ECLASS – OPEN STANDARD FOR MASTER DATA SUPPORTING SMART MANUFACTURING

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CLASSIFICATION SYSTEM ECLASS

1. Classify

Allocating the product to the suitable ECLASS class

2. Describing Master Data

For a detailed, neutral „description“ of the diverse products, additionally properties are needed

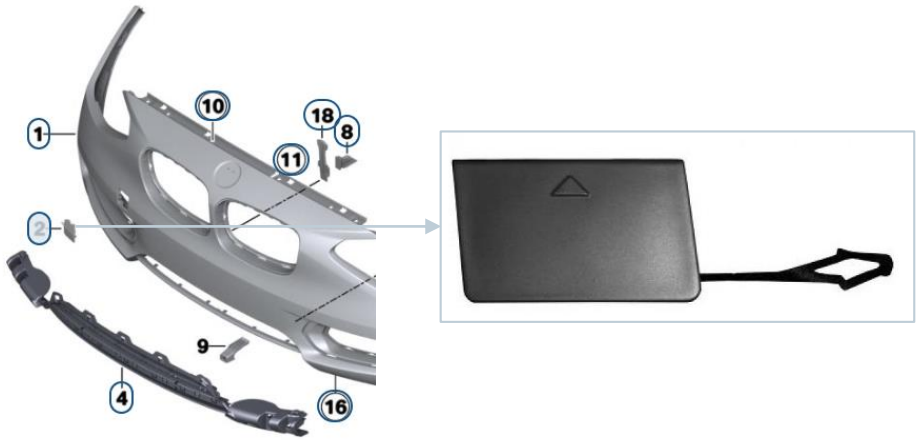
Coded Name:	**44-02-02-01**
Preferred Name:	Covering valve (car/exterieur)
IRDI:	0173-1#01-AFV732#003

CLASSIFICATION SYSTEM ECLASS

List of properties

0173-1#02-AAN521#005 - Color
0173-1#02-BAF634#009 - Material
0173-1#02-AAX155#001 - bevel available
0173-1#02-AAX150#001 - The multilayer structure available
0173-1#02-AAJ172#003 - width
0173-1#02-AAO663#003 - GTIN
0173-1#02-AAB713#006 - Weight
0173-1#02-AAO677#002 - Manufacturer name
0173-1#02-BAA020#009 - height
0173-1#02-AAO035#005 - depth
0173-1#02-AAO676#003 - product article number of manufacturer
0173-1#02-AAQ326#002 - address of additional link
0173-1#02-AAG779#003 - length
0173-1#02-AAY811#001 - URI of the product
0173-1#02-AAO057#002 - Product type
0173-1#02-AAY812#001 - GLN of manufacturer
0173-1#02-AAO736#004 - product article number of supplier
0173-1#02-AAM551#002 - Supplier product designation
0173-1#02-AAO742#002 - Brand
0173-1#02-AAU734#001 - Manufacturer product description
0173-1#02-AAX092#001 - Clauses for delivery
0173-1#02-AAU732#001 - Manufacturer product root

