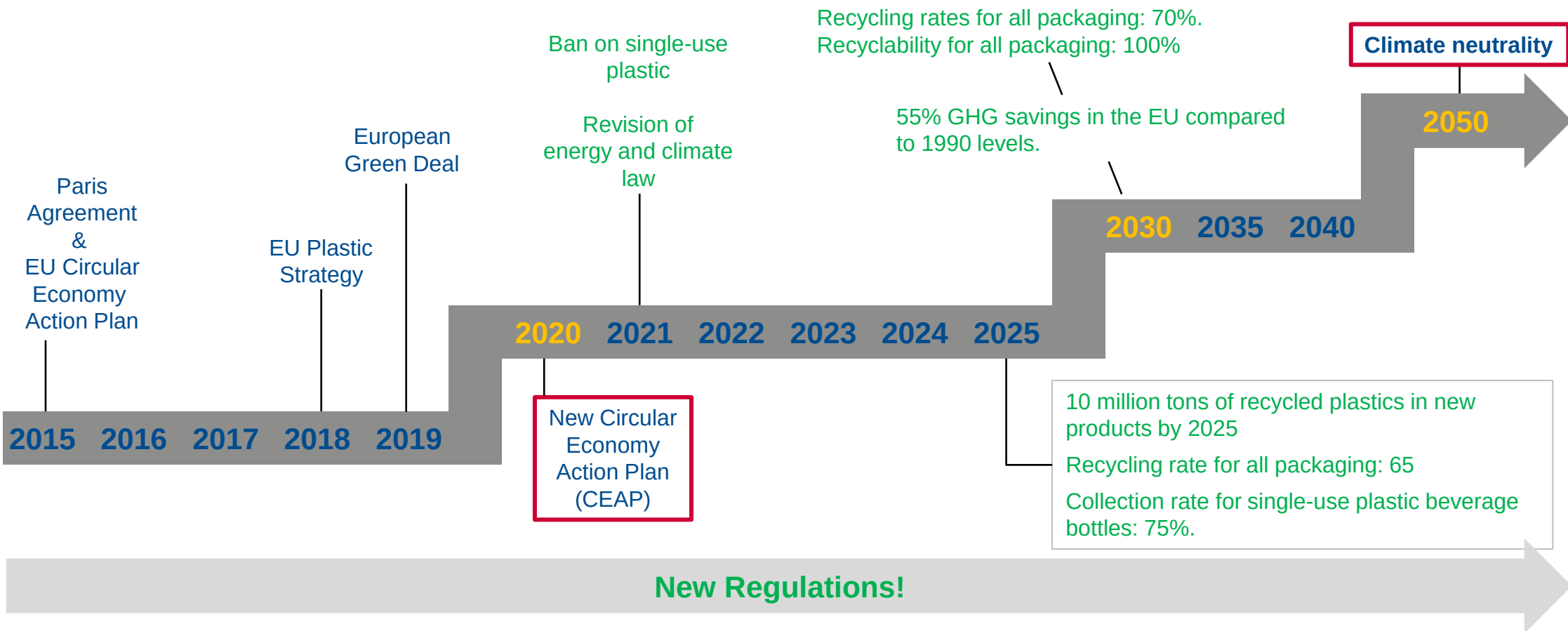


ZVEI-Show-Case PCF@Control Cabinet

“Control Cabinet with Product Carbon Footprint based on the Asset Administration Shell”

