

# FEDeRATED Final Event

#LL17 – SIMplification of Processes for Logistics Enhancement (**SIMPLE**)

30th November 2023

The logo for SIMPLE consists of the word "SIMPLE" in a white, sans-serif font. The letters are set against a background of two overlapping, semi-transparent rectangular shapes: a teal one in the foreground and a darker teal one behind it.

Simplificar | Digitalizar | Colaborar

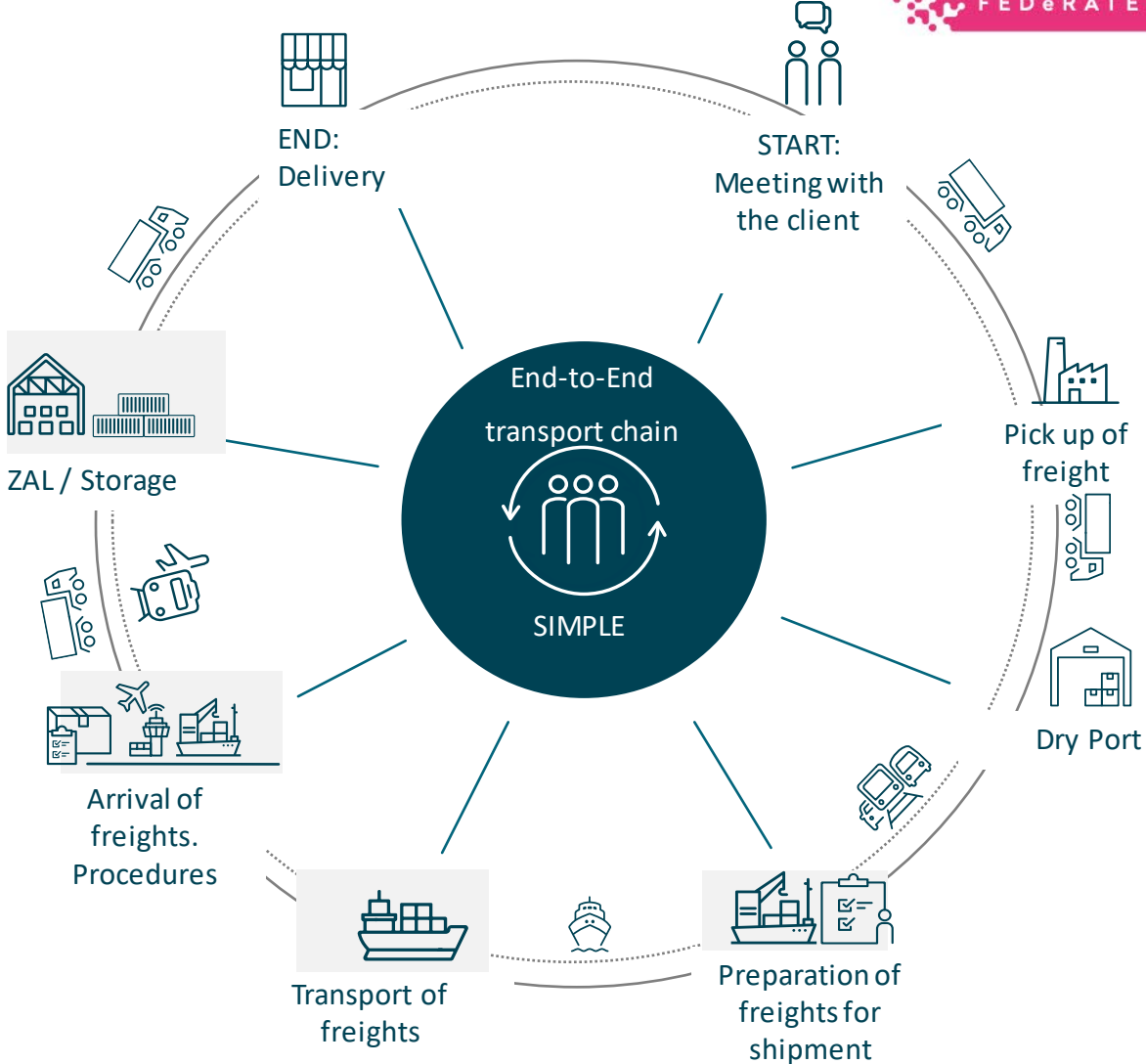


Co-financed by the Connecting Europe  
Facility of the European Union

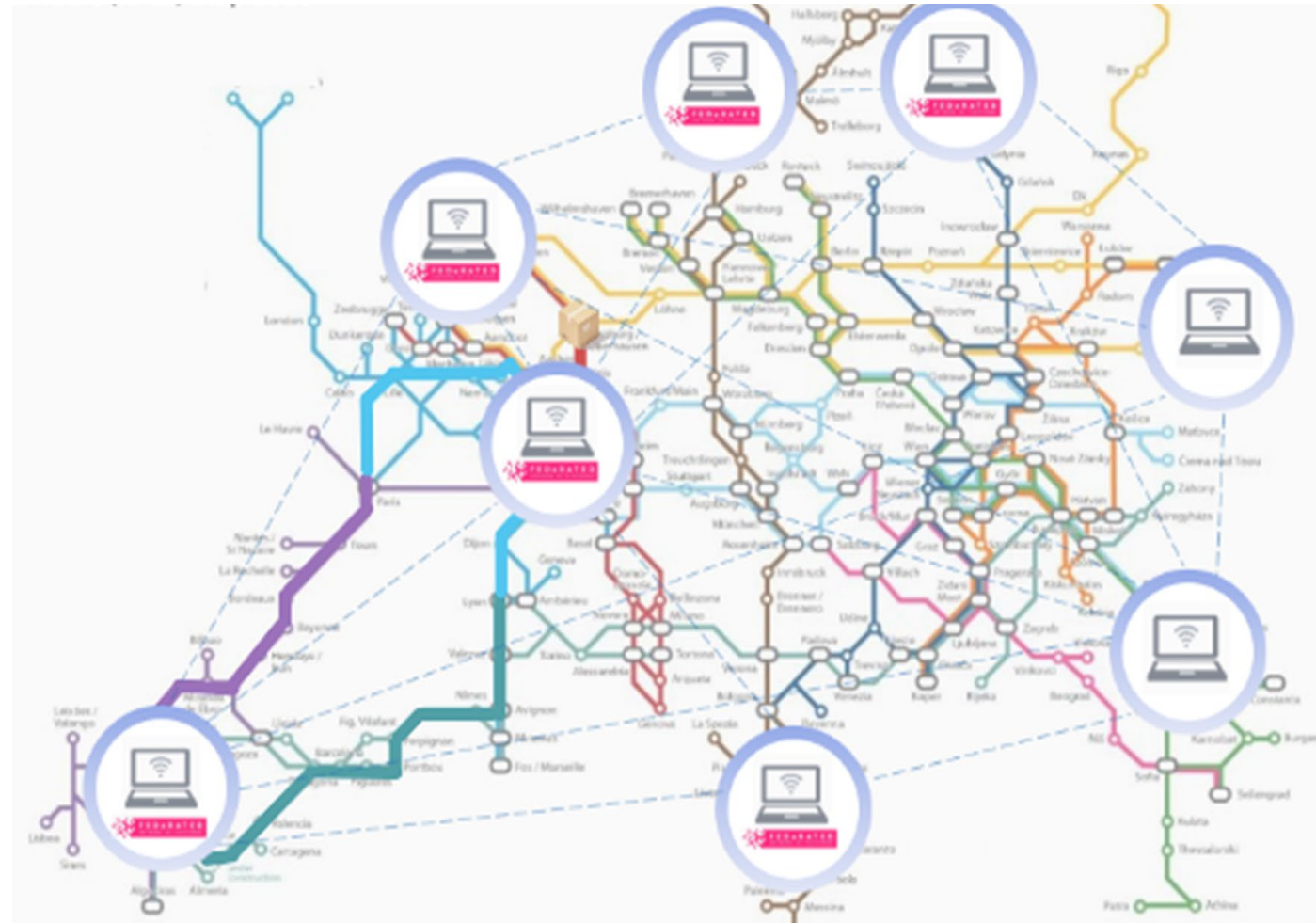
# SIMplification of Processes for a Logistic Enhancement



