Electronic Transport Documents for Dangerous Goods – From National Solutions to EU-wide Interoperability

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GBK TRUSTED PARTNER

Overview

- History of eDGTI and legal status
- Concept of eDGTI and the GBK Trusted Partner TP1/TP2 solution
- Concept of electronic freight transport information (eFTI)
- Challenges in the introduction of eFTI

History

2007 The informal telematics working group was mandated by the Joint Meeting (UNECE WP.15/AC1) with the aim of developing the use of telematics for the transport of dangerous goods

2012 Dangerous goods data model (eDGTI)

2013 Architecture for the exchange of the electronic transport document

2019 Guidelines for the application of RID/ADR/ADN 5.4.0.2 (electronic dangerous goods transport document) The Joint Meeting adopts the guide, which can now be applied

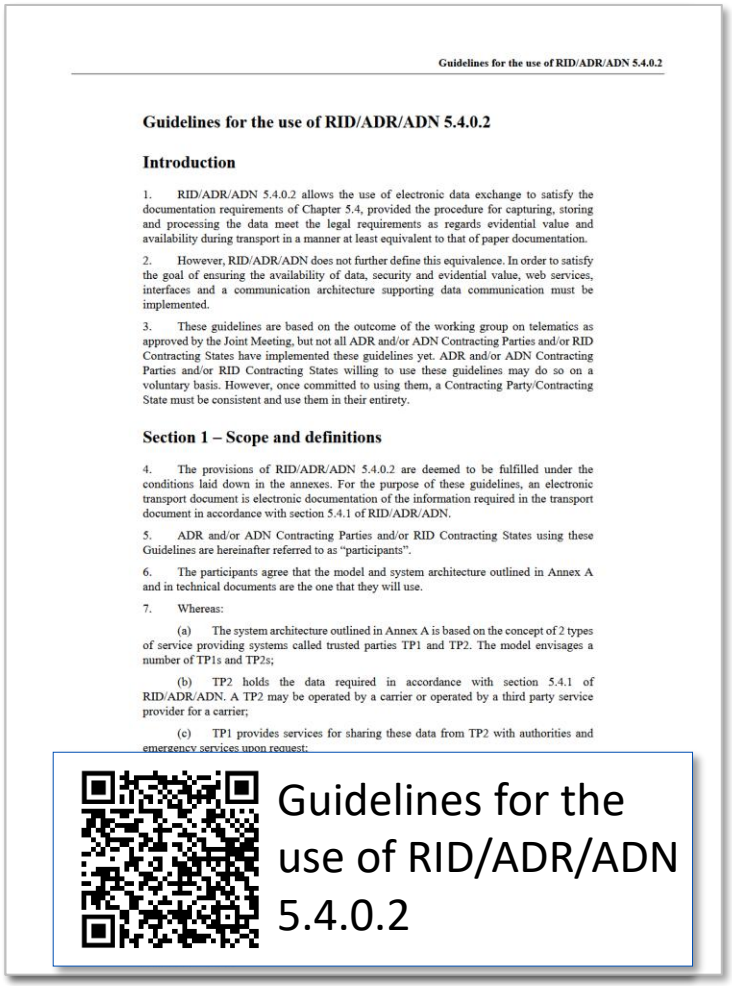
Publication of the guide on the UNECE and OTIF websites http://otif.org/de/?page_id=1103 http://www.unece.org/trans/danger/publi/adr/adr_guidelines.html

In Germany: Publication of the guidelines for the application of subsection 5.4.0.2 ADT/RID/ADN in the „Verkehrsblatt (2021)“ → Application of the electronic dangerous goods transport document possible in Germany

2020 Regulation (EU) 2020/1056 on electronic freight transport information

Legal status
Guideline

- **5.4.0.2 RID/ADR/ADN ...**
  - allows electronic data exchange, provided that the procedure fulfils the legal requirements with regard to probative value and availability during transport at least equivalent to the procedure with written documents ("equivalence")
- **The guidelines ...**
  - defines necessary elements of data communication to achieve equivalence - communication architecture, web services, interfaces (collectively referred to as eDGTI)
  - is aimed at RID/ADR/ADN states - the states decide on applicability



