Mobility Data Space Event

19 MAY 2022

gaia-x

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SAVE THE DATE

Chapter 2: Breakout / Panel sessions

#1 Urban mobility

Moderators: Maximilian Staebler & Simon Odrowski
DLR Institute for AI Safety & Security

Agenda

14:15 – 14:20	Introduction | Maximilian Stäbler
14:20 – 14:35	**From IoT to the Economy of Things – Self Sovereign Identity & Decentralized Data Spaces** | *Peter Busch, Robert Bosch Group: Technical Strategy for Mobility* *Matthias Buchhorn, Data Space Architect EDC / IDSA / DSBA / GAIA-X (Hub Germany)*
14:35 – 14:45	**Gaia-X – Mobility Data Spaces and Citizen Data sharing** | *Paul Theyskens, MyData Brussels Hub, IMEC and MaaS Alliance Working Group Technology & Standard Leader*
14:45 – 14:55	Q&A
14:55 – 15:00	Wrap-up | Maximilian Stäbler

From IoT to the Economy of Things

Self Sovereign Identity & Decentralized Data Spaces

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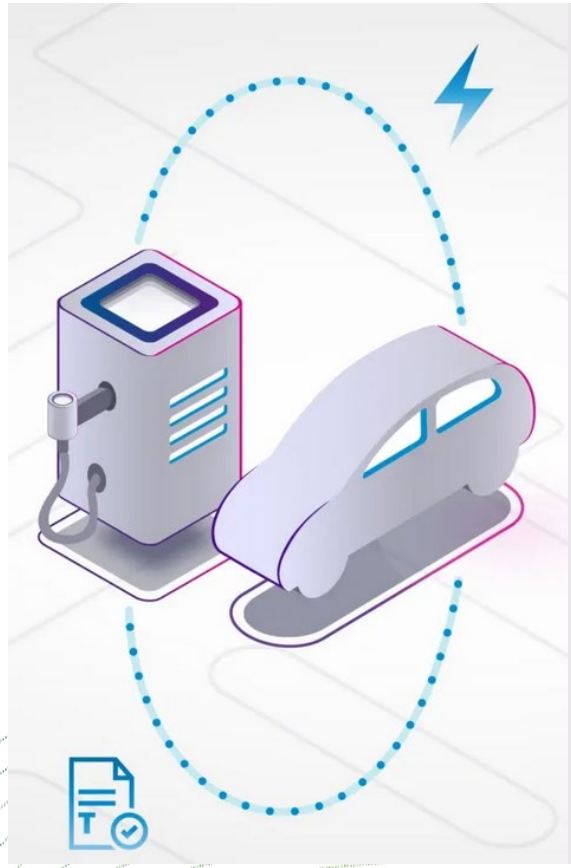
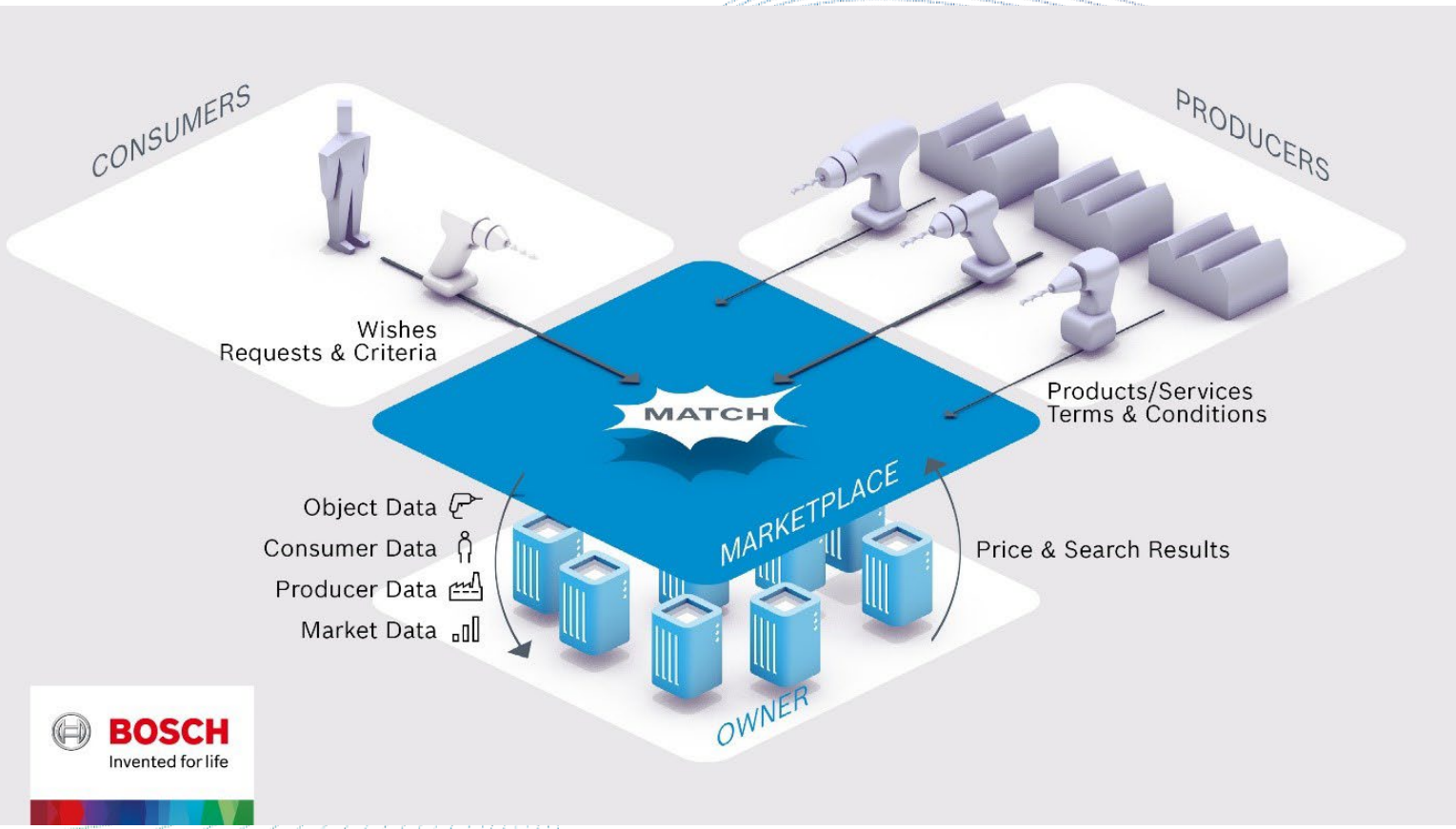
Peter Busch, Product Owner DLT Mobility Bosch
Matthias Buchhorn-Roth, Dataspace Architect, Microsoft

From IoT to the Economy of Things

An EoT ecosystem to solve Trust and Market needs





A common platform for an **ecosystem of service providers and apps** with positive impact on society and a **fertile ground for innovation,** …
… as an **alternative to a centralized platform** to enable more opportunities **without lock-in** in a **coopetition** mode

Data Sovereignty by SSI*

Use Cases for Decentralized Identities

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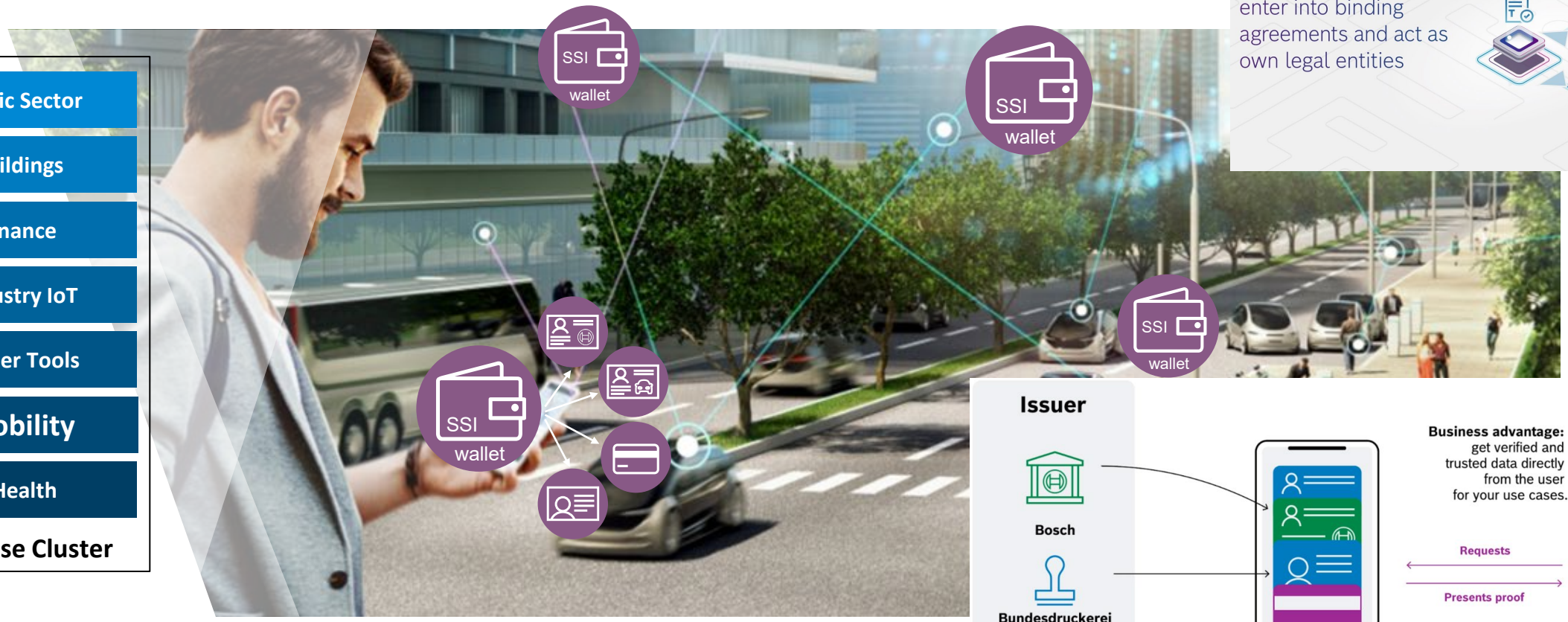
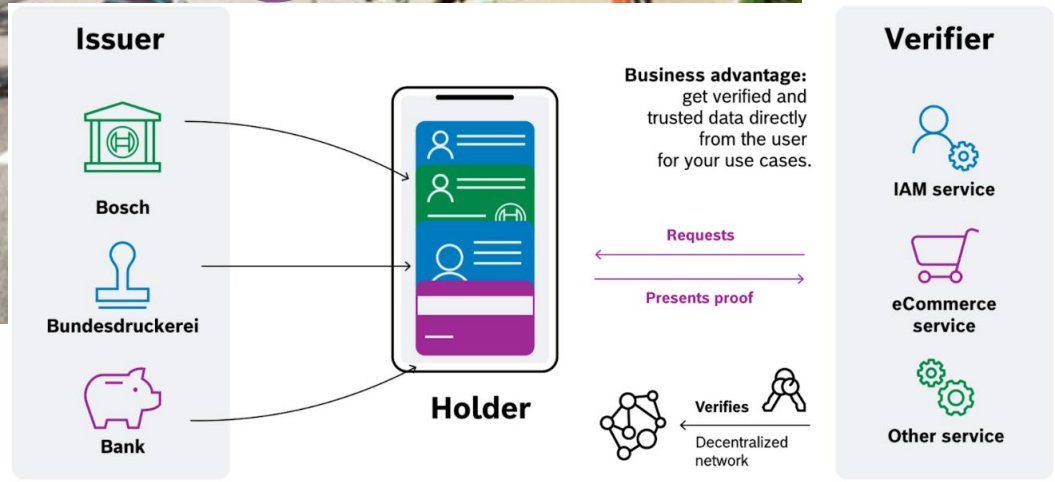
Public Sector
Buildings
Finance
Industry IoT
Power Tools
Mobility
eHealth

