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Building eFTI Platforms: Architecture, Roles and Integration

Thursday, 7 May 2026

Agenda

- What is eFTI and where the Regulation goes?
 - Lasse Nykänen, eFTI Experts OÜ
- Architectural Options in Practice
 - Marco Gorini, Magellan Circle
- eFTI Architecture
 - Niko Rodopoulos, OnLine Data
- ICT System Roles
 - Oguz-Kaan Oeztuerk, Abona
- eFTI Data Retrieval
 - Karl Christoph Strack, GBK Trusted Partner
- Interfaces of the eFTI Platform
 - Barry Van Leuven, Pionira
- Questions & Answers

What is eFTI and where the Regulation goes?

Lasse Nykänen, eFTI Experts OÜ

eFTI – electronic Freight Transport Information

eFTI is an enabler



eFTI in nutshell

- eFTI is new EU regulation, which digitalizes the data exchange between economic operators and competent authorities
- eFTI is multimodal
 - Road, air, rail and inland waterways
- eFTI boost transition from paper to digitalization & from documents to data

eFTI regulation

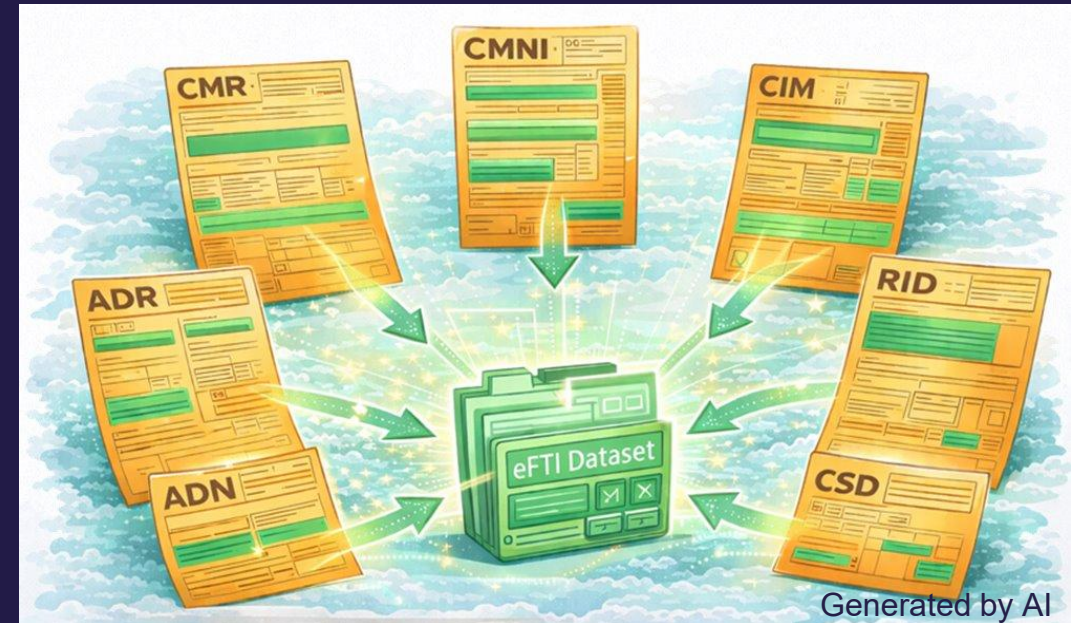
- **“This Regulation establishes a [harmonized] legal framework for the electronic communication of regulatory information between the economic operators concerned and competent authorities** in relation to the transport of goods on the territory of the Union.” (Article 1, **eFTI Regulation 2020/1056**)
- **eFTI regulation mandates Member States** to accept electronic transport information for demonstrating compliance, emphasising content requirements, data security, and common specifications.
 - **For economic operators eFTI is voluntary**
- **eFTI operates on data elements defined by regulation rather than entire documents**, whereby competent authorities can access only the specific information they need so that unnecessary exposure is minimized.



Generated by AI

eFTI regulation

- **Existing EU Regulations and Directives** establishes the information requirements that are subject to controls by competent authorities for different transport modes and use cases
- The Delegated Regulation 2024/2024 classifies these information requirements according to the Regulation/Directive they come from:
 - Regulation 11/1960 concerning the abolition of discrimination in transport rates and conditions
 - Directive 92/106 on the establishment of common rules for certain types of combined transport
 - Regulation 1072/2009 on common rules for access to the international road haulage market (cabotage)
 - Regulation 1013/2006 on international shipments of waste
 - Directive 2008/68 on the inland transport of dangerous goods (road, rail, inland navigation)
 - Regulation 300/2008 on common rules in the field of civil aviation security



eFTI data exchange system

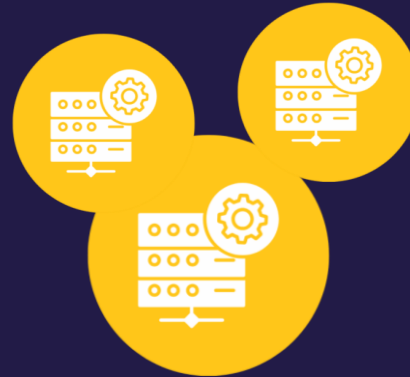
- **eFTI is a Europe-wide** common data standard and framework for the electronic exchange of freight information between authorities and economic operators, that ensures smooth interoperability between **eFTI Platforms** and **eFTI Gates**.
- **eFTI Gate** – an intermediary between the **eFTI Platforms** and the **Competent Authorities**
 - **eFTI Gates are connected EU-wide**
- **eFTI Platform** – an operating system, environment or **database** intended to be used for the processing and storing of **eFTI data**
 - **Needs to be certified**



Economic operator



eFTI Platform



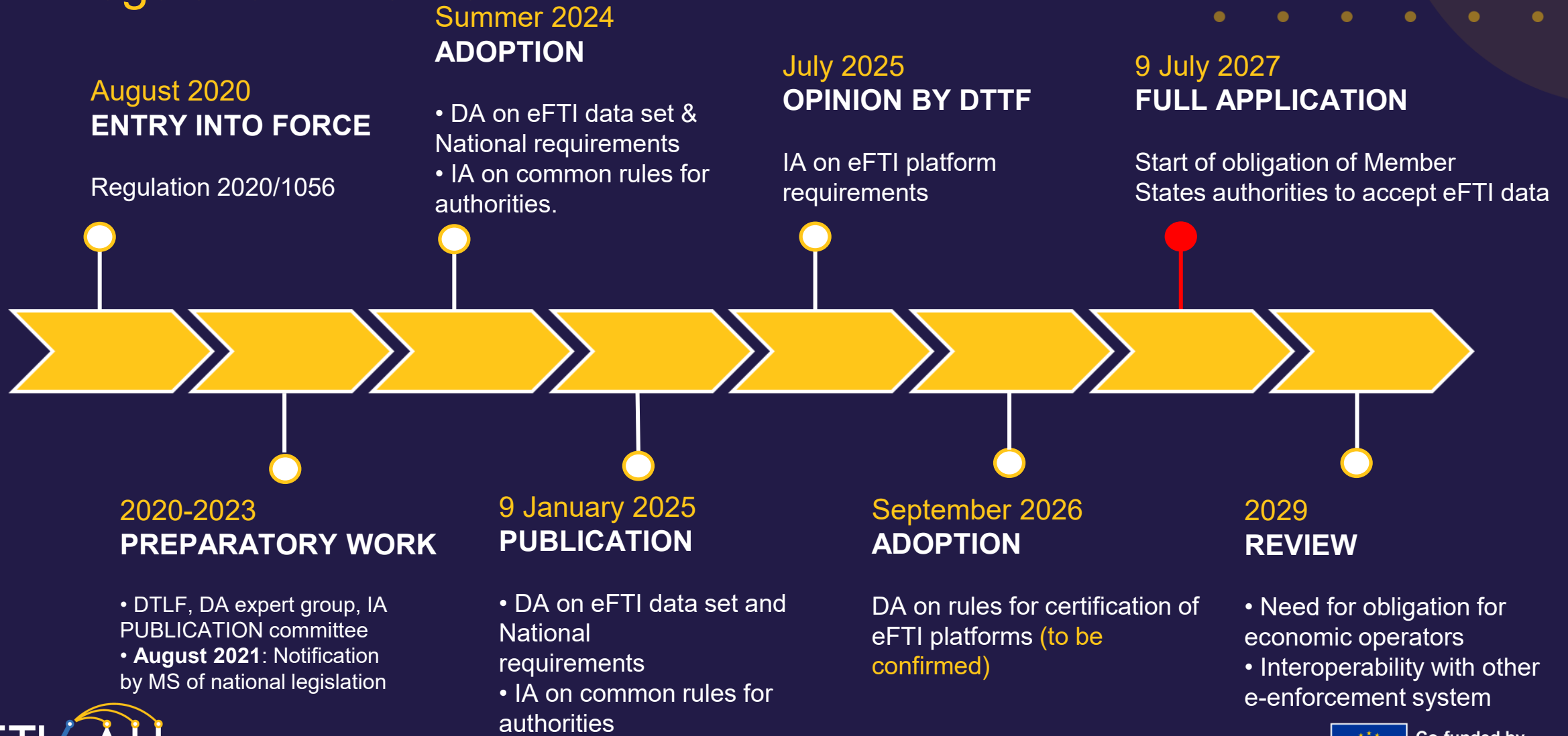
eFTI Gates

AAP



Competent Authority
(e.g Police)