**SIMPLE** is a federative (decentralized) platform for the integrated and digital share of data related to the transport of goods (road, rail and maritime modes), between the different nodes of the supply chain



- Architecture for interoperability.
- Semantic model.



# SIMPLE Platform values

**Decentralized digital** infrastructure to exchange data between systems with common capabilities.

Digitalization as a key driver of efficiency, simplification and harmonization.



## Collaboration

- Communication
- Data Sharing



## Predictions

- Early detection of conflicts
- Reduction of waiting times and other inefficiencies



## Management

- Better use of resources. Cost reduction
- Traceability and Visibility



## Security

- Encryption
- Blockchain transaction logging



## Multimodal

- Easier data exchange through shared semantics across all modes of transport



## Conectivity

- Platform interoperability
- Real time data

SIMPLE Platform



# Shipment and Event concepts

## Shipment

Goods or sets of goods that travel from origin to destination, and which may use different modes of transport and logistics and transport infrastructures, by virtue of a single transport contract or multiple consecutive transport contracts, involving different players and with routes that can be traced.

## Event

It represents actions, milestones, business transactions or any other form of activity in the real world. They usually involve one or various business relationships, players, means of transport, equipment, goods and physical infrastructures.



# Stakeholders, digital twins and physical infrastructures



## Stakeholders

Roles of the companies participating in the logistics and transport operations, in accordance with the current regulations

- Consignor
- Shipper/Expeditor
- Consignee
- Transport operator
- Carrier
- Depositary
- Depositor
- Notified
- Authority

## Digital Twins

Any object in the real world that can have a digital replica in logistics operations

- Transport means
- Transport equipment
- Freight
- Physical infrastructures

## Physical infrastructures

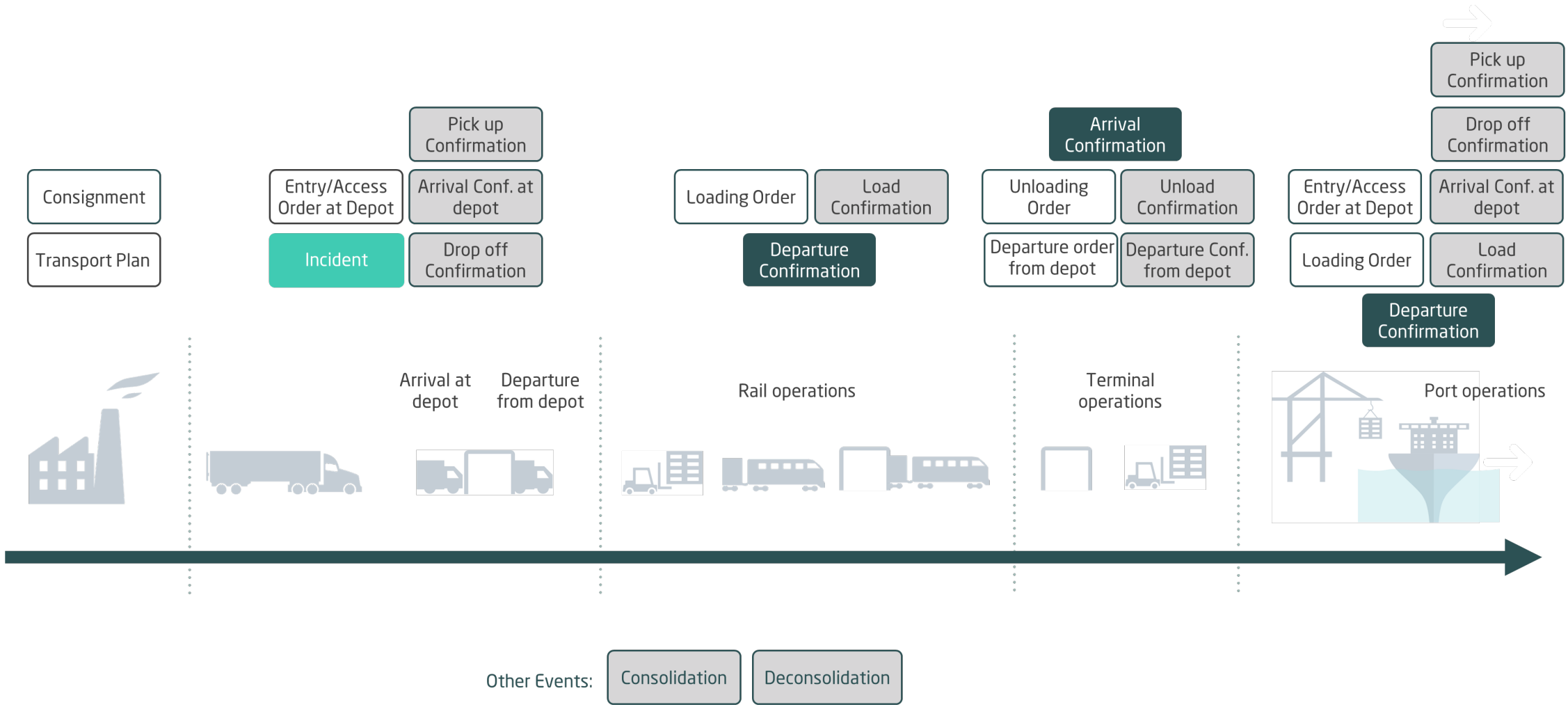
Location or terminal where logistics or transport activity may take place

