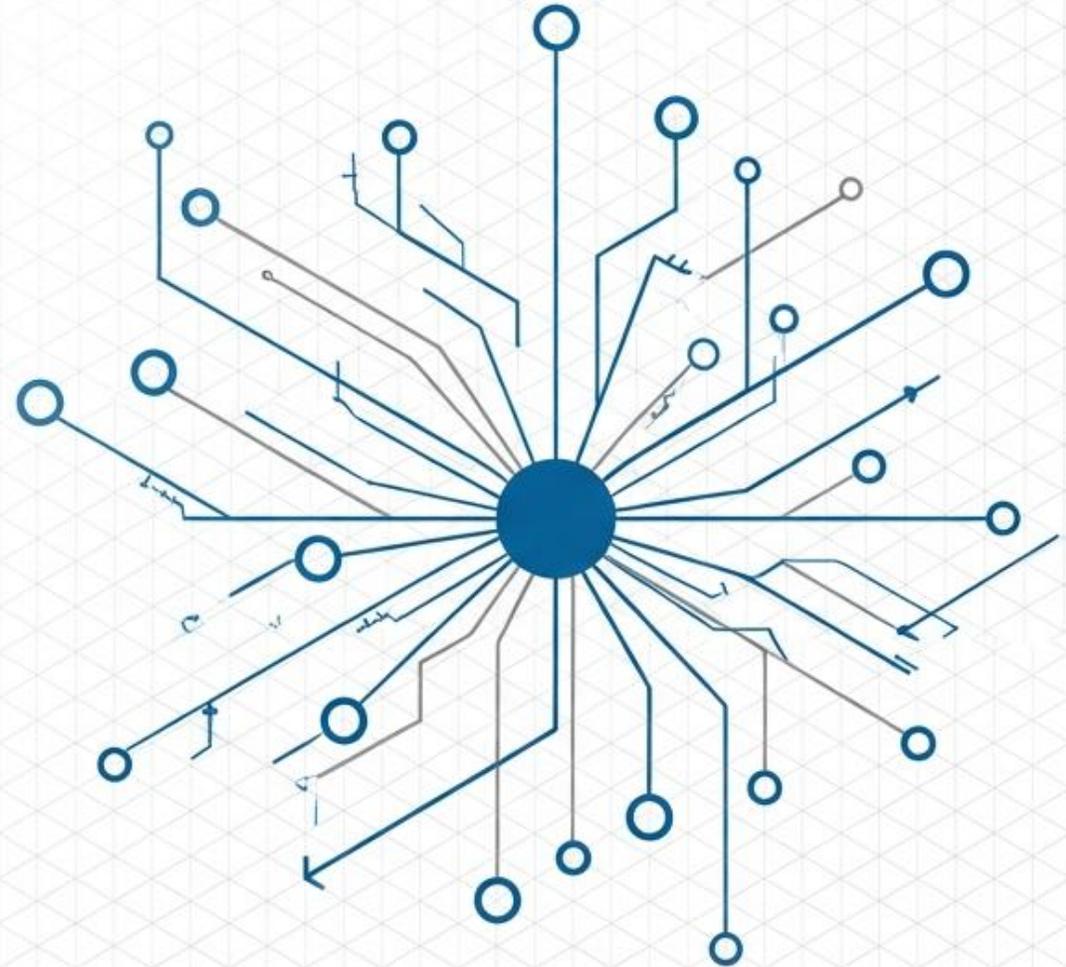


Asset management with ASAM ODS

Creating a holistic data space
for the digital twin

Stefan Romainczyk
Peak Solution



Asset management with ASAM ODS

Creating a holistic data space for the digital twin

Introduction to IDTA

What is the AAS?