eFTI regulation timeline



Where we are now

- Authorities' regulation and obligations are well known (eFTI Gate)
 - Authority/Gate IA & DA published on 9 January 2025
- Economic operators (eFTI platforms)
 - Platform IA published on 7 November 2025
- Technical documentation – [eFTI WIKI](#)
 - All available eFTI regulation
 - Technical Guidance Document 1 (TGD 1)
 - Technical Guidance Document 2 (TGD 2)
- **In process**
 - Certification rules for eFTI platforms
 - Specification for eFTI service providers
 - Certification for eFTI service providers
 - Review of IAs (Gate and platform)
 - XSD work

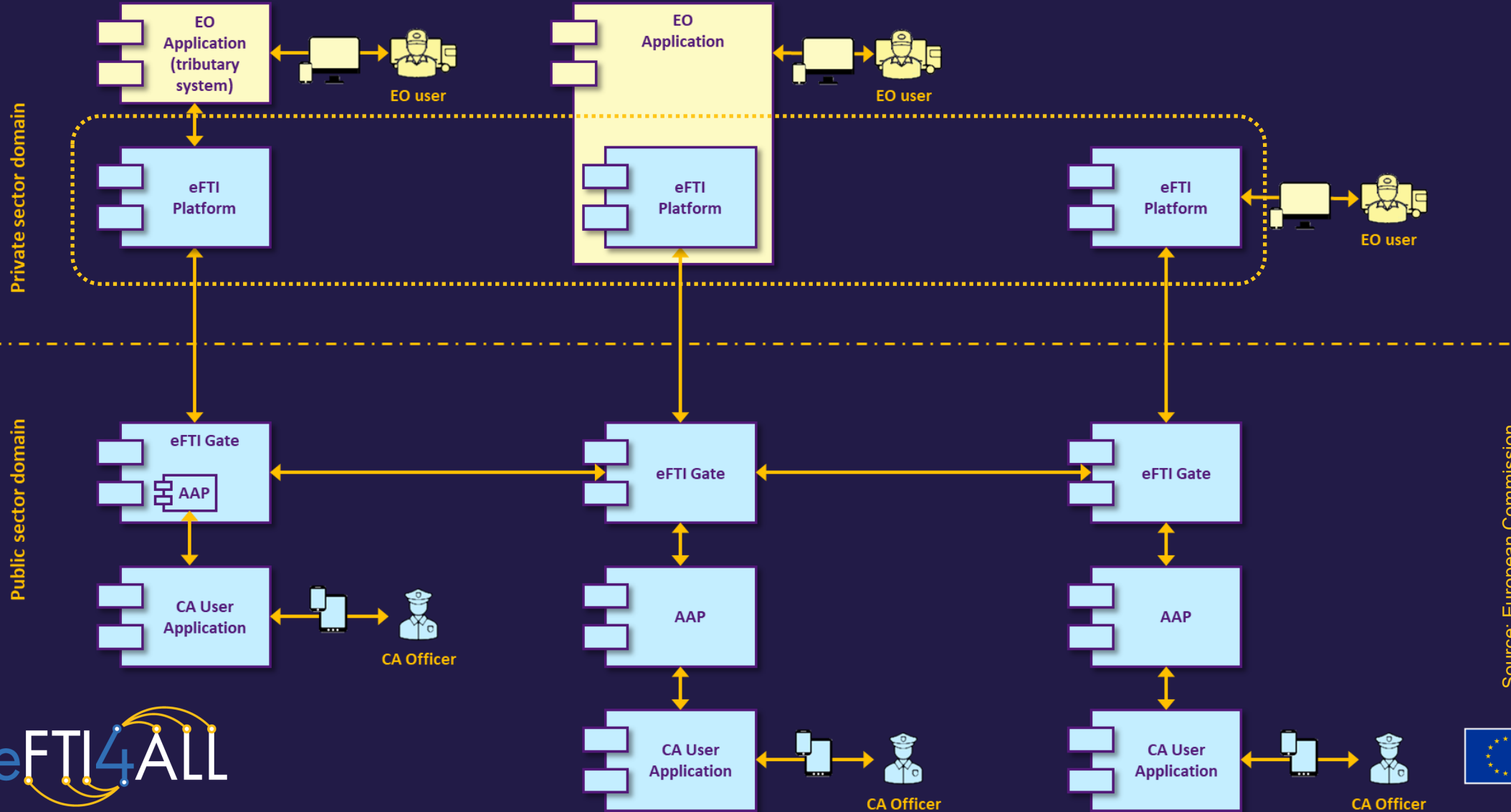


Architectural Options in Practice

Marco Gorini



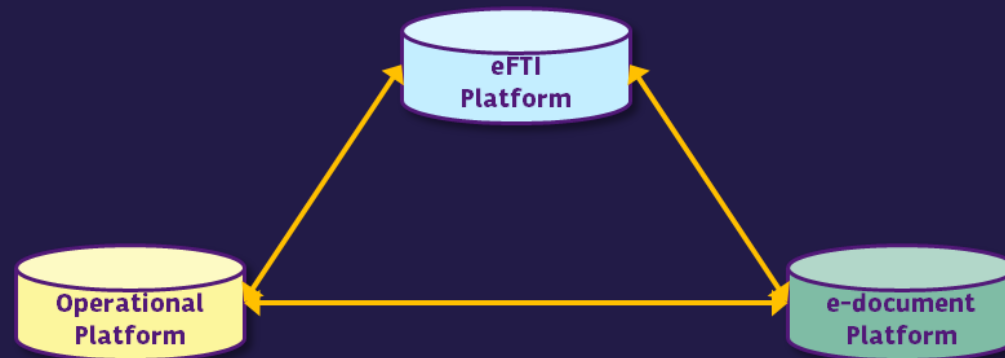
eFTI Reference Architecture at a glance



Source: European Commission

eFTI Platforms vs. existing business IT systems

- eFTI Platforms can (and will!) interoperate with existing business IT systems implementing B2B workflows:
 - Operational platforms: relate to the daily operation of the business of Economic Operators (e.g. booking, planning, monitoring)
 - e-document platforms: relate to the preparation and exchange of documents with other parties: consignment notes (CMR, CIM, CMNI), invoices, bill of lading, delivery notes, dangerous goods (ADR, RID, ADN), etc.



