



Building the Digital Backbone: Reference Architecture and Implementations for Seamless Transport Data Exchange in the EU

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eFTI actors

Economic operators

- eFTI Platforms



Member states

- eFTI Gate



Authorities

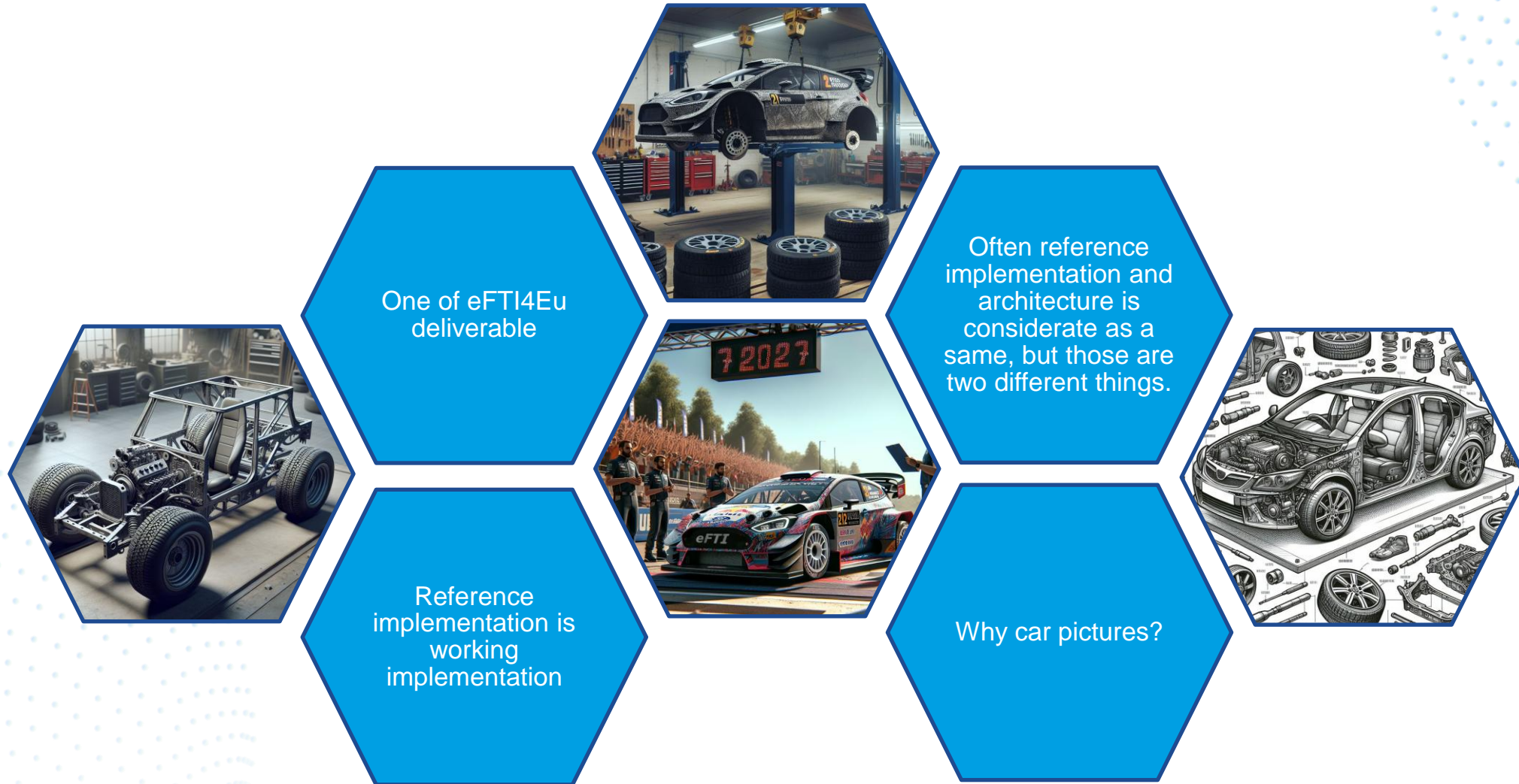
- eFTI Authority access point (AAP)



How to get started?