- Warehouse
- Port terminal
- Railway terminal
- Logistics area

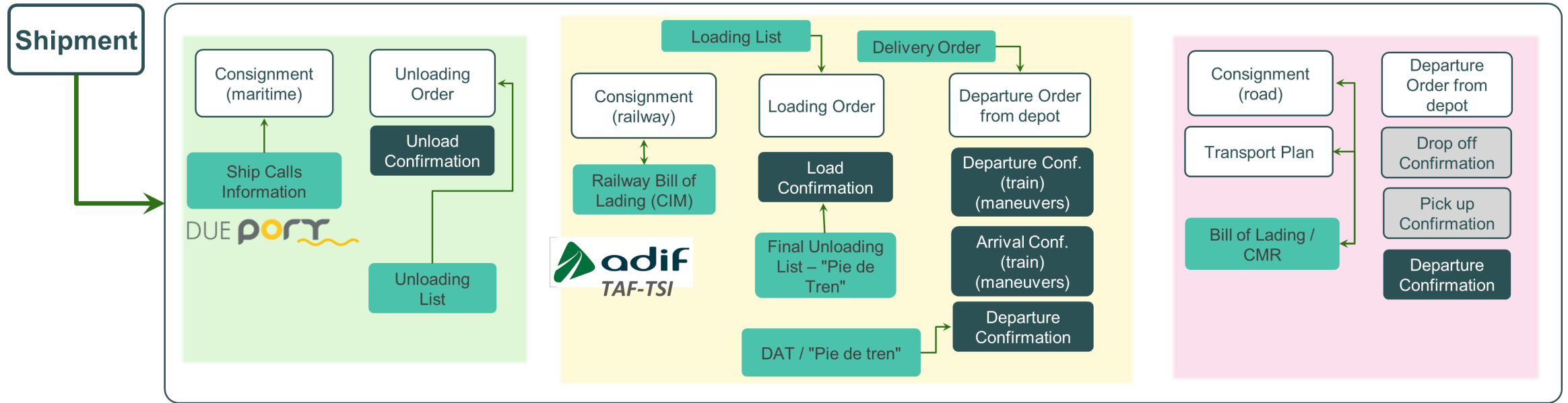
*\* The term "warehouse" refers to all specific nodes at origin and/or destination for the freight included in a Shipment, i.e., industrial, production, assembly centers or installations, etc. These are nodes that, with some exceptions, will only have road transport as transport mode for receiving/dispatching goods, although in certain specific cases they may have a private railway siding system at their facilities for dispatching/receiving goods.*



# SIMPLE Events

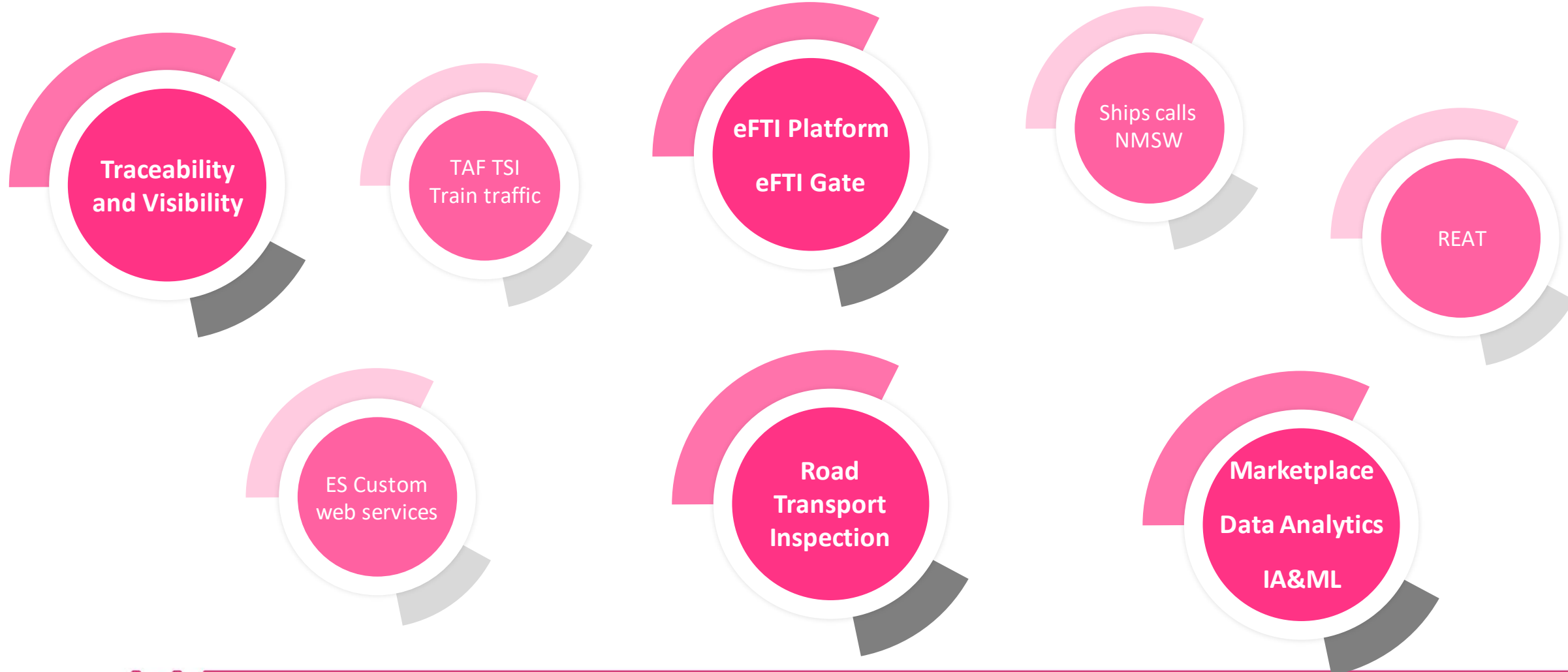


# Multimodal transport flow in SIMPLE





# SIMPLE main services and functionalities



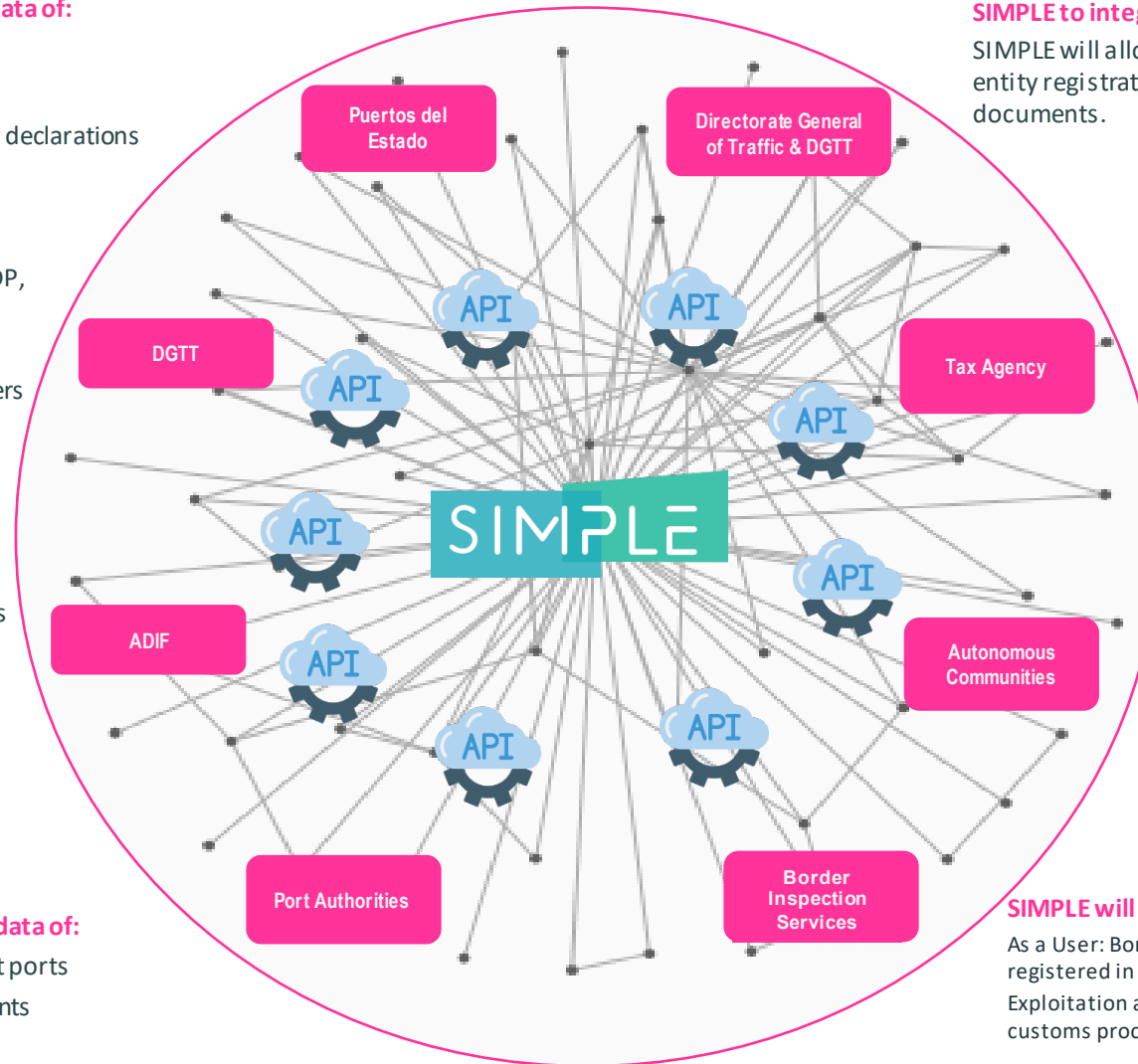
# Integration with administration systems