Roadmap – European Green Deal





Circular Economy Action Plan

For a cleaner and
more competitive
Europe

The European Digital Product Passport

„Digital Nameplate 4.0 (DNP4.0)“ – ZVEI-Demonstrator Shown on SPS-fair in 2019

ZVEI:
Die Elektroindustrie



STANDARDIZATION
COUNCIL
INDUSTRIE 4.0

ABB

FESTO

rexroth
A Bosch Company

Lenze

Schneider
Electric

**PHOENIX
CONTACT**

SIEMENS

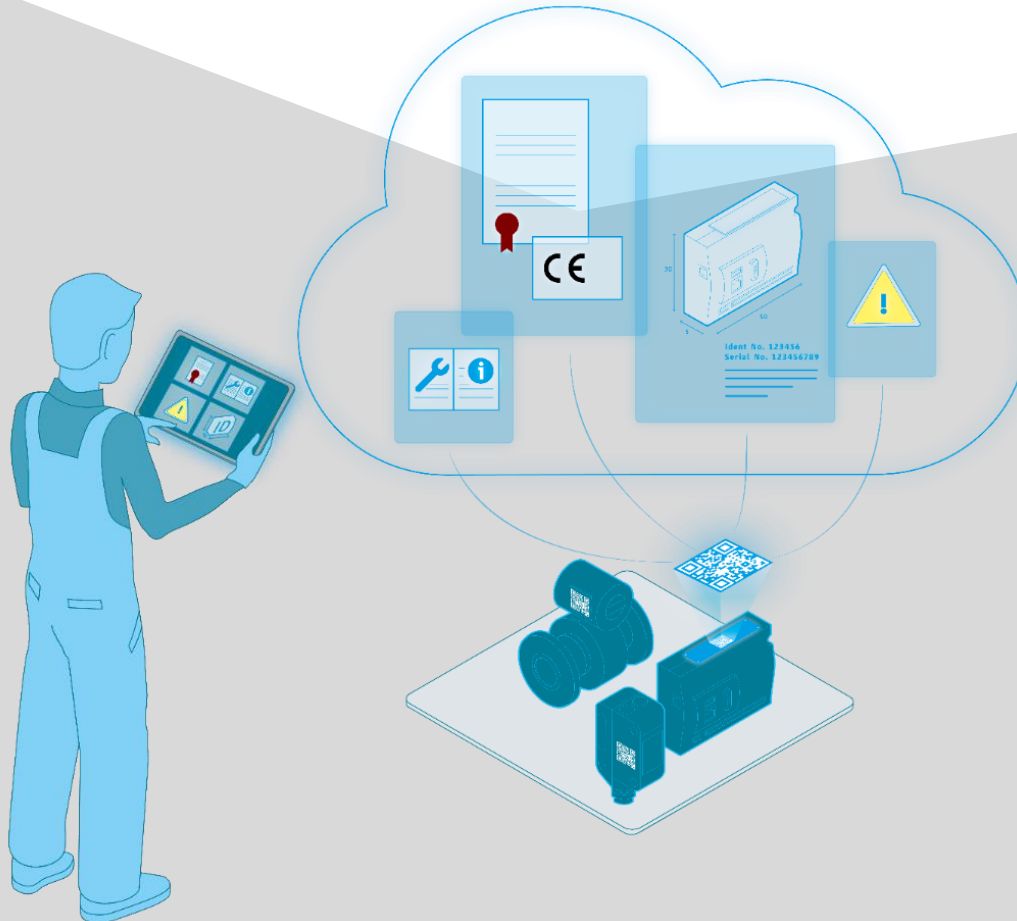
PEPPERL+FUCHS



atp Magazin
11/12-2019

The Digital Nameplate 4.0 –

consistent.sustainable.future-proved.connected



Saving time and costs

- Access to product documentation online
- No costs for paper and logistics



One valid standard

- Across companies
- via DIN SPEC 91406
- > IEC 61406 (“Identification Link”)



Global Access

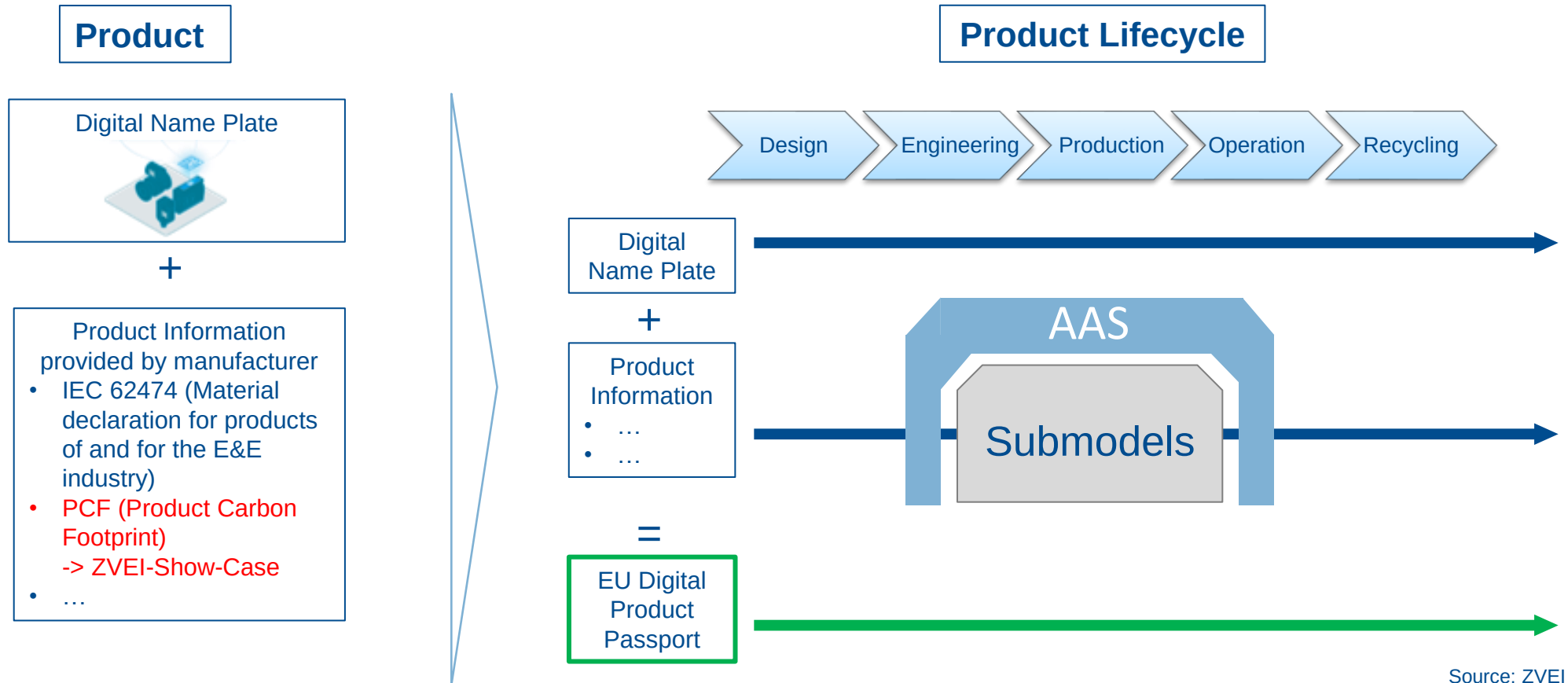
- Documents in all languages
- Locale Certificates (CE, CCC, ...)