Use Case Cluster

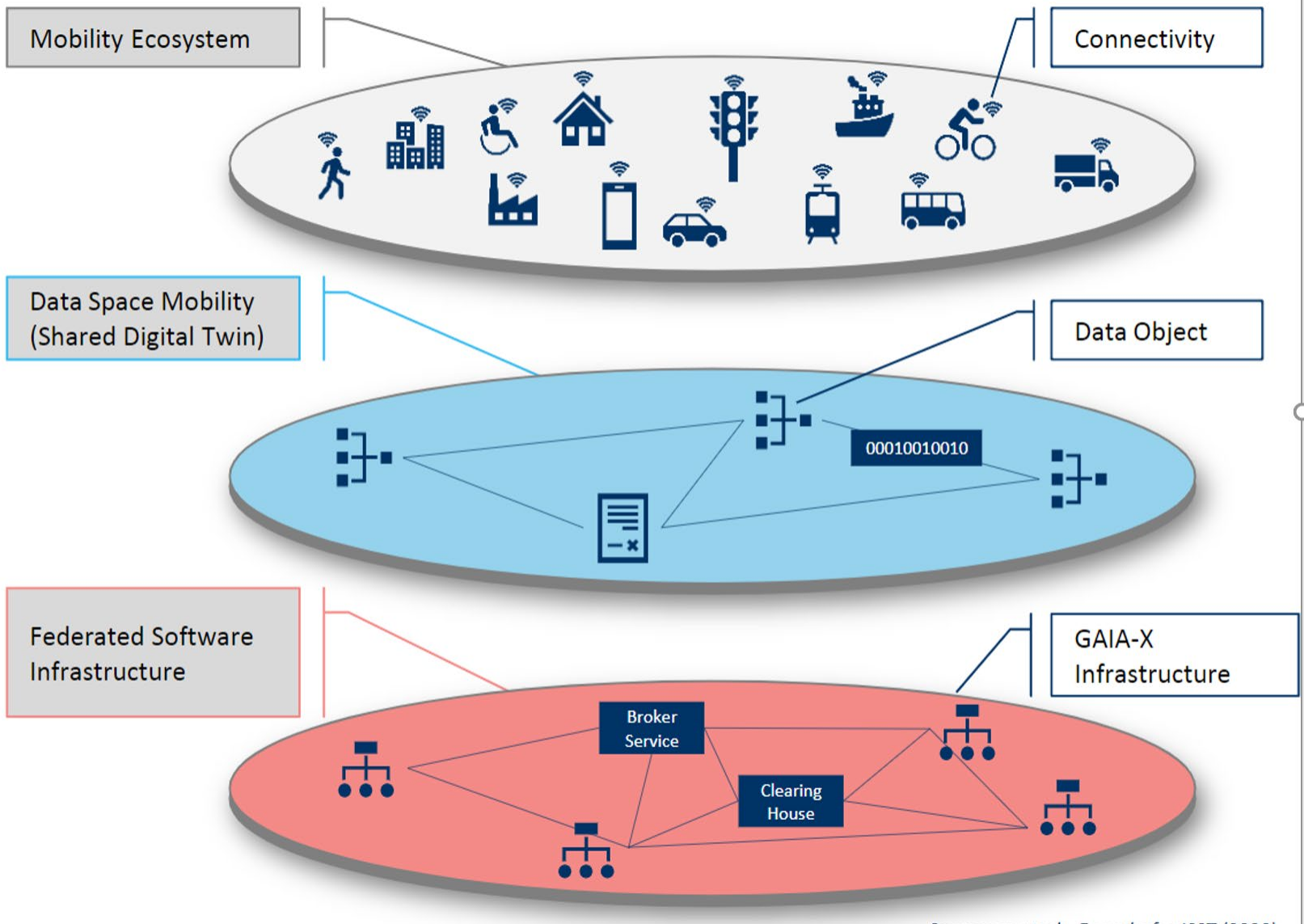


Economic device –
autonomous IoT devices enter into binding agreements and act as own legal entities



*SSI: Self Sovereign Identity

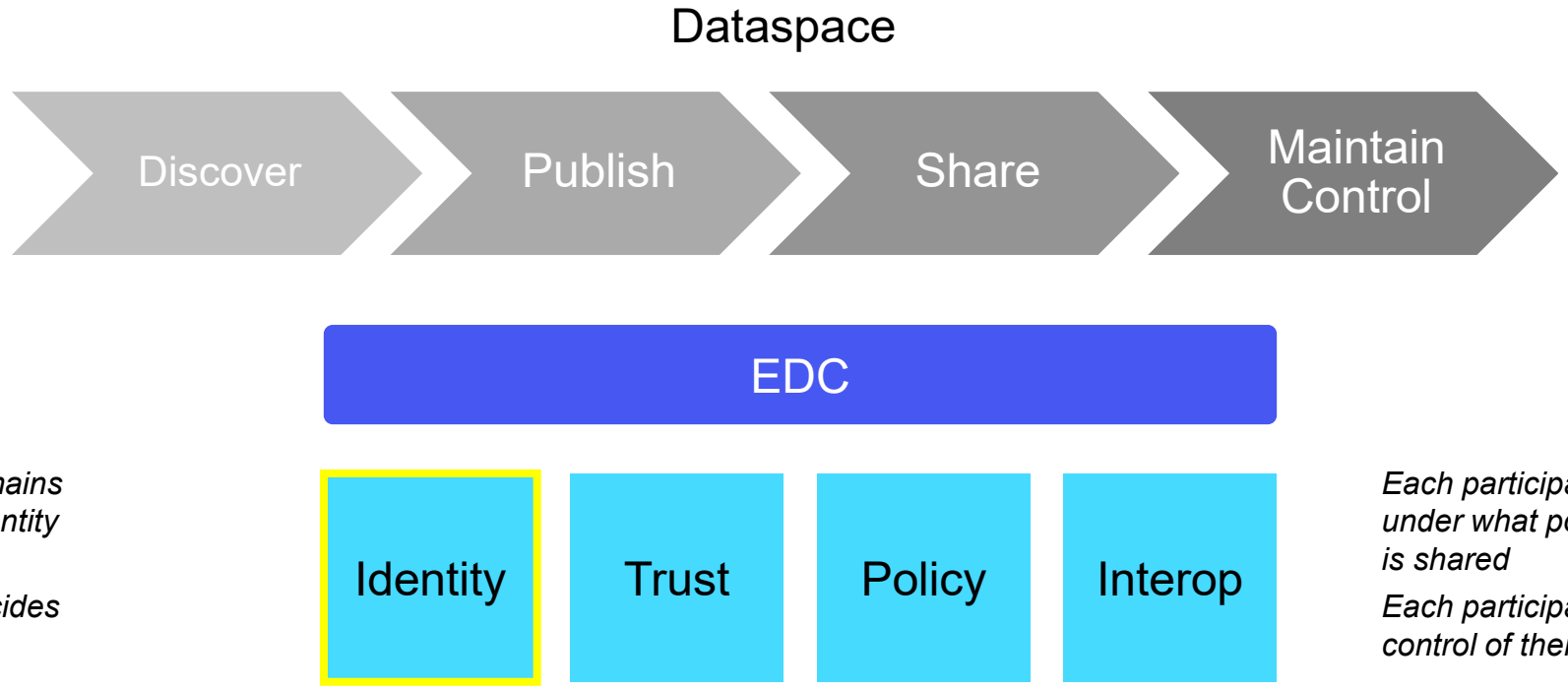
From IoT to Economy of things



Source: acatech, Fraunhofer ISST (2020)

What is a Dataspace?