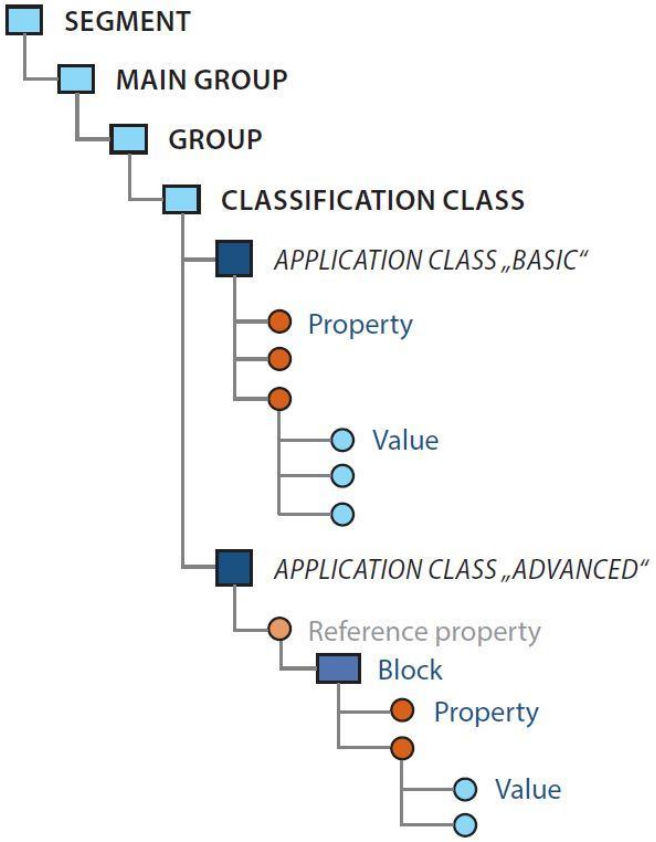
Example „Color“



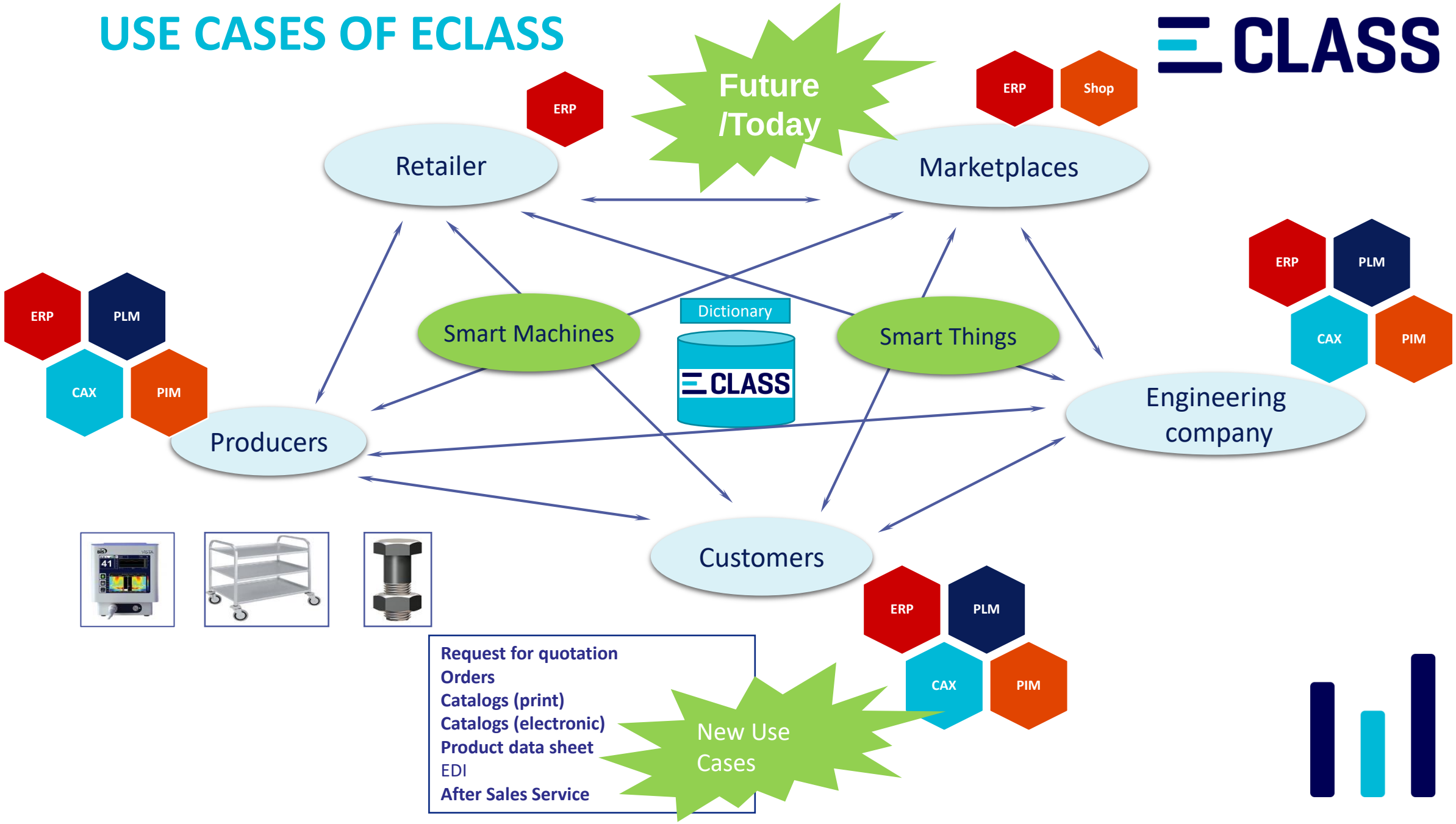
Property	02-AAN521 Color
short name	-
Format	STRING
Definition:	with the eye perceptible frequency of publication of environment