## Integration with DUEPORT to obtain data of:

- Ship calls
- Dangerous Goods
- Cargo manifests and Summary declarations

## SIMPLE will be integrated with REAT:

- Transport Authorization Control (MDL, MDP, MPC) and linked vehicles
- Community License
- Certificate of professional aptitude for drivers – CAP



## SIMPLE to integrate road inspection functionality:

SIMPLE will allow the DGTT systems to make requests related to a vehicle or entity registration within a date range, as well as to administrative control documents.

## SIMPLE will allow the exchange of data with the Tax Agency

As a User: the Tax Agency will be able to consult the information on events registered in the Blockchain by consuming the consultation services.

Exploitation and/or use of the data shared in SIMPLE to contribute to the completion of customs procedures.

Provision of the administrative status of cargoes through SIMPLE.

## SIMPLE will enable connection to centralized registries of the Autonomous Communities

When the possibilities exist, SIMPLE will be able to connect to its centralized registries (Autonomous Communities) and make verifications on the existence of vehicle conformity certificates for the transport of perishable goods issued by the autonomous community.

## SIMPLE will enable data exchange with Border Inspection Services (SIF)

As a User: Border Inspection Services will be able to consult the information on events registered in the Blockchain by consuming the consultation services.

Exploitation and/or use of the data shared in SIMPLE to contribute to the completion of customs procedures.

## Integration with ADIF to obtain data of:

- Terminal arrival and departure train timetables
- Trains running

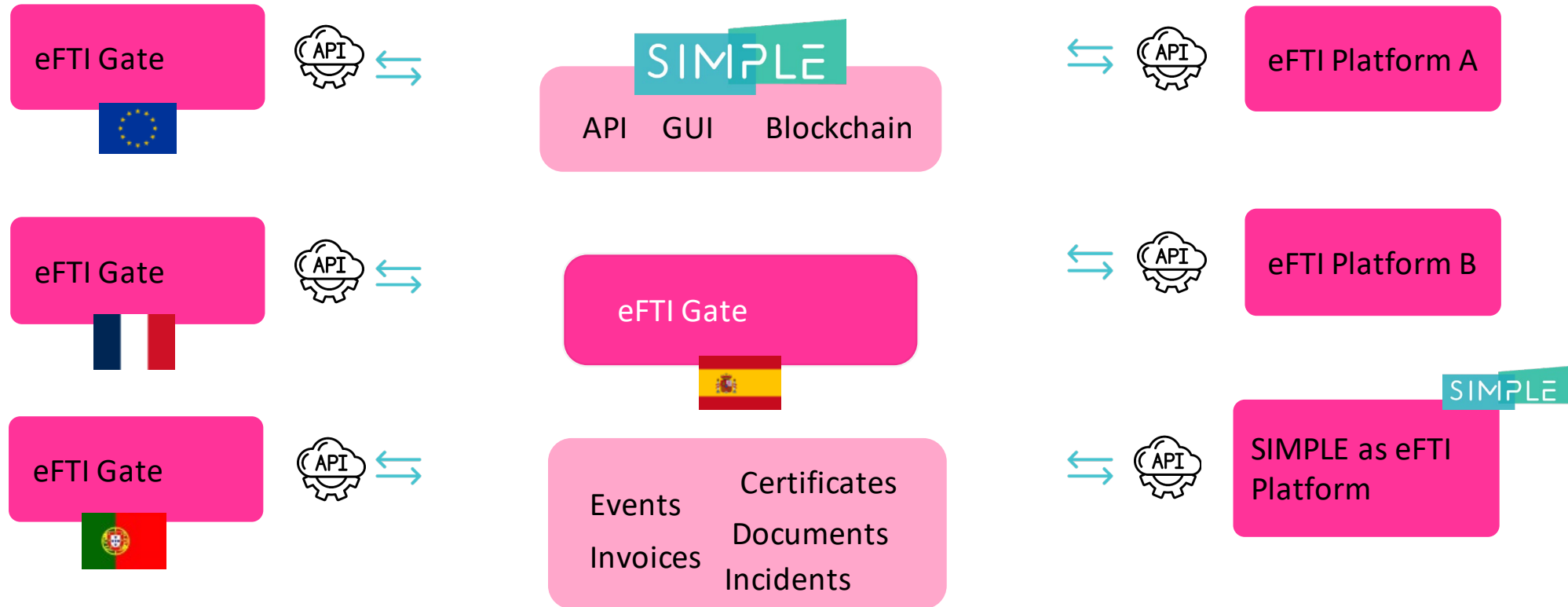
Dangerous goods information and border information will be communicated with ADIF integrated systems. Information on available freight terminals will be integrated through ADIF's digital catalogue of terminals.

