

Unifying AAS and OPC UA “Common Information Model and Common Communication”

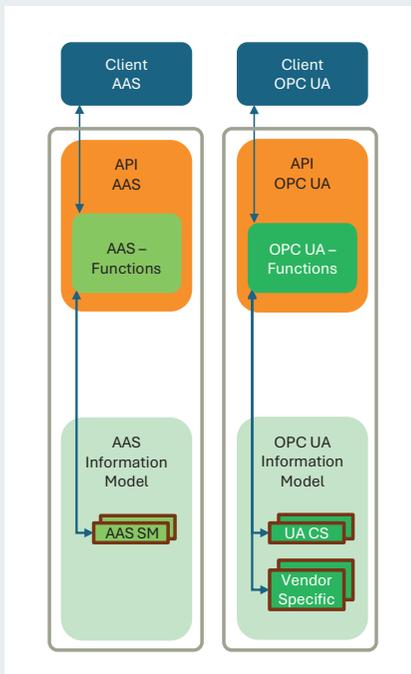
Proof of Concept by Siemens, IDTA and OPC Foundation

Joint Working Group IDTA & OPCF started in 2023

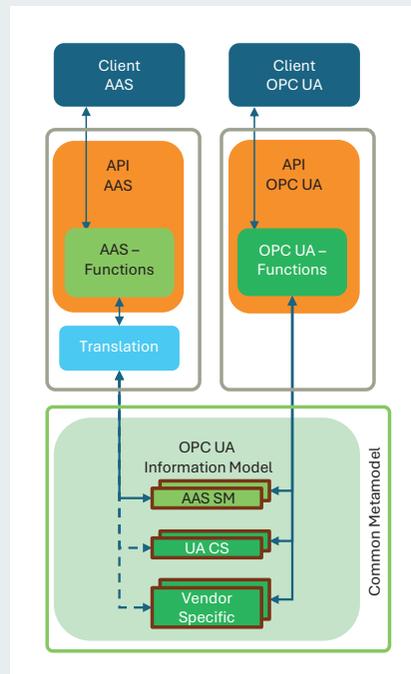
Focus of work: Generic Meta Model translation / Maintain similarities / Common Communication / Manage relationships in between models (server datasheet, AID, AIMC)

Journey from different Models and different APIs to a Common Model and Common API

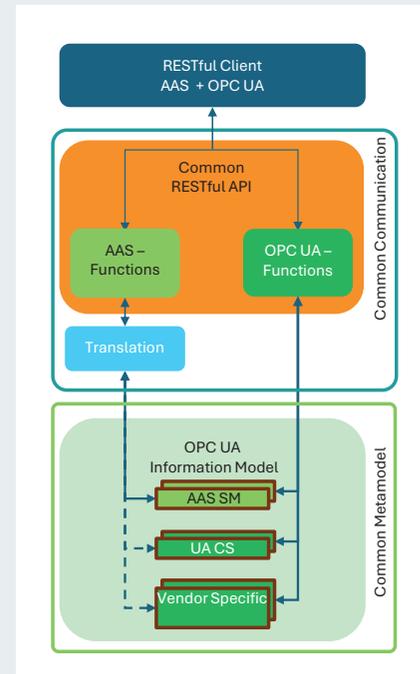
Today's AAS- and OPC UA-Clients access **different** Models via **different** APIs.



Today's AAS- and OPC-UA-Clients access a **common** Model via **different** APIs.

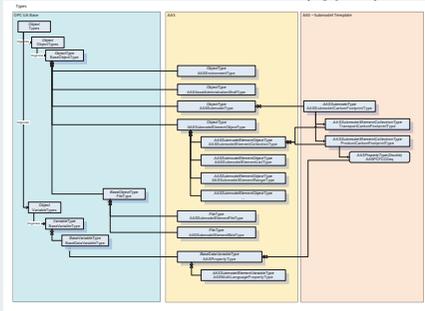


New common Clients access a **common** Model via a **common** API.

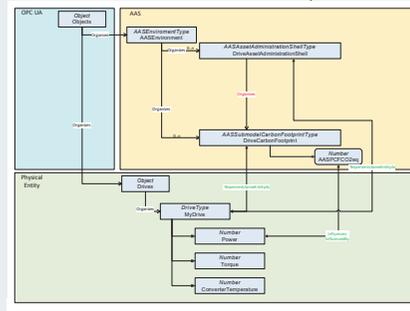


Common Meta Model

OPC UA Information Model (Types)



OPC UA Information Model (Instances)



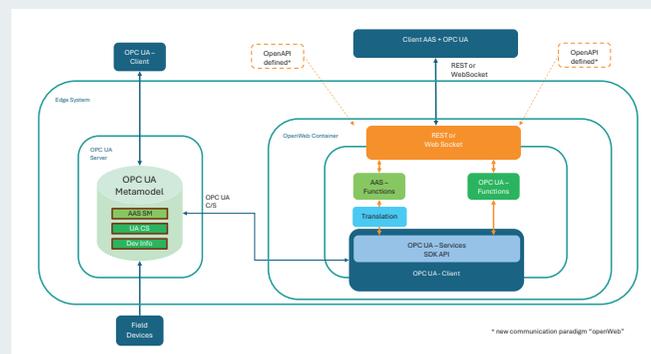
- One Database for the digital representation
- Same meta modeling language
 - Translate any AAS Submodel Template & Submodel to OPC UA meta model
 - Generic ruleset for machine-based translation
 - Any OPC UA CS in OPC UA meta model
 - Applies also to any vendor specific models

- Realizes the proposal of the IEC Whitepaper “Semantic interoperability: challenges in the digital transformation age (2019–10–30)”
- Leveraging SMT “Carbon Footprint” and CS “Energy management”

Common Communication

- Joined REST communication: AAS REST & OPC UA REST
- Translation of the AAS functions:
 - AAS functions has to be translated to a sequence of OPC UA service calls
 - OPC UA response needs to be translated back to AAS function result
- Optional optimization with WebSocket communication

Proof of Concept – Architecture



Information



Presentation:
<https://opcfoundation.org/developer-tools/marketing-communication-presentations>



Recording:
<https://youtu.be/-C-EvixO0Wg>



IDTA & OPCF Joint Working Group:
<https://opcfoundation.org/about/organizations/view/23>

www.industrialdigitaltwin.org
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