Legal status
Announcement in the „Verkehrsblatt“ (official transport journal)

- **Publication in the Verkehrsblatt causes applicability in Germany**
  - Companies can use an electronic transport document if they provide it in accordance with the guidelines
  - Authorities and emergency services must accept an electronic dangerous goods document provided in accordance with the guidelines
  - Status until further notice: "Transitional phase" in accordance with Annex A point 4 of the guidelines: Information required on board on data terminal equipment - this must be accepted
  - "Transition phase" = time until all authorities and emergency services are connected to the TP1/TP2 system - new guidelines will then also be required

VkBl. Amtlicher Teil 103 Heft 4 – 2021

Nr. 43 **Bekanntmachung des Leitfadens für die Anwendung des Unterabschnitts 5.4.0.2 ADR/RID/ADN**

Bonn, 04. Februar 2021
G16/3641.150/01

Nach Anhörung der obersten Verkehrsbehörden der Länder gebe ich nachfolgend den Leitfaden zur Anwendung des Unterabschnitts 5.4.0.2 ADR/RID/ADN in Deutschland bekannt. Das nach Abschnitt 5.4.1 ADR/RID/ADN vorgeschriebene Beförderungspapier kann in elektronischer Form erstellt und mitgeführt werden, wenn die Vorgaben des Leitfadens eingehalten werden. Dies gilt für Beförderungen in Deutschland und für grenzüberschreitende Beförderungen zwischen Deutschland und RID-Vertragsstaaten und/oder ADR- und/oder ADN-Vertragsparteien, die diesen Leitfaden anwenden. Informationen zur Anwendung in anderen RID-Vertragsstaaten werden über die Webseite der OTIF und Informationen zur Anwendung in anderen ADR- und ADN-Vertragsparteien werden über die Webseite der UNECE zur Verfügung gestellt.

Bei Nutzung des elektronischen Gefahrgutbeförderungsdokuments muss an Bord von Güterzügen, Fahrzeugen und Binnenschiffen ein Datenendgerät nach Anlage A Nummer 4 des Leitfadens mitgeführt werden, auf dem das Beförderungsdokument in menschenlesbarer Form dargestellt wird.

Die elektronische Abfrage des Gefahrgutbeförderungsdokuments durch zuständige Überwachungsbehörden und Einsatzkräfte wird über eine Trusted Party 1 (TP 1) gemäß dem Leitfaden realisiert.

In Deutschland wird als TP 1 folgende Stelle tätig:

GBK

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Königsberger Str. 29
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tp1@gbk-ingelheim.de

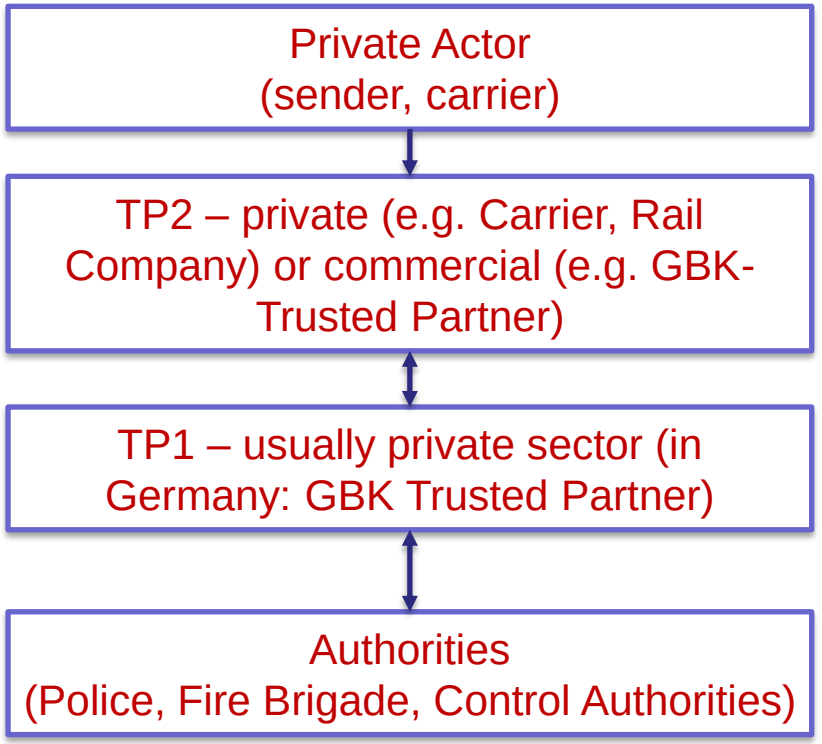
Zuständige Überwachungsbehörden und Einsatzkräfte, die sich bei einer vorgenannten TP 1 registrieren lassen wollen, haben sich gemäß Anlage A Nummer 1 Buchstabe d des Leitfadens in ein beim BMVI (Referat G 16; RefG16@bmvi.bund.de) geführtes Verzeichnis aufnehmen zu lassen.