AAS Submodels

Relationship between ASAM ODS and AAS

Ongoing Activities and possible Next Steps

Introduction to IDTA

(Slides provided by Dr. Christian Mosch / CEO / IDTA)

Evolution of Industry 4.0

Industry 4.0

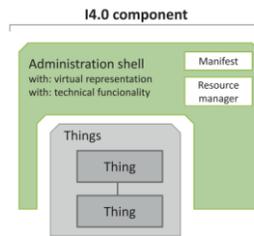
Asset Administration Shell

Industrial Adaption

Technology Association

International Norm

AAS Services Hub



2013

2015

2019

2020

2023

2025

Start of Industry 4.0

Concepts and Specifications

Introduction of the Digital Nameplate

Founding of IDTA with 23 Organisations

Release of IEC 63278-1 and AAS Spec V3

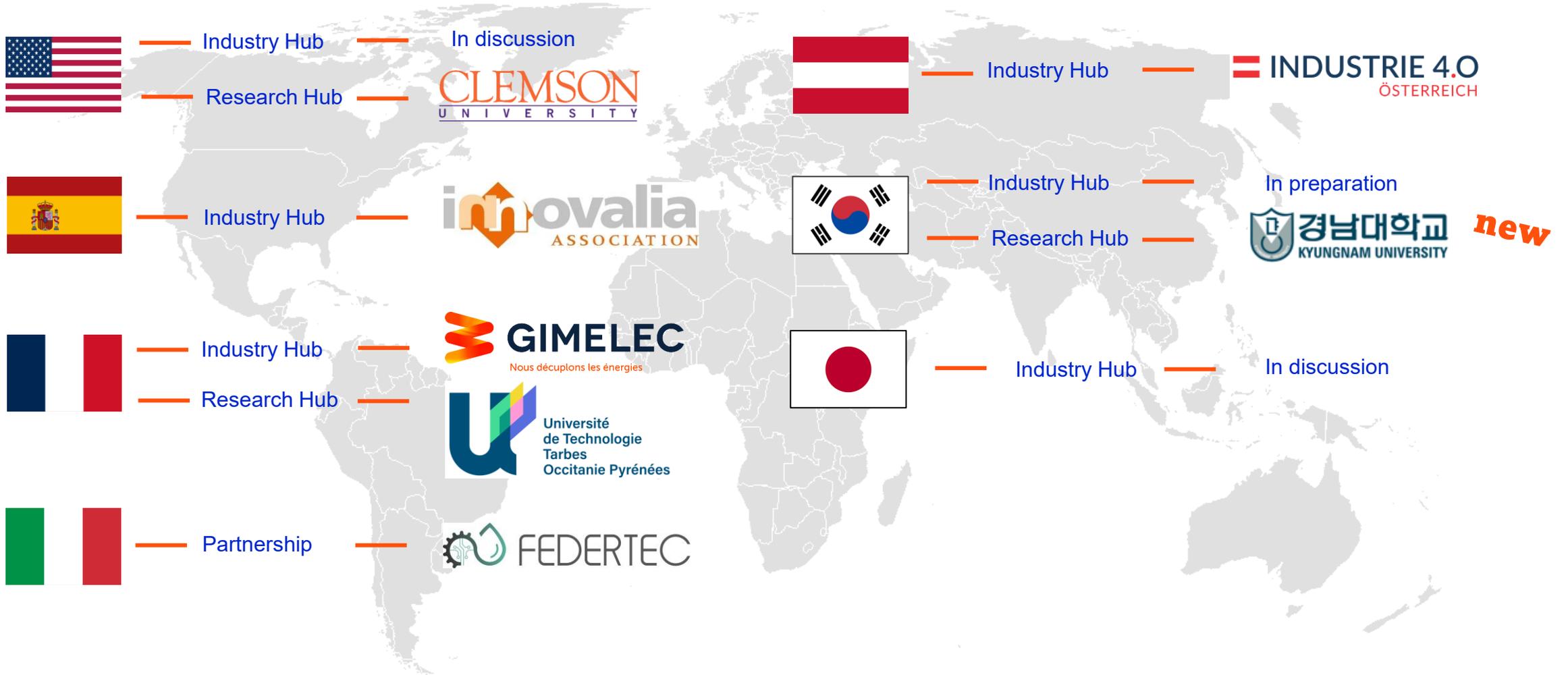
Launch of Services for decentralized Data Ecosystem

MEMBERS: SUPPLIERS – USERS | OT – IT



124 Members from 21 Nations

International Hubs – Industry & Research



What is the AAS?