Source: European Commission

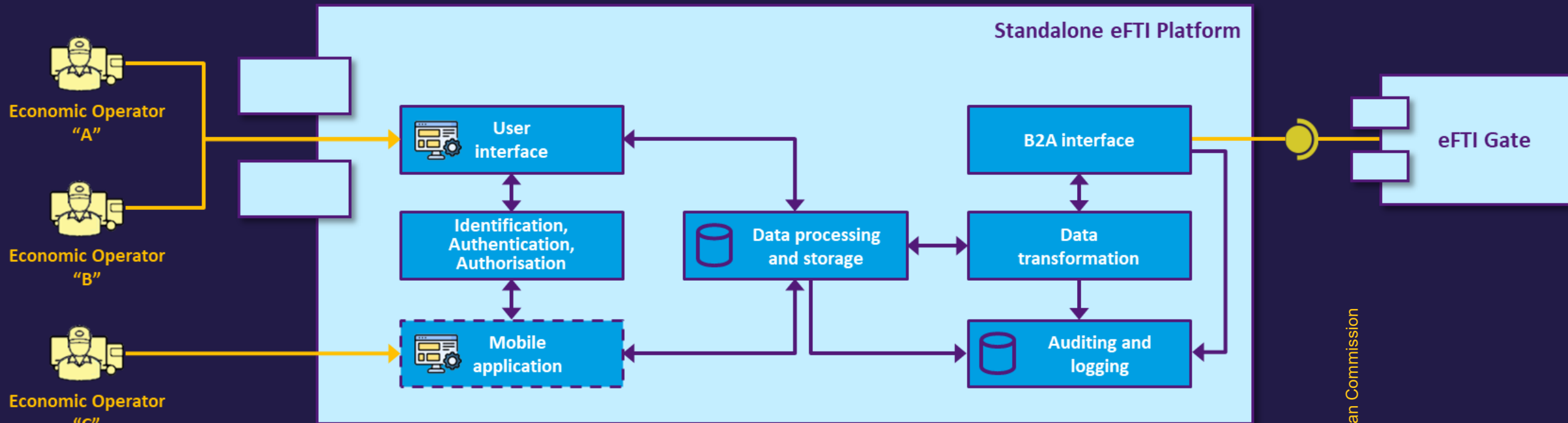
eFTI Platform architectural options

- **Standalone**
 - The eFTI Platform does not interoperate with any other IT system (except for the eFTI Gate)
- **Layered**
 - An eFTI layer is built on top of an existing IT system with a different purpose
- **Distributed**
 - The platform gathers eFTI data from other IT systems (tributary systems) possibly operated by other Economic Operators

Standalone architecture

- The platform only provides eFTI functionalities
- It is totally independent from any IT system used by transport and logistics operators
- Suitable for all cases where there is no need to exchange data through M2M interfaces
- It can be used by multiple Economic Operators, but all must use the user interface of the platform (usually web-based or mobile application)

Standalone architecture

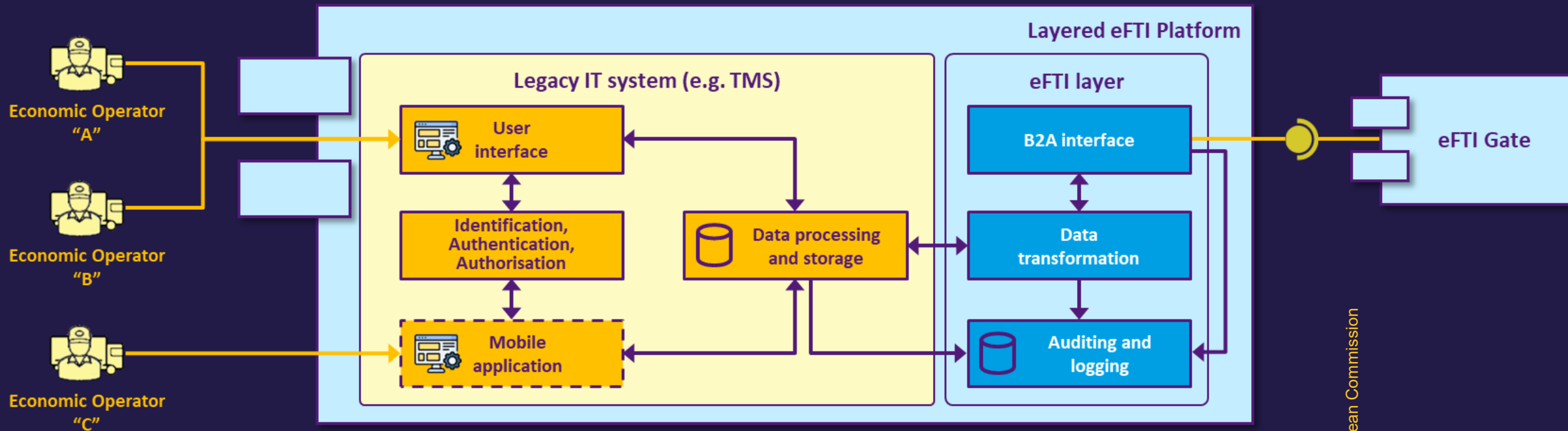


Source: European Commission

Layered architecture

- An eFTI layer is built on top of a “legacy” IT system
- Suitable for all cases where there is no need to exchange data through M2M interfaces
- It can be used by multiple Economic Operators, but all must use the user interface of the legacy system (usually web-based or mobile application)
- Examples of legacy systems are:
 - e-document platforms for Service Providers
 - Enterprise Resource Planners (ERPs) for shippers
 - Transport Management Systems (TMSs) for carriers and freight forwarders

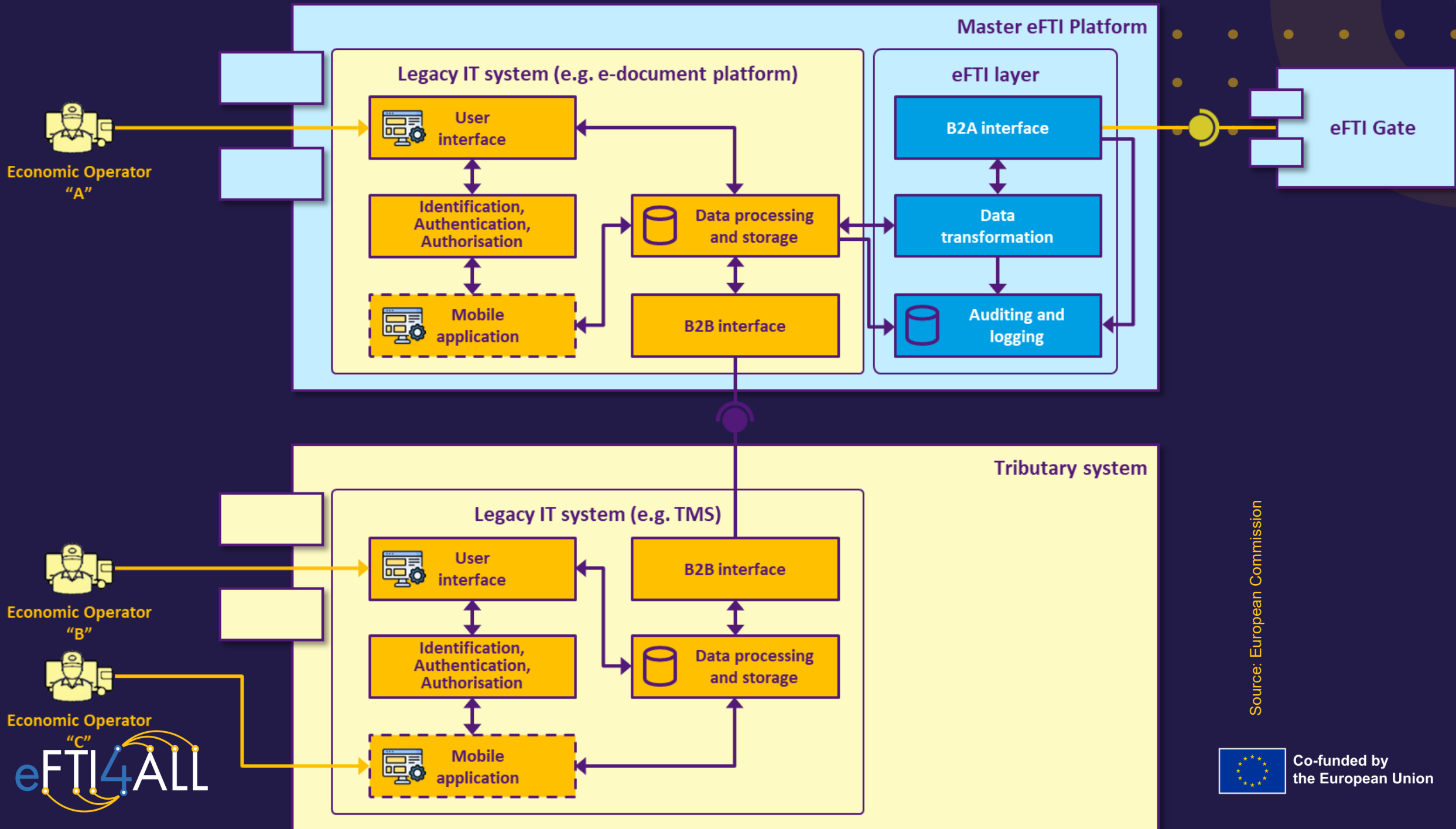
Layered architecture



Source: European Commission

Distributed architecture

- Multiple IT systems (tributary systems) upload eFTI data to a single (master) eFTI Platform, through a M2M interface (unidirectional upload)
- Suitable for all cases where there is need to exchange data through M2M interfaces
- It can be used by multiple Economic Operators, each using their own system user interface