Sofern für die Überwachungsbehörden und Einsatzkräfte die Möglichkeit der elektronischen Abfrage noch nicht realisiert ist oder bei der Kontrolle oder im Rahmen von Zwischen- und Notfällen aufgrund von Störungen nicht genutzt werden kann, erfolgt die Abfrage des Gefahrgutbeförderungsdokuments durch Ablesen auf dem Datenendgerät. Die Bedienung des Datenendgeräts obliegt in der Regel den Fahrzeugführern, Triebfahrzeugführern und Schiffsführern. Diese haben im Rahmen ihrer Auskunftspflicht der für die Überwachung zuständigen Behörde bei der Durchführung der Überwachungsmaßnahmen die erforderlichen Hilfsmittel zur Verfügung zu stellen und die nötige Mithilfe zu leisten (§ 9 Absatz 2 GGBefG). Sie haben das Kontrollpersonal auf Aufforderung in die Bedienung des Datenendgeräts einzuweisen oder es bei der

Auszug aus dem Verkehrsblatt Amtlicher Teil

Concept of eDGTI: Basic principle

- Shipper/carrier places transport document data in the defined DGTINA .xml format on their TP2 server
- TP2 server delivers data about events (login/logout) to TP1
- In the event of an incident (control, accident), authorized control authorities (in Germany e.g. BALM, EBA, police) and emergency services (public fire brigade) can query the data record stored at TP1 using the identification number of the respective transport unit
- In Road Traffic, vehicles that travel electronically must be marked accordingly