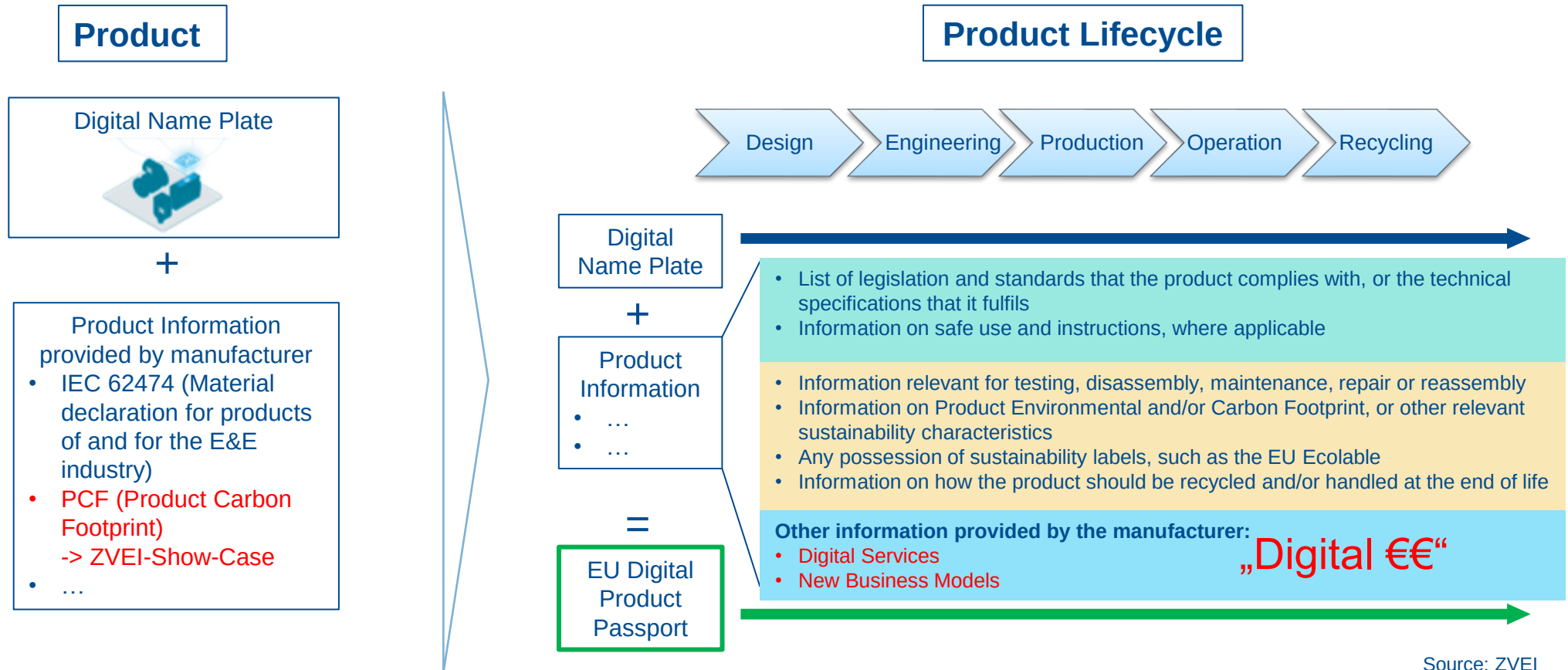
Sustainability

- Saving resources
- No paper documentation anymore

„EU Digital Product Passport (DPP4.0)“ – Enabling „Digital Transformation“ and new Business Models



„EU Digital Product Passport (DPP4.0)“ – Enabling „Digital Transformation“ and new Business Models



Source: ZVEI

Increasing Requirements on Accountability for PCF – ZVEI:

More than 90% are in the Supply Chain and not Transparent

Die Elektroindustrie

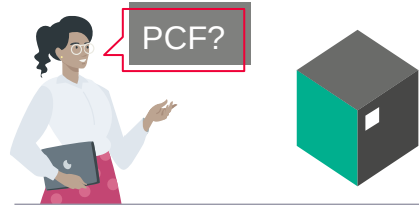
Responsibility

Public pressure

CO₂ Tax

Comp.
Advantage

Customer Request



- Requirements for PCF declaration
- Lost projects due to missing PCF info
- Increased willingness to pay for PCF transparency

Product Carbon Footprint (Cradle to Gate)

Direct Emissions (Scope 1)



Energy (Scope 2)



9%

Supply Chain (Scope 3)



91% intransparent¹

Scope 1 & 2

Data are available, but solution for **automated break down** on product level is **missing**

