

LL17 EU Gate / 51Biz

Information based on previous information

Semantic interoperability between global and EU semantics

The EU-Gate LL#17 also lives with the FEDeRATED architecture and 4 DTLF Building blocks by enabling global logistics operators to continue using existing WCO, UNCEFACT and IATA standards to present transport information as semantic endpoints. Living Lab #17 tests the semantic integration of the UN/CEFACT JSON-LD vocabulary and the IATA OneRecord ontology for complex multimodal air-cargo shipments in the context of e-CMR/eFTI road controls.

Data can only be shared at the source when data consumers can trust and verify the information that is presented in an electronic format. Therefore, EU-Gate LL#17 is participating within **an iShare Satellite**.

The EU-Gate living lab is closely monitored by two UNECE (EU border integration) and UN/CEFACT (RDM2API cross-border ledger integration) digital expert groups. Within this context, living lab #17 tests a configuration whereby the EU-Gate access point issues and verifies decentralized identities and verifiable credentials and presentations.

The business services and key interactions of the EU-Gate Living Lab #17

The most important business services that are configured within the context of EU-Gate Living Lab #17 are:

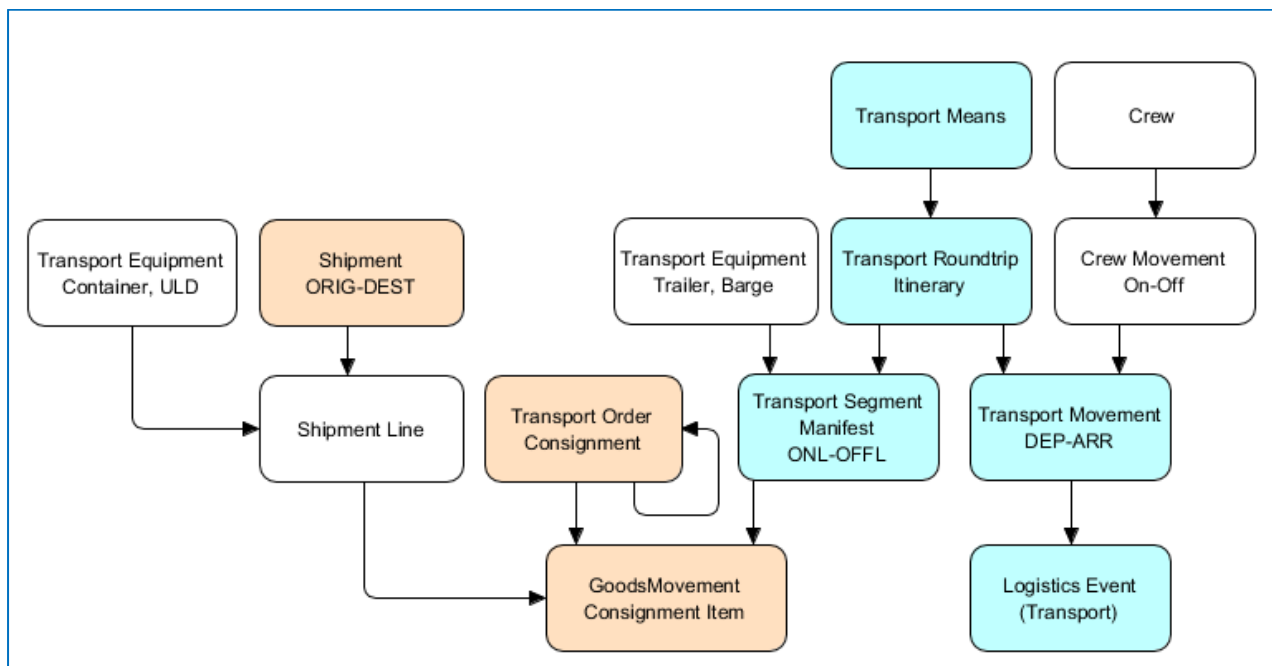
Business service and interaction	Provider	Consumer
Access transport information by the unique ID (UUID) of a transport related datasets (logistics objects) that are shared at the source	Shipper/Forwarder	Carrier (track and trace of shipments) Government officer (linked data, referenced in consignments)
	Carrier	Government officer (eFTI controls) Shipper/Forwarder (track and trace of transport movements)
Resolver: identify the URI of the eFTI platform of the transport logistics operator based on the registration ID of the truck or trailer	EU-Gate Resolver	EU eFTI data sharing environment Any party authorized
Resolver: identify the URI of the eFTI platform of a logistics service provider based on the ID of the service provider	EU-Gate Resolver	EU eFTI data sharing environment Any party authorized
Present available logistics objects for the current transport operations (Roadside control)	Carrier	Government control officer

Present transport information in multiple semantic presentation formats (XML, JSON-LD, RDF)	EU-Gate Mapping Service	Logistics parties eFTI control authorities
Issue verifiable credential (VC) for a shipment or transport dataset	EU-Gate access point on behalf of the shipper/forwarder of the transport service provider	B2B: trust between shippers, forwarders, and carriers B2A: Control authorities (eFTI, Customs)
Enable subscriptions to logistics events	IATA OneRecord data source	Any party that is authorized

The logical data model of the EU-Gate LL#17 access point.