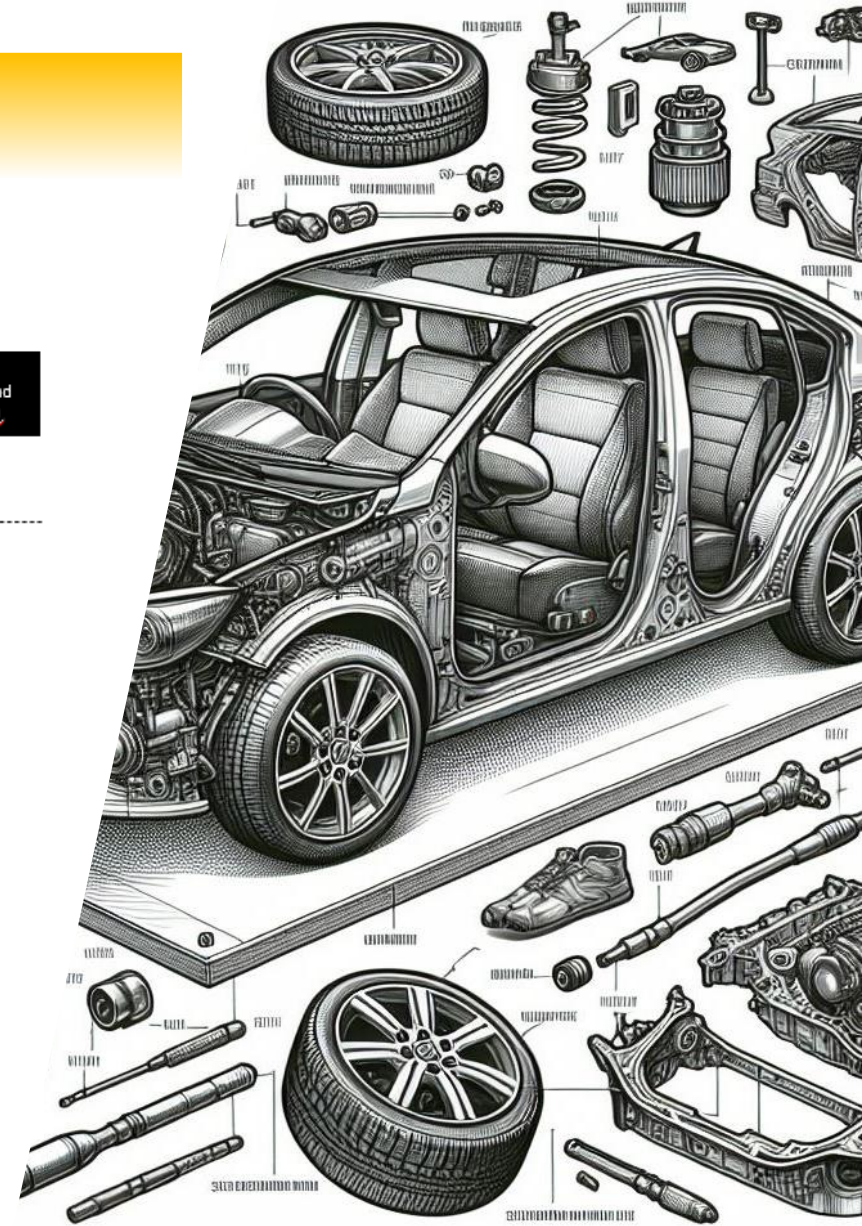