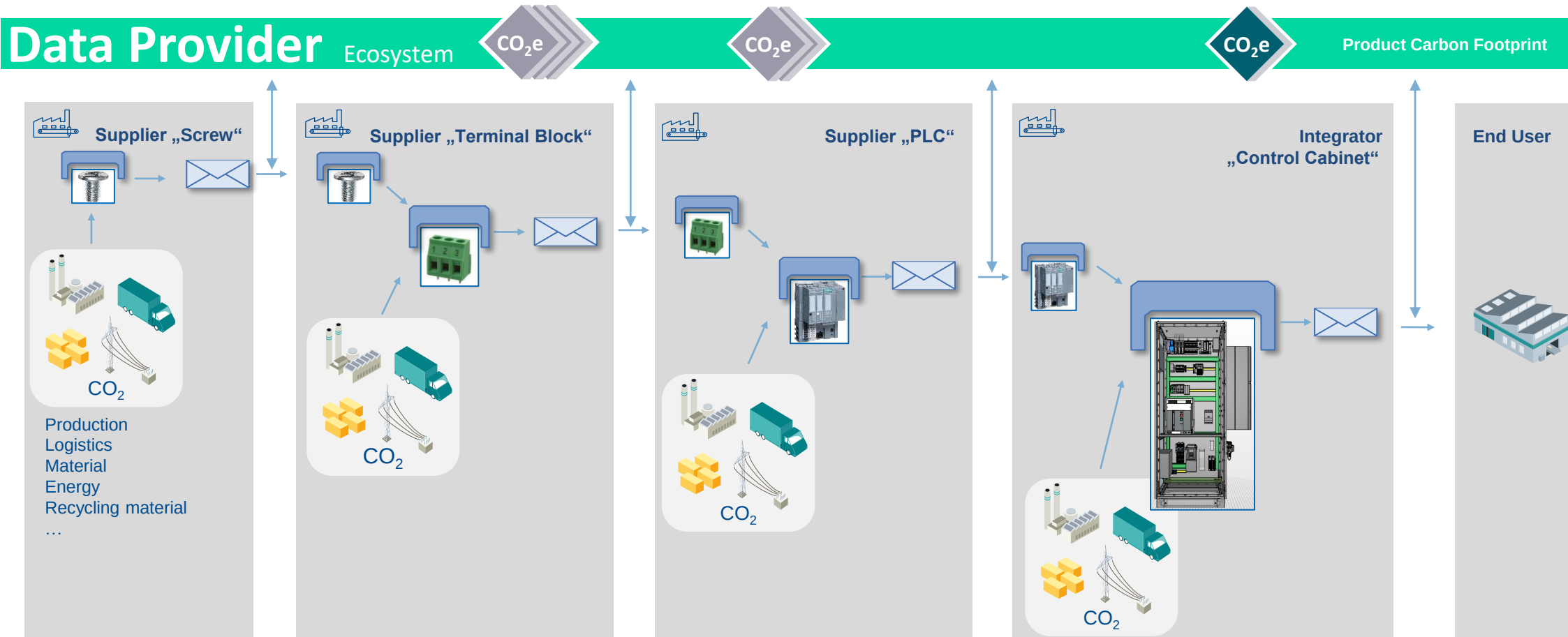
Scope 3

Data from the supply chain are **not accessible** even though the supply chain has major impact on the PCF