CLASSIFICATION SYSTEM ECLASS

- ECLASS is a hierarchical standard for master data to classify and describe products and services
  - Classification tree over four levels
  - Properties at 4th level added
  - Values added to properties
  - Keywords at all levels

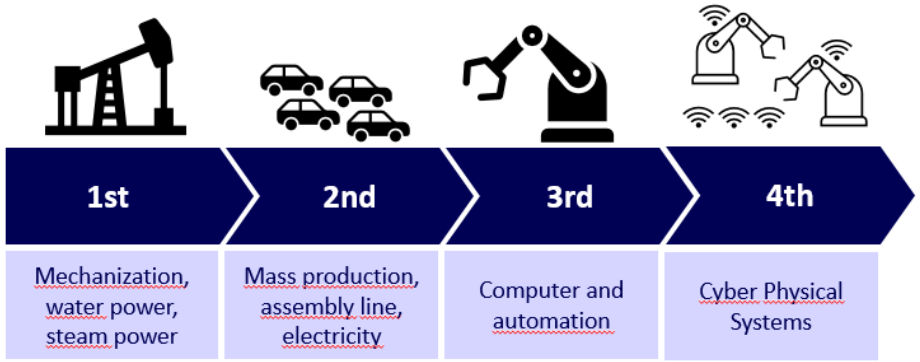


USE CASES OF ECLASS



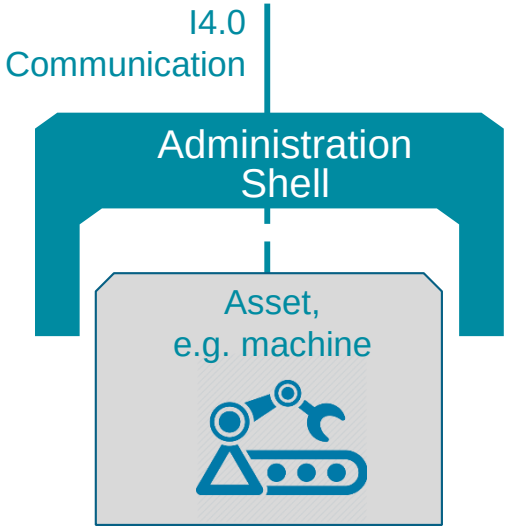
SMART MANUFACTURING / INDUSTRY 4.0

- „Industry 4.0“ originates from a project as part of the hightech-strategy from governments, cooperations and standardisation committees, that promote the automation of production