- A dataspace is a way for organizations to securely share data with other participants.
- Dataspaces are built on *identity*, *trust*, *policy*, and *interoperability*
- Dataspaces enable data cooperation in a multi-cloud federation



https://projects.eclipse.org/projects/technology.dataspaceconnector

https://github.com/eclipse-dataspaceconnector/DataSpaceConnector

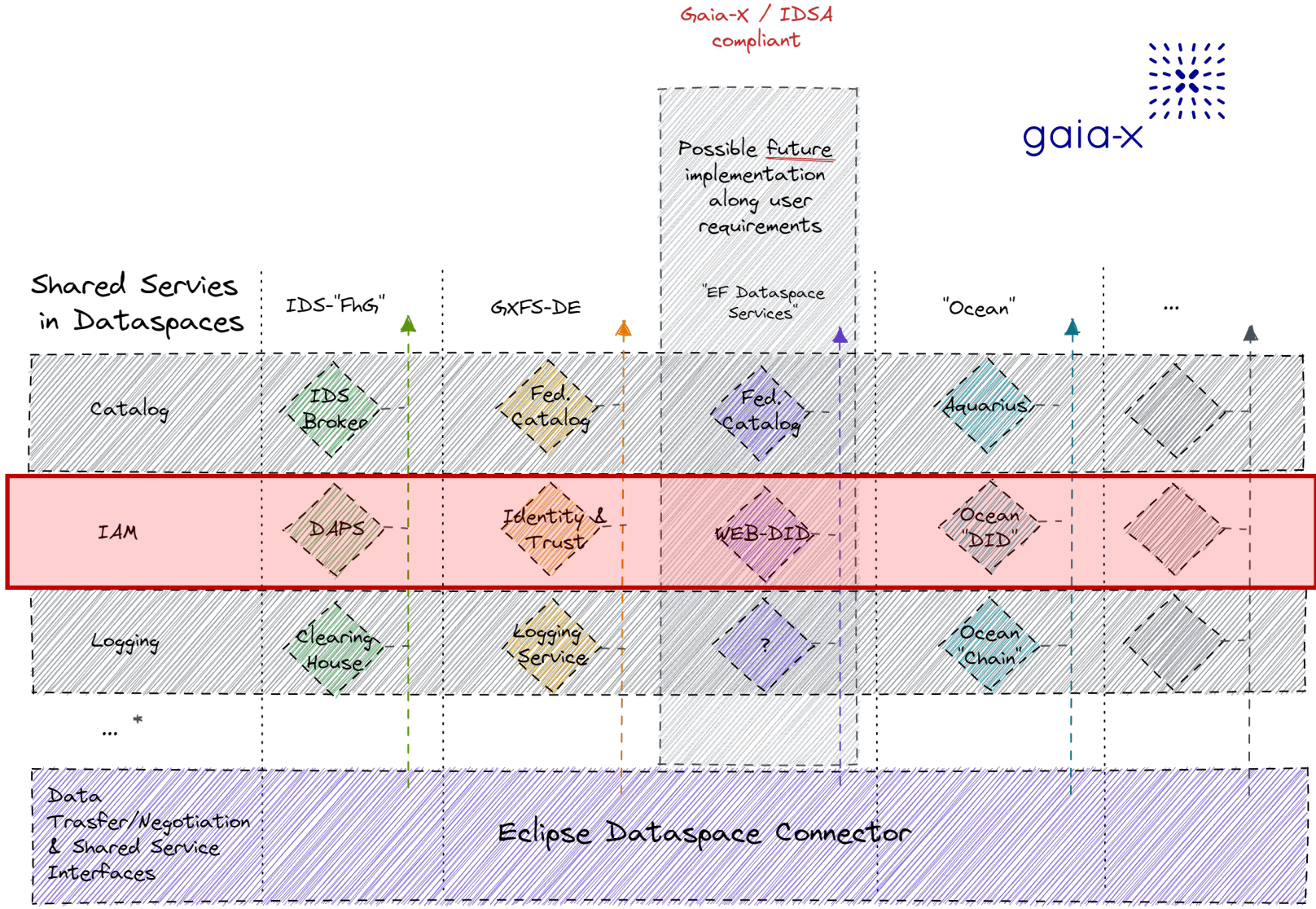
Eclipse Dataspace Connector (EDC)

A reference architecture for gaia-x compliant federation services of data transfer and compliance

- Reference Implementation of IDSA RAM 4.0 and GAIA-X architecture
- Open Source under Apache 2.0 on GitHub
- Free of intellectual property rights
- Used in GAIA-X projects Catena-X, SafeFBDC
- Modular / Extendable Architecture
- Based on Java 11+

- EDC has a flexible, modular system
- Modules can be exchanged
- Custom modules can be created
- Existing modules can be extended
- Can be fully decentralized

  or partially centralized



Thank you!

Peter Busch, Product Owner DLT Mobility Bosch

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Gaia-X – Mobility Data Spaces and Citizen Data sharing

Paul Theyskens
MyData Brussels Hub, IMEC and MaaS Alliance Working Group
Technology & Standards Leader

Gaia-X - Mobility Data Spaces and Citizen Data sharing

Paul Theyskens

For fair, sustainable, and prosperous digital society through a human-centric approach to personal data

People get value from their data and set the agenda on how it is used

For **organisations**, the ethical use of data is always the most attractive option

mydata.org/declaration

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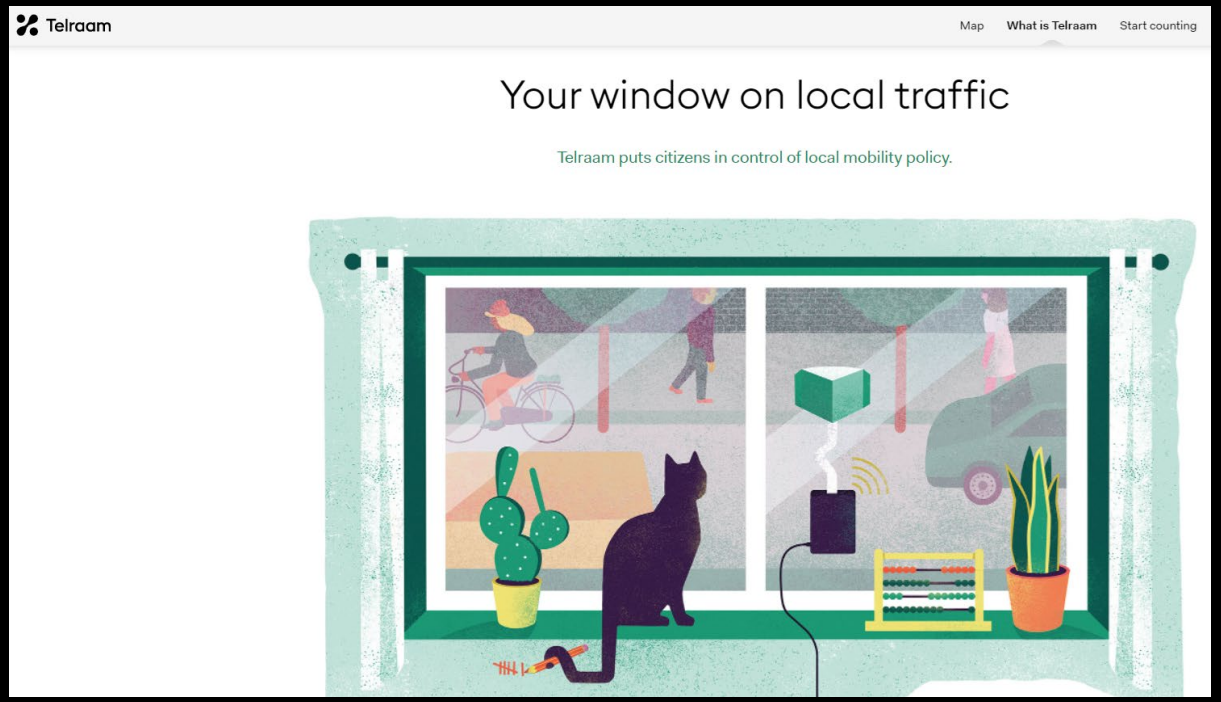
1. FORMAL → ACTIONABLE RIGHTS
2. DATA PROTECTION → EMPOWERMENT
3. CLOSED → OPEN ECOSYSTEMS

Citizens in Belgium

Citizens in Belgium



Privacy and consent first, with ethically sourced data

We prioritize transparency and consent in our products and communications. As a gig worker-owned cooperative, our incentives are serving our driver-members first and foremost.

Multi-platform and comprehensive

Understanding gig work and new mobility really requires being able to see it at the fleet level, across platforms, days, and geographic boundaries.

Quantitative meets qualitative

We pair granular quantitative analysis with a direct line to the gig workers who generate data, so when you see a pattern that you're interested in learning more about, you can talk directly to drivers and understand the motivations and behaviors behind that pattern.

Track change over time and in response to interventions

Our dataset is longitudinal, allowing you to see historical patterns, predict future trends, and measure impacts from policy or operational interventions.

Known sourcing

It's crucial to know where your information comes from. We don't sell information products built with ambiguous data sources, black box algorithms, or hidden biases. You'll know exactly what you're getting with

MyData
in the European Data Strategy

MyData is recognized as one of the movements that “promise significant benefits to individuals, including to their health and wellness, better personal finances, reduced environmental footprint, hassle-free access to public and private services and greater oversight and transparency over their personal data.”

A European strategy for data, 19 February 2020

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Guarantee that the human-centric thinking is embedded in the European data spaces as far as personal data is concerned

Develop further the interoperability of data intermediaries in the context of data spaces

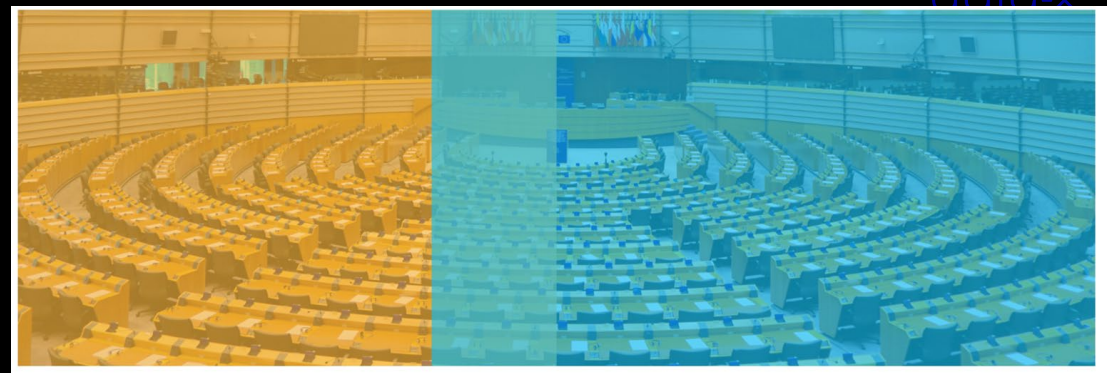
Data Governance Act – Data Intermediaries

Data Spaces

TEAM DATA SPACES

Teaming up for Data Spaces in Europe

Team Data Spaces commits support to the EU's plan to create European data spaces that realise the full potential of data sharing in the respect of European values.