The electronic (digital) transport document: Three options

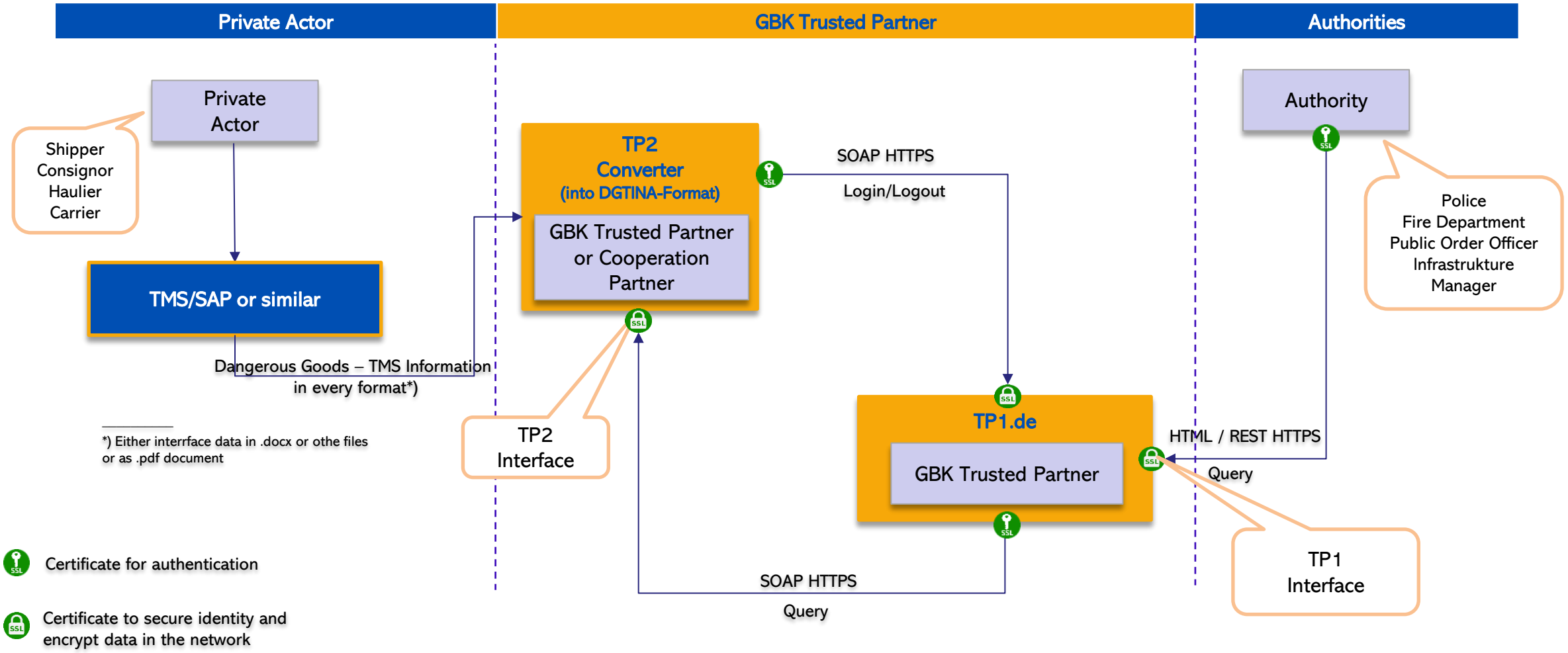
Private actors have three options for implementing the requirements of the guideline:

- Provide the dangerous goods data in the correct format and be TP2 themselves
