup/delivery and terminal
- In case of any exceptions contact each actor in order to verify the transport information
- Apply to each case the Contract terms in order to produce detailed Invoice value.
- Produce and send the Invoice Draft and the Invoice justification documentation.

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: based on internal records from the transport integrator the project team was able to determine average man-hours spent for invoicing (per month)
- In the DiSCwise Solution the transport integrator will keep records of the new situation, using the DiSCwise framework to identify improvements.

Baseline

Task list:

- The logistics operator gathers all the documentation of the trips planned during the billing month.
- The documentation is processed. This is the step that takes more time because it is all done based on Excel documents.
- The result of processing the documentation is integrated into the financial system.
- Invoices are sent to customers.

Baseline measurement:

Baseline task	Baseline duration
Invoicing man-hour spent	30 hours per month

DiSCwise services

Task list:

- Tagus system has a integrator with the financial system of the pilot.
- The operator generates a file with logistical integration and loads it into the ERP.
- Invoices are sent to the client.

KPI goal:

DiSCwise task	DiSCwise duration
Invoicing man-hour spent	1-2h Month

KPI 3.2: Invoicing lead time

Background

The same rationale applies as in last KPI.

Definition

Time lapse between service completion and the moment when the client accepts the Invoice.

How to measure

Measurement of the KPI can be achieved by:

- On the Baseline: currently the project team is working with the transport integrator to obtain an average value for this KPI.
- This value is not available because Iberian Steel accepts auto-billing invoices from its clients and makes a high level conference.
- In the DiSCwise Solution: the transport integrator will keep records of the new situation, using the DiSCwise framework to identify improvements, and producing the invoices to client before auto billing.

Baseline

Task list:

- This value is not available because Iberian Steel accepts auto-billing invoices from its clients and makes a high level conference.

Baseline measurement:

Baseline task	Baseline duration
Invoice lead time	No data available. This value is not available (for the baseline version) because Iberian Steel accepts auto-billing invoices from his clients and makes a high level conference.

DiSCwise services

Task list:

- Tagus sends details of all the goods delivered to the customers of the service provider. This exchange of information between the Tagus and the customers' systems is done weekly.
- At the end of the month the service provider sends the bill to customers.
- The client makes the validation of billing submitted.

KPI goal:

DiSCwise task	DiSCwise duration
Invoice lead time	4-5 days

Requirements to succeed

The pilot case has everything to be a success. The fact that the Iberian Steel does not have any software for planning and management of train trips has intensified their need. Communication between the service operator and its customers becomes optimized and easy to manage through the implementation of the system.

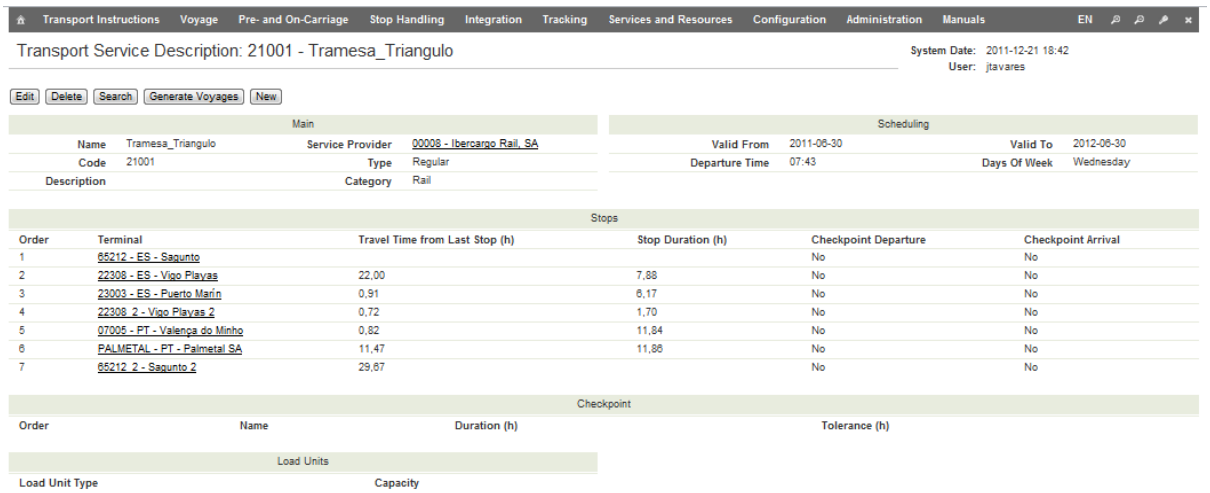
Software tools

Initially, the pilot actors, as mentioned above, had no software for management and trip planning. The TAGUS version installed on Iberian Steel, despite some specifications made for the business of transporting coils, is a generic application for planning and management of freight transport. Thus, we can split the application into 3 relevant parts:

- Management and planning of trains and wagons.
- Creation of Transport Instructions.
- Management of the rail terminal.