28 OCT Blog

MYDATA AND THE EUROPEAN UNION'S LATEST DATA DEVELOPMENTS

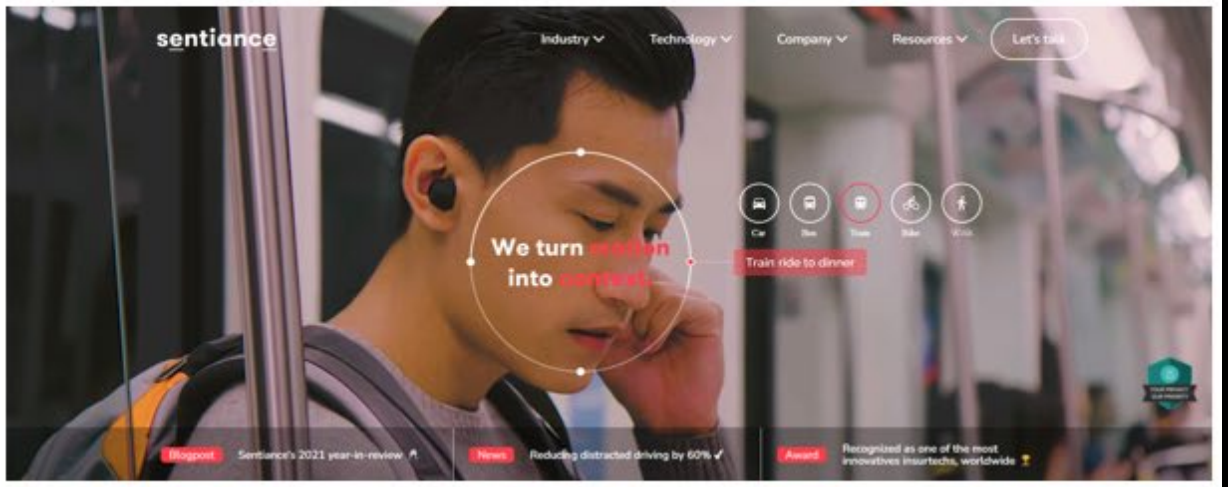
The European Union (EU) is a global regulatory powerhouse in the data rights space, with the General Data Protection Regulation (GDPR) being the most well known example. The upcoming Data Governance Act may be the next globally influential, data-related regulation benefiting citizens at home and abroad. In this blog, MyData Chair, Antti "Jogi" Poikola explains the EU Data Governance Act and how it supports achieving the goals in the MyData Declaration .

17 NOV Blog

22 COMPANIES AND ORGANISATIONS RECEIVE THE MYDATA OPERATOR 2021 AWARD

SOME USE CASES EXAMPLES

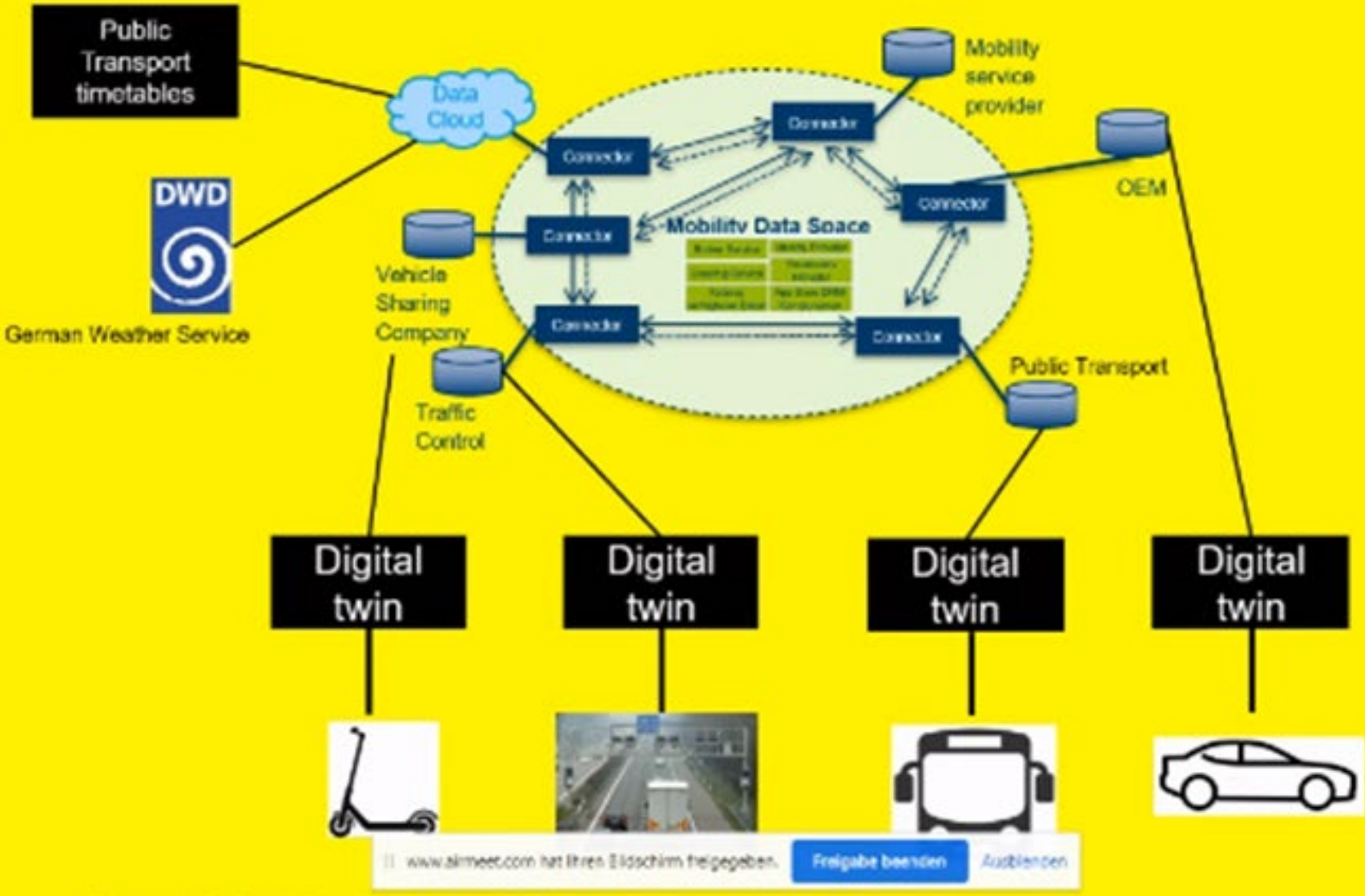
- **Pedestrian Flow**
- **Data** : telco footfall data , smartphone sensor data, mobility apps data, personal digital twin
- road suitability tracking, mobility mode switching prescription, inclusivity scoring, Hoppin Point/eHubs priority construction, safe route , fitness coach, eco mobility scoring and prescription



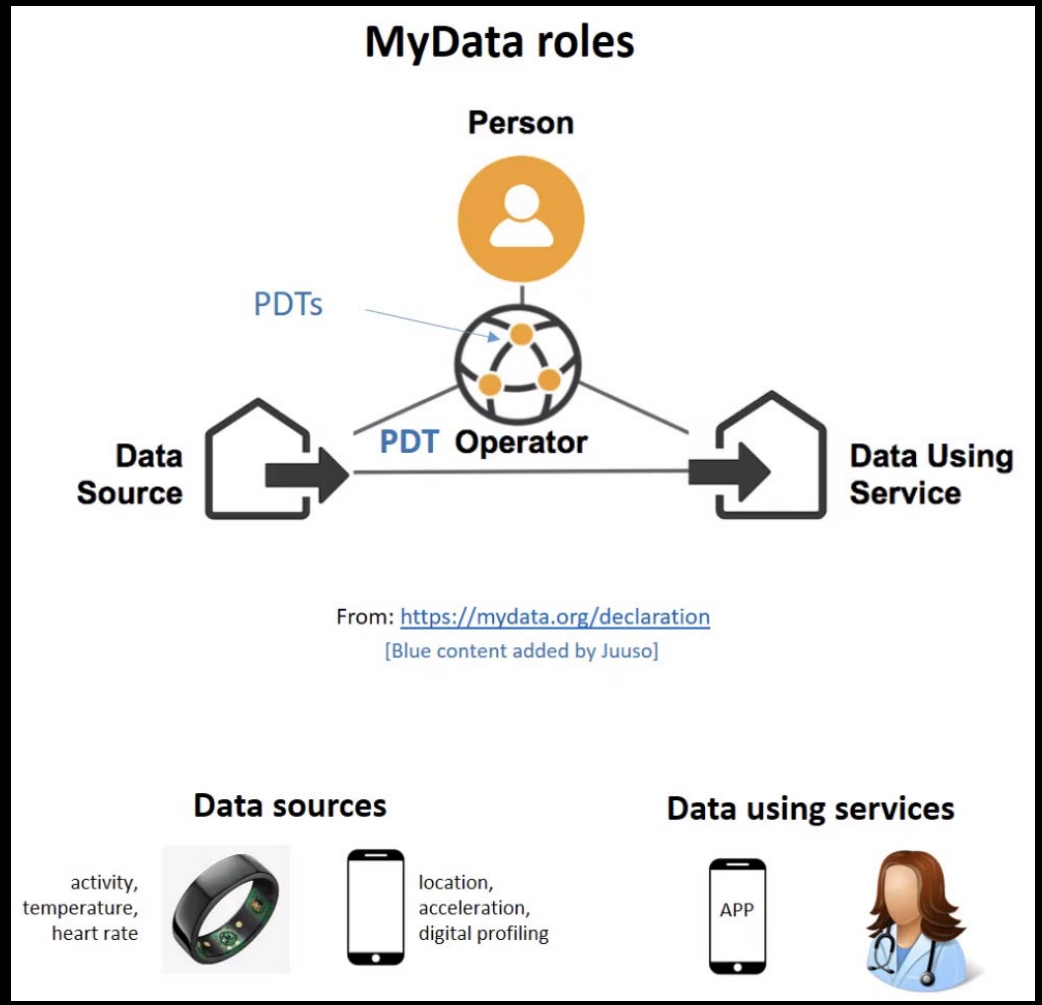
- **Bike Flow**
- **Data** : Streamr, Skipr, GBFS, Bike Data Project
- dynamic bikelanes, Bike infra priority setting, weather modeswitching prescriptions