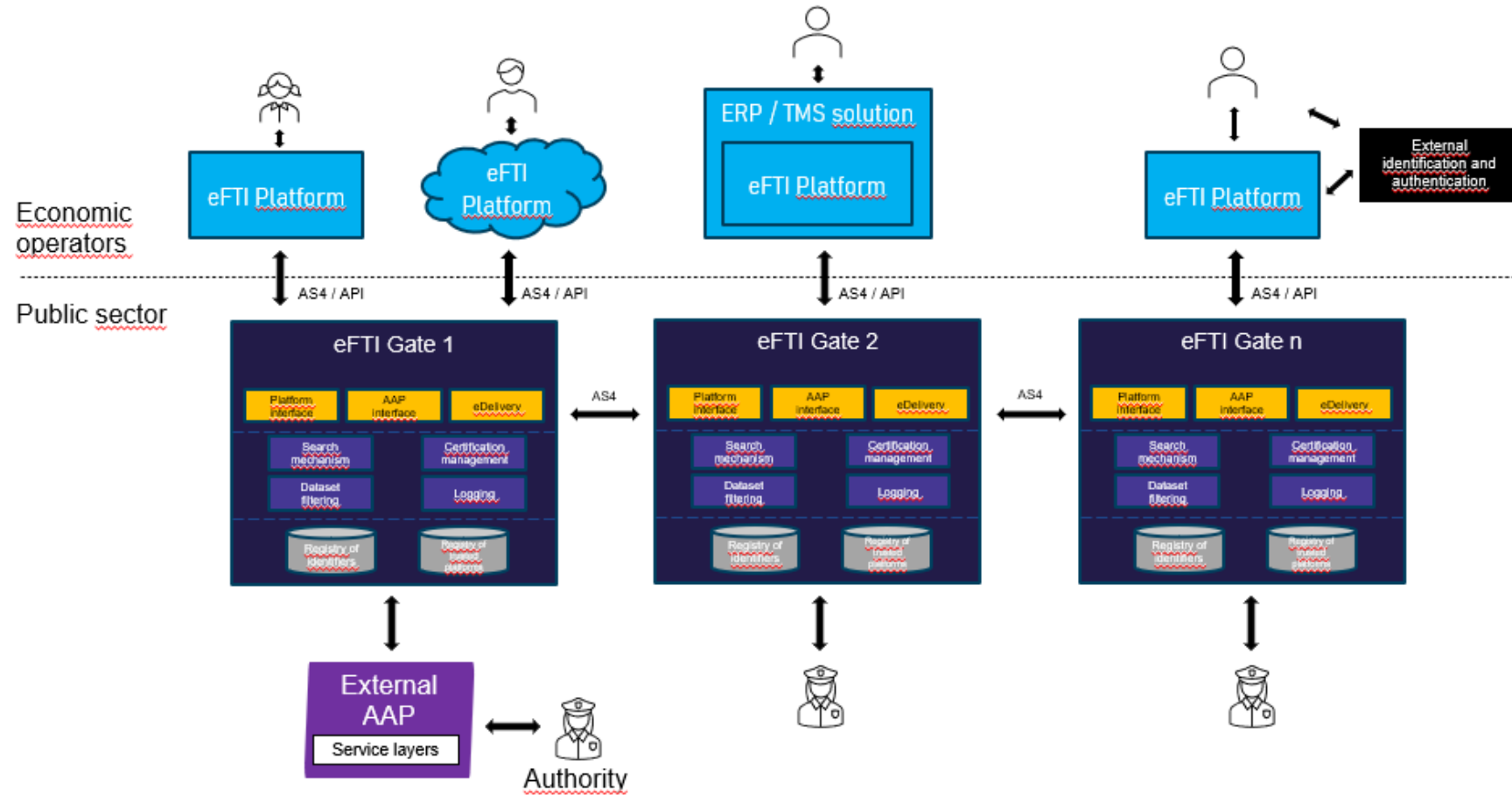