## Integration with Port Authorities to obtain data of:

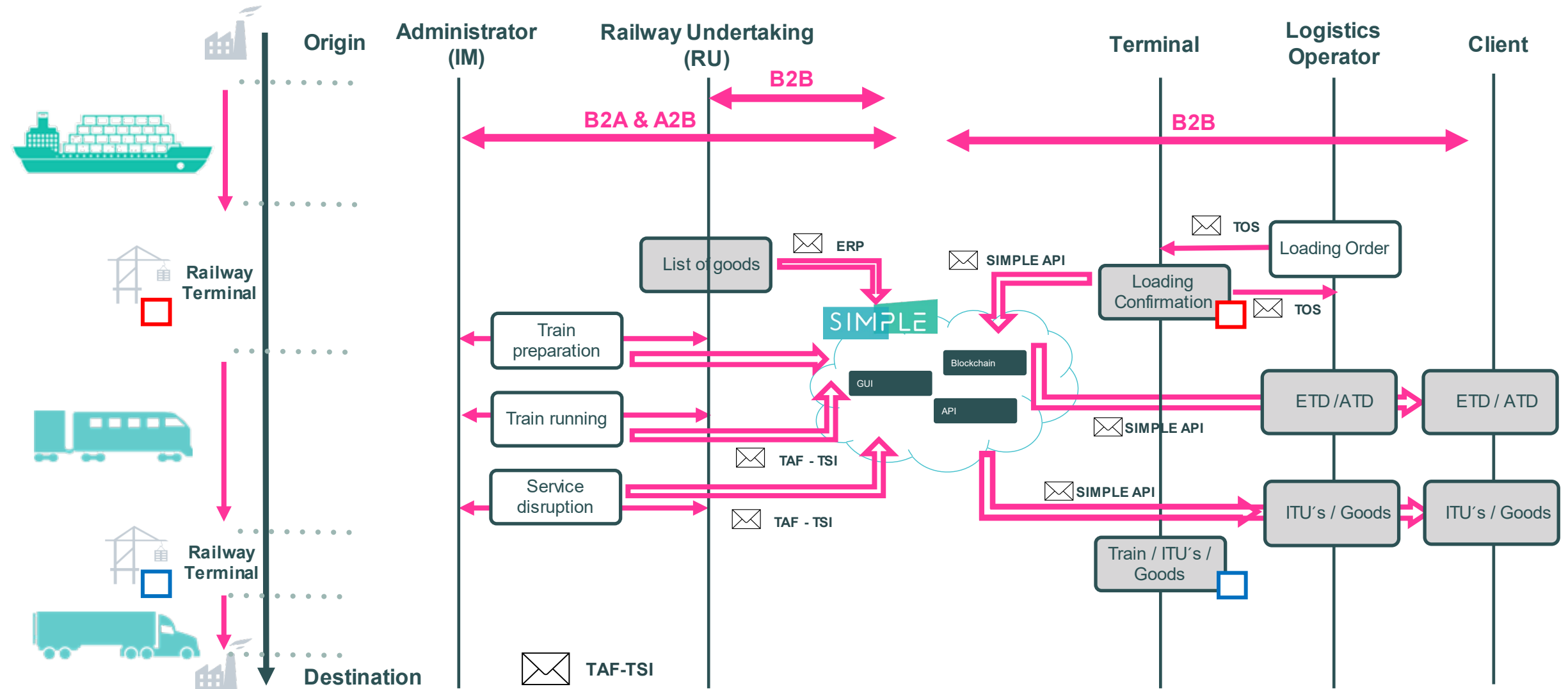
- Trains departing from and arriving at ports
- Events associated to Freight Shipments