Mobility as a Service

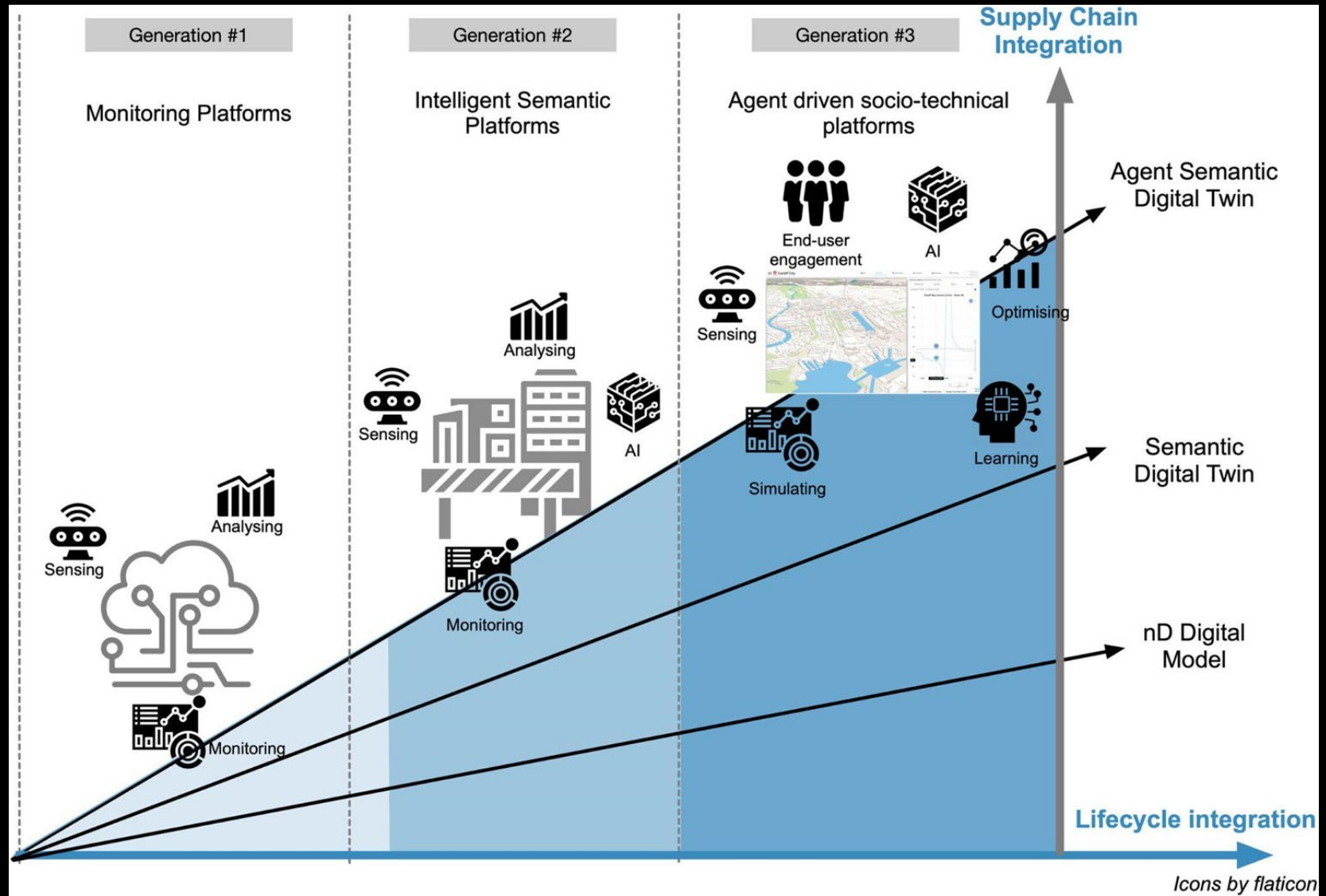
Making Data available



Personal DT operators



Evolution of DT



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Thanks
Questions?

Breakout Session « Urban Mobility »

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Wrap-Up

Thank you!

Maximilian Stäbler: maximilian.staebler@dlr.de
Simon Odrowski: simon.odrowski@dlr.de

Chapter 2: Breakout / Panel sessions

#2 Intercity mobility

Moderator: **Dominique Epardeau**
Chairperson of Gaia-X Mobility DSBC and Executive Member of the Mobility, Transport & Tourism Data Space EONA-X

Speaker: **Ghislain Delabie**
Fabrique des mobilités

Urban Mobility Data Space?

Building French MaaS ecosystem based on standards and European cooperation

Gaïa-X Mobility Data Space Event - 19th of May 2022

FABRIQUE des mobilités France

Agenda

1. French MaaS ecosystem
2. Standards for MaaS
3. Standards lifecycle analysis
4. Key components of standardisation and a Mobility Data Space
5. How success looks like

[Booster] French MaaS ecosystem

A roadmap powered by policy and technical guidelines

LOM (Law for mobility - 2019) has been pioneering European policy framework for MaaS

National ecosystem co-designing law + current roadmap + best-practices to scale up

Standards best suited to stakeholders

Strong involvement of stakeholders in **designing standards that serve the ecosystem**.

Building on what works EU-wide and contributing with new approaches

Building digital infrastructure for MaaS

Promising digital infrastructures have been identified and are nurtured.

They will be supported by **public-private funding to scale up once they demonstrated their potential real-life** (and with community support)

E.g: Local/national federation of mobility accounts and personal Data, POI/mapping assets, Mobility Data Hub, Gaïa-X, open gateway for MaaS integration

Investing in digital and decarbonized mobility

France 2030 strategy and financing should **actively support players and projects that implement the roadmap, use standards and digital infrastructures** for MaaS

=> Wait (a few weeks) and see

FAB

[Booster] Standards for MaaS

Standards best suited to stakeholders

Original developments to the EU ecosystem

A standard for User Management, SSO and GDPR-compliant Data-sharing in Mobility (S2 2022)

A popular standard for integrating ridesharing in MaaS (already 50 PTAs implementing it)

Contributing to EU momentum

CEN03 norm for PT booking API

TOMP-API for new mobility (bike/scooter/car sharing), with French extensions/contributions

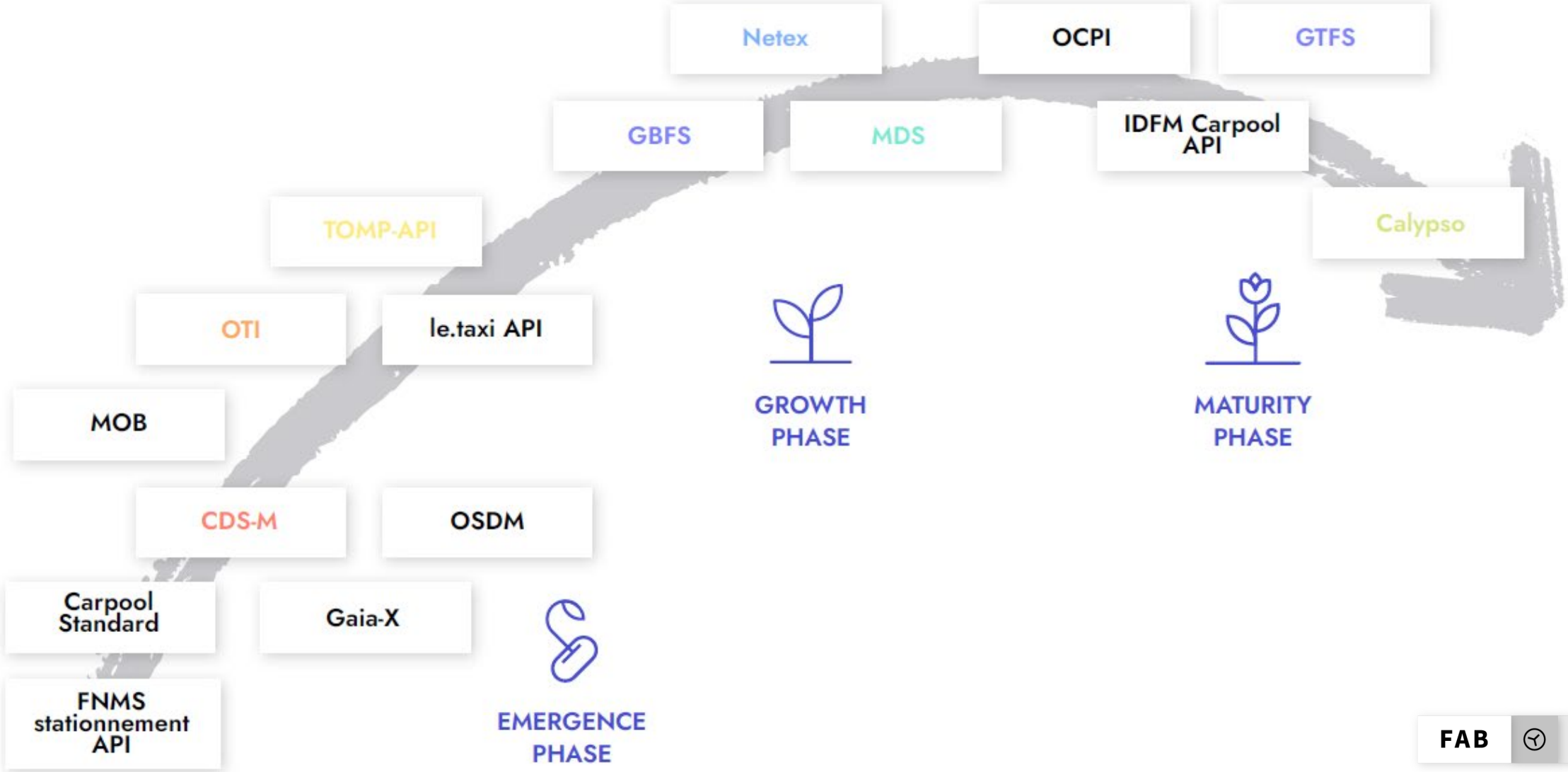
A foundation for MaaS: passenger information Data