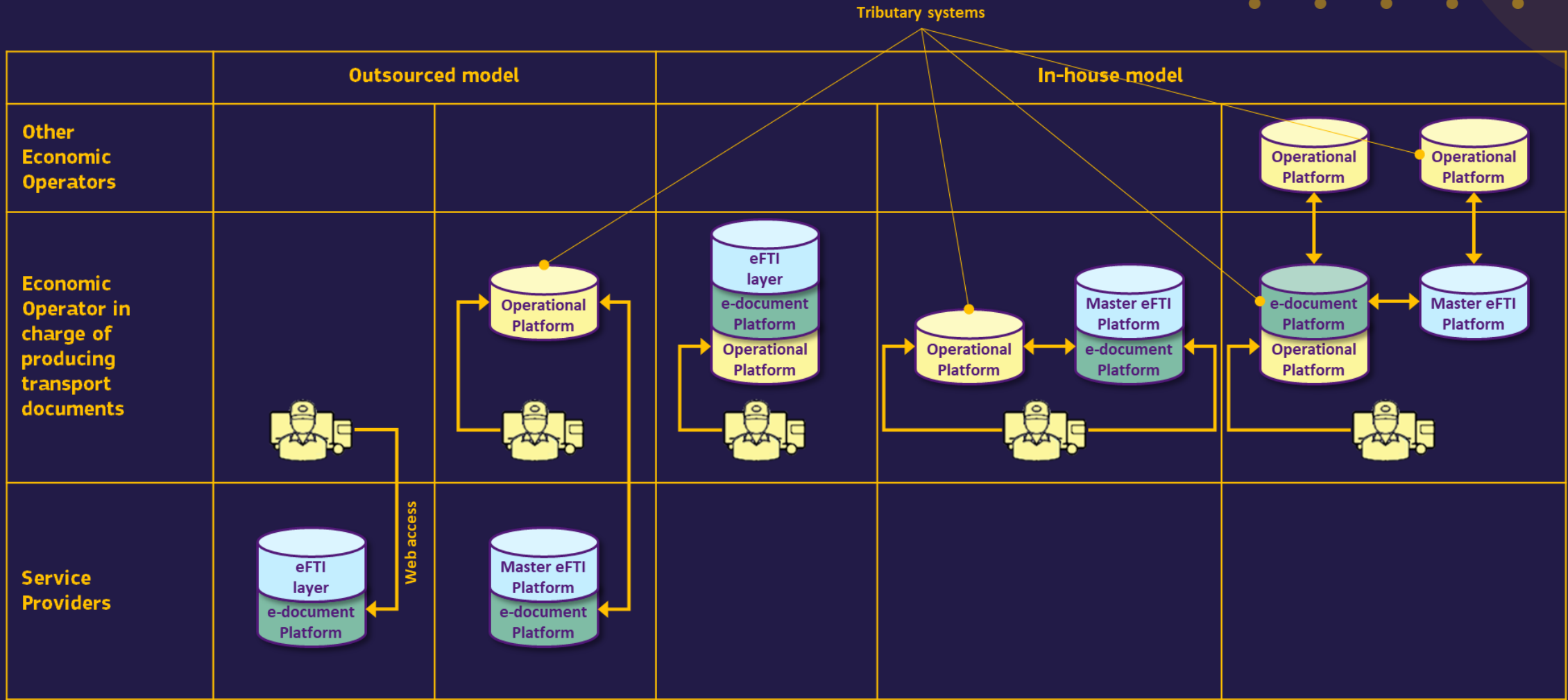


Source: European Commission



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Examples of platform architectures applied to service models



Source: European Commission



eFTI Architecture

An example of eFTI Platform layout

Niko Rodopoulos, OnLine Data

Economic Operator Systems
Shippers, Carriers, 3PLs, Forwarders

- TMS
- ERP
- WMS
- Fleet systems
- eCMR solutions

Platform Middleware
Identity / Access Management

- user authentication
- company roles
- delegated access
- authority permissions

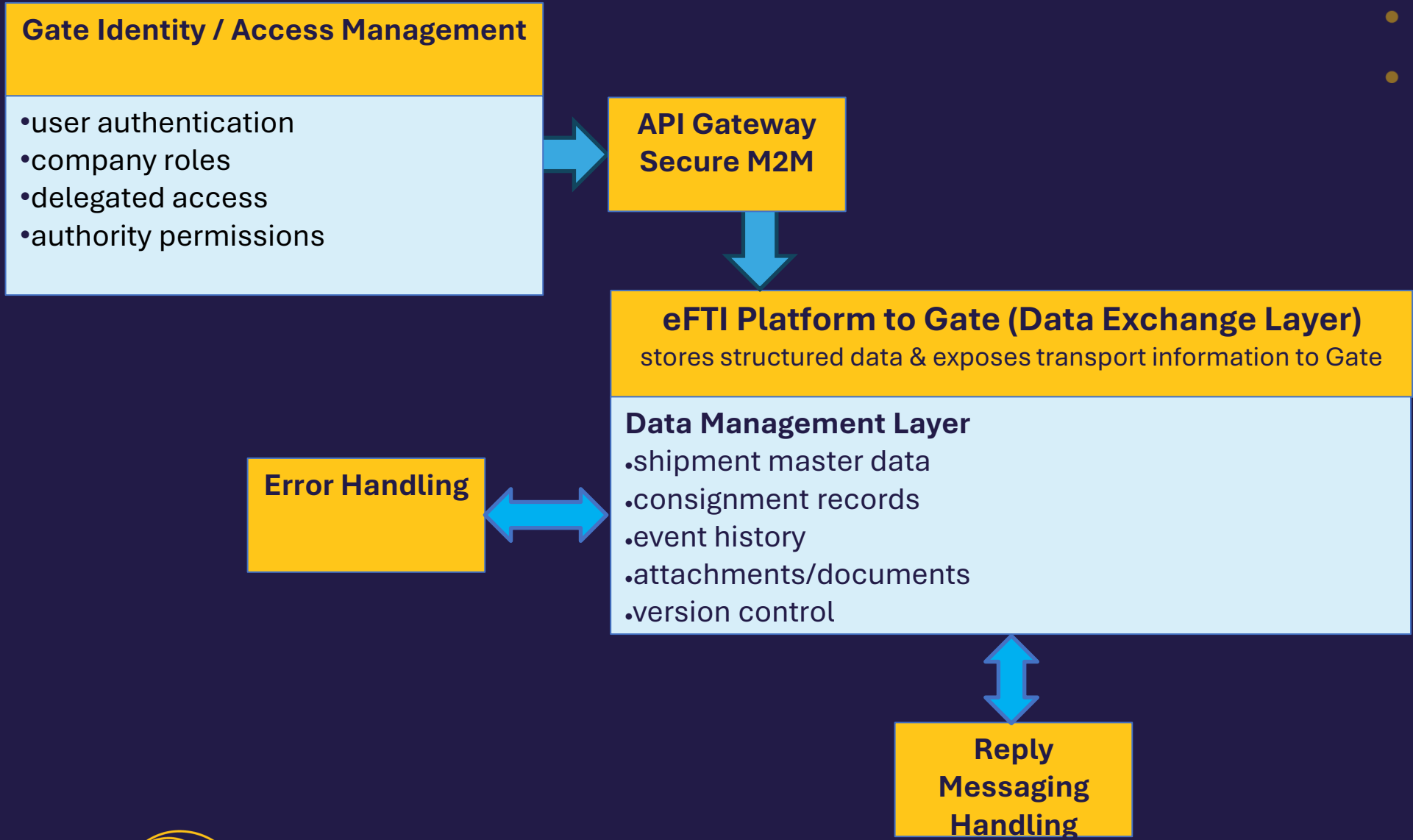
Platform
API
EDI/UN
XML
Custom

Data Exchange Layer
Agnostic enterprise data exchange engine
stores & validates structures & data mappings
Prepares & exposes transport information to the Platform

eFTI Platform
stores & validates structures & data mappings
Prepares & exposes transport information to the Gate

