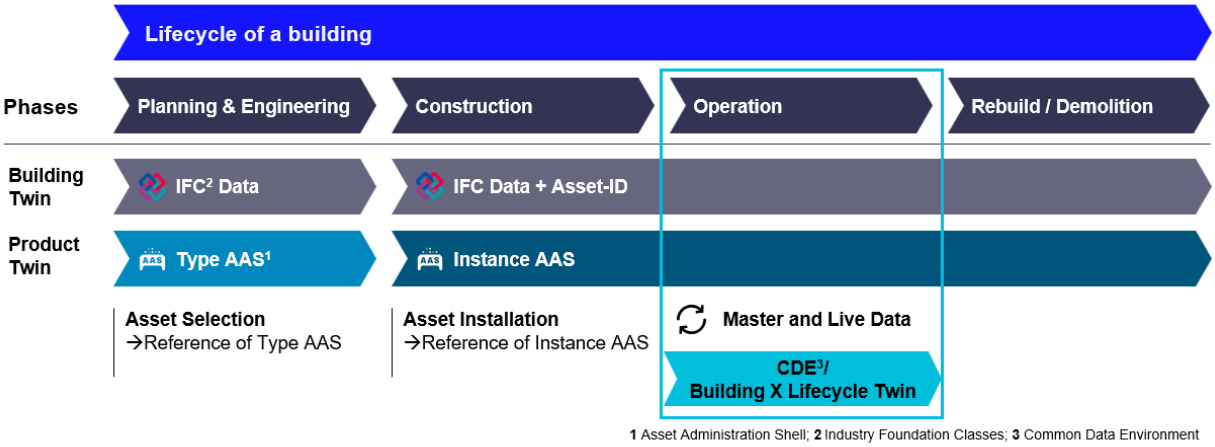
Factsheet Validation of BIM-AAS Integration for Building Operations



STANDARDIZED LINKING OF BUILDING, ASSET AND OPERATIONAL DATA IN THE OPERATIONAL PHASE

- Connects building structure and asset information in a standardized way
- Improves access to documents, master data and live operational data
- Supports interoperable building operation across system boundaries
- Validates the practical use of BIM-AAS linking in a real building context
- Demonstrates how IFC, AAS and a CDE can complement each other in operation

In the operational phase of buildings, relevant information is typically distributed across heterogeneous systems. Building data and structure is often represented in BIM or IFC models, while product-related information, documentation, and operational data are managed separately. As a result, operators lack a consistent and standardized way to connect building context, asset identity, documentation, and operational data. This limits interoperability and makes the reuse of digital information across lifecycle phases more difficult.

Industrial Digital Twin Association e.V.
Lyoner Straße 18 — 60528 Frankfurt am Main
Germany

Phone +49 69 6603 1939
Email info@idtwin.org
www.industrialdigitaltwin.org

The AAS enables standardized and interoperable access to asset-related information

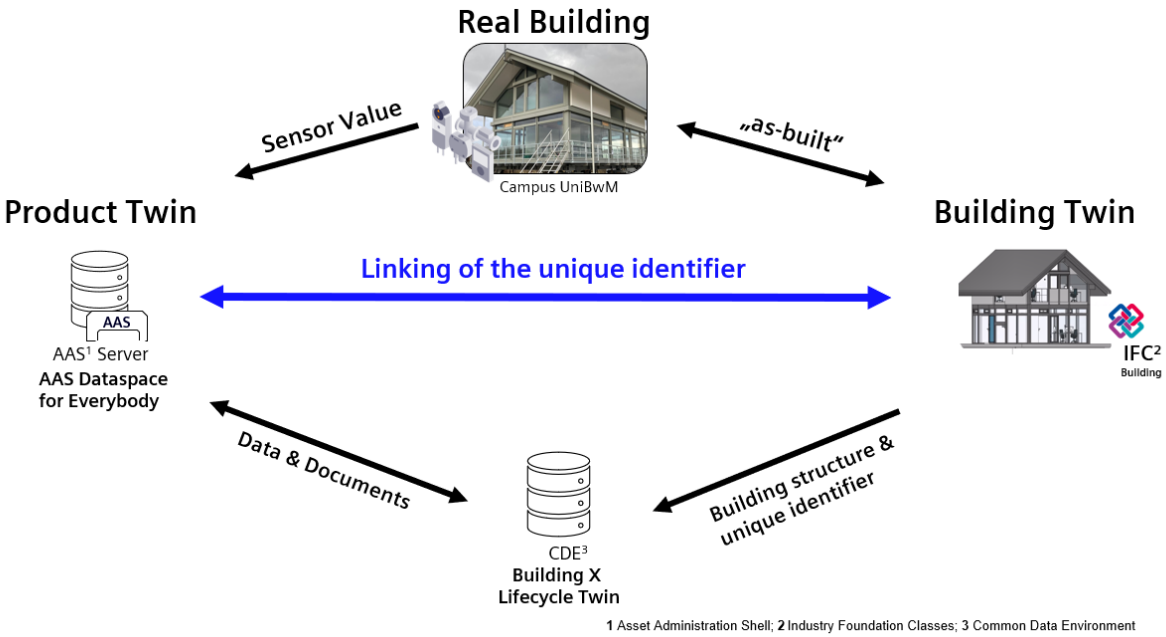
The Asset Administration Shell (AAS) provides a standardized digital representation for assets and their information. In this use case, the AAS enables structured and interoperable access to product-related data and documents and supports the linking of asset-specific information to the building context represented in IFC. Together with a common identifier concept, the AAS serves as a key interoperability mechanism between building twin, product twin, and operational data environments.

A standard-based demonstrator for integrating building, asset and operational data

The demonstrator combines an IFC-based building model, AAS-based product information, a common data environment, and sensor data from a real building. A unique identifier is used to link the building twin and the product twin. The building model provides the structural context, while AAS instances provide access to product-specific information and documentation. The common data environment manages building-related structure and lifecycle information, and live data from the real building complements the operational perspective. This setup was used to validate the practical applicability of the IDTA / buildingSMART recommendations for the operational phase.

Link: Guideline - BIM building model for the integration of machines, building services and external devices using the Asset Administration Shell

This demonstrator was implemented in collaboration with the University of the Bundeswehr Munich, which provided the real building environment and the corresponding building model, as well as with Fraunhofer IESE and NetApp, which provided the AAS Data Space for Everybody. Siemens contributed the lifecycle-oriented common data environment used in the demonstrator.



1 Asset Administration Shell; 2 Industry Foundation Classes; 3 Common Data Environment