¹ Carbon Disclosure Project, Feb 2021

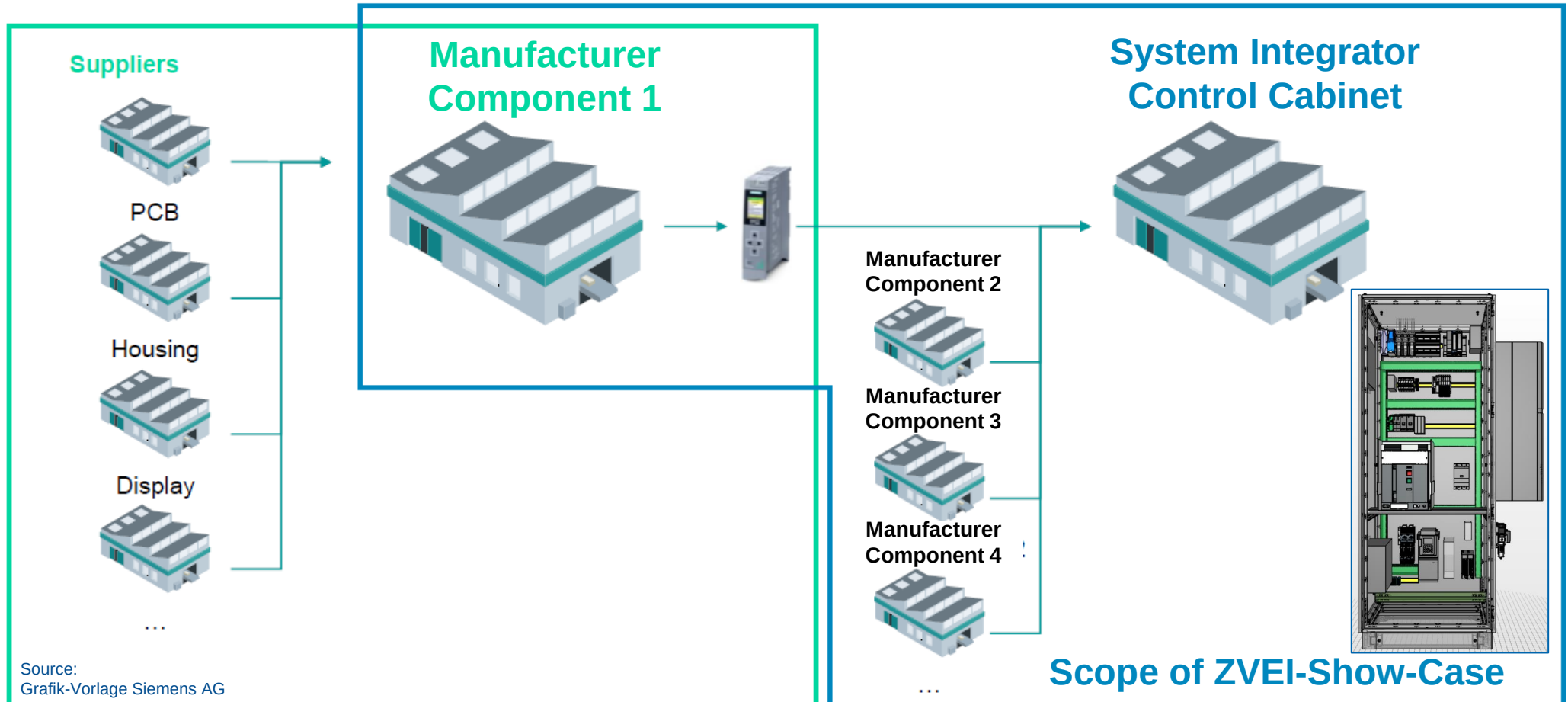
ZVEI-Show-Case PCF@Control Cabinet –

Simple Supply Chain including OEM, 1st Tier and 2nd Tier Suppliers



ZVEI-Show-Case PCF@Control Cabinet –

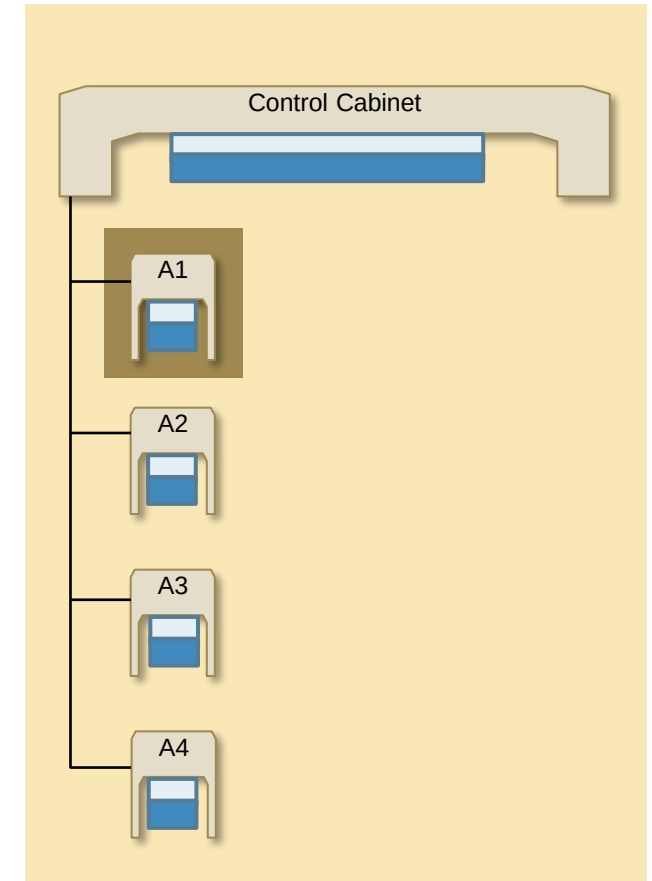
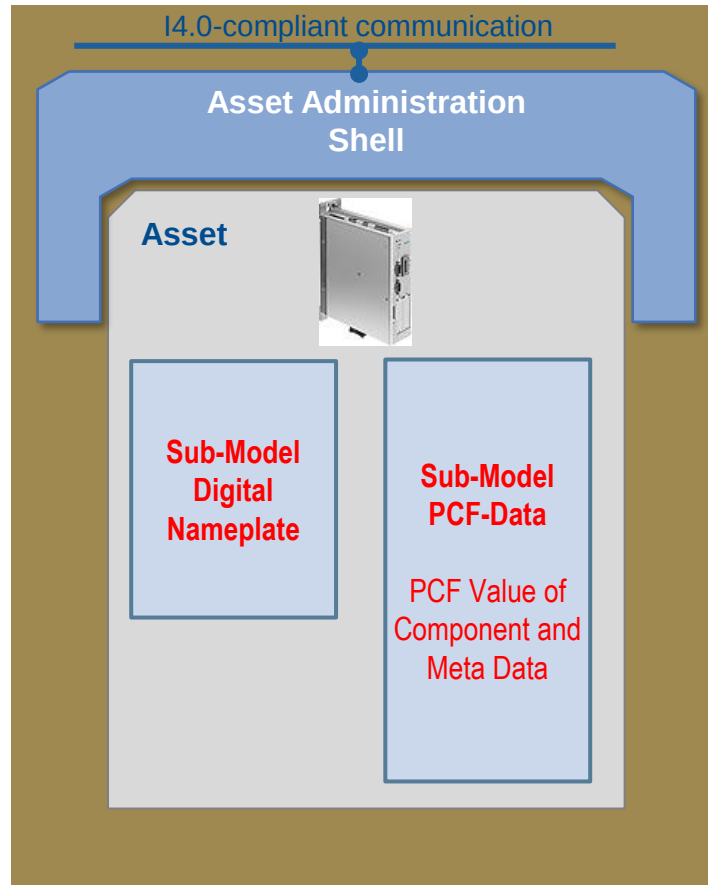
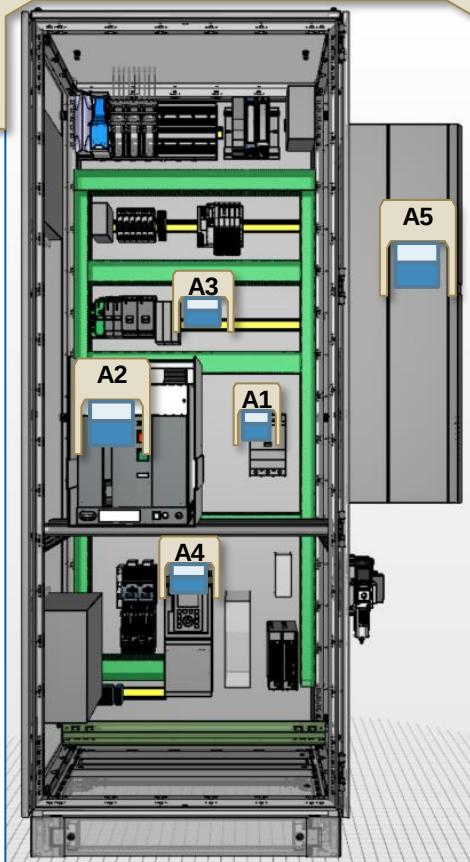
Simple Supply Chain including OEM, 1st Tier and 2nd Tier Suppliers