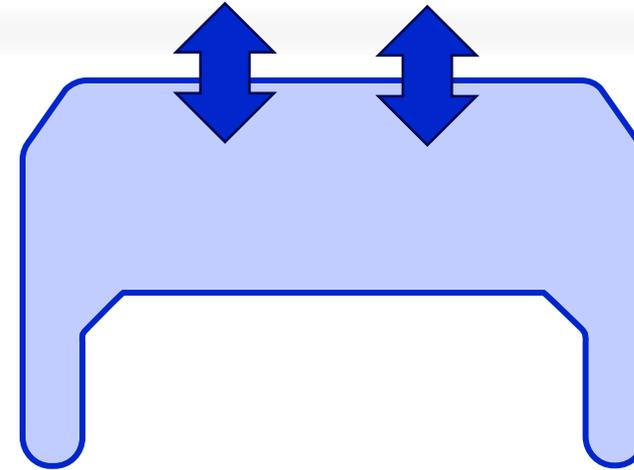
Asset Administration Shell – Verwaltungsschale

(Slides provided by Dr. Christian Mosch / CEO / IDTA)

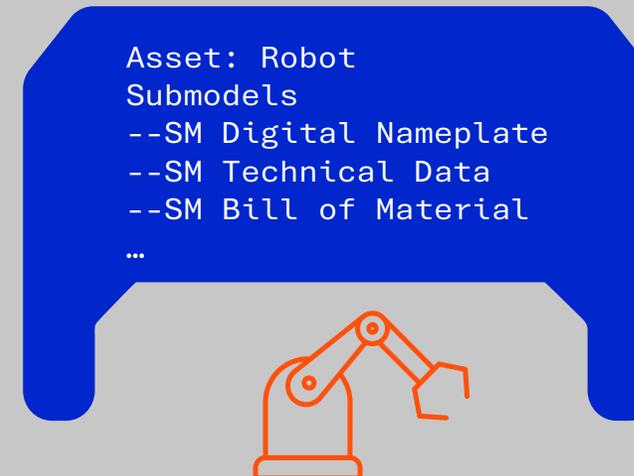
IDTA conducts two Standardisation Tracks



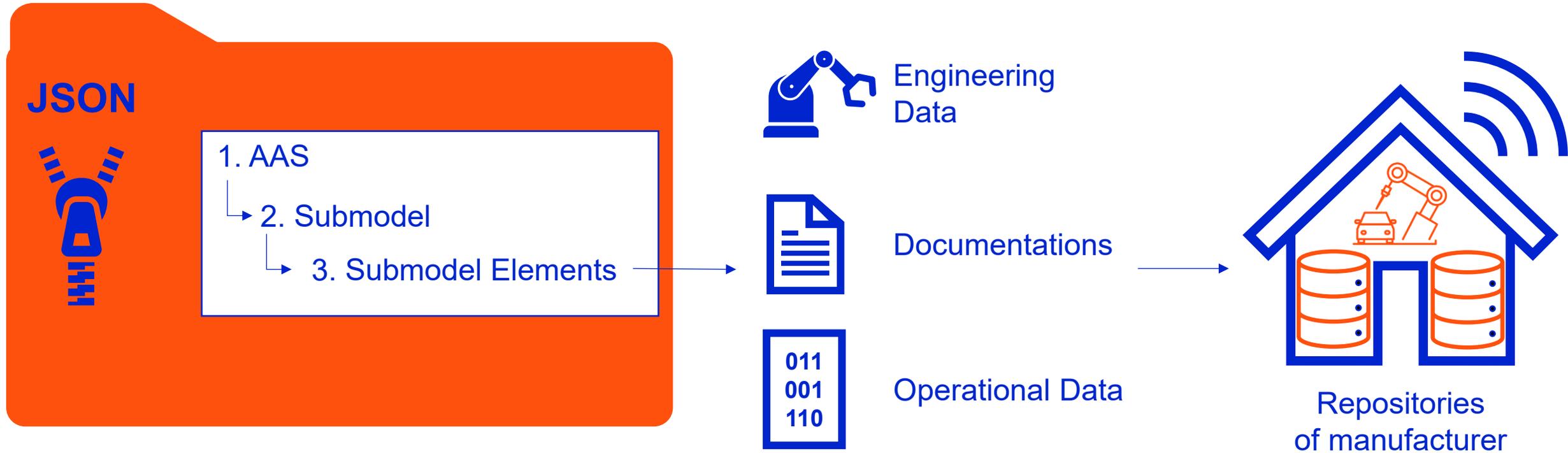
1. AAS Specification Standardised
 - Software Structure
 - Interface