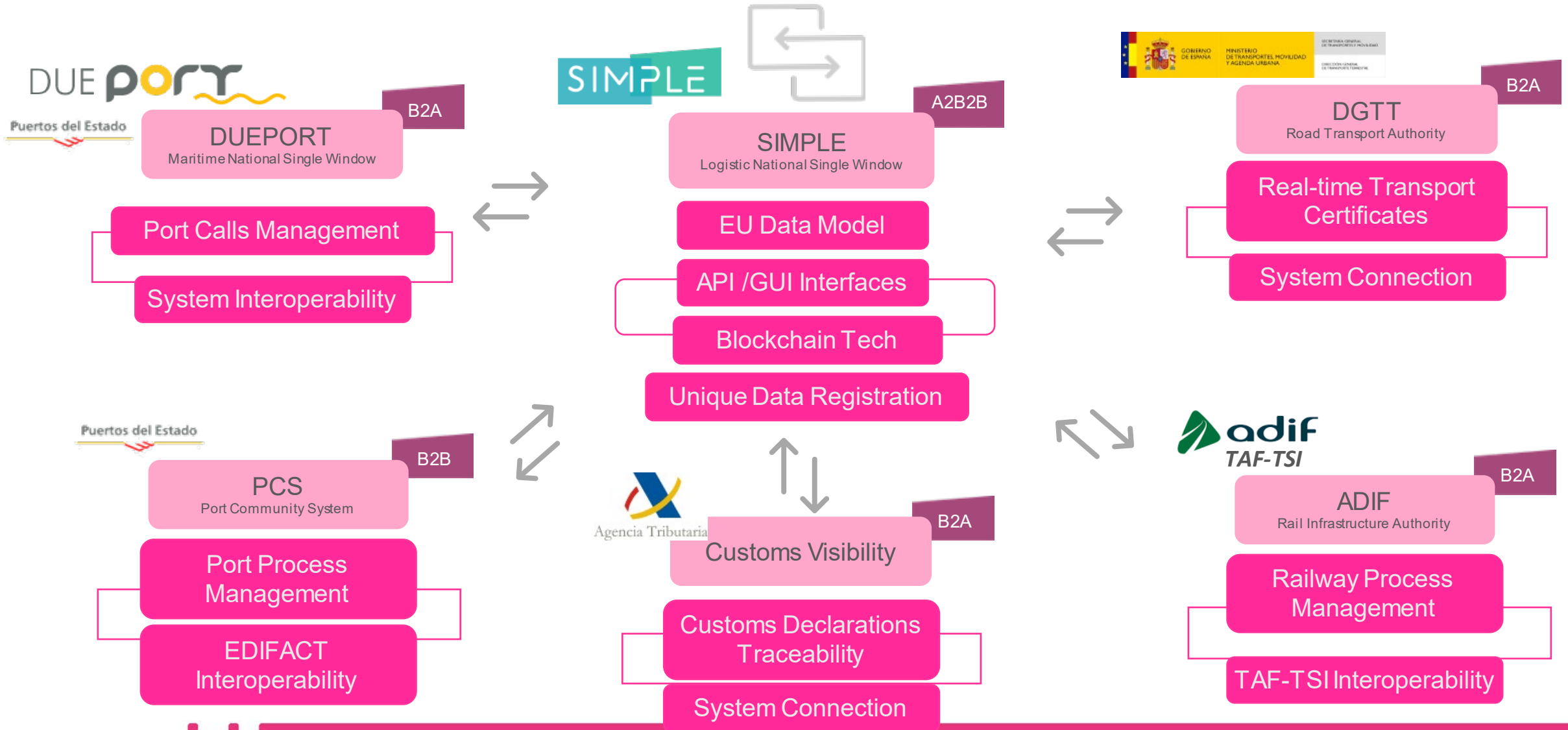
# SIMPLE as eFTI Gate



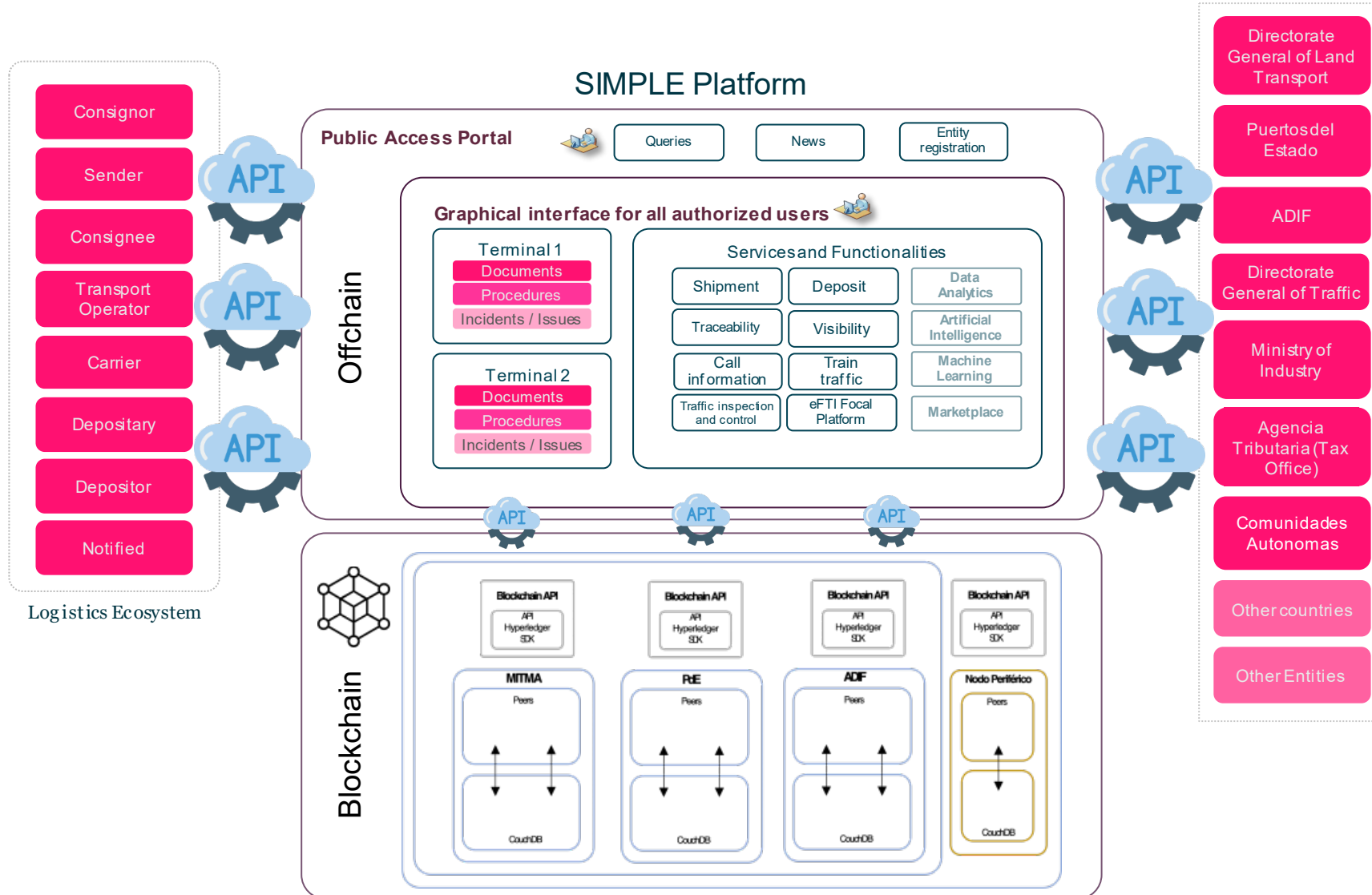
# Administration, Stakeholders & Flow: B2A & B2B



# Services Integration: from Dueport to SIMPLE



# Functional architecture - Offchain - Blockchain



# Functional architecture - Offchain - Blockchain



- Records in Blockchain serve as an **immutable ledger** of all Logistics Events and Transactions associated with Shipments.
- The key of the Blockchain records contains information regarding the transaction identifier, the type, the operation performed (creation, modification, and deletion) and the time of recording.

idSimple	objectType	objectId	idConsignment	operationType	simpleRegistrationTime
ES22B123456788BNRKSQE	shipment	11		CREATE	1651657719
ES22B123456788BNRKSQE	consignment	33	33	CREATE	1651657724
ES22B123456788BNRKSQE	transportPlan	221	33	CREATE	1651657872
ES22B123456788BNRKSQE	order	223	33	CREATE	1651657902
ES22B123456788BNRKSQE	order	223	33	UPDATE	1651658003

- SIMPLE allows you to **query and validate your record on the Blockchain using the Hash**, the transaction's unique identifier

Detalle del elemento Correcto

Id: Datos generales de Planificación de transporte **Fecha:**06/11/2023 - 11:16 **Transacción:**3afa796a1e586d04b...

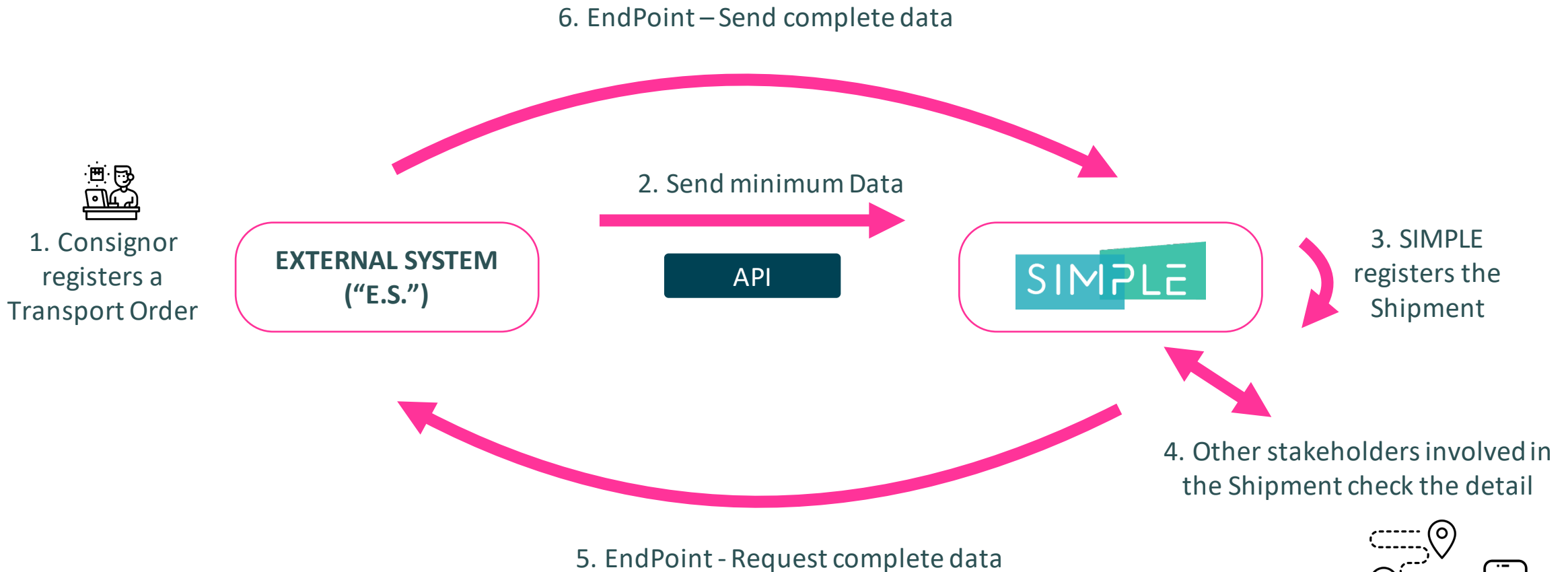
Campo	Valor anterior	Valor nuevo
BusinessTransactionInvolvedActors.38...	LogisticRoles_Carrier	
BusinessTransactionInvolvedActors.38...	B28383939	
BusinessTransactionInvolvedActors.38...	Porteador	