<p>Data Management Layer</p> <ul style="list-style-type: none">•shipment master data•consignment records•event history•attachments/documents•version control	<p>Rules & Validation Engine</p> <ul style="list-style-type: none">•schema validation•mandatory field checks•country/regulation logic•business rules
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eFTI Gate



ICT System Roles

Oguz-Kaan Öztürk



Key roles in the eFTI ecosystem

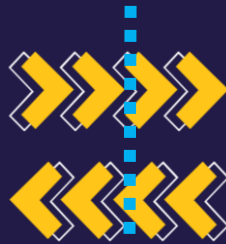
- **Transport Companies ERP/TMS** – software used by transport companies, such as ERP or TMS, which generates transport data and is connected to an eFTI Platform
- **eFTI Platform** – a software, environment or **database** intended to be used for the processing and storing of **eFTI data**
- **eFTI Gate** – an intermediary between the **eFTI Platforms** and the **Competent Authorities**
- **Competent Authorities** – institutions that will request transport data for controls or emergencies



Transport company's
ERP/TMS



eFTI Platform



eFTI Gate



Competent Authority
(e.g. Police)

ERP - Enterprise Resource Planning
TMS – Transport Management System

Example: eFTI data flow international authority control

ERP/TMS BE



eFTI Platform BE



eFTI Gate BE



eFTI Gate DE



Competent Authority
(e.g. Police) DE

ERP - Enterprise Resource Planning
TMS - Transport Management System



eFTI Data Retrieval

The Dangerous Goods use case

Karl Christoph Strack



Motivation & Use-Case

Integration of the UNECE
Guidelines 5.4.0.2 ADR/RID/ADN
into the eFTI-regulation

The electronic (digital) transport document: Legal background

§International:

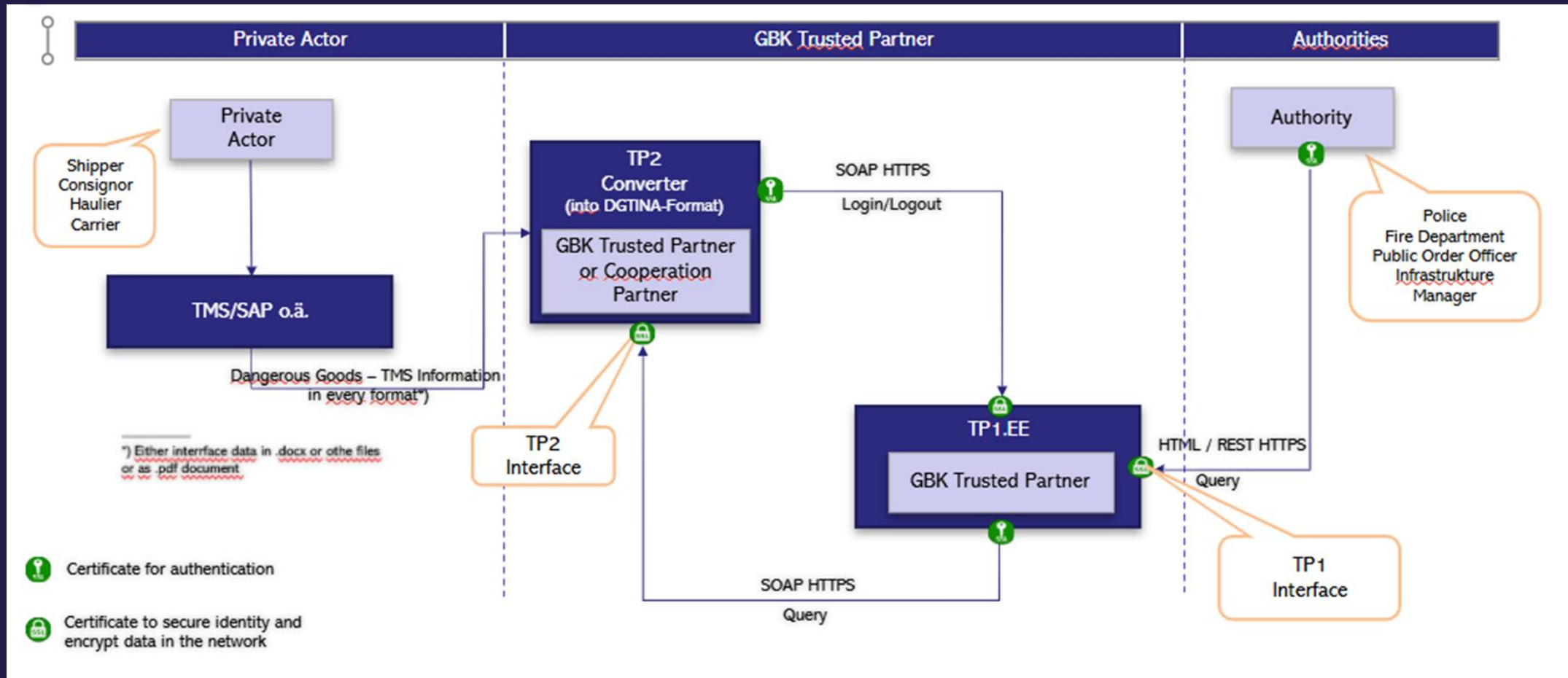
Guide to the application of the subsection 5.4.0.2 RID/ADR/ADN
(publicly available on the UNECE and OTIF websites)

§in Germany:

Guideline von 2021 (published in Verkehrsblatt, Heft 4/2021, Nr. 43) *)

- Equivalence in terms of evidentiary value and availability during transport
- voluntary application
- defines necessary elements of data communication (communication architecture, web services, interfaces), collectively referred to as eDGTI
- if the guide is applied, it must be applied in full

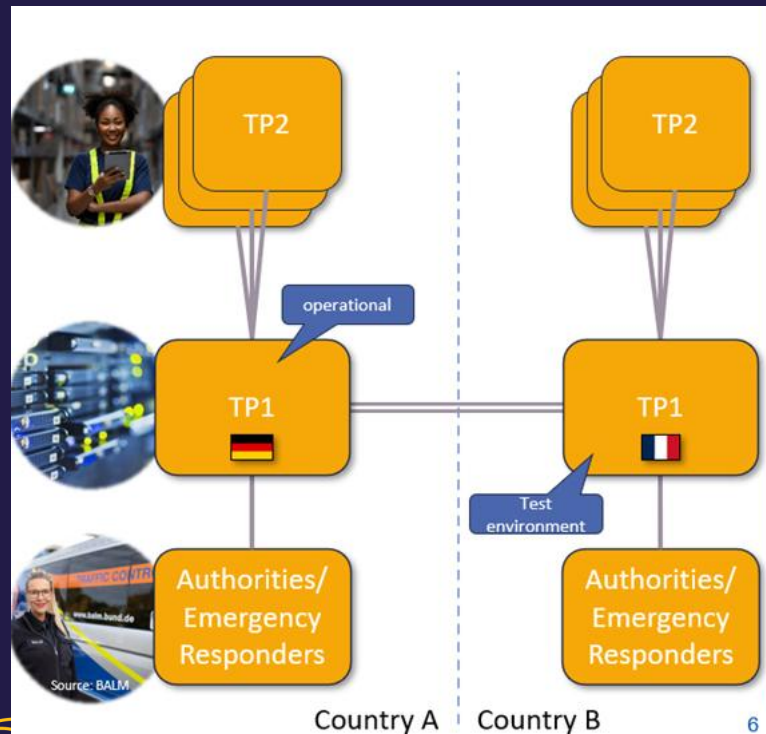
GBK-Trusted Partner: TP2 as service with data conversion – current solution in Germany