2. Submodels Standardised information models



::: AAS as Register for Submodels and Container for Documents

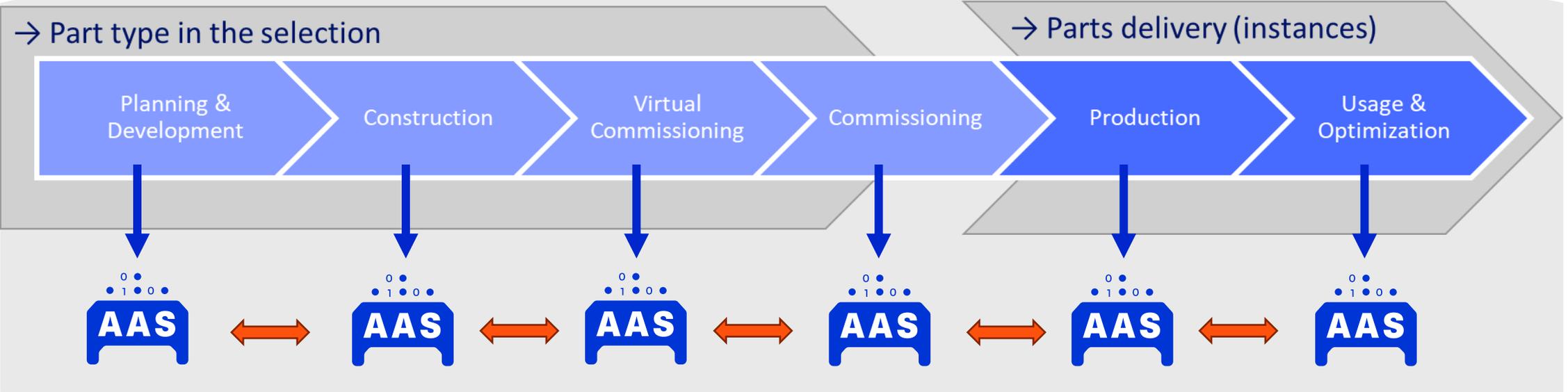


Future Digital Twins with AAS



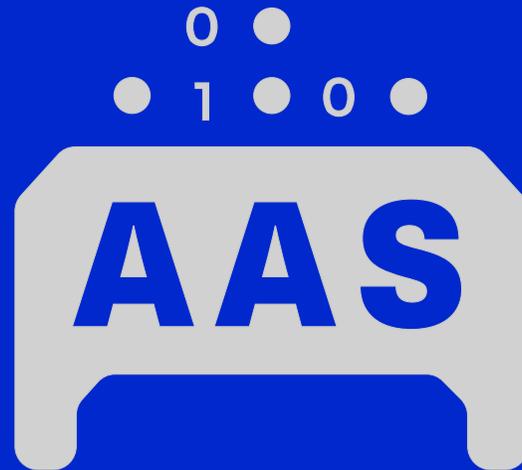
- Standardization & open source
- Efficient scaling
- Complete life cycle

Supplier part



The Vision

Asset Administration Shell



Worldwide Standard for
the Industrial Digital Twin

AAS Submodels

AAS Submodels

Submodel Template Repository



Submodels ▾

🔍 Search by ID Short for submodels

🔍 Filter by Lifecycle Phase ▾

Digital Nameplate

Contains the nameplate information attached to the product

Version:3.0

Download ▾ <> API PDF

Carbon Footprint

The Submodel provides the means to access the Carbon Footprint of the asset.

Version:1.0

Download ▾ <> API PDF

Time Series Data

Contains time series data and references to time series data to discover and semantically describe them along the asset lifecycle.