Cancelar Aceptar



# Systems integration

- The **data is stored at source** except for a minimum set of data.
- The **data sharer retains control of the data.**





# Data Sovereignty: SIMPLE permit matrixes

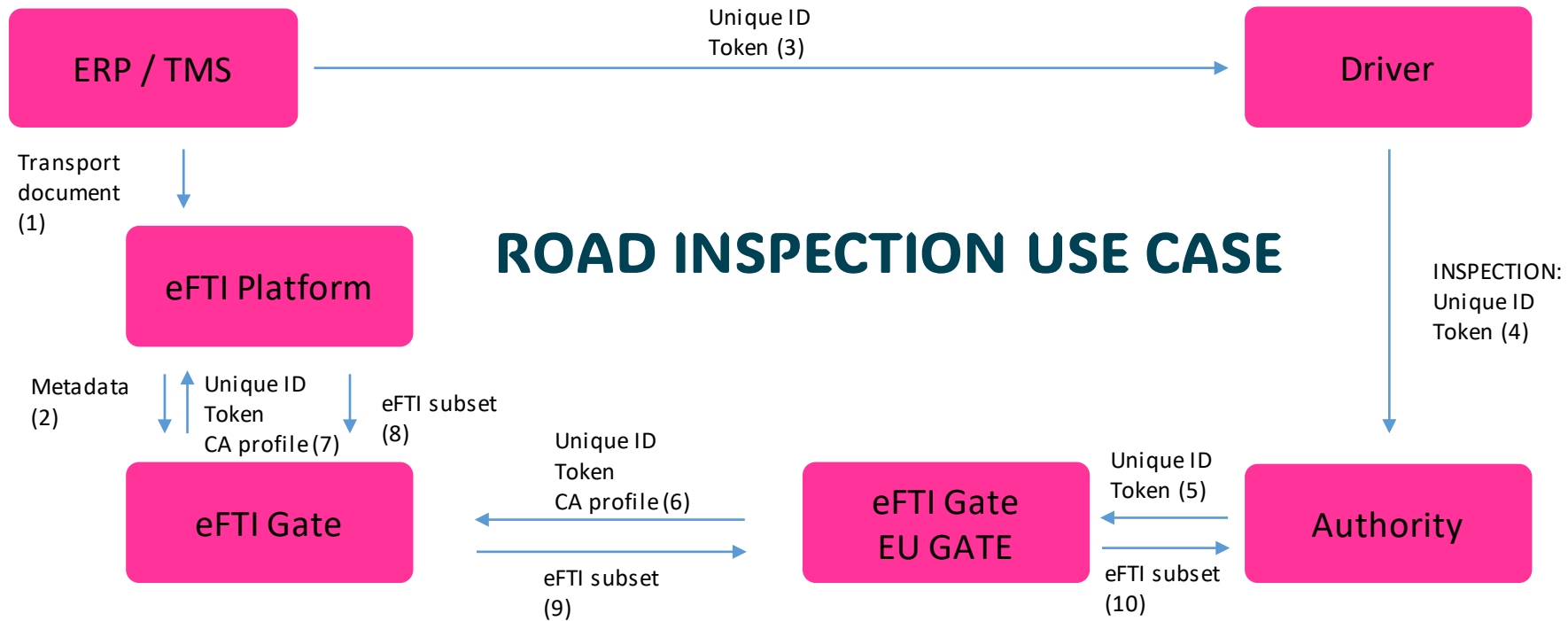
- **Control of data** through permission matrices.
- **Availability of a matrix for each existing Record in SIMPLE** (Shipment, Consignment and all other Events).
- **Configuration of the display and editing of each parameter** for each logistic and administrative role available in SIMPLE

Gestión de Envíos [Restablecer configuración](#) [Guardar](#)

Atributo / Rol	Remitente o Cargador		Expedidor		Operador de Transporte		Destinatario		Notificado		*Controlador en Carretera		*Inspector de transporte en oficina		*Autoridad Aduanera		*Administrador ferroviario		*Autoridad Portuaria		*Autoridad	
Envío Relacionado	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Origen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fecha salida solicitada	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Destino	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fecha Llegada Solicitada	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equipamientos	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mercancías	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Actores	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Documentos	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Observaciones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