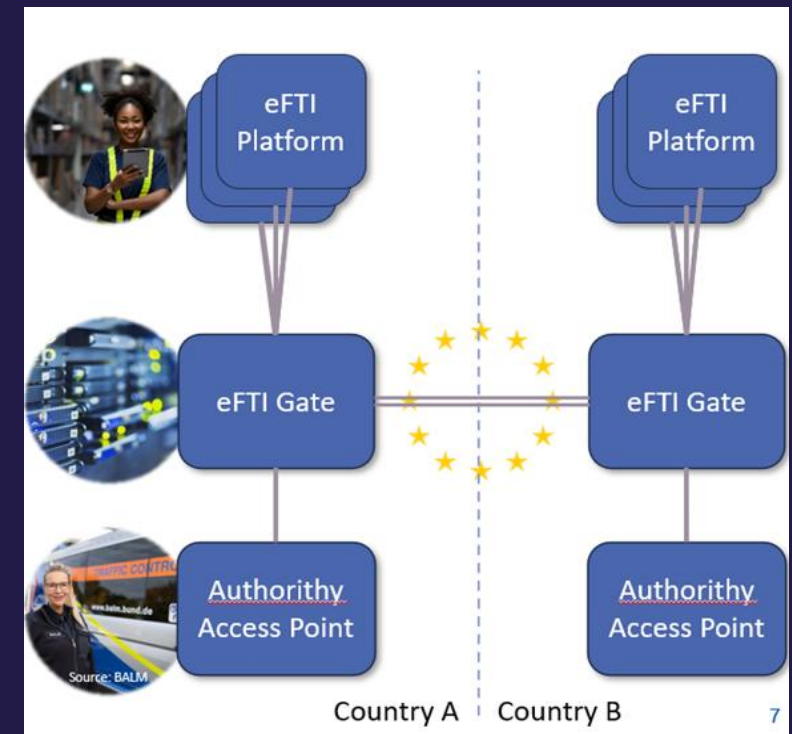
Dangerous Goods Data Exchange TP1-TP2 and Transition to eFTI

Dangerous Goods Data Exchange TP1-TP2 and Transition to eFTI

UNECE Guideline 5.4.0.2 ADR/RID/ADN



Dangerous Goods in eFTI



Dangerous Goods Data Exchange TP1-TP2 and Transition to eFTI

The electronic transport document: the official German authority TP1 frontend

TP1.DE - GBK Trusted Partner 1
DEVELOPMENT SYSTEM

KARL STRACK

Type: Road
Identifier number: HH-KS2002
Select Country: Germany

Search

Vehicle

vehicleCountryOfOrigin	vehicleRegistrationPlateIdentifier	vehicleTypes	containerIdent	ID
DE	HH-KS2002	anyVehicle	KCST333666-7	19918ff8dd1
DE	HH-KS2001	anyVehicle		

Document: 1

1. Document

ID	deliveryDate	pickUpDate
19918ff8dd1	9/8/2025, 12:00:00 AM	9/8/2025, 12:00:00 AM

Consignor

Name	Street	Postalcode	City	Country code
logikcs - Logitikberatung	Wulfsdorfer Weg 16	22359	Hamburg	DE

Consignee

Name	Street	Postalcode	City	Country code
GBK Trusted Partner	Königsberger Straße 29	55218	Ingelheim	DE

Description

1. 1202 Heizöl (leicht) umweltgefährdend (Sondervorschrift 640L), 3, I, (D/E), ENVIRONMENTALLY_HAZARDOUS

totalQuantityOfDG: 60 L (volume)
numberOfPackages: 3
packageTypeDescription: Kanister

Dangerous Goods Data Exchange TP1-TP2 and Transition to eFTI

The electronic transport document:
The German TP2 data
in the French TP1


HH-KS2002

Synthèse **Véhicule** Conducteur Complément Documents Transport Documents Matières Dangereuses

Véhicule n°1

Plaque d'immatriculation du véhicule: HH-KS2002
Pays d'origine: DE

Type de véhicule: ANY_VEHICLE



HH-KS2002

Synthèse Véhicule Conducteur Complément Documents Transport **Documents Matières Dangereuses**

Documents MD 19918ff8dd1

Expéditeur

Destinataires

Dispositions particulières pour le transport maritime ou aérien

Autres informations

Liste Documents Matières Dangereuses

UN 1202 Heizöl (leicht) umweltgefährdend (Sondervorschrift 640L), DL_3, GE PG_I, (TRC_DE)

Numéro ONU: 1202

Nom technique: Sondervorschrift 640L

Groupe d'emballage: PG_I

Quantité totale de marchandise dangereuse: 60

Livraison-Vente

Déchets

Matières dangereuses pour l'environnement: ENVIRONMENTALLY_HAZARDOUS

Nombre des colis: 3

Désignation officielle de transport: Heizöl (leicht) umweltgefährdend

Étiquettes: DL_3

Code de restriction en tunnels: TRC_DE

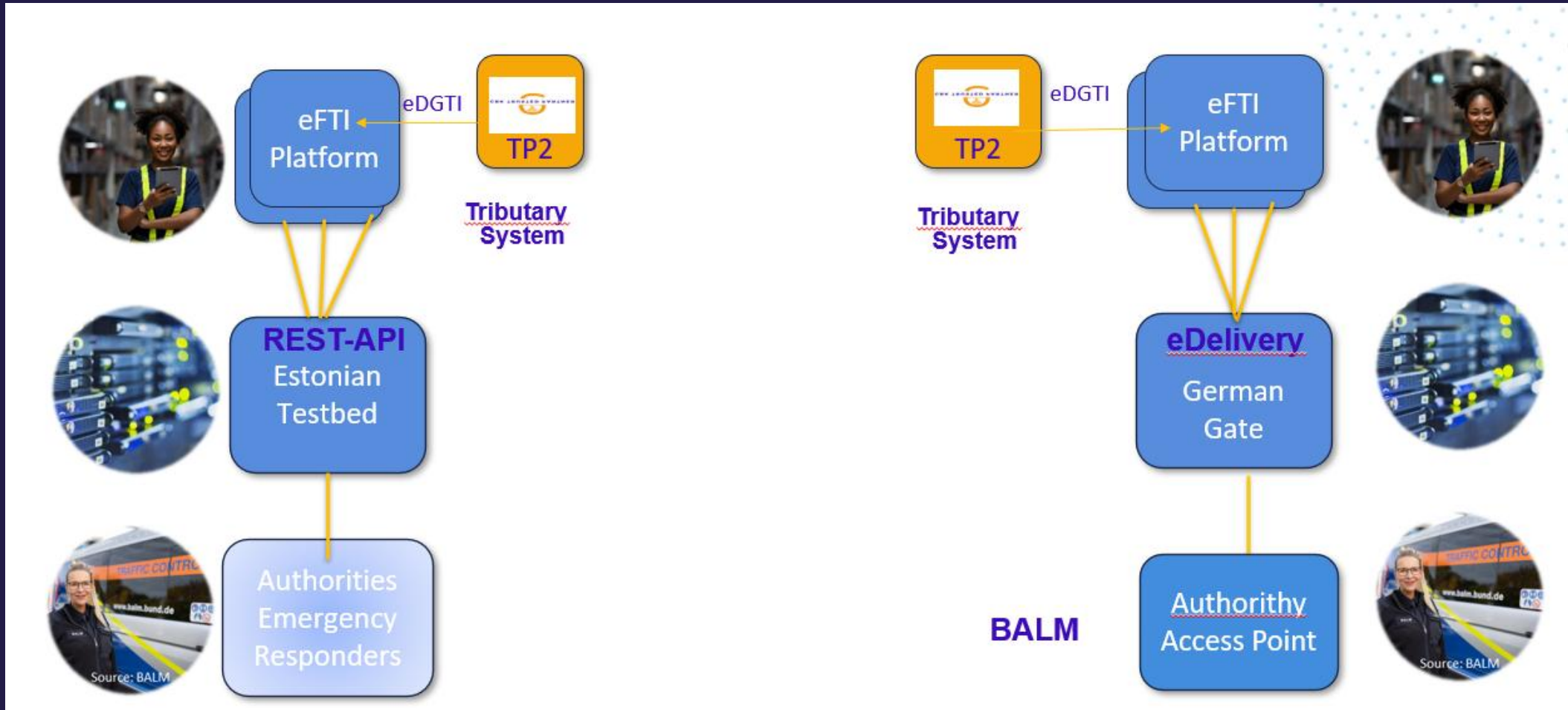
Unité de la quantité totale de marchandise dangereuse: VOLUME

Description des colis: Kanister

Quantité limitée

Emballage vide jeté non nettoyé

TP1/TP2 goes eFTI





Interfaces of the eFTI Platform

with an e-Document management system

Barry van Leuven
 **Pionira**

Who are we?