Version:1.1

Download ▾ <> API PDF

AAS Submodels

Combining Submodels

- DPP – Digital Product Passport - AAS Submodels Enable Standardized Interoperability
- DBP – Digital Battery Passport (consists of 7 Submodels)

Digital Battery Passport (DBP) - Part 1: Digital Nameplate

Contains the static nameplate attributes attached to the battery.

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 2: Handover Documentation

The Submodel defines a set meta data for the handover of documentation from the manufacturer to the operator for industrial equipment

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 3: Product Carbon Footprint

The Submodel provides the means to access the Carbon Footprint of the asset.

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 4: Technical Data

Technical data of the battery.

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 5: Product Condition

Covers all battery lifetime relevant properties.

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 6: Material Composition

Mandatory data: Battery chemistry; critical raw materials; materials used in the cathode, anode, and electrolyte; hazardous substances; impact of substances on the environment and on human health or safety.

Version:1.0

[Download](#) [<> API](#) [PDF](#)

Digital Battery Passport (DBP) - Part 7: Circularity

Dismantling information (including at least: exploded diagrams of the battery system/pack showing the location of battery cells; disassembly sequences; type and number of fastening techniques to be unlocked; tools required for disassembly; warnings if risk of damaging parts exists; amount of cells used and layout); part numbers for components and contact details of sources for replacement spares; safety measures (Annex XIII (2b-d)); usable extinguishing agent (Annex VI, Part A(9)).

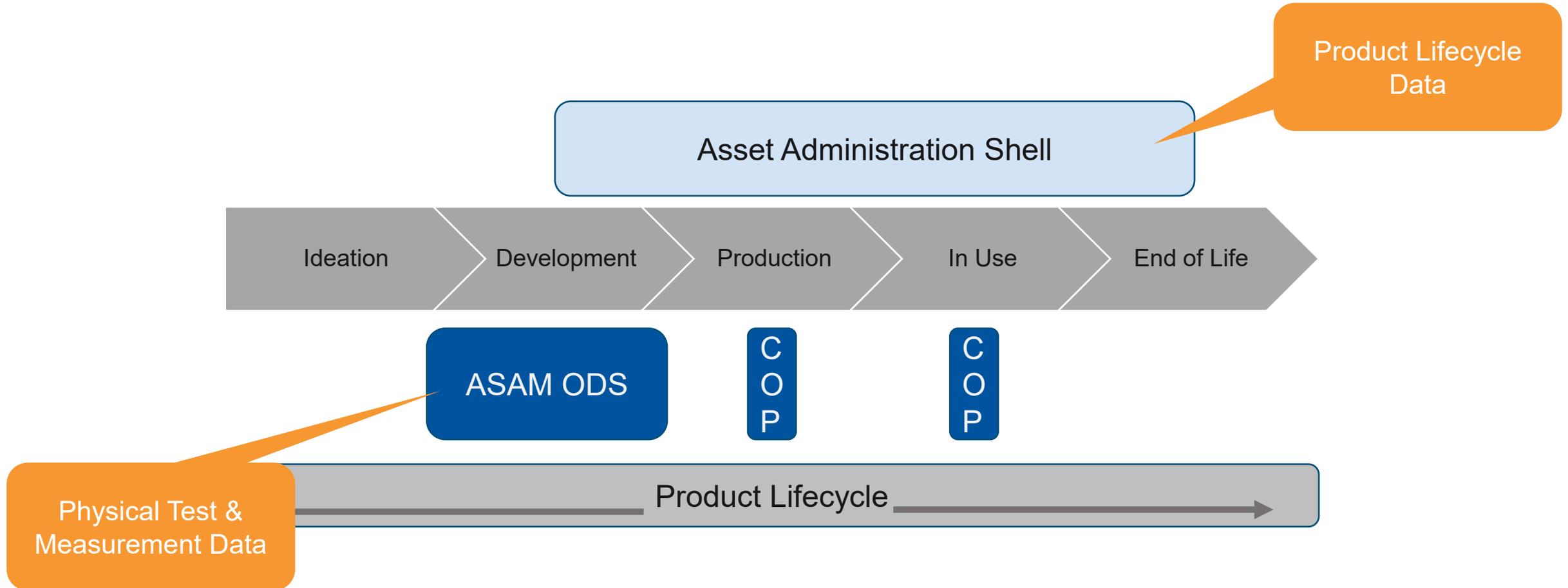
Version:1.0

[Download](#) [<> API](#) [PDF](#)