ZVEI-Show-Case PCF@Control Cabinet

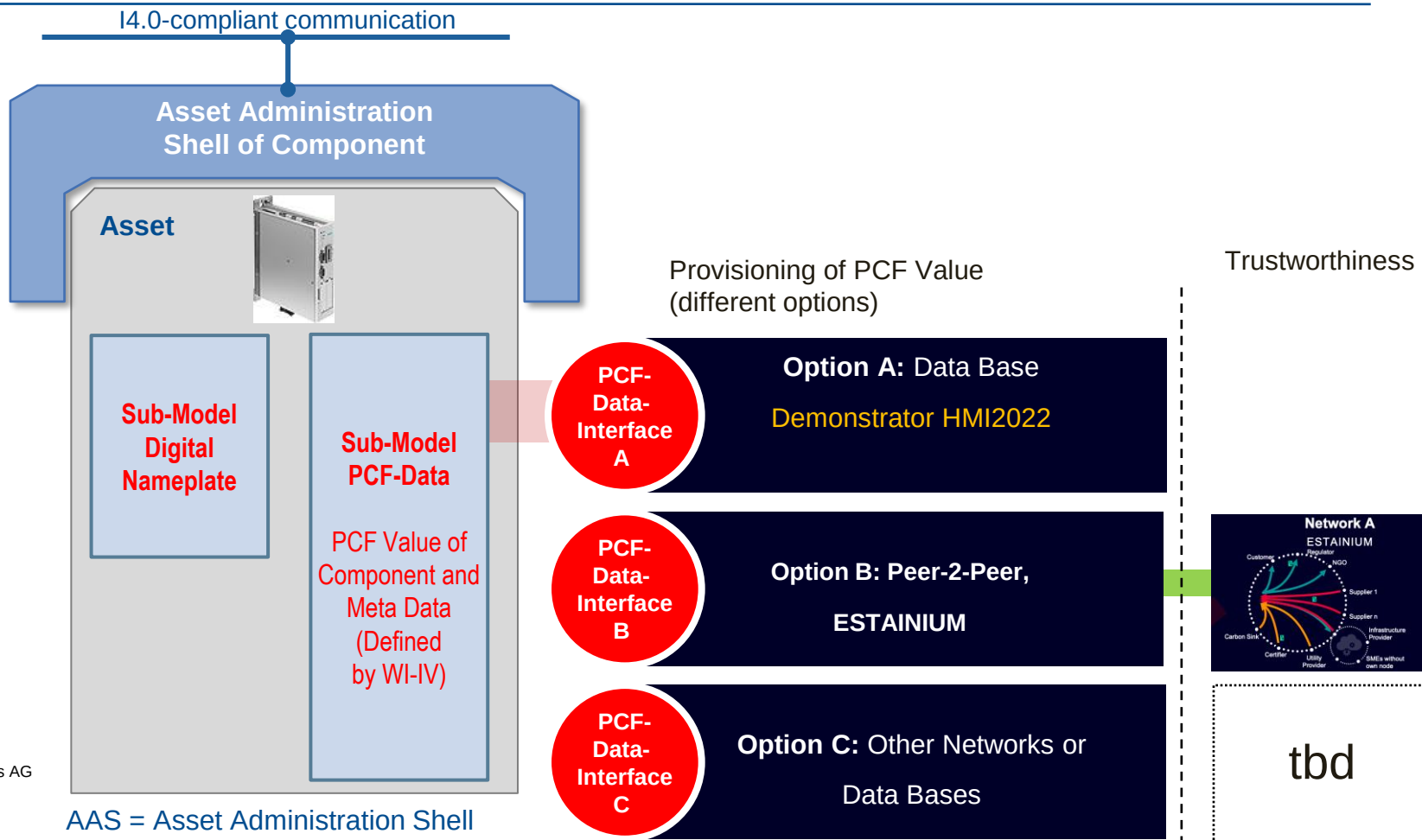
Demonstrator

Asset Administration Shell
of the Control Cabinet



ZVEI-Show-Case PCF@Control Cabinet

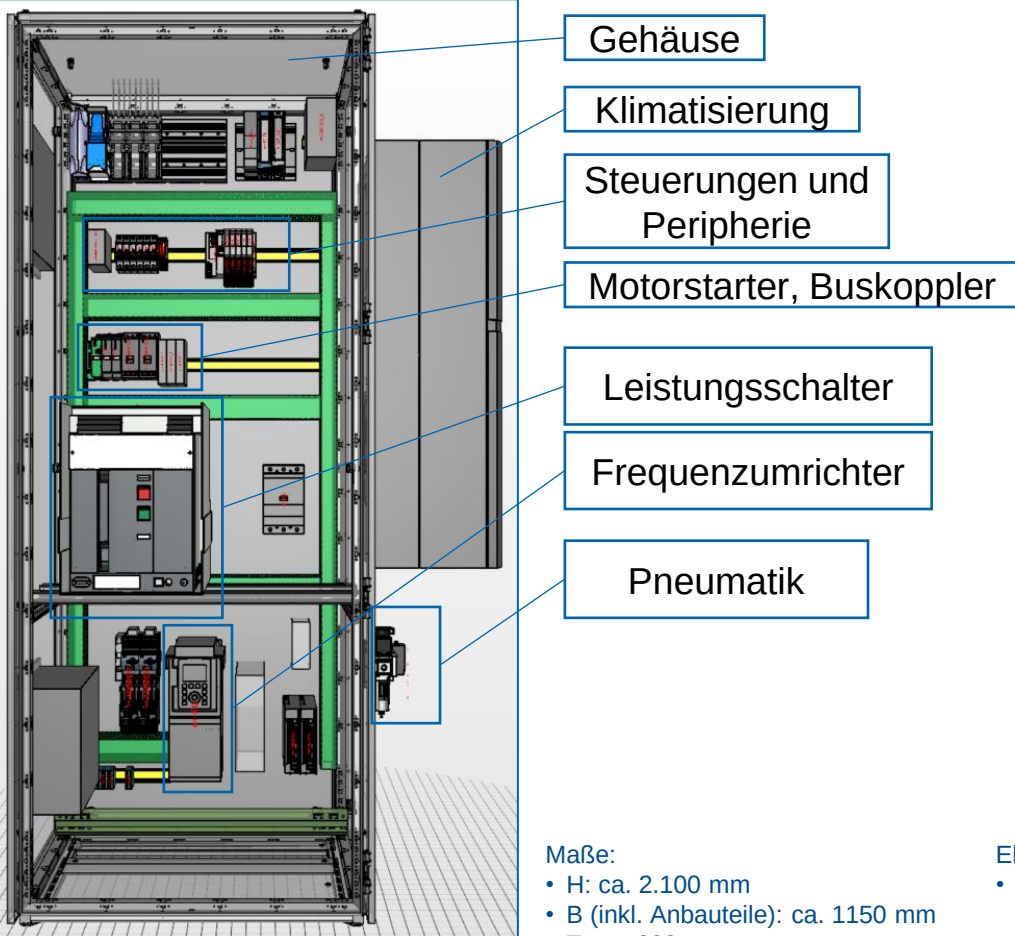