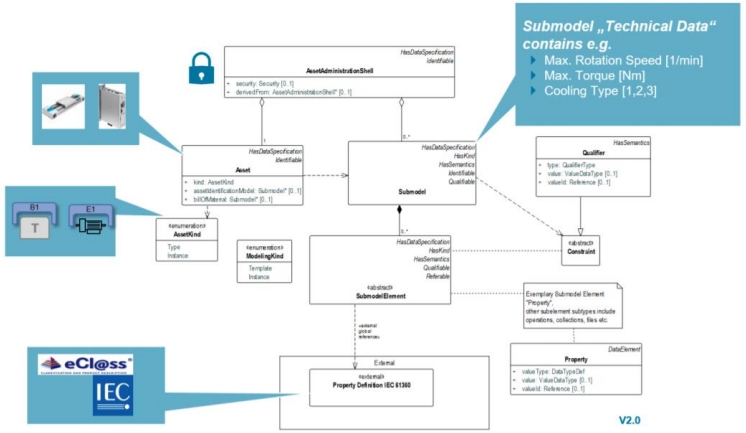


- Linking machines, workpieces and systems, companies create intelligent networks along the entire value chain, that can control each other autonomously

THE ASSET ADMINISTRATION SHELL (DIGITAL TWIN FOR INDUSTRIE 4.0)



- The Asset Administration Shell (AAS) is the digital representation of the real asset, the Digital Twin
- The AAS can be used as data exchange format, it can communicate and interact
- The AAS is the key outcome of the German Industrie 4.0 Plattform
- Submodels are the key elements of the AAS