- SaaS-company: Unburdening companies with administrative tasks by **digitizing their transport document flow** and managing it more efficiently
- HQ in Belgium
- First platform for eCMR > since grown into market leader

Service:

- License for various (international) transport documents
- Integrated with the most common logistics systems (TMS/ERP/on-board computer)
- +55K users across EU



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Road transport: national and international

Documenttype	Scope of transport	Legal context	Countries	Target audience	Status in eWastra	Benefits/importance
e-CMR	International	CMR Convention	All countries that have ratified the CMR Convention (throughout Europe).	Transport companies, shippers, 3PL organizations	✓	Paperless international transport, legally valid, eFTI compliant Mandatory to accept from July 2027.
National consignment note	National	National transport value	EU countries	National carriers, distributors	✓	Local regulations simplified.
			Spain: Carte de Porte, Documento de Control	National carriers, distributors	✓	Digital Documento de Control: mandatory from October 2026.
e-MOVE	National	National logistics flows	Belgium (mainly)	Moving companies	✓	Operational simplicity
e-SOIL	National	Environmental legislation	Belgium	Construction logistics	✓	Compliance and follow-up of soil transport
e-ECD	National / European Union	Sectoral enforcement	Various countries	Tank cleaning / bulk logistics	✓	Risk reduction and audit preparedness

Waste transport: national and international

Documenttype	Scope of transport	Legal context	Countries	Regulatory authority	Status in eWastra	Benefits/importance
DIGID	Waste – national	Flemish waste regulations	Flemish Region (Belgium)	OVAM	✓	Fully complies with Flemish regulations (OVAM). Mandatory digital from 2023.
		Brussel/Wallonia kader	Brussels/Wallonia (Belgium)	Brussels Environment/ SPW	✓	Fully complies with regional legislation.
Begeleidings-brief	Waste – national	Waste regulations in the Netherlands	The Netherlands	The Dutch government	🕒 in test	Fully complies with regional legislation.
eAnnex7	Waste from the "green list" (cross-border)	EU regulations concerning waste transport	EU	EU	✓ (via API)	From May 21, 2026, digital registration via DIWASSS is mandatory. With eAnnex7, you are automatically compliant.
eAnnex1B	waste from the "amber list" (cross-border)	EU regulations concerning waste transport	EU	EU	🕒 in test	From May 21, 2026, digital registration via DIWASSS is mandatory. With eAnnex7, you are automatically compliant.

Animal by-products: EU

Documenttype	Scope of transport	Legal context	Countries	Status in eWastra
Commercial document	Intra-EU-transport	EU Regulation 1069/2009	EU	 Planned

Other documents/attachments

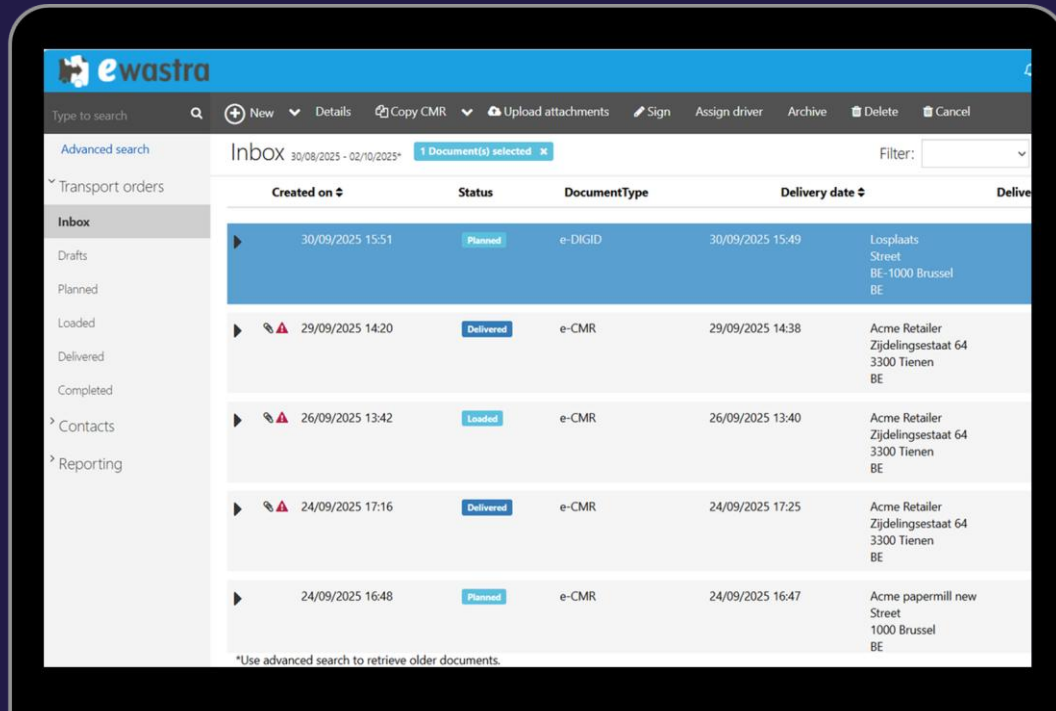
Documenttype	Benefits/importance
Loading slip - POD - Transport slip - Weigh slip - Delivery note - WDR - Photos	Even more error-free and paperless work.

Flexible creation of your documents

Our service offers **various ways** to create your digital transport documents:

- **Manual**
- **Via templates**
- **Via integration**

Document creation



Manual
Enter data yourself via the eWastra portal + app.

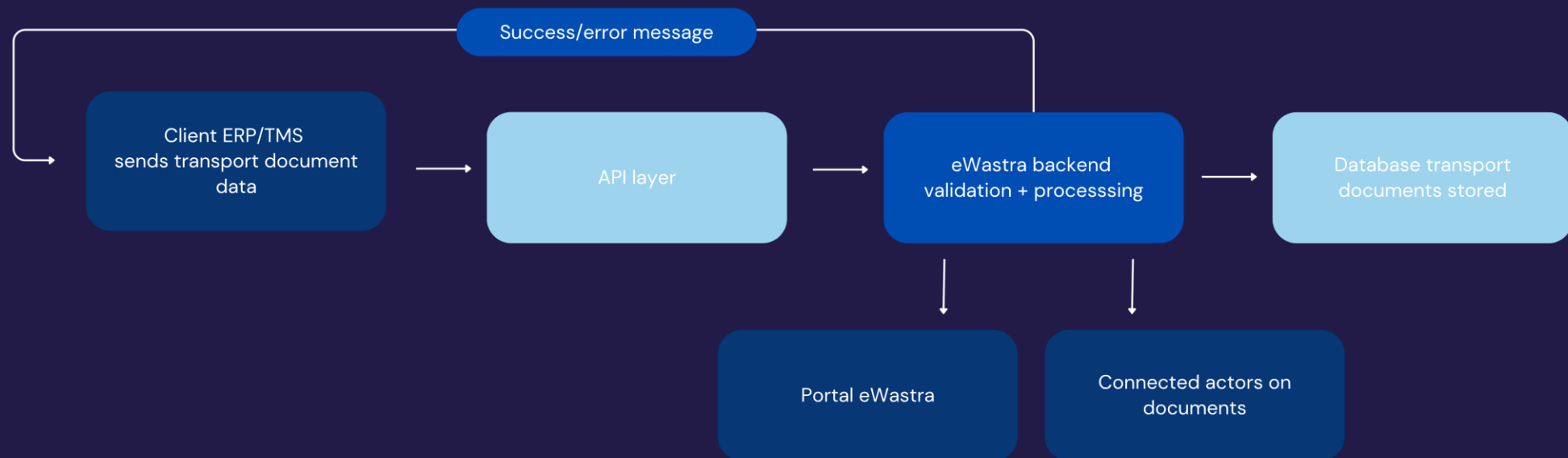


Template
Enter data via templates for recurring trips.