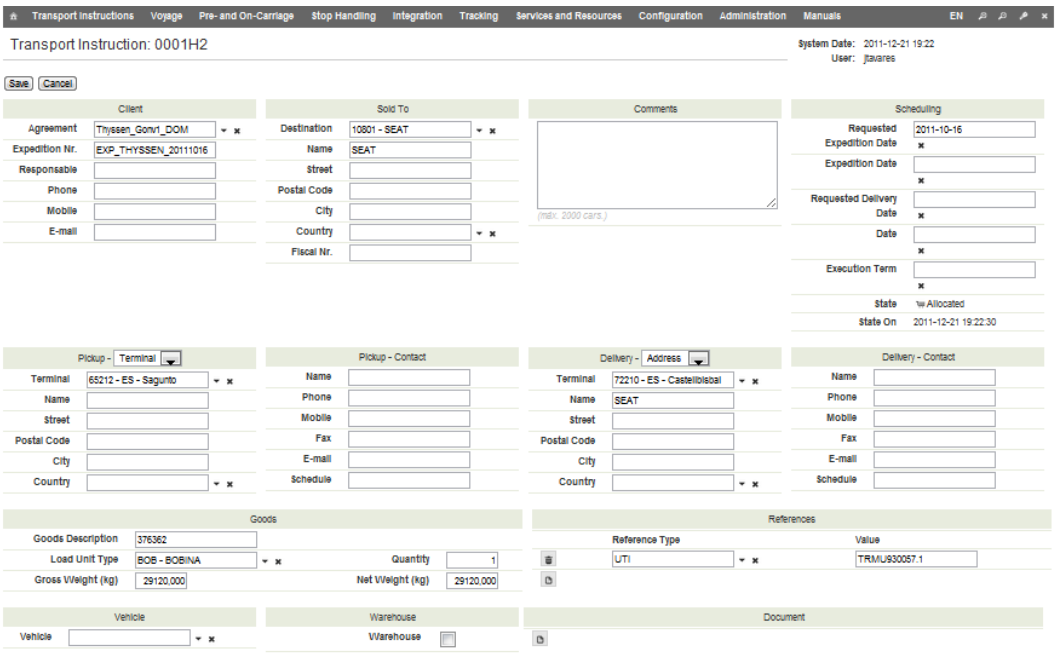
Management and Planning

Iberian Steel is now able to plan and manage trips for the transport of steel coils, in an easy and fast way. TSDs support immediate travel planning to the desired period. Because the pilot did not have any application to manage this type of operation, installation of Tagus became prominent