- Provide the dangerous goods data in the correct format but delegate the TP2 role
- Provide dangerous goods data, let a provider convert to correct format and be TP2

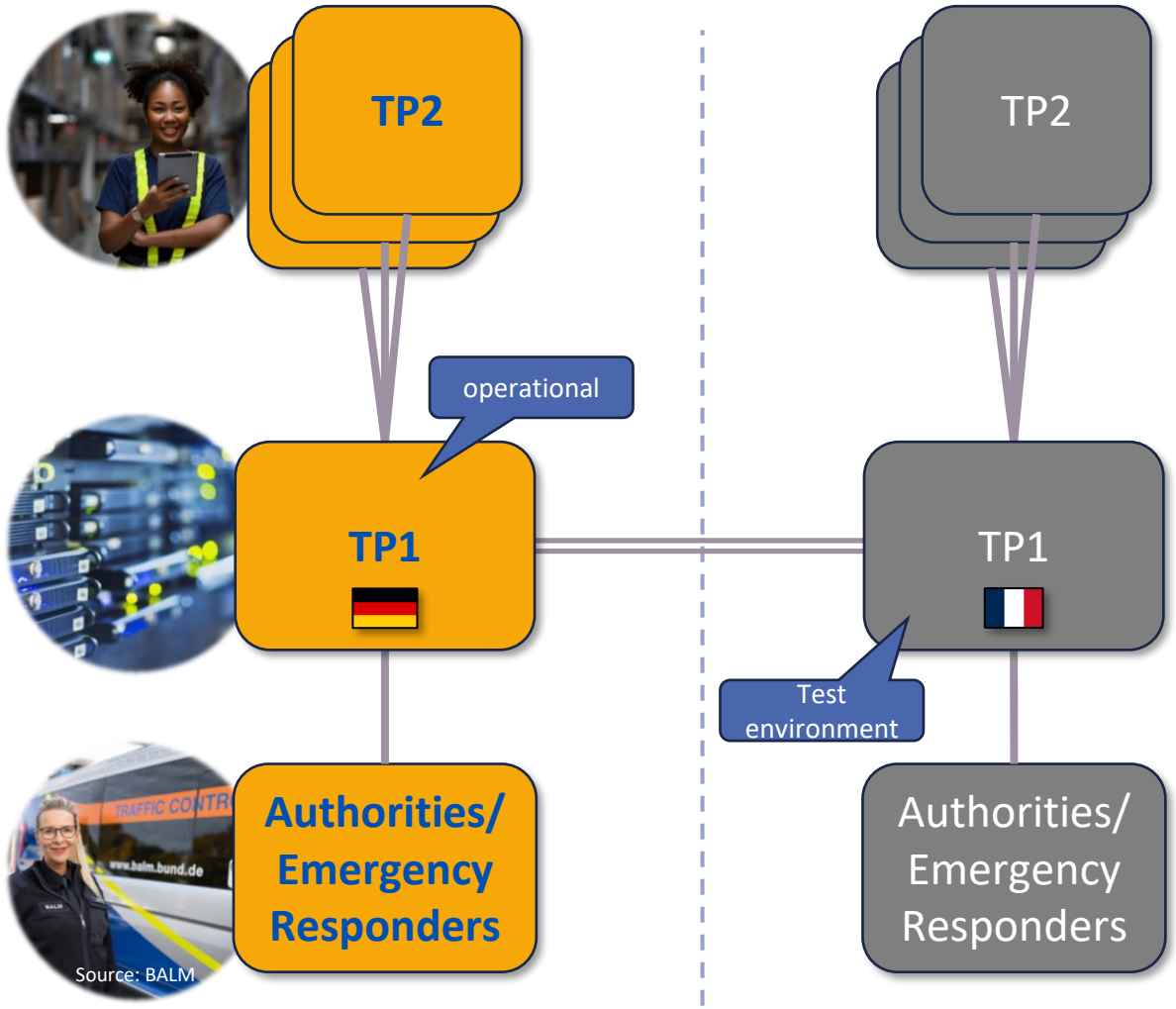
GBK Trusted Partner offers three modules for this purpose:

- Exclusively functions as TP1
- TP2 as a service (without data conversion) and functions as TP1
- TP2 as a service (with data conversion) and functions as TP1

Module 3
TP2 as service with data conversion



- **No regulations for authorities or emergency responders: Their internal behaviour and how they make use of the system is entirely up to them**
- **Existing public key infrastructure can be used**
- **Internet backbone**
- **Two level « trusted party » interface:**
  - Access provider named TP1
    - Provided by an official organisation (Authority or certified body)
    - Provides services for access control
    - Management of roles and rights
    - Registration of certificates
    - Stores service end-points, metadata (vehicle IDs…) and related attributes for each DG transport
    - Provides a Search Mechanism
  - Content provider named TP2
    - May be provided by a company in-house system (ERP, TMS, …) or a service provider
    - Stores transport related DG information (transport documents, certificates, dynamic data) and metadata (e.g. vehicle ID) for the time of transport



Dangerous Goods Data Exchange TP1-TP2 and Transition to eFTI

eFTI platform (private sector)

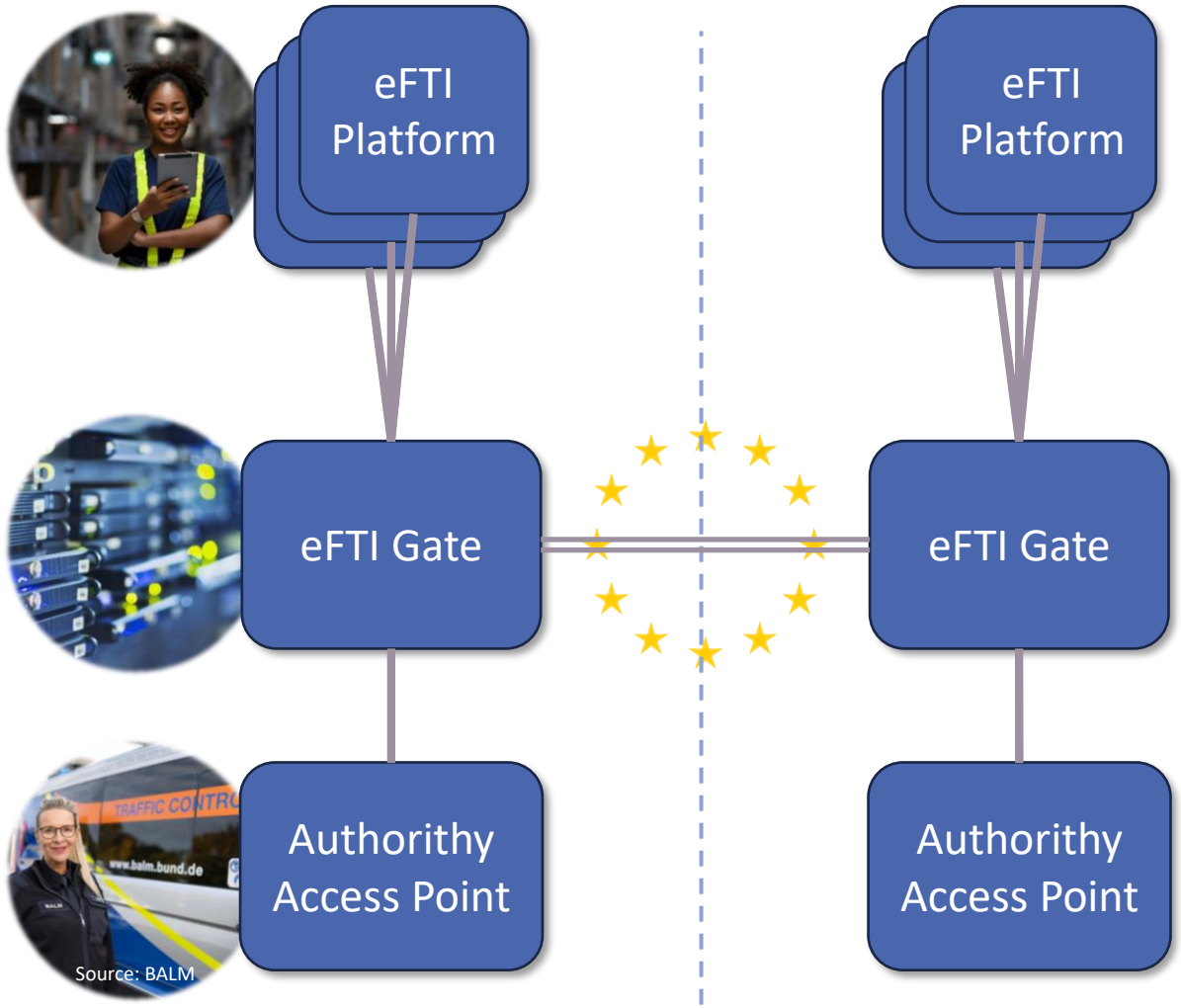
- Provision of eFTI data sets (not documents)
- Addressing digitally or via identifiers
- Certification mandatory

eFTI-Gate (public sector; per member state)

- Intermediaries eFTI platforms ↔ Competent authorities
- No storage of content data
- Linked with all other EU eFTI gates
  (eFTI-Gates provide a federated service)
- Identifier register
  (e.g. licence plate, vehicle identification, etc.)

AAP (authority access point; public sector)

- Identification, authentication and authorisation of access



The challenges

Making eFTI a reality

- Harmonised, interoperable, Europe-wide eFTI exchange environment
- System architecture in distributed sovereignty
- "Translation" of the legal texts into technical specifications
- Ambitious schedule
- Acceptance by economic operators
  - Requirements on eFTI Platforms
  - Mapping of familiar business ecosystems onto eFTI platforms and tributary systems
  - Implementation costs
  - Transition from systems in place to
  - Certification (low costs + in time)
  - Acceptance of data model

eFTI dangerous goods data - difference to eDGTI

- Different modelling paradigms
  - rights-based digital twin (ADR/RID/ADN) vs. trade-orientated model (eFTI)
- Semantic differences, e.g. sender and receiver
- Deep hierarchical structure with (conditional) dependencies to avoid errors vs. flat hierarchical structure for „easier“ implementation
- For the time being, eFTI only takes into account mandatory elements of ADR/RID/ADN

- ⇒ Planning for DE: Further use of eDGTI (tried and tested over many years) until the eFTI dangerous goods dataset is reliably applicable.

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