EU standards when relevant (mainly Public Transport): Netex/Transmodel family

Open standards very popular, with low EU-support: GTFS, GBFS

FAB

[Benchmark] Standards lifecycle analysis



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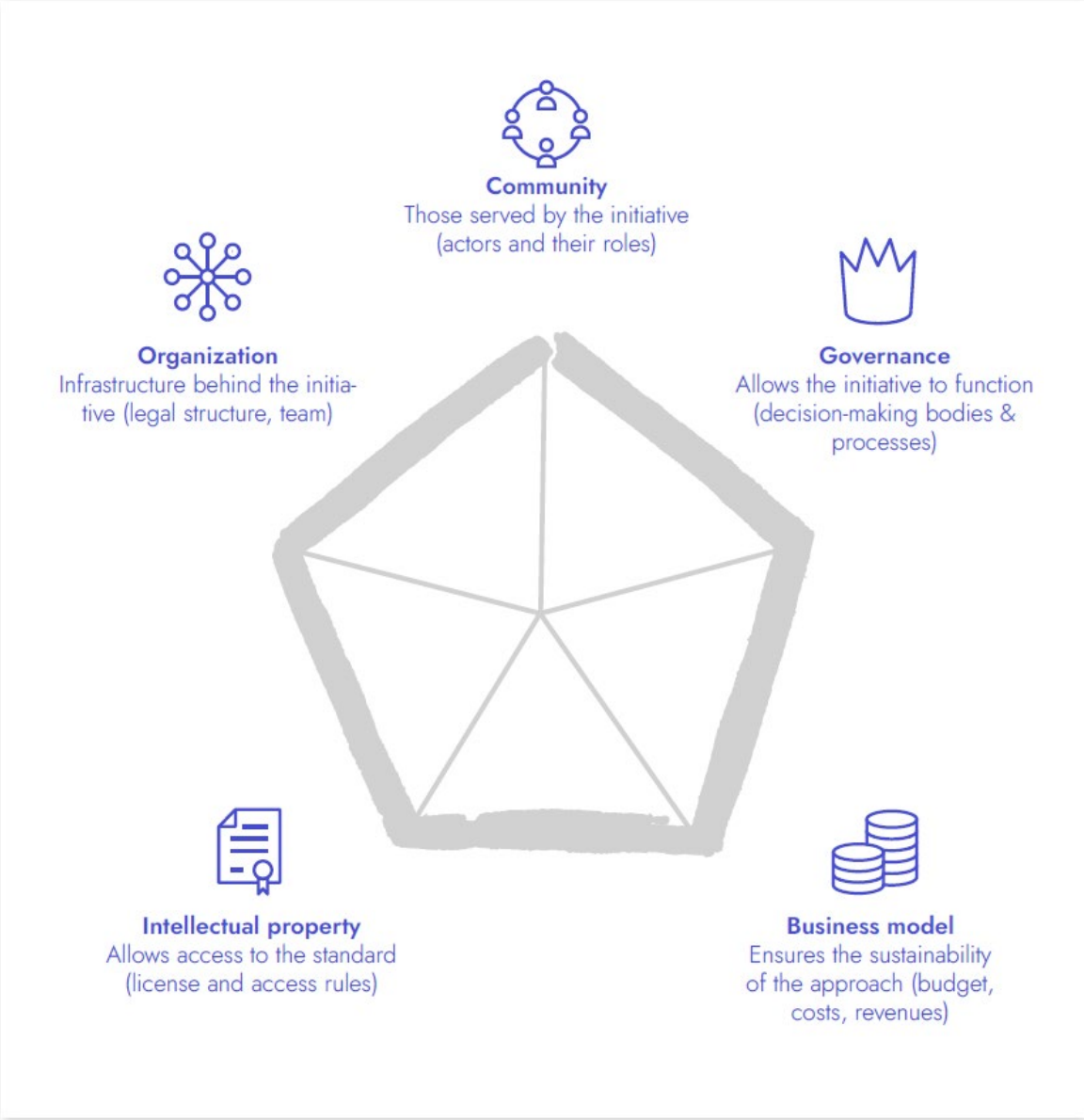
[Key components] Designing standards and a Mobility Data Space



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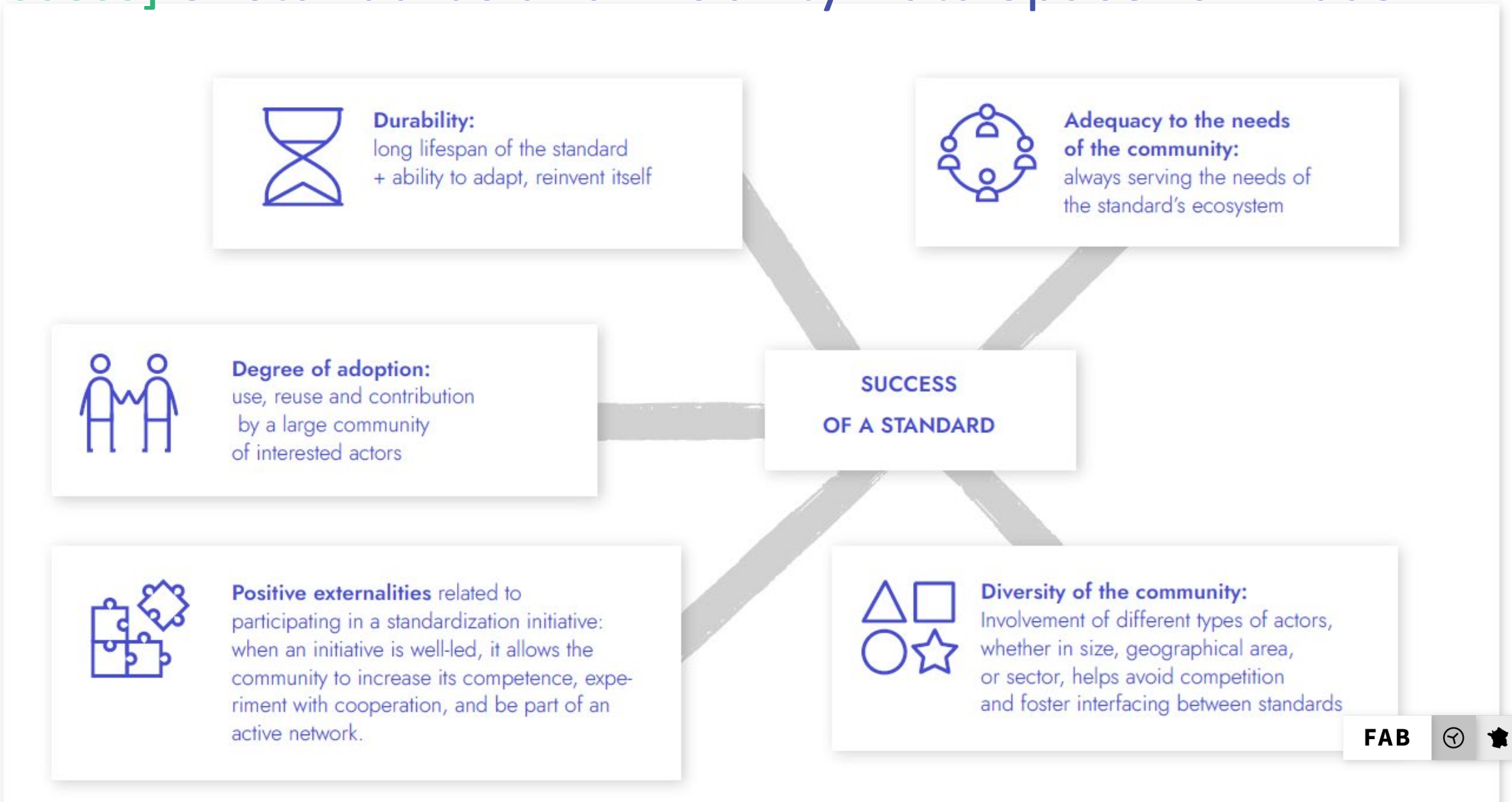
[Success] of standards and Mobility Data Space for MaaS



FAB

Merci - Thanks

Ghislain Delabie - ghislain@fabmob.io

Our report on MSDM standards & governance

CC BY FAB

Chapter 2: Breakout / Panel sessions

#3 Enabler Data Standards

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Moderators: Harmen van der Kooij and Jelle Hoedemaekers

Speaker: Michael Karl, Head of Safety-Critical Data Infrastructures - Institute for AI Safety & Security - DLR

Data

- One of the most **valuable** business aspects
- Data is primarily **created at the edge**
- Data as a **single entity** is not that useful

Next step
Interconnect Data Spaces

Data Ecosystems

- Enable **work across** organizational structures
- **Collaboration**
- Great concept for business segments with **large number of participants**

Flagship Projects
GAIA-X, CATENA-X

Data & Applications

- Data is **decentral** & **heterogeneous**
- Applications are **decentral**
- **Special requirements** when using highly decentralized and heterogeneous data

Conclusion
Standards leverage collaborative handling of data

Data is specific

- **Data is different** as the organization who gathers it
- **Bias**
- Related to **semantics**

Requirement
Have good data

Example: Artificial Intelligence (AI)

- New **paradigm**: no specific instruction, but (a lot of) examples
- **Correlation** vs. causality
- **Black-Box** (implementation based on data samples)

Requirement
Have good & representative data

Beyond Data (1/2)

- How to **harmonize** heterogeneous data?
- How to measure **quality** in distributed ecosystems?
- How to ensure **safety & security** in decentral scenarios?