Relationship between ASAM ODS and AAS

ASAM ODS and IDTA AAS

Product Lifecycle Perspective



COP = Conformity of Production

Combining ASAM ODS and AAS Data

Goal

A comprehensive data profile

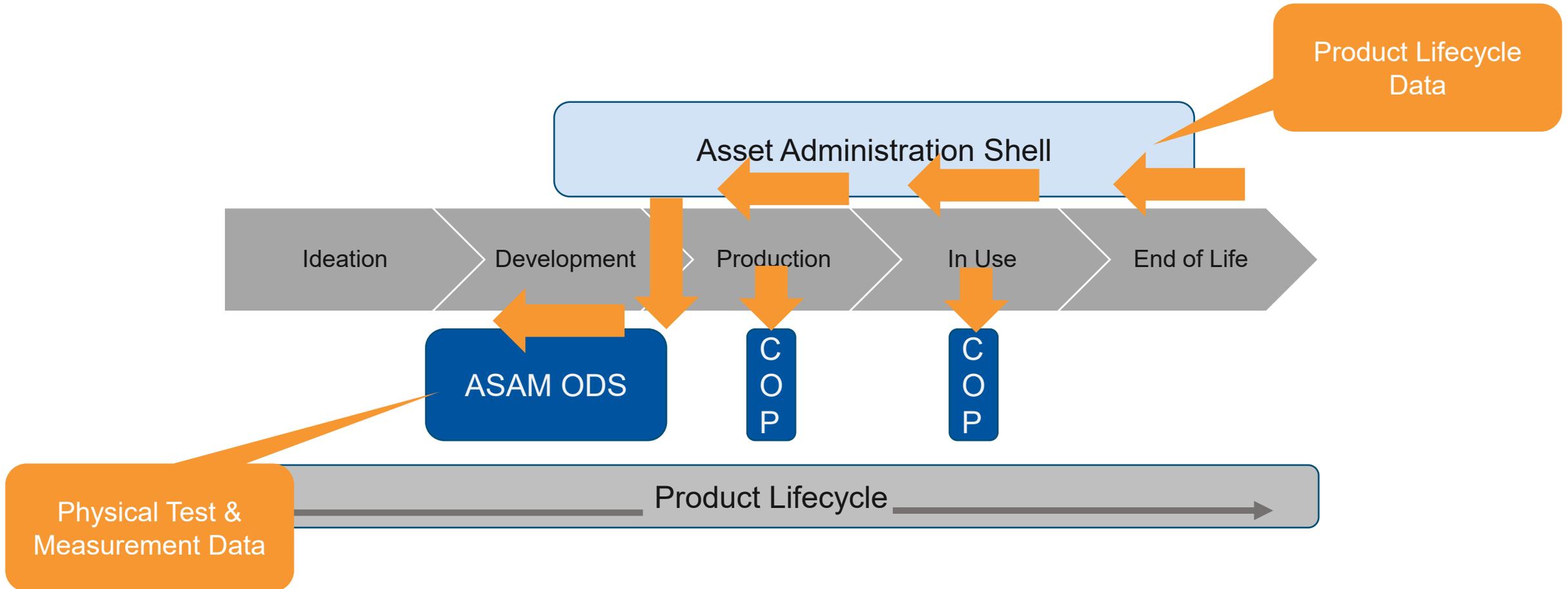
from product development to product EOL and beyond improves

- **Standardization**
- **Data interoperability**
- **Digital twins**

ODP = Conformity of Production

ASAM ODS and IDTA AAS

Product Lifecycle Perspective – Data Traceability



COP = Conformity of Production

ASAM ODS - AAS Connectivity

Value Proposition

Combining product lifecycle data (AAS) with data from physical testing (ODS) improves abilities in