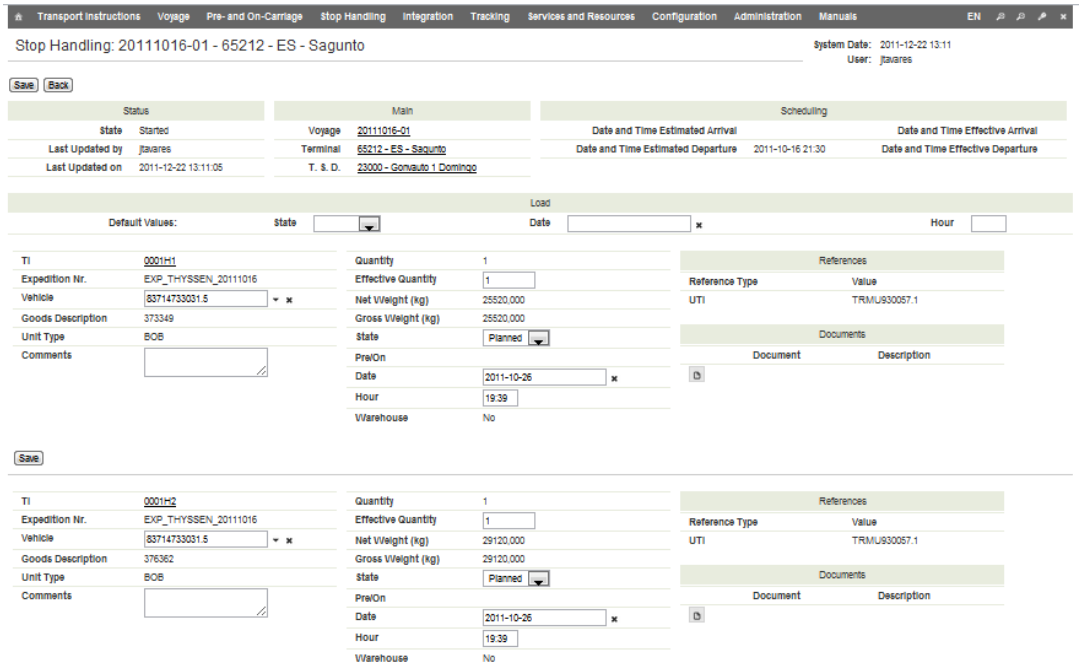
Transport Instructions

The pilot customers so far contacted the service operator to make the transport of goods. This entire process was slow and very time-consuming for the operator. With the installation of Tagus, the responsibility to inform the operator of the goods transported remains the responsibility of the customer but is now supported by a tool that ensures that all the fields required for transport are completed.



Terminal Operations

Significant improvement was achieved in the terminal management. The whole task of confirming the service was time consuming, and involved the exchange of documentation between the terminal operator and the logistic service operator. The application of Tagus offers in the terminal management area all the information of the goods to be unloaded/loaded. The terminal operator informs Tagus on the state of the goods, using the application, or in case of adoption of the QRCode reader the task of confirmation of the goods is easier. All the information given by the terminal operator about the state of the goods will be registered in tracking information, and made available to all the interested parties.


Transport Instructions Voyage Pre- and On-Carriage Stop Handling Integration Tracking Services and Resources Configuration Administration Manuals EN
Stop Handling: 20111016-01 - 65212 - ES - Sagunto
System Date: 2011-12-22 13:11
User: jtavares
Save Back
Status
State Started
Last Updated by jtavares
Last Updated on 2011-12-22 13:11:05
Main
Voyage 20111016-01
Terminal 65212 - ES - Sagunto
T. S. D. 23000 - Gonvauto 1 Domingo
Scheduling
Date and Time Estimated Arrival
Date and Time Effective Arrival
Date and Time Estimated Departure 2011-10-16 21:30
Date and Time Effective Departure
Load
Default Values: State Date Hour
TI 0001H1
Expedition Nr. EXP_THYSSEN_20111016
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Goods Description 373349
Unit Type BOB
Comments
Quantity 1
Effective Quantity 1
Net Weight (kg) 25520,000
Gross Weight (kg) 25520,000
State Planned
PreOn
Date 2011-10-26
Hour 19:39
Warehouse No
References
Reference Type Value
UTI TRMU930057.1
Documents
Document Description
Save
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Vehicle 83714733031.5
Goods Description 376362
Unit Type BOB
Comments
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Effective Quantity 1
Net Weight (kg) 29120,000
Gross Weight (kg) 29120,000
State Planned
PreOn
Date 2011-10-26
Hour 19:39
Warehouse No
References
Reference Type Value
UTI TRMU930057.1
Documents
Document Description