Every asset needs its administration shell to be integrated in Industry 4.0

Online Bibliothek

https://www.plattform -i40.de/SiteGlobals/PI40/Forms/Listen/Downloads

STANDARDIZED SEMANTIC OF THE AAS WITH ECLASS

ECLASS

Standardized Semantic

+

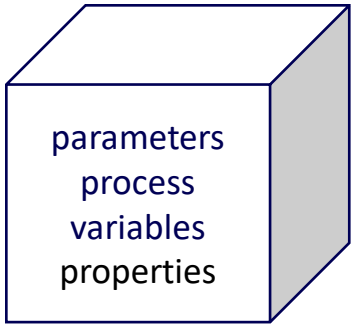
PLATTFORM INDUSTRIE4.0

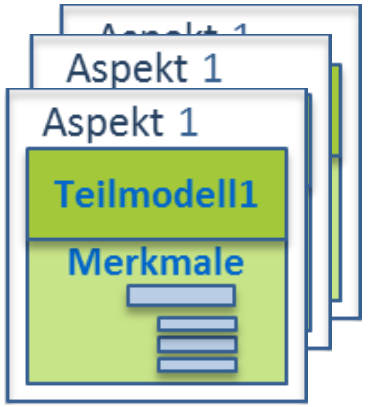
Standardized Structure
AAS & Submodels

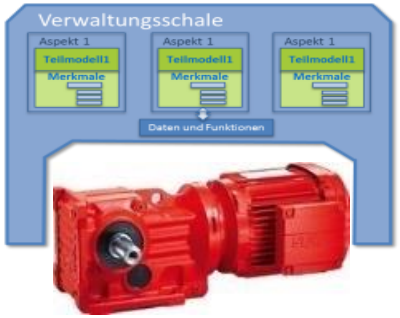
=

I4.0

Fully standardized Digital Twin
Industry 4.0 enabled





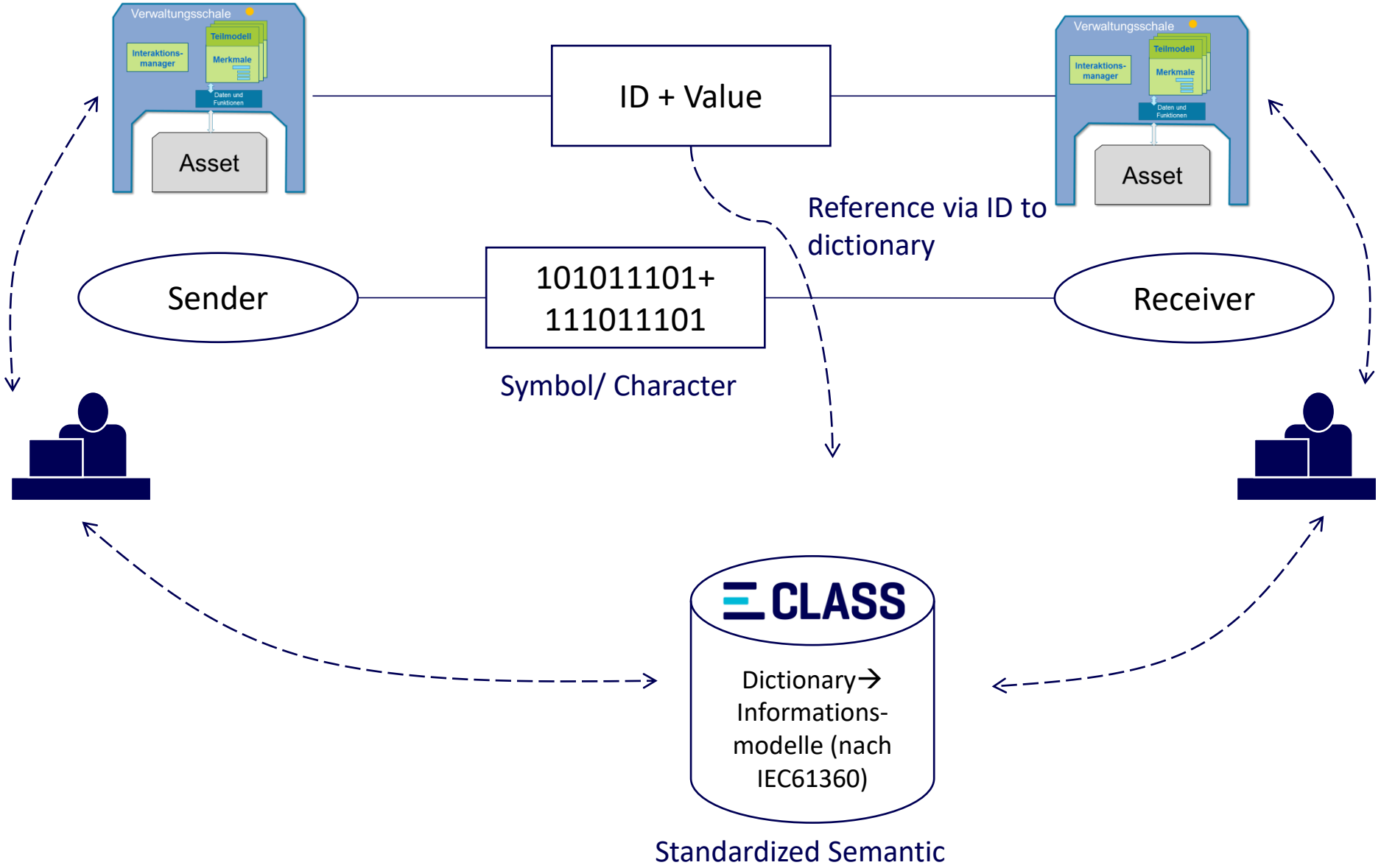


Each property has an IRDI (International Registration Data Identifier)