eFTI reference implementation?

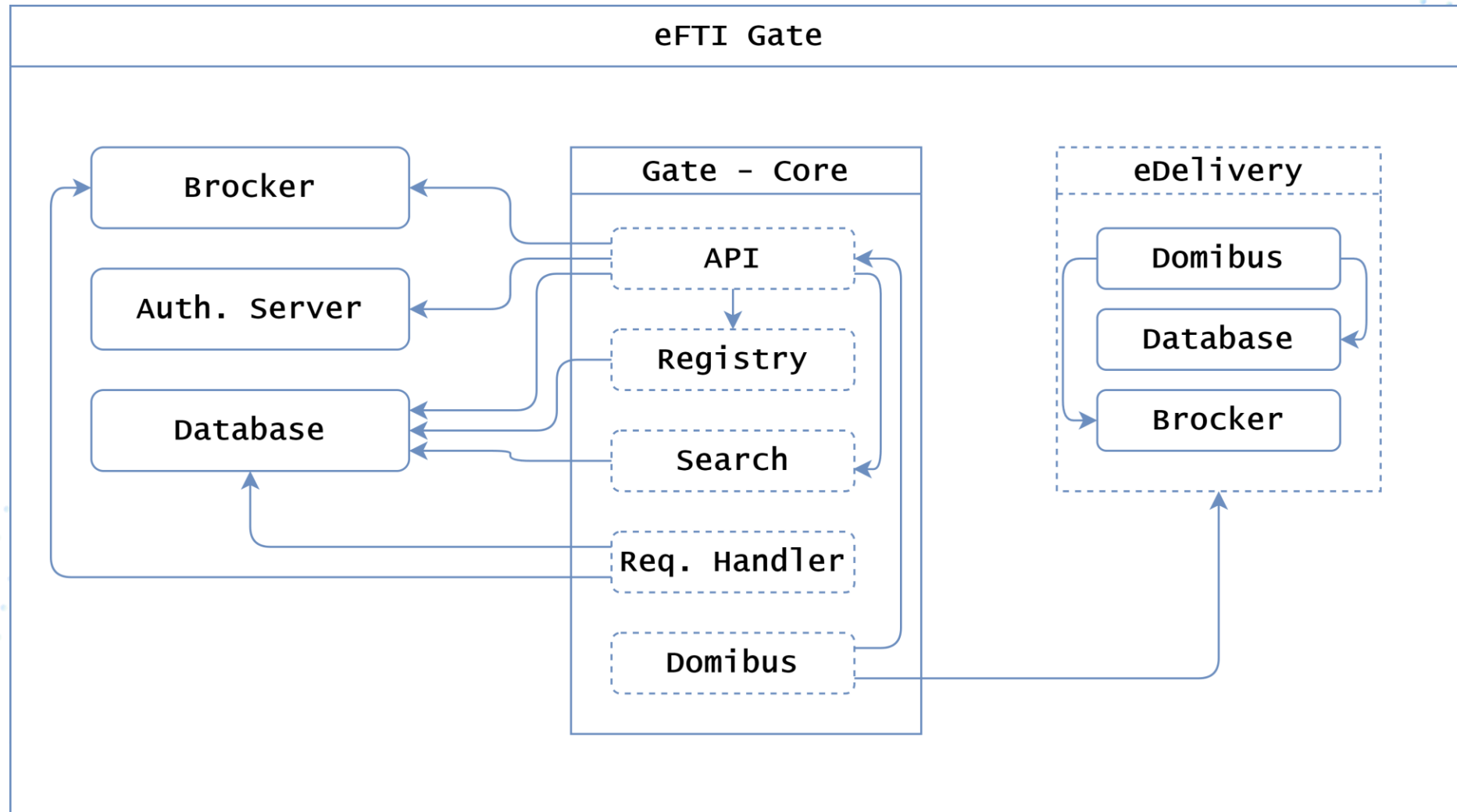


All car related pictures created by Microsoft CoPilot

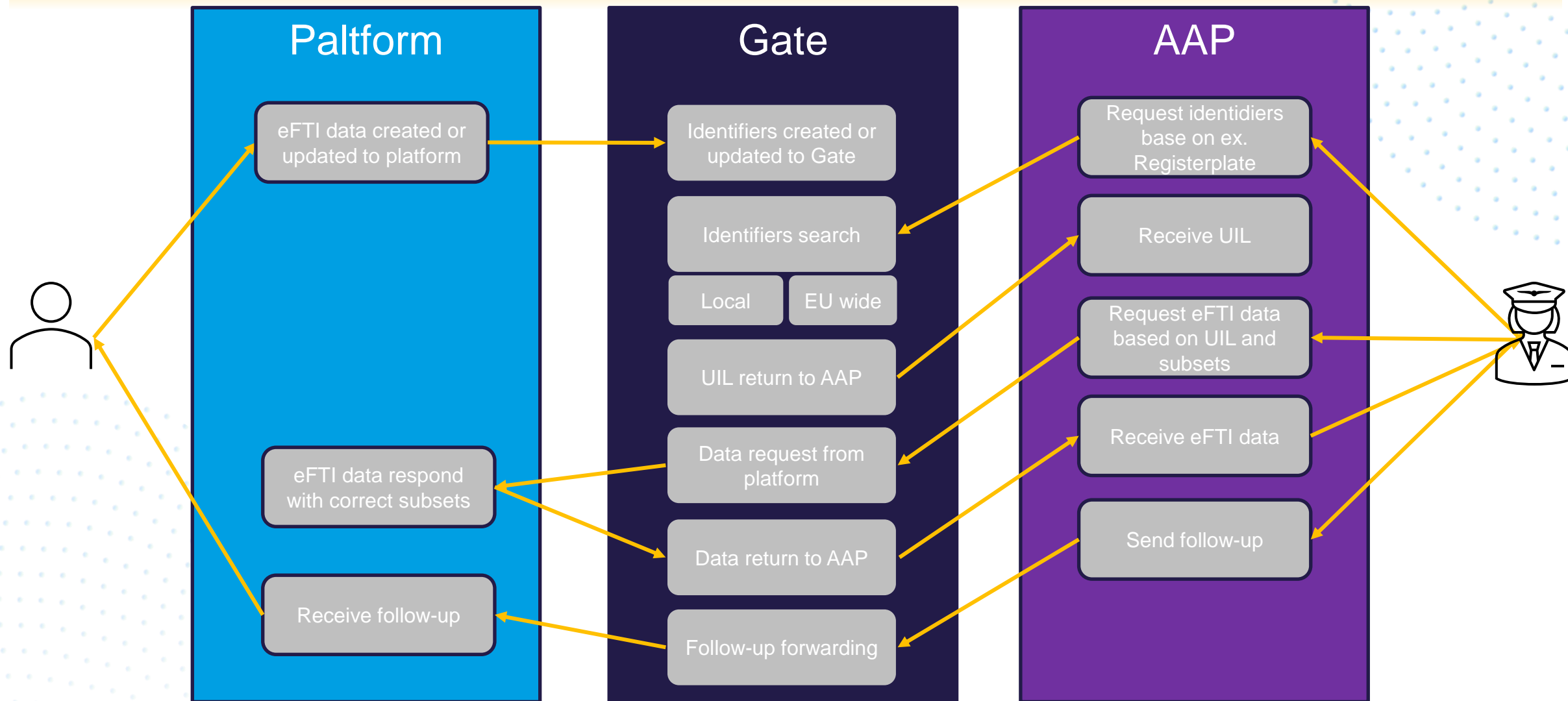
Reference architecture



Architecture Overview – eFTI Gate Components



Simplified data flow

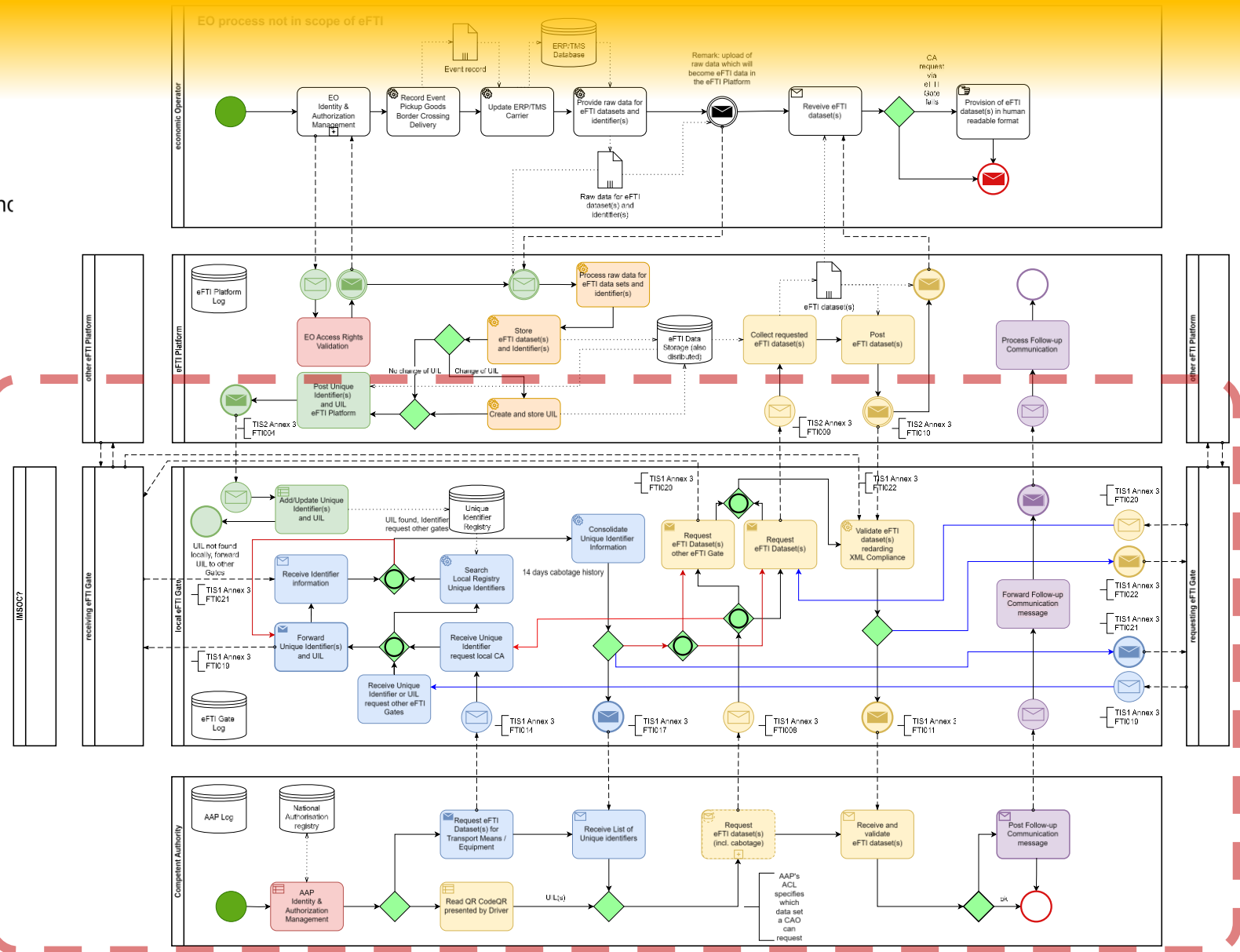


BPMN

Colour Key

- UC Identification, Authorisation, Authentication of EO and
- UC Request for Identifiers(s) and UIL(s)
- UC Request for eFTI Data sets via UIL
- UC Upload eFTI Data sets, Identifiers to eFTI Platform
- UC Upload of Identifiers and UIL(s) to eFTI Gate
- UC Follow-up communication

eFTI4EU
Project
Boundary



AAP in short

Member states can implement separate AAP or just provide interfaces to Authorities. Then member state need to provide access control, role management for authority.

If providing interfaces, authentication, roles and functions needs to be implemented in authority application side.

Logs need to be linked so that information flow is traceable. No need to share authority person identity



eDelivery is integration method that uses AS4 XML messages for communication