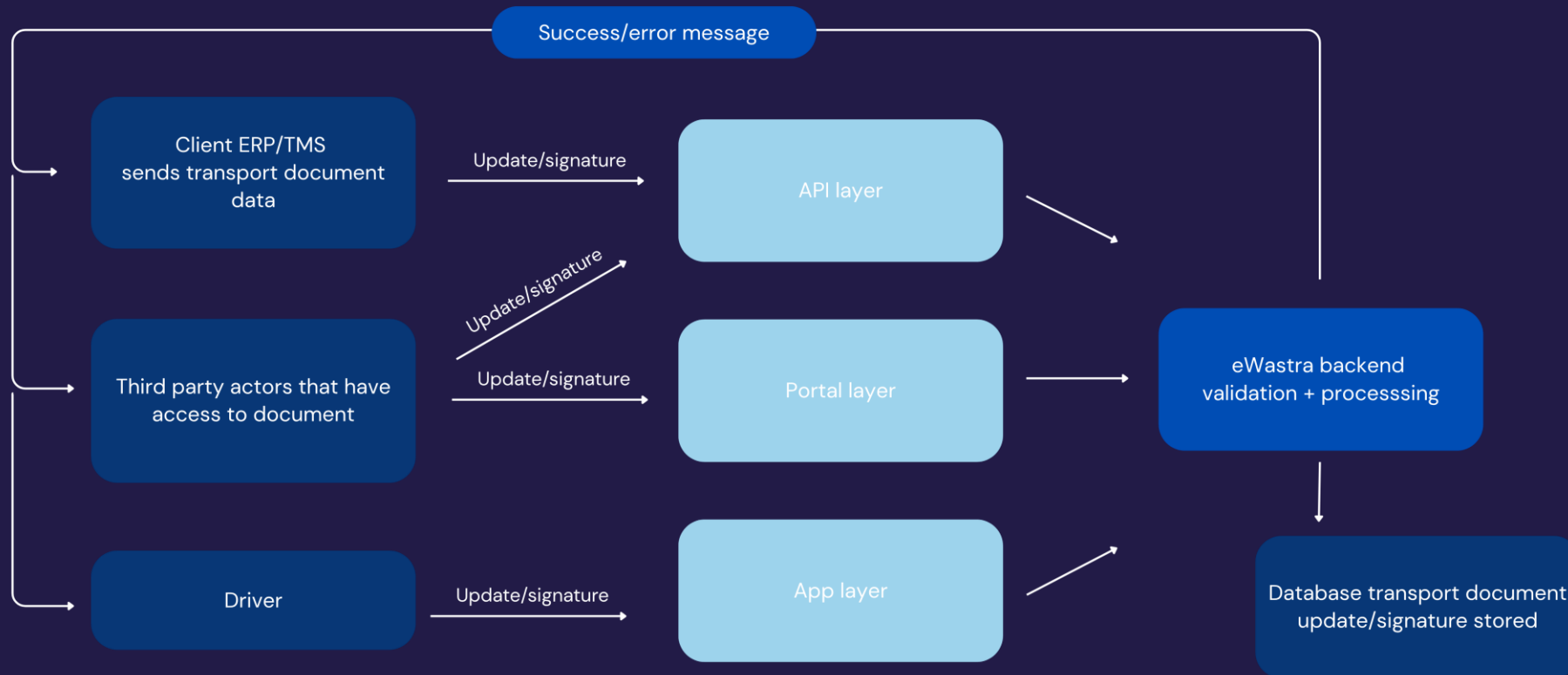


API integration
Automatically let data flow via: TMS, ERP, WMS,...

Document creation flowchart



Document updates flowchart



Digital document creation



eWastra


Portal
 portal.ewastra.com


TMS – ERP – WMS – POS – Telematics
 API / EDI / XML / CSV / IDocs


App

Digital documents
 eCMR - national CMR's - DIGID - eAnnex7 - attachments,...

eFTI data sharing

 **eFTI platform** 
 eWastra - eFTI platform X - eFTI platform Y - eFTI platform Z

eFTI gates per EU country 


 **Authority** 

eFTI vs. everyday example

1 Transport data
travels throughout the entire transport.



2 The eFTI platforms
collect the B2G data and share it with the eFTI gate.




3 eFTI-gate
shares the B2G data with the correct authority.




4 Government control
takes place faster and digitally.



1 Payments
take place through various means.



2 Bank A
processes your payment.



3 SWIFT network
handles international communication between bank A and your bank.



4 Your bank
confirms the payment.



Time for your questions

Any questions

- Regulation?
- Architecture?
- Data?
- eFTI and tributary systems (ICT systems)?
- Business and use cases?



SAVE THE DATE

Building eFTI Platforms #2: Business Value and Digital Ecosystem

 Thursday June 18, 2026

 Online on Zoom

 13 – 15 CEST

eFTI4ALL Consortium

TRAFIKVERKET Trafikstyrelsen Danish Civil Aviation and Railway Authority 51Biz.lu Hemeleers & Partners Circle Group GBK TRUSTED PARTNER

eFTI Experts Kouvola Innovation vedia AHOLA DIGILOGISTIKA KESKUS DIGITAL LOGISTICS CENTER OF EXCELLENCE tm Transport Malta

FENIX 2.0 NETWORK NeoGLS Intelligent Transport Pionira LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG Ministère de la Mobilité et des Travaux publics ABONA

KIGET CFL multimodal CTM Collectivité Territoriale de Martinique HELLENIC REPUBLIC MINISTRY OF DEVELOPMENT PCT PIRAEUS CONTAINER TERMINAL S.A.

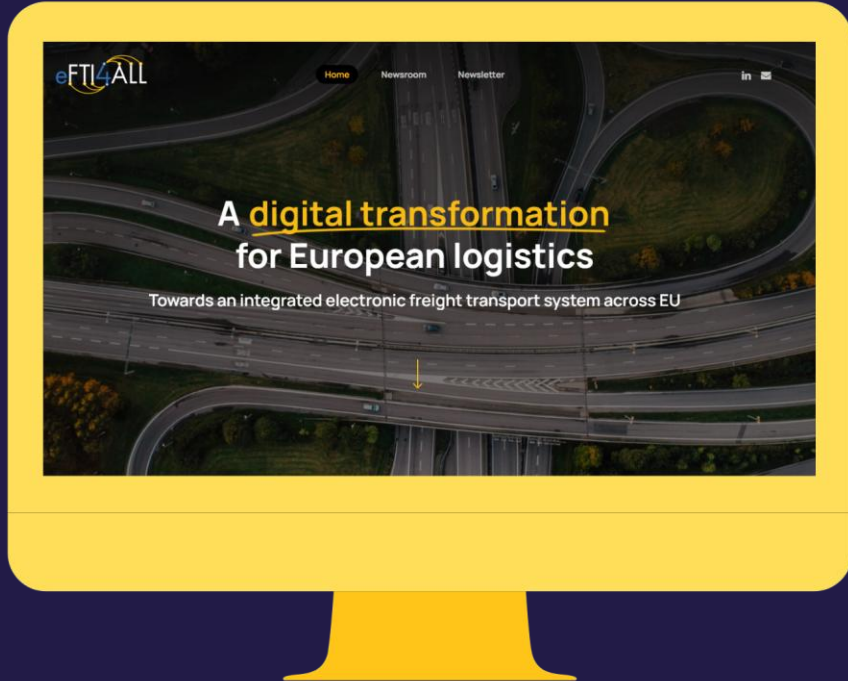
MAKIOS LOGISTICS ONLINE DATA CERTH/HIT Hellenic Institute of Transport ETISEY ICGS MC Mobility Consultants

iTO DEV TIA TRANSPORT INNOVATION ASSOCIATION PORT EXPERTISE PORT & MARITIME SERVICES EXPONAUT Collibra



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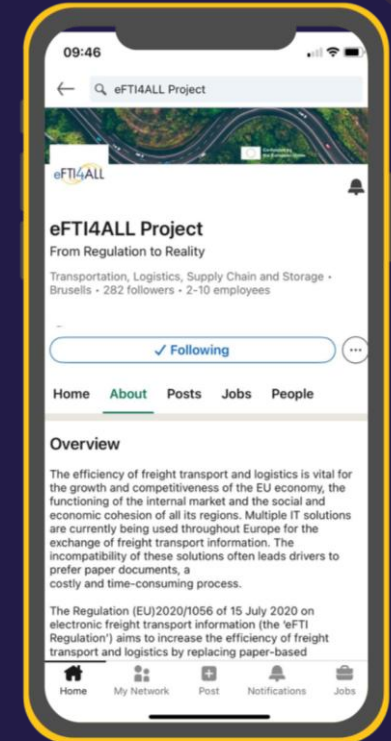
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Thank You!



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