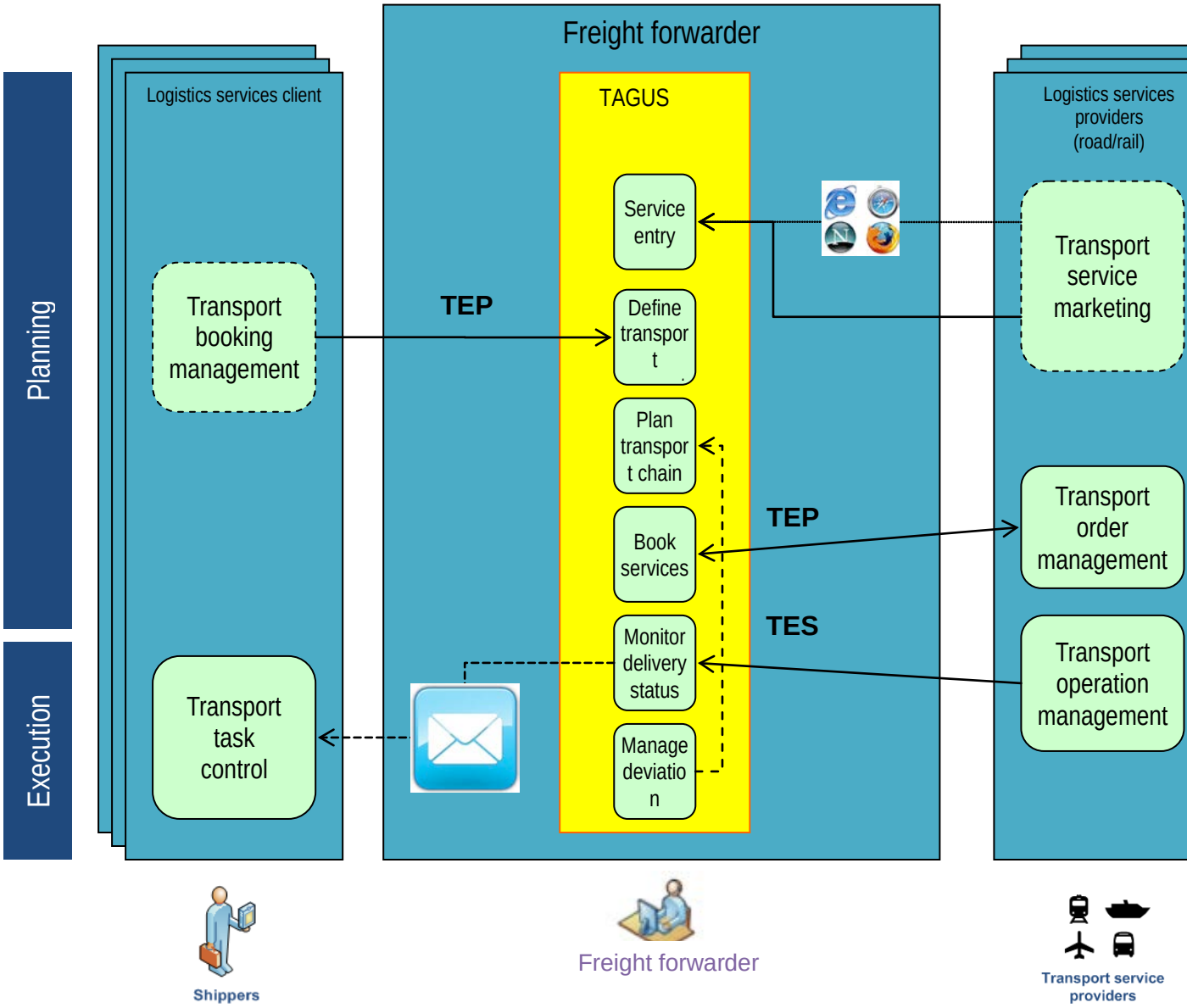
Use of Common Framework and supporting tools

This section provides an overview of the Common Framework roles and messages between the components used within the Portuguese pilot. The complete description of the Common Framework can be found in the DiSCwise Reference Architecture document.

Tagus is an application designed in accordance with the defined structure in Common Framework. In fact, Tagus does not use all the fields defined in this structure. However, it is structured in accordance with the requirements necessary to meet the structure designed for the DiSCwise Pilots.

Tagus receives requests via the Web from logistics services clients, as well as the configurations of the Transport Service Description from Logistics Services Providers.

The Forwarder operator, in this special case of this pilot, has the responsibility to arrange the best itinerary for the transportation of goods (TEP). Railroad Terminal management and the generation of internal events in the system for tracking of goods, the client always has full knowledge of the state of their charge (Waypoints, loading, unloading) (TES).



Interaction between the roles

The following diagram shows the interaction between the different parts involved in a transportation procedure.