eDelivery enables secure , reliable and trusted exchange of digital data and documents

To clarify:

- eDelivery ≠ Domibus
- eDelivery ≠ Peppol
- eDelivery ≠ Harmony
- eDelivery ≠ eMSW (Maritime Single Window)

Identifiers

Attribute	Data element	Data Type	Definition
transport movement mode code	eFTI581	Code	The code specifying the mode of transport, such as by air, sea, rail, road or inland waterway, for the main leg of transport of the movement of a consignment of goods.
used transport means identification number	eFTI618	Identifier	The identifier of the means of transport used in the primary leg of transportation of the carriage of the consignment of goods from one place to another.
[used transport means] registration country code	eFTI620	Code	The unique identifier for the registration country of the means of transport used in the primary leg of transportation of the carriage of the consignment of goods from one place to another.
transport equipment category code	eFTI378	Code	The code specifying the category for the used transport equipment, such as container or trailer.
transport equipment identification number	eFTI374	Text	The identification number of the used transport equipment for this consignment such as the <u>licence plate</u> .
transport equipment registration country code	eFTI578	Code	The unique identifier for the country of equipment registration.
[used transport equipment] sequence number	eFTI987	Numeric	The sequence number differentiating this piece of logistics transport equipment from others in a set of used transport equipment.
carried transport equipment identification number	eFTI448	Text	The identification associated to the carried transport equipment.
[carried transport equipment] sequence number	eFTI1000	Numeric	The sequence number differentiating this piece of logistics transport equipment from others in a set of carried transport equipment.
consignment carrier acceptance date	eFTI39	<u>DateTime</u>	The date when this consignment will be, or has been, accepted by the carrier.
consignment delivery event actual occurrence date	eFTI188	<u>DateTime</u>	The actual date of the delivery event for this consignment.