LL17 only presents the CMR data of Abona/Hegelmann, Pionira, IATA OneRecord (Vedia!) and the Microsoft Navision ERP system as eFTI datasets using multiple presentation formats: XML, JSON-LD, RDF triples and Verifiable credential. Everything is configuration. The API of the access point presents the RDF triples as semantic endpoint so that the information can be combined using SparQL queries.

In analogy with the DCSA Information model, EU-Gate Living #17 includes a logical data model that defines the essential entities of information that are required for the processes and interactions that are in the scope of the living lab.



Within the scope of LL#17, the logical data model is interoperable with the UN/CEFACT BuyShipPay, MMT, e-CMR, eFTI; WCO/EUCDM and IATA OneRecord semantics. The semantic relationships between shipments, consignments, transport iterations and transport movements are essential in multimodal supply chains.

The EU-Gate living lab has adopted the (draft) UNECE JSON-LD vocabulary to publish shipment, transport itinerary and transport order/consignment datasets in multiple presentation formats including XML, JSON-LD, and RDF triple formats.

The living lab aims to demonstrate a seamless integration of the IATA OneRecord semantic model for air-cargo transport, the UNCEFACT MMT/eCMR semantics for road transport.

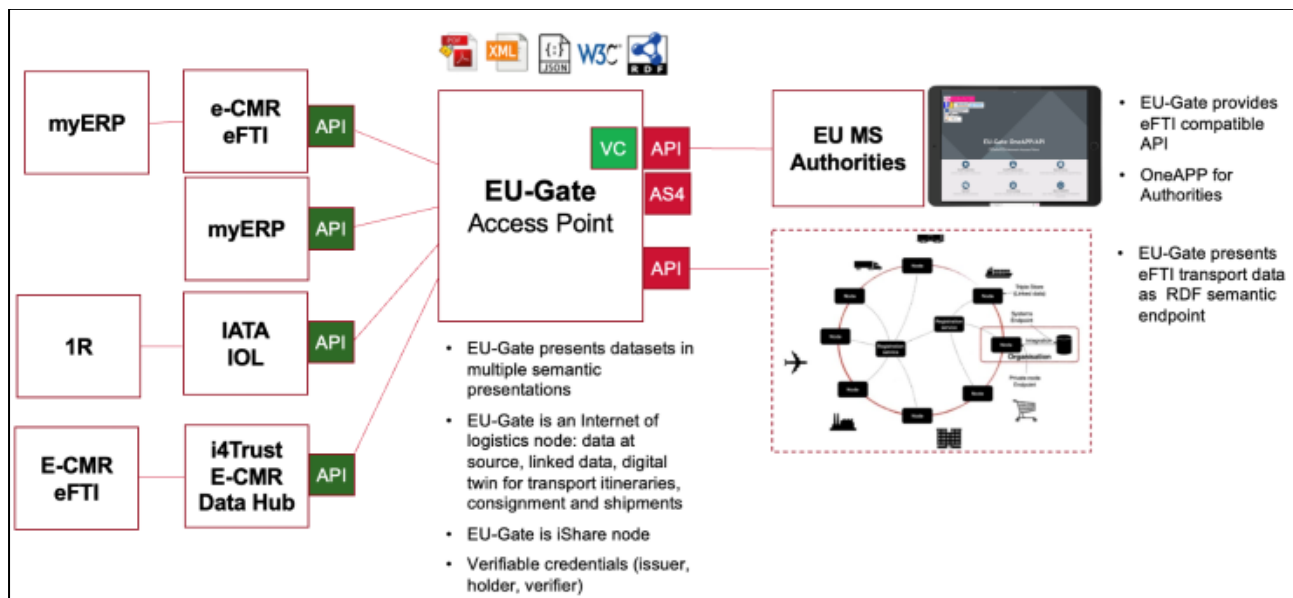
The key data entities currently mapped to the FEDeRATED ontology are:

Shipment	Transport Means	Transport document
Consignment, transport order	Transport Itinerary	eFTI dataset
Loading Unit	Transport Movement	eFTI manifest
Trade Unit	Transport Segment	eFTI meta data
Goods Movement	Transport Event	
Trade party (and their roles)	Transport Equipment	
Trade location	Transport Manifest	
Shipment event		

The concept

The current architecture of the EU-Gate LL#17 access point will continue to evolve with the definition of the secondary eFTI regulation (due 2023Q3) and the evolving granularity of the FEDeRATED architecture.

EU-Gate is a European eFTI Gateway (top-down perspective)



The EU-Gate architecture is currently implemented as an API Gateway that can be accessed by authorities, currently simulated by the OneAPP for Authorities application.

The living lab will finetune its capability to present the data that is collected from the source as an eFTI certified platform and as a semantic endpoint that can be accessed by the other FEDeRATED living labs.