# SIMPLE as eFTI Gate



CA: Competent Authority  
ID: Identification

B2B: 1, 3  
B2A: 2, 4, 7, 8

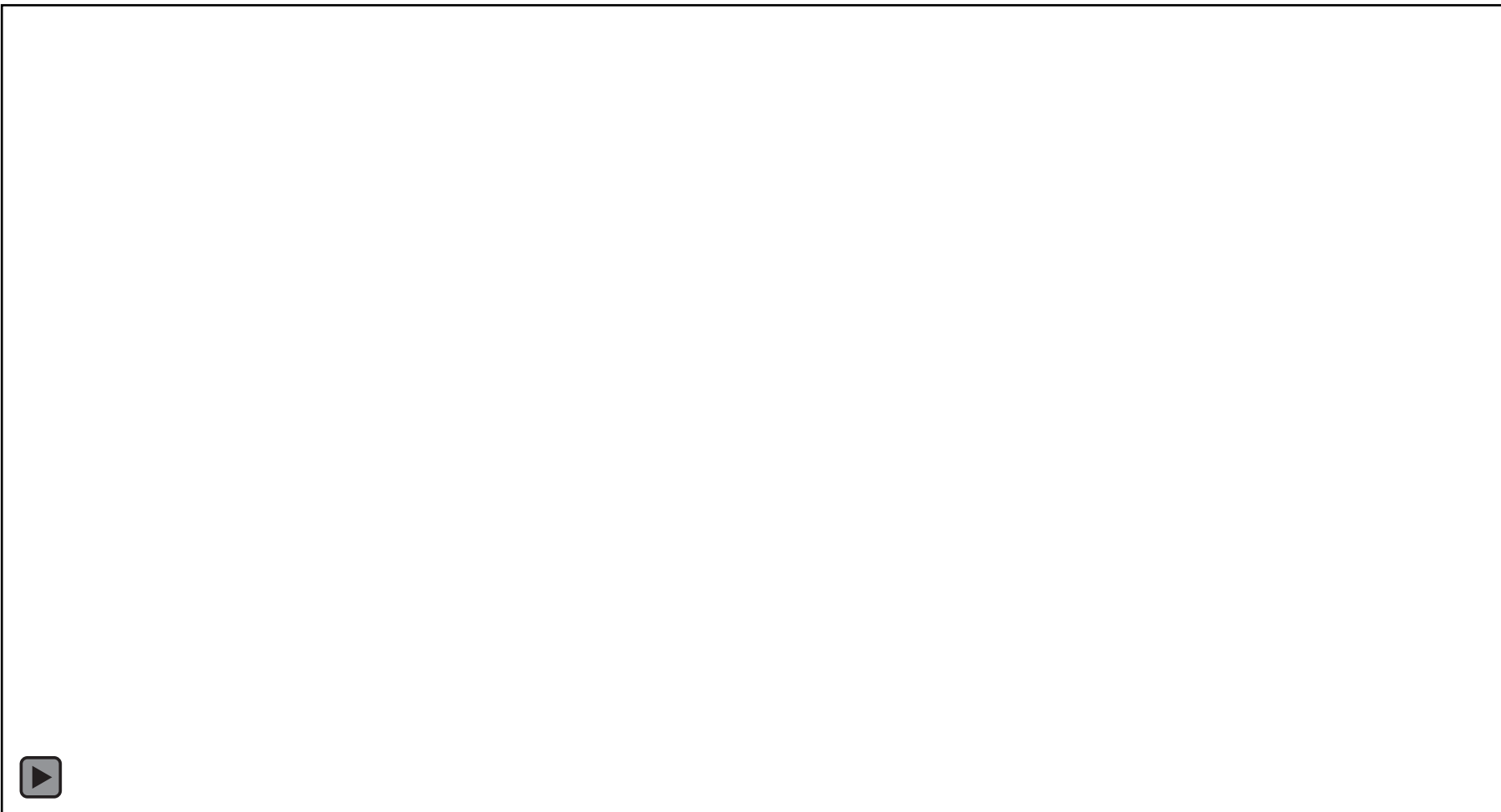


# Main SIMPLE use cases



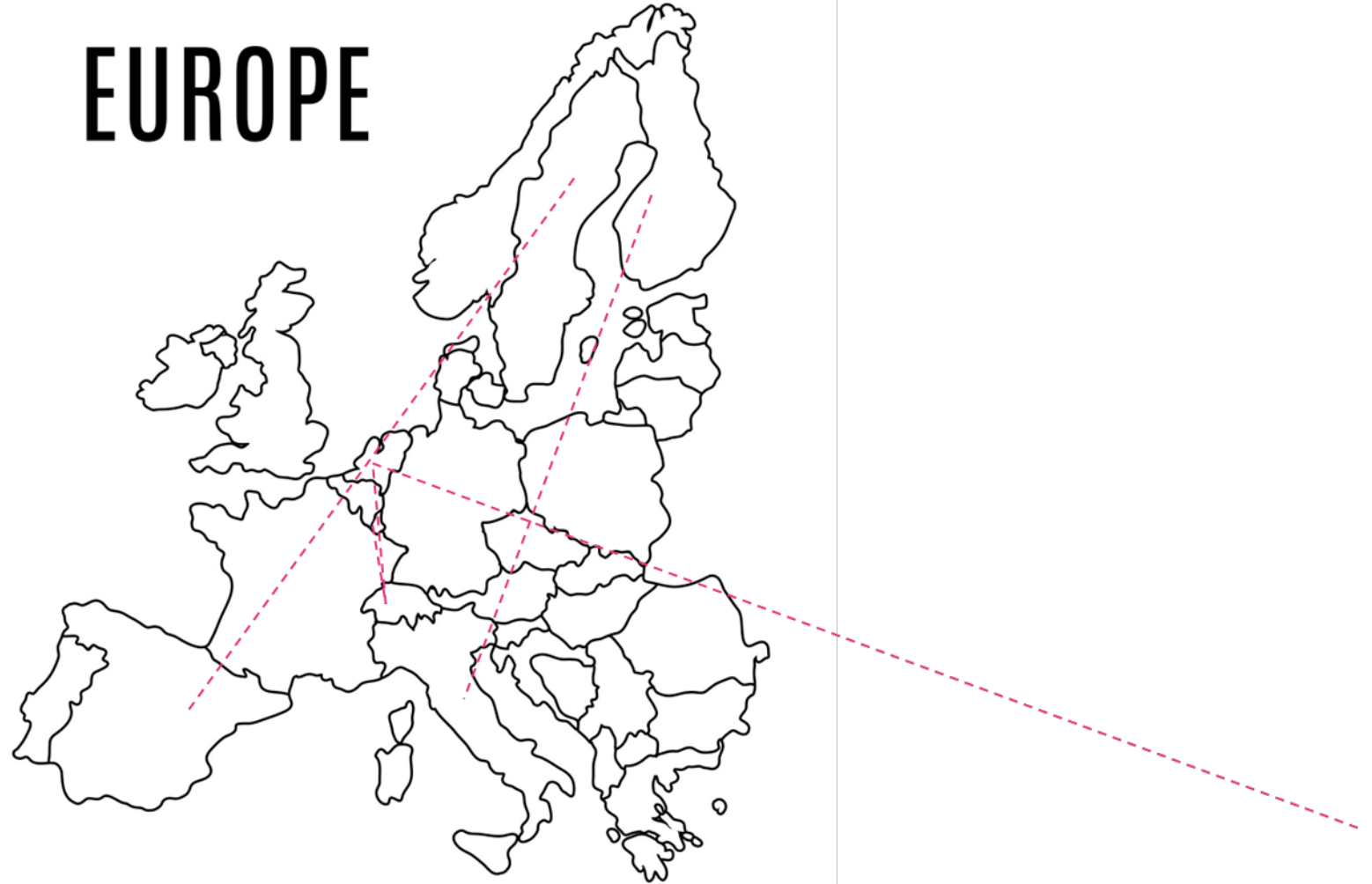
No contact	Initial contacts	Pilot project proposal defined	Participants identified	Under specification	Under implementation	Partial tests performed	Completed	
								ALICANTE PORT
								COSCO SHIPPING
								altia LOGISTIC SOFTWARE
								USYNCRØ
								TRAFIKVERKET  RISE
								SiBiz.lu  FEDeRATED
								agata FUTURE HAPPENS
								sesé
								WEBTRANS
								FEDeRATED





# OUR VISION

## EUROPE



# OUR VISION



DATA SPACE  
EU Mobility Data Space (freight + pax)

INTEROPERABILITY  
ARCHITECTURE

INTEROPERABILITY  
SEMANTIC

EU REGULATION AND DIRECTIVES  
(EUTDM)

*Deployment in splendid isolation is not an option.  
Interconnectivity is essential.*



# AUTOMATED PROCESSES WITH HUMAN SUPERVISION

Digital Identity – Blockchain –  
Smart Contracts – Generative AI  
(Human Logistic)

## INTERNET OF LOGISTICS

*“Letting a 100 flower (and more) bloom” is feasible when structured around  
21<sup>st</sup> Century proof semantics.*



# We must continue



- ✓ The importance of DTLF.
- ✓ Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information (eFTI).
- ✓ SIMPLE: need for progress.
- ✓ The importance of an EU Framework to advance federated data sharing. Key role of data spaces.





# We must continue



- ✓ An EU Member States driven collaboration, including business participation, to enable federated data sharing.
- ✓ Enable scaling.
- ✓ EU funding.



# THANK YOU

[www.federatedplatforms.eu](http://www.federatedplatforms.eu)

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