Requirement
Make the life of data transparent

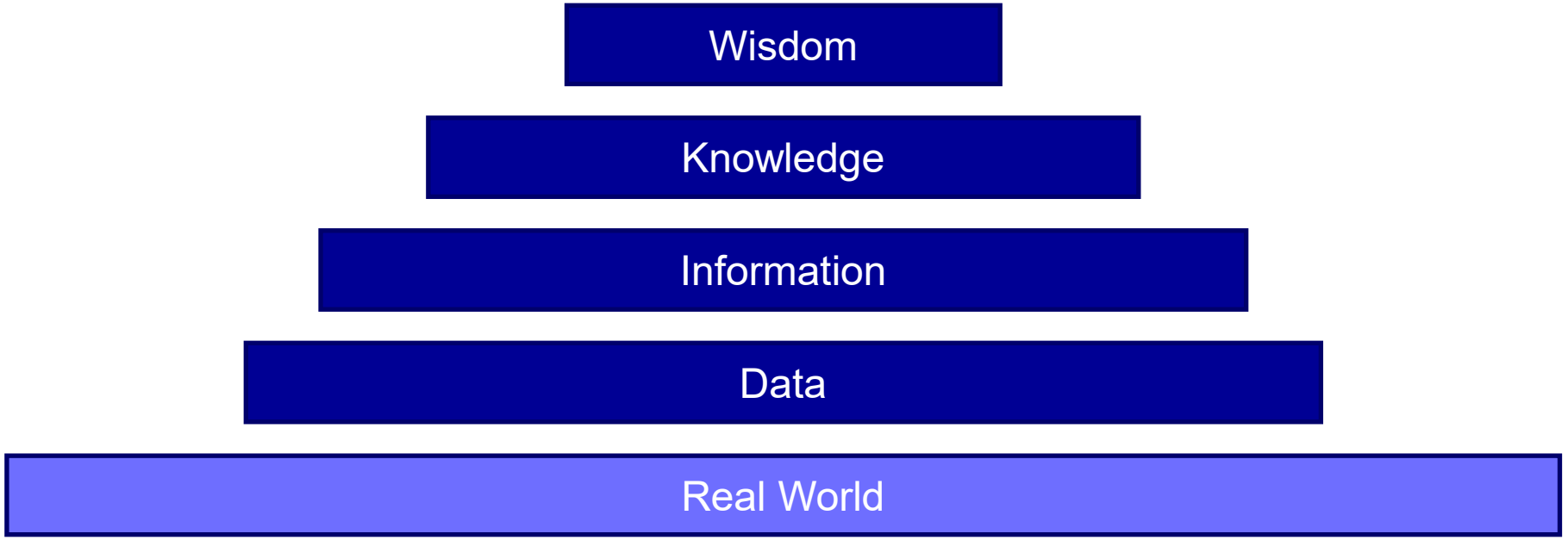
Beyond Data (2/2)

- Data **Provenance**
- Data **Taxonomy**
- Data **Ontologies**

Goal

Allow a deeper understanding of data

Holistic Goal



Better, safer, and more secure applications.

Thank you!

Michael Karl

michael.karl@dlr.de

Chapter 2: Breakout / Panel sessions

#4 Enabler AI

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Moderators: Harmen van der Kooij and Jelle Hoedemaekers

Speaker: Dr. Arne Raulf
Head of Department *Algorithms and Hybrid Solutions*, Institute for AI Safety

Institute for AI Safety & Security

Sankt Augustin and Ulm // www.dlr.de/ki

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Aeronautics | Space | Energy | Transport | Safety | Digitalisation

AI Engineering

Algorithms & Hybrid Solutions

Data & Infrastructures

Execution Environments & Innovative Computing Methods

Ethical, Legal & Social Aspects

Science | Industry | Society | Politics

AI@DLR

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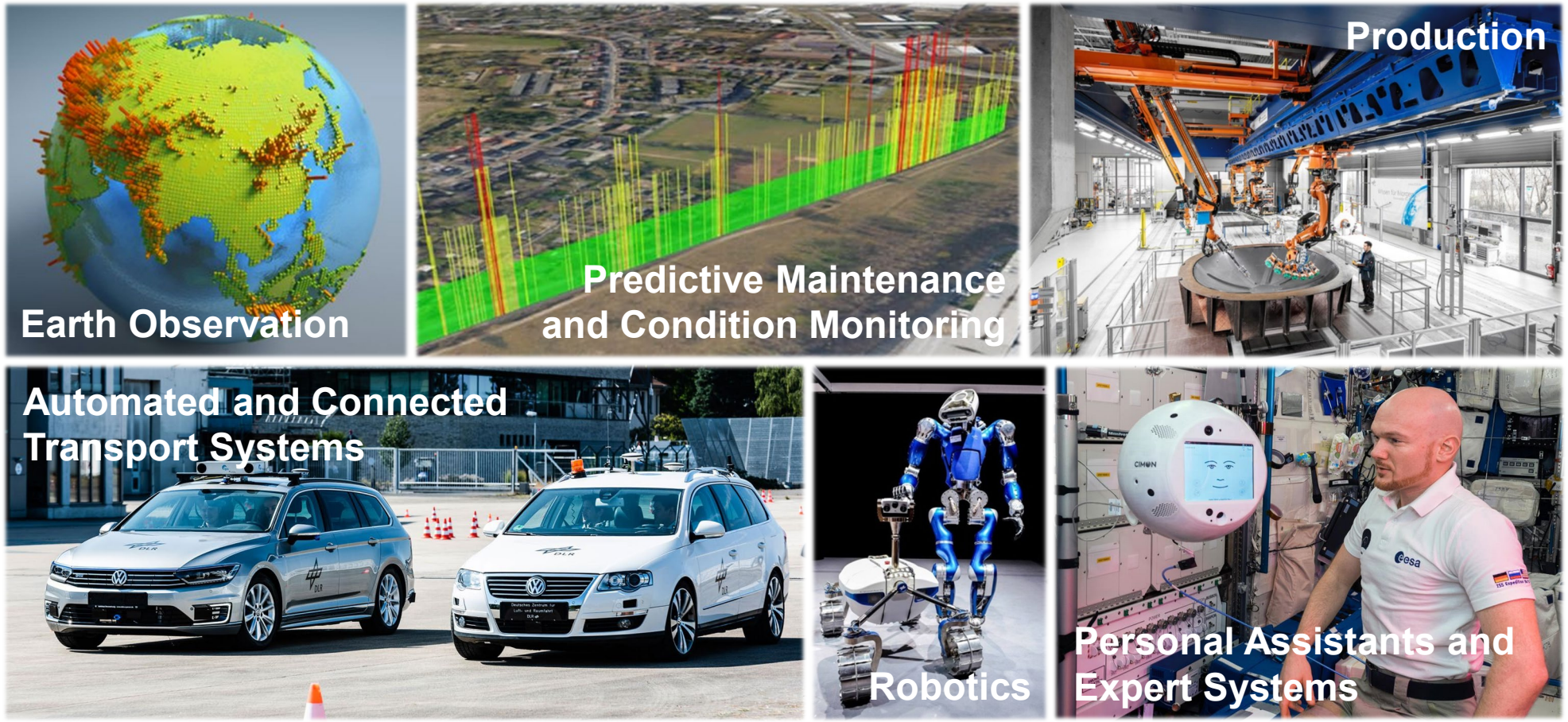

Fig.: DLR

AI@DLR

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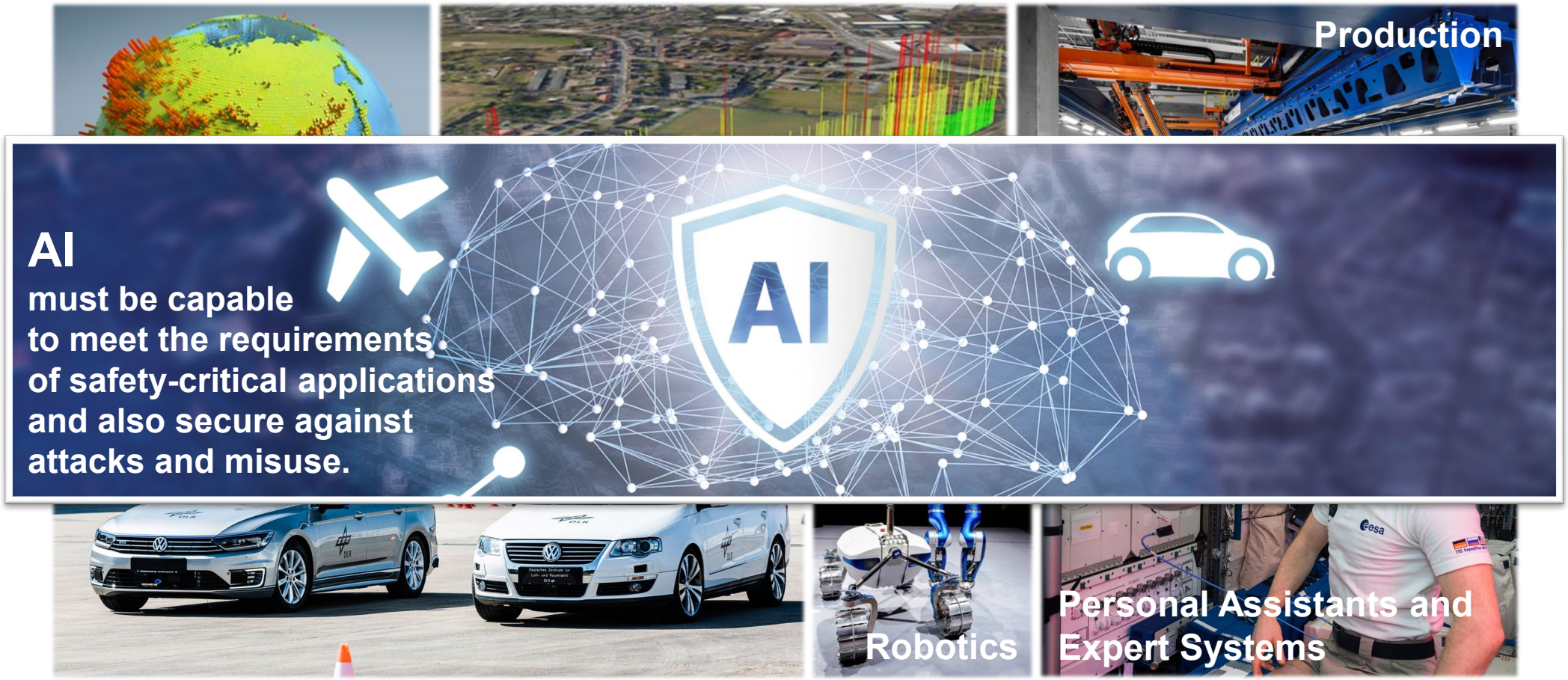