- **Predictive maintenance**

and can significantly reduce time and cost for

- **Product improvement**

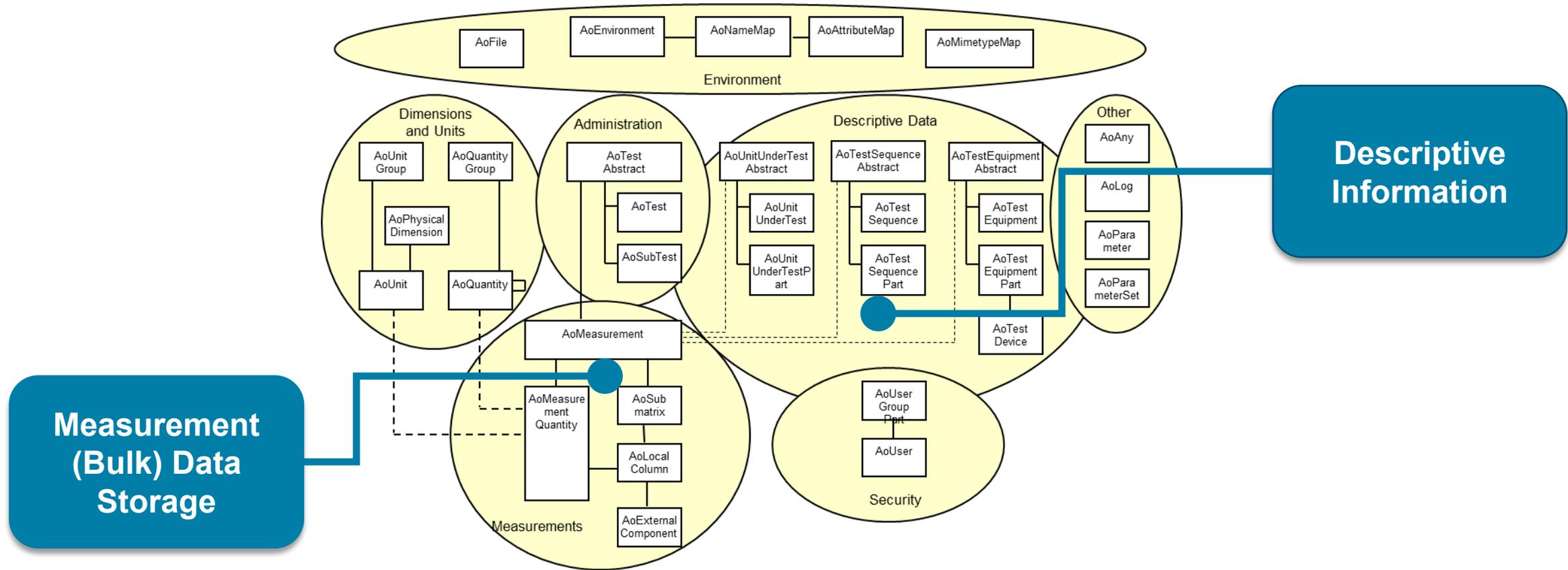
- **New product development**

ODS = Conformity of Production

Exposing ASAM ODS data through AAS

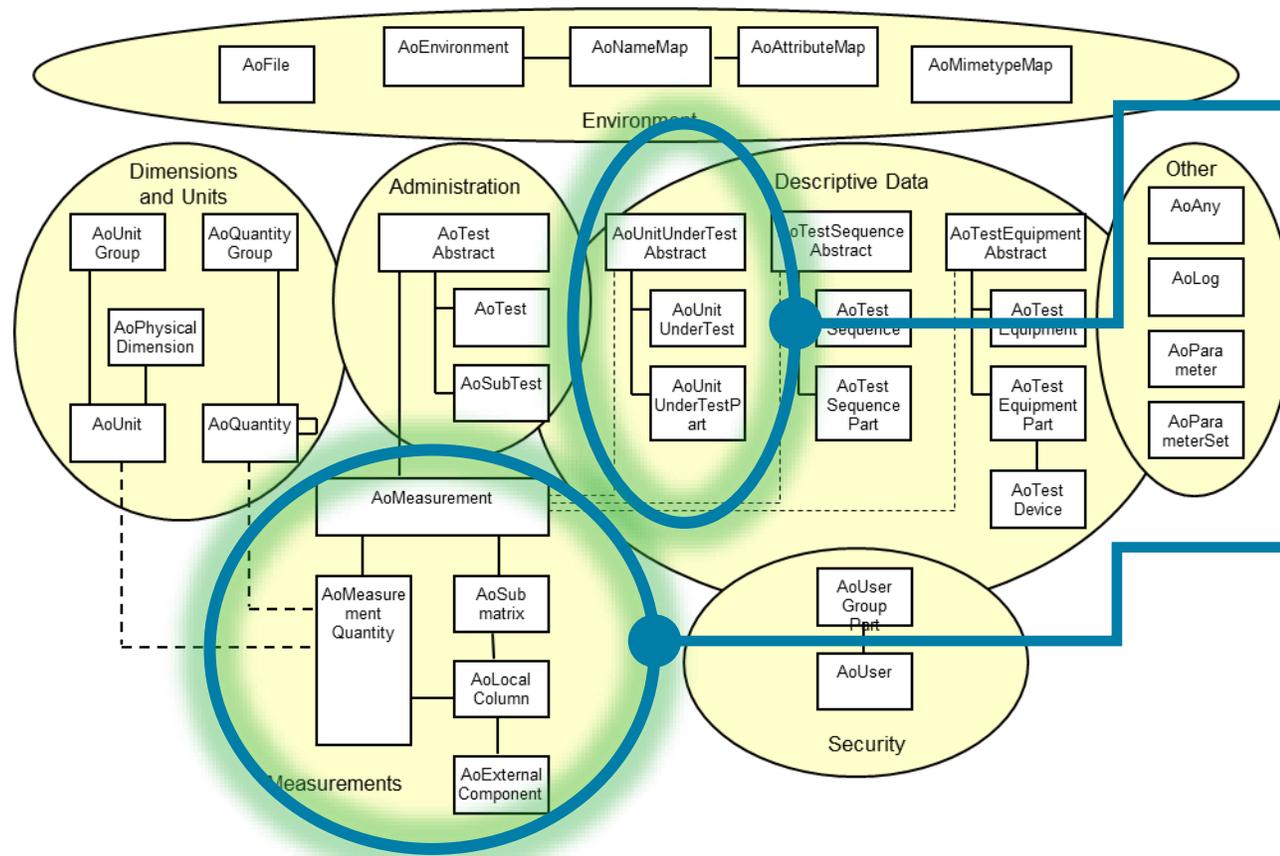
ASAM ODS and IDTA AAS

Data Perspective



ASAM ODS and IDTA AAS

Data Perspective



Create Submodels for referencing ODS Meta Data (UUT, ...)

Expose ODS Measurement Data through AAS-API

Ongoing Activities and possible Next Steps

Ongoing Activities and possible Next Steps

ASAM Community Activity

- ✓ Introduction to ASAM Technical Steering Committee on January 26th
- ✓ ASAM Board meeting on February 10th
- ✓ Technical Seminar on March 18th

IDTA Community Activity

- Joint working IDTA group “Provision of ODS Data”

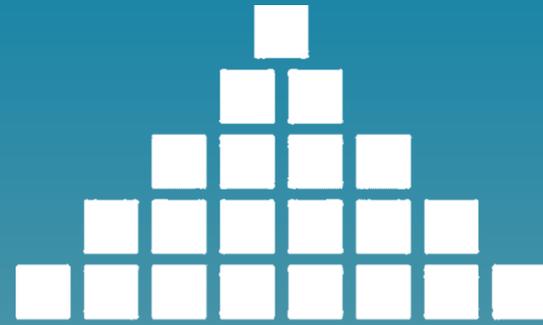
Combining ASAM ODS and AAS Data

Goal

**A comprehensive data profile
from product development to product EOL and beyond improves**

- **Standardization**
- **Data interoperability**
- **Digital twins**

ODP = Conformity of Production



PEAK SOLUTION

Test Processes - Test Data - Digital Identities

www.peak-solution.de

Thank you for your attention!