What about platforms?

Voluntary

Multiple implementation options

Create standard

Specifications are still open



eFTI platform alternatives

Option 1: Stand alone system



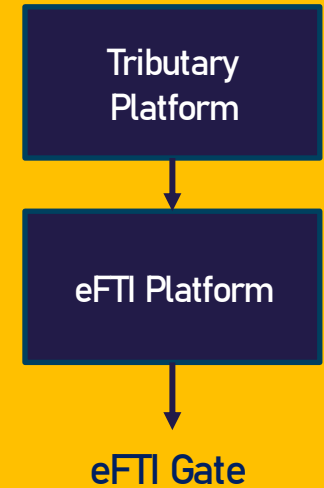
Option 2: Third party service ex. SaaS service



Option 3: Part of TMS / ERP solution



Option 4: Use of tributary



Reference implementation

Reference implementation is:

- one of our (eFTI4EU) deliverables
- following the latest version of regulation
- open source
- functional implementation with shared code

Reference implementation is not:

- a version which contains additional modifications or changes proposed by the project
- ready for production use
- a national implementation

In order to drive it, you need to:

- select wheels (running platform)
- driver (who will do implement it to you)
- team (who will maintain it)
- drive settings (adapt it to follow your national requirements)



Reference implementation

```
24 public class IdentifiersService {
28     private final IdentifiersRepository repository;
29     private final IdentifiersMapper mapper;
30     private final AuditRegistryLogService logService;
31     private final SerializeUtils serializeUtils;
32
33     @Value("${gate.owner}")
34     private String gateOwner;
35     @Value("${gate.country}")
36     private String gateCountry;
37
38     public void createOrUpdate(final SaveIdentifiersRequestWrapper identifiersDto) {
39         final String bodyBase64 = serializeUtils.mapObjectToBase64String(identifiersDto);
40         final SaveIdentifiersRequest identifiers = identifiersDto.getSaveIdentifiersRequest();
41
42         final Optional<Consignment> entityOptional = repository.findByUil(gateOwner,
43             identifiers.getDatasetId(), identifiersDto.getPlatformId());
44
45         Consignment consignment = mapper.dtoToEntity(identifiers);
46         consignment.setGateId(gateOwner);
47         consignment.setPlatformId(identifiersDto.getPlatformId());
48         consignment.setDatasetId(identifiers.getDatasetId());
49
50         if (entityOptional.isPresent()) {
51             consignment.setId(entityOptional.get().getId());
52             log.info("updating Consignment for uuid {}", consignment.getId());
53         } else {
54             log.info("creating new entry for dataset id {}", identifiers.getDatasetId());
55         }
56         this.save(consignment);
57         logService.log(identifiersDto, gateOwner, gateCountry, bodyBase64, FTI_004);
58     }
```

Reference Implementation current version

- **Rel 0.5 – December 2024**
 - eDelivery Gate to Gate (PoC)
 - Search + Identifiers
 - -> interfaces
 - Application log (initial)
 - Registry of identifiers
 - Interface to AAP
 - CA application mockup
 - Documentation
 - General guide (D2.2 + Github)
 - Github technical documentation
 - Open source code – Github



Reference Implementation Roadmap

- **Rel 0.9 – December 2025**
 - eDelivery Gate to platform
 - REST API Gate to platform
 - Platform certification & authentication
 - CA notification interface
 - Platform Mockup with eDelivery
 - Documentation
 - Updated

Select the route you want to take:

How you do implementation?

- Do everything by yourself
- Use reference implementation
- Buy it from another country
- Create a coalition

In any case at least learn what we have made in eFTI4Eu project.

<https://github.com/EFTI4EU/reference-implementation>

Also interface descriptions and eDelivery settings are available over here.





Thanks!



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www.efti4eu.eu



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