Nominal current

0173-1#02-AAC824#007

INTETRACTIVE ASSET ADMINSTRATION SHELL

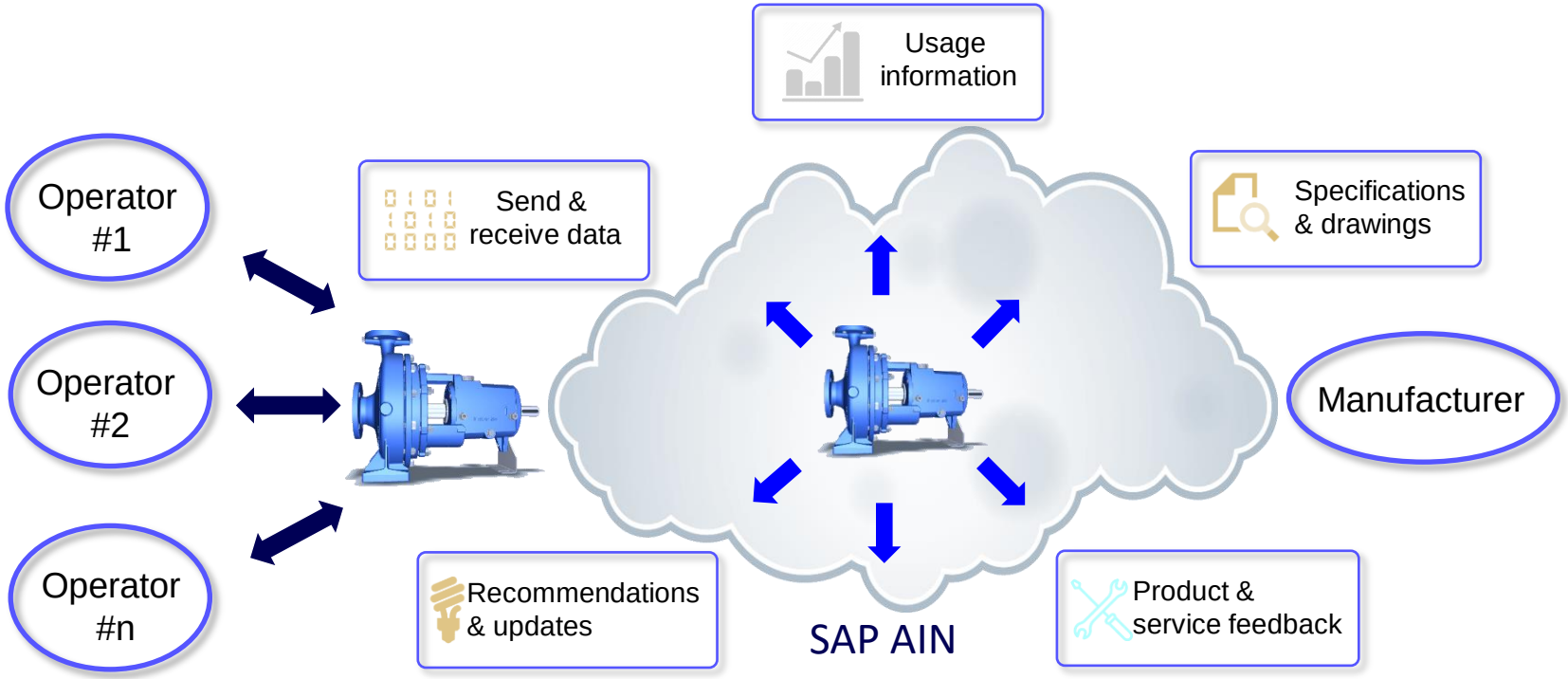


A VARIETY OF INFORMATION CAN BE SHARED BETWEEN BUSINESS PARTNERS: SAP ASSET INTELLIGENCE NETWORK

CLASS

OPERATOR

MANUFACTURER



BUSINESS VALUE

- Lower asset life cycle costs
- Establish one channel to many manufacturer's, EPCs and Service providers
- Higher asset availability
- Reduce manual asset search effort
- Receive notifications, service work summaries and service bulletins
- Push communication and alerts to manufacturers / service providers
- Reduce master data maintenance effort
- Higher process safety by transparent and bundled product – service offerings from manufacturer

SUMMARY

A standardized and referable sematic is one of the key enable for smart manufacturing (Industry 4.0) with minimized migration and installation effort