Several PCF-Calculation Methods and Provision Options



Source: ZVEI, Siemens AG

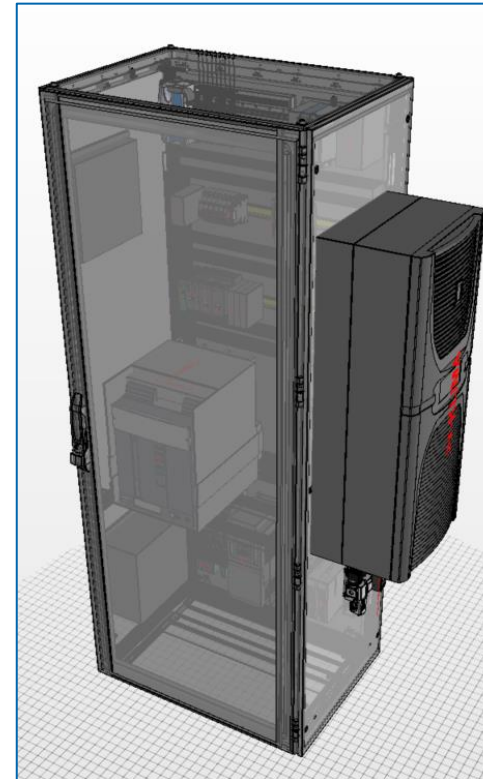
AAS = Asset Administration Shell

ZVEI-Show-Case PCF@Control Cabinet – Work-Item I – Control Cabinet

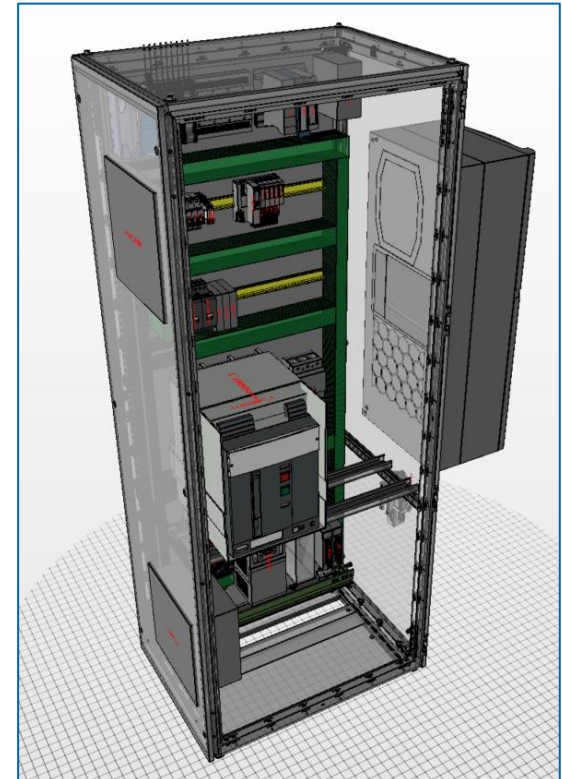


Maße:

- H: ca. 2.100 mm
- B (inkl. Anbauteile): ca. 1150 mm
- T: ca. 600 mm



ISO Ansicht 1 mit Tür



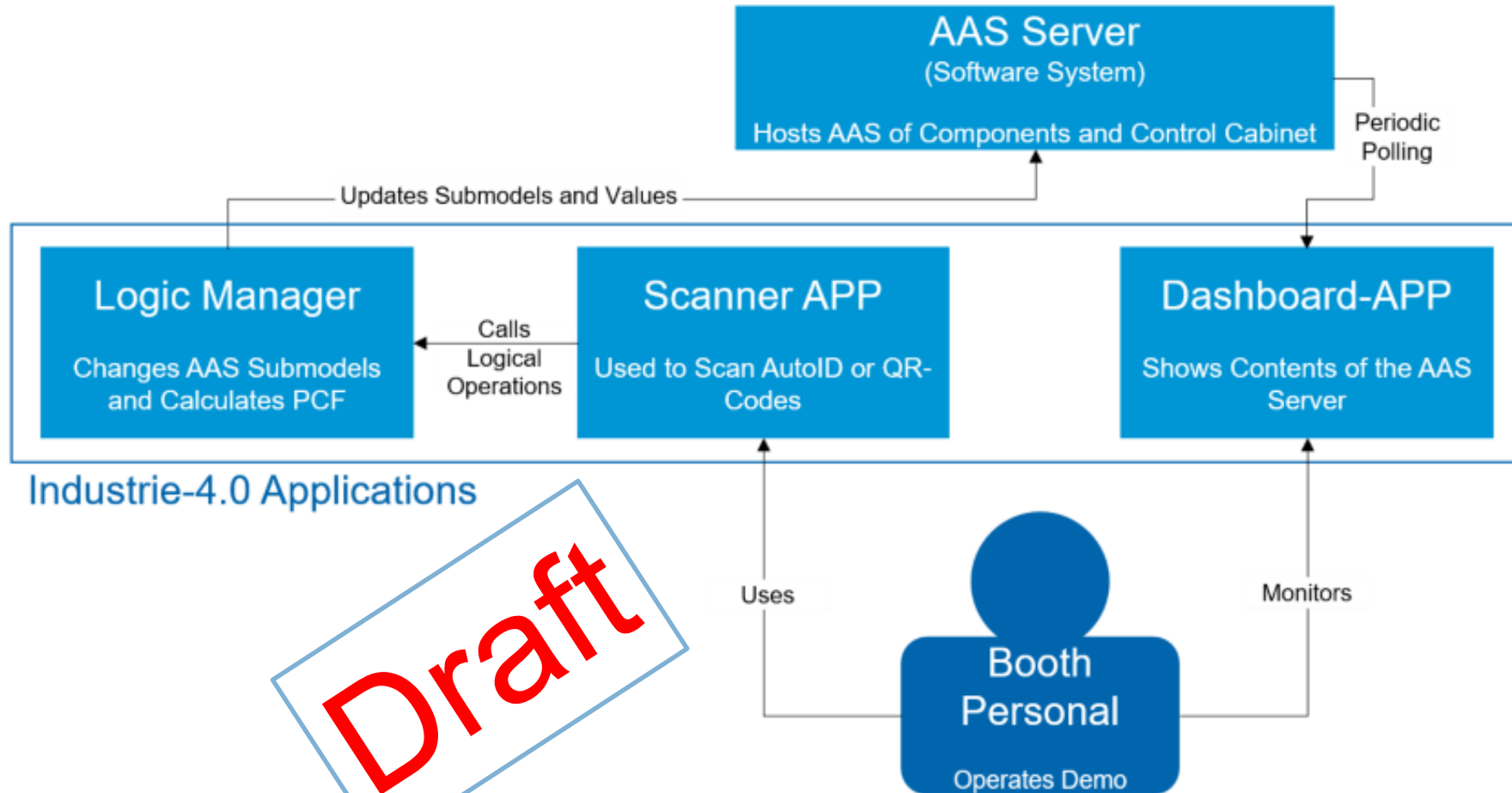
ISO Ansicht 2 ohne Tür

Elektrischer Anschluss:

- nur Innenbeleuchtung mit Standard-Kaltgerätestecker
- Schuko 240V, 10A Vorsicherung

ZVEI-Show-Case PCF@Control Cabinet –

Work-Item II – Digitalisation



Draft

ZVEI-Show-Case PCF@Control Cabinet –

Work-Item II / IV / V – PCF Submodel and ECLASS

SM	"ProductCarbonFootprint" [IRI, https://example.com/ids/sm/4052_2241_2112_2671]
▷ SMC	"FootprintInformationModule1" (6 elements)
⌵ SMC	"FootprintInformationModule2" (6 elements)
Prop	"Messverfahren" = PEP
Prop	"CO2eq" = 0.019
Prop	"Lebenzyklusphase" = Cradle-to-gate (A1-A3)
Prop	"BEZUGSGROESSE" = Stück
Prop	"WARENUEBERGABEORT" = Hannover
Prop	"MENGENEINHEIT" = 1
⌵ SMC	"FootprintInformationModule3" (6 elements)
Prop	"Messverfahren" = PEP
Prop	"CO2eq" = 0.019
Prop	"Lebenzyklusphase" = Production (A1)
Prop	"BEZUGSGROESSE" = Stück
Prop	"WARENUEBERGABEORT" = Hannover
Prop	"MENGENEINHEIT" = 1

Draft

ZVEI-Show-Case PCF@Control Cabinet –

Participating Companies and Organisations

ZVEI:
Die Elektroindustrie



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Industrial Control Systems

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