Fig.: DLR

AI as an important Enabler

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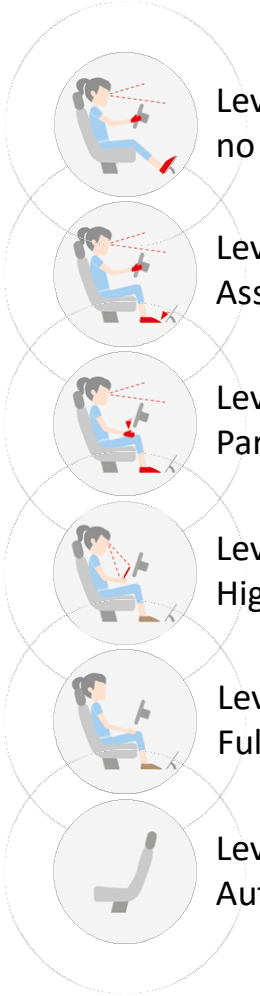
AI as an important Enabler

Automated and Connected Driving



Level 0
no Automation

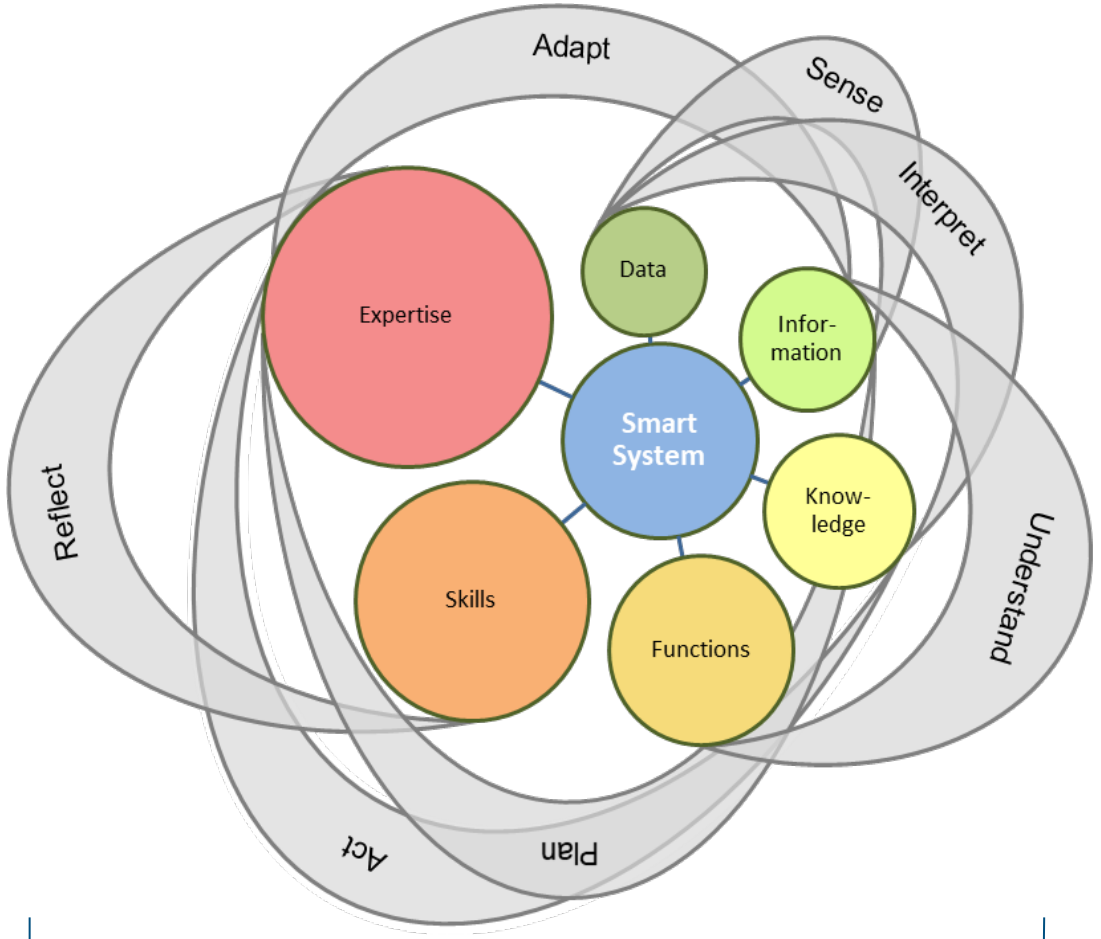
Level 1
Assisted

Level 2
Partial Automation

Level 3
High Automation

Level 4
Full Automation

Level 5
Autonomous

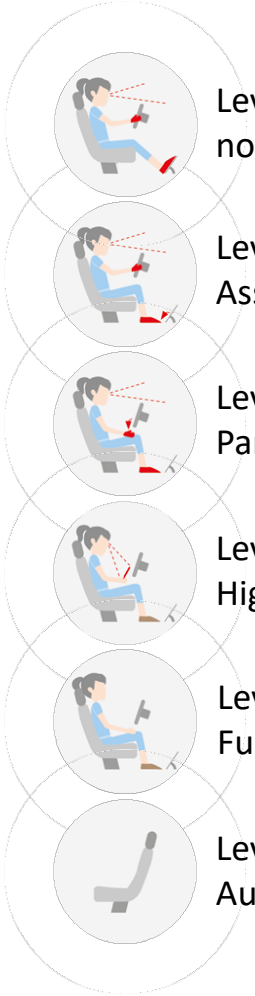


Different Deployment Strategies
and Use-Cases

no cooperation	Level a
provision of function-specific data / information (i.e. handling of data/information by recipient remains open; use without explicit feedback to sender)	Level b
Level b + integration into receiver's situational picture and feedback to sender	Level c
Level c + coop. developm. of a situational picture with the aim of a common situational picture (possibly including joint interpretation or plausibility check)	Level d
Level d + cooperative planning with a fixed goal structure (possibly a differentiation regarding driving tasks could be useful (strategical / tactical / operational))	Level e
Level d + cooperative planning with a flexible goal structure (possibly a differentiation regarding driving tasks could be useful (strategical / tactical / operational))	Level e*

AI as an important Enabler

Automated and Connected Driving



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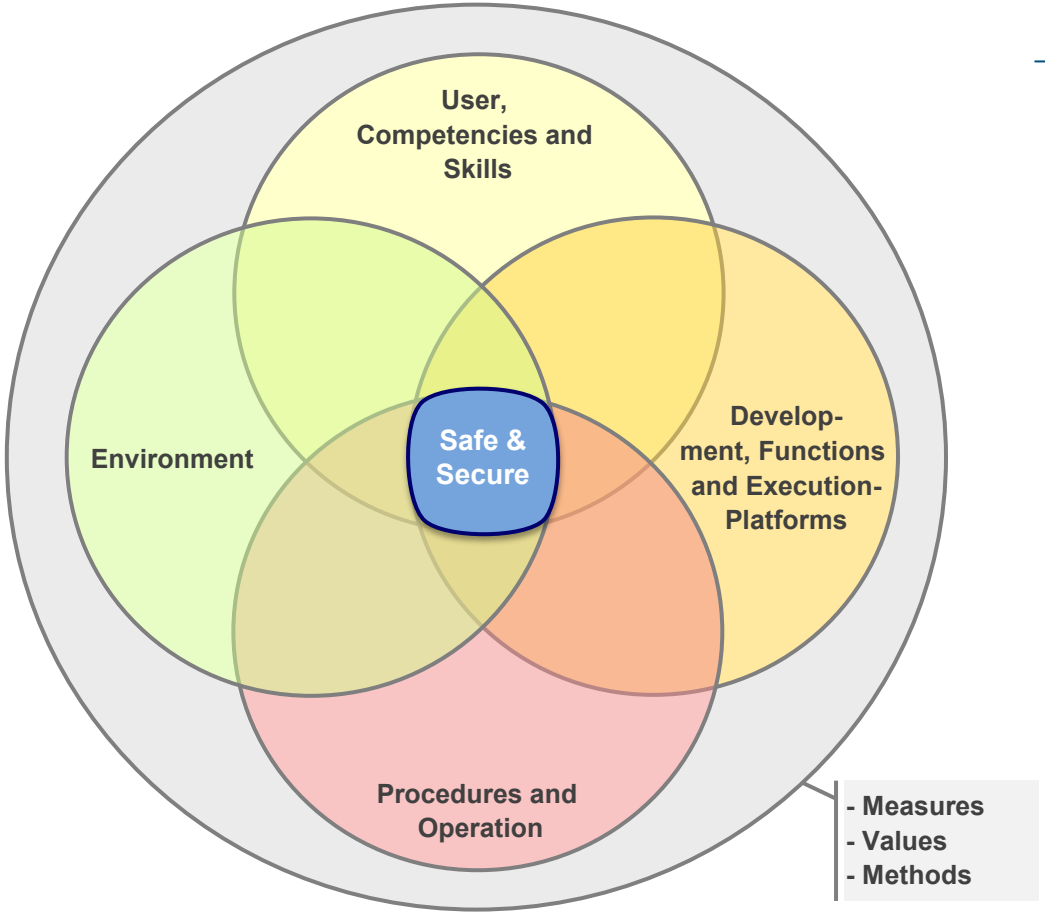

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Thank you!

Dr. Arne Raulf
arne.raulf@dlr.de

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