Unplanned or lose communication between machines will be possible

ECLASS is the broadest and most matured semantic dictionary

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FACTS & FIGURES

CLASS

~ 3.500 users

>17.000 properties

no expense with the translation and mapping of master data standardization

16 different languages

>44.000

~ 150 active members

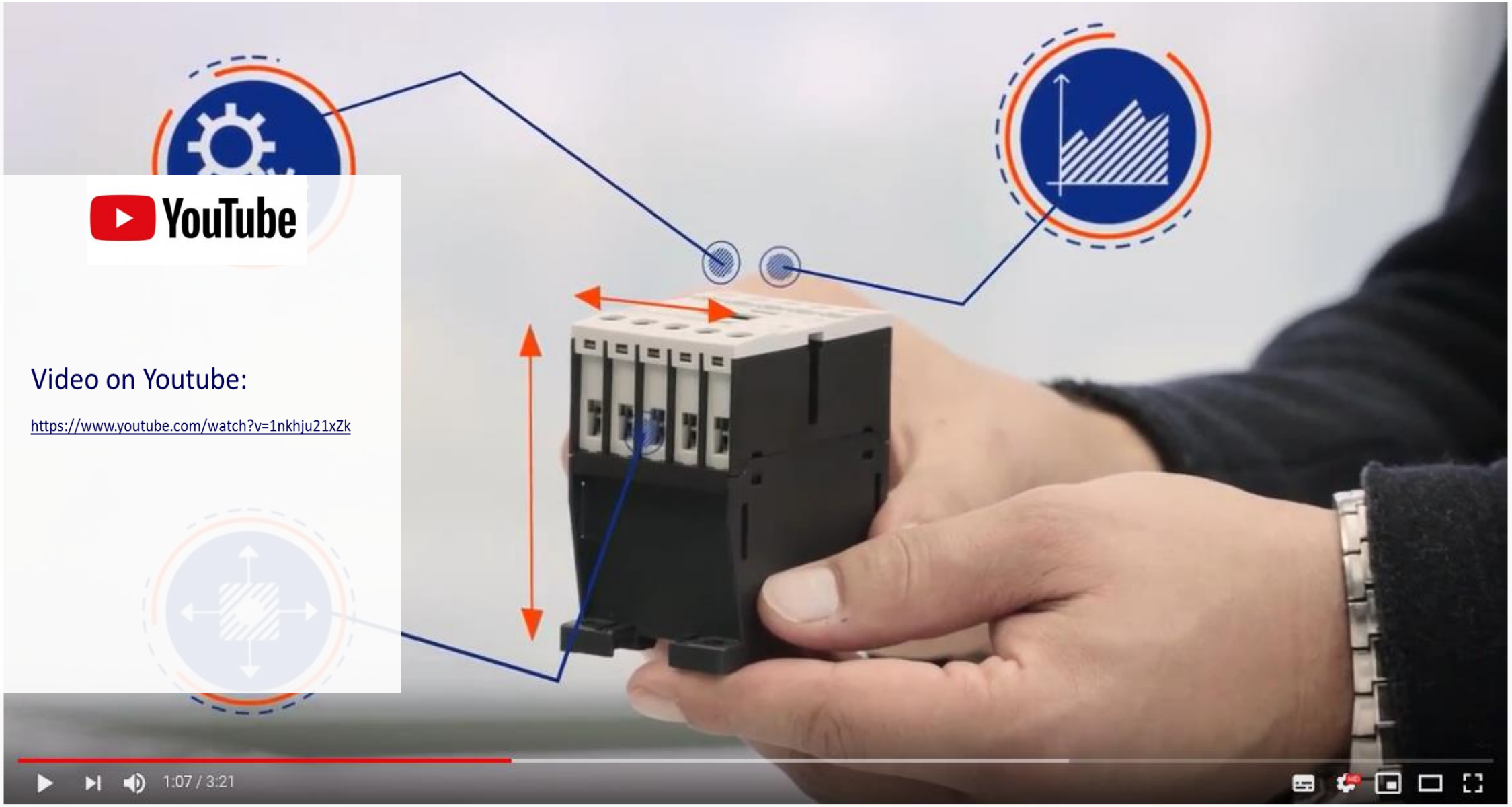
4

global network of service providers

transparent and open development in releases

>80 cooperations with global leaders in CAx or with international standardization / system providers

since 2000



eCl@ss CAx application version 2 (EN)