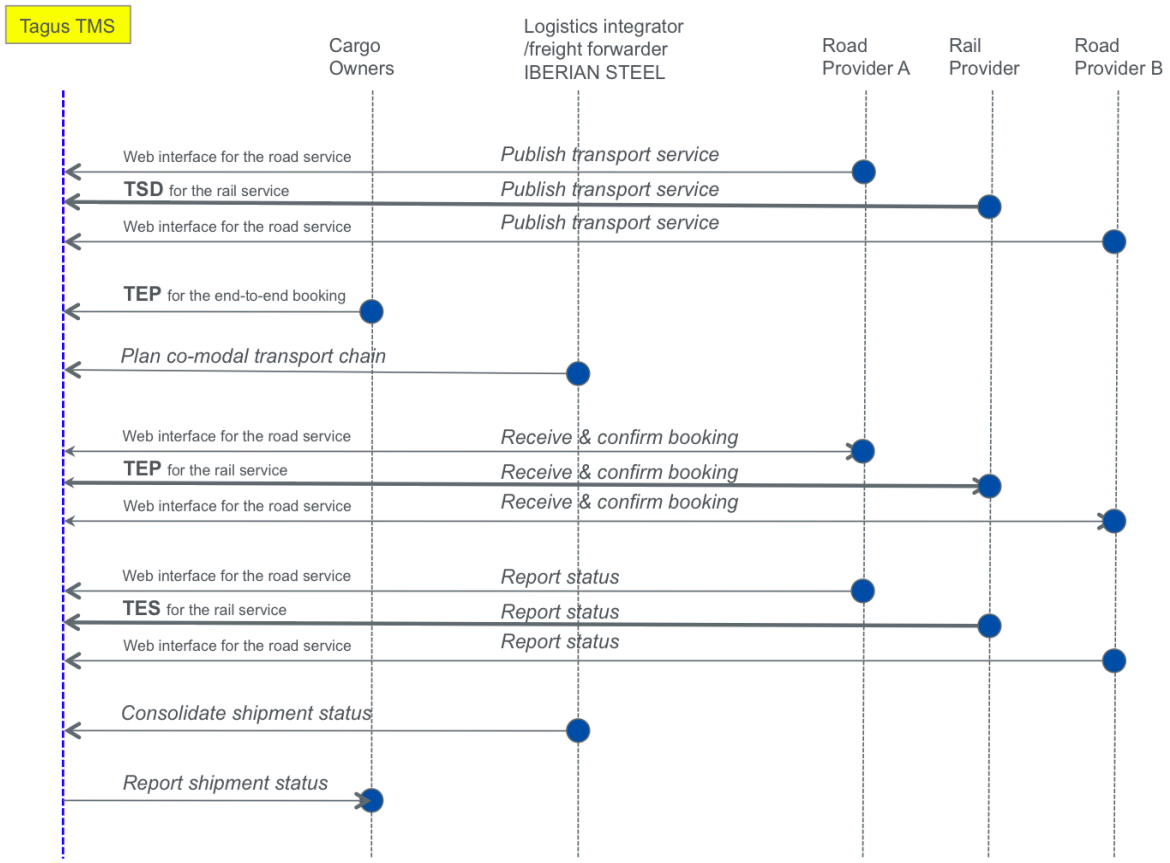
Transportation providers publish their services in the Tagus. This publication of services is made via the web, enabling the user to do this type of operation from anywhere with internet access.

The cargo owners publish details on TAGUS of the goods to be transported, as well as the source and destination of the cargo.

The Logistic Integrator plans the whole itinerary for the transportation of goods to reach its destination in the desired period.

Transport operators transport, receive and confirm the transport order. TAGUS is automatically updated about the status of the goods. This information is crucial to the logistics service clients.

Finally, the logistics operator consolidates the state of the expedition in TAGUS, and later reports to the client the arrival of the goods.



Benefits

This section describes the benefits of the Portuguese Pilot that were perceived by the pilot and the remaining identities involved in this type of transportation.

Actors	Benefits	KPI's
Transport Integrator (Iberian Steel)	. Quick knowledge of the cargo to the destination; . Centralized information and organized into a single system; . Advanced planning of trips; . Effort reduction in travel planning; . Total control of cargo in transit; . Quick management of the exceptions (delays, breakdowns, etc.) . A quick billing to customers; . Minimization of exchanging documents electronically (email, fax, etc.);	. KPI 1.1 . KPI 1.3 . KPI 1.4 . KPI 2.1 . KPI 2.4 . KPI 3.2
Client Providers	. Quick knowledge of the cargo to the destination; . Quick billing the final customer; . Notification when there are exceptions in transport; . Possibility to upload transport instructions through the application without exchanging information with the service provider;	. KPI 1.4
Logistic Providers	. Quick knowledge of the cargo to the destination; . No paperwork for loading of goods; . A quick billing to final customers;	. KPI 1.2 . KPI 1.4
Terminal Operators	. Quick access to cargo destined to the terminal -> Improved performance in the actions of loading / unloading . Quick load management at the end (Loading and Unloading) . Increased performance in loading / unloading . Quick reporting to the rail service Provider;	. KPI 1.1 . KPI 1.2 . KPI 1.4
Final Customers	. Quick access to the cargo on hold;	. KPI 1.2

Lessons learned

The adoption of TAGUS to manage the transport of steel coils along the Iberian Peninsula led to the following conclusion:

- The Iberian Steel stakeholders emerged as pioneers in an area that is known to be relatively closed to new technologies;
- Acquisition of an application that allows Iberian Steel to give visibility of the services being available through Common Framework;
- Assignment of responsibilities for all parties involved in the transport;
- Centralized information in a single application, with a history of modifications;
- Full control of charge for all participants in the carriage;
- Freeing-up resources for other tasks asset to the company;
- Effectiveness and speed of billing to customers;

Document History

Version	Date	Author	Remarks
1.0	20/12/2011	Nuno Pereira	First version(until KPIs).
1.1	6/01/2012	Nuno Pereira	Full version
1.2	6/01/2012	David Griffiths	QA