prostep ivip at a glance

Nora Tazir, prostep ivip

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Nora Tazir (prostep ivip)

- **Nora Tazir**
- **Technical Program Manager prostep ivip since 2010**
- **Consultant for PLM Strategy & and requirements management at PROSTEP AG (2010-2018)**
- **Studied Industrial Engineering specializing in mechanical engineering at Technical University of Darmstadt**
- **Animal friendly and enjoys drumming**

prostep IVIP
30
years of
excellence

PROSTEP IVIP AT A GLANCE

A strong community since 1993

Leading Worldwide-acting Neutral & Non-Profit Network
180 Members from Manufacturing Industry, IT and Research
Driven & Funded by its Members
Know-how exchange in non-competitive areas
Sharing risks and funds, instead of doing it alone
Best practices, even beyond branches and continents

Digital Transformer in Product Creation & Production
Defining Standards & Interfaces for Digital Processes
Safeguarding industrial Benefits & Interoperability

Expert in IT-Standards & Industrial Implementation

PROSTEP IVIP AT A GLANCE

prostep ivip

30 years of excellence

A strong community since 1993

PROSTEP IVIP FACTS AND FIGURES

22 Partner Bodies

Marketplace

1 Publicly Funded Project incl.
3 new applications

25 Projects

175 Members -3

10 Web Seminars

5 F2F Events & 1 virtual
Symposium, AI, JT, STEP,
SE, Days, VEC Day

+14 Publications

2022 Admissions:

- Industry: 3
- IT & ISVs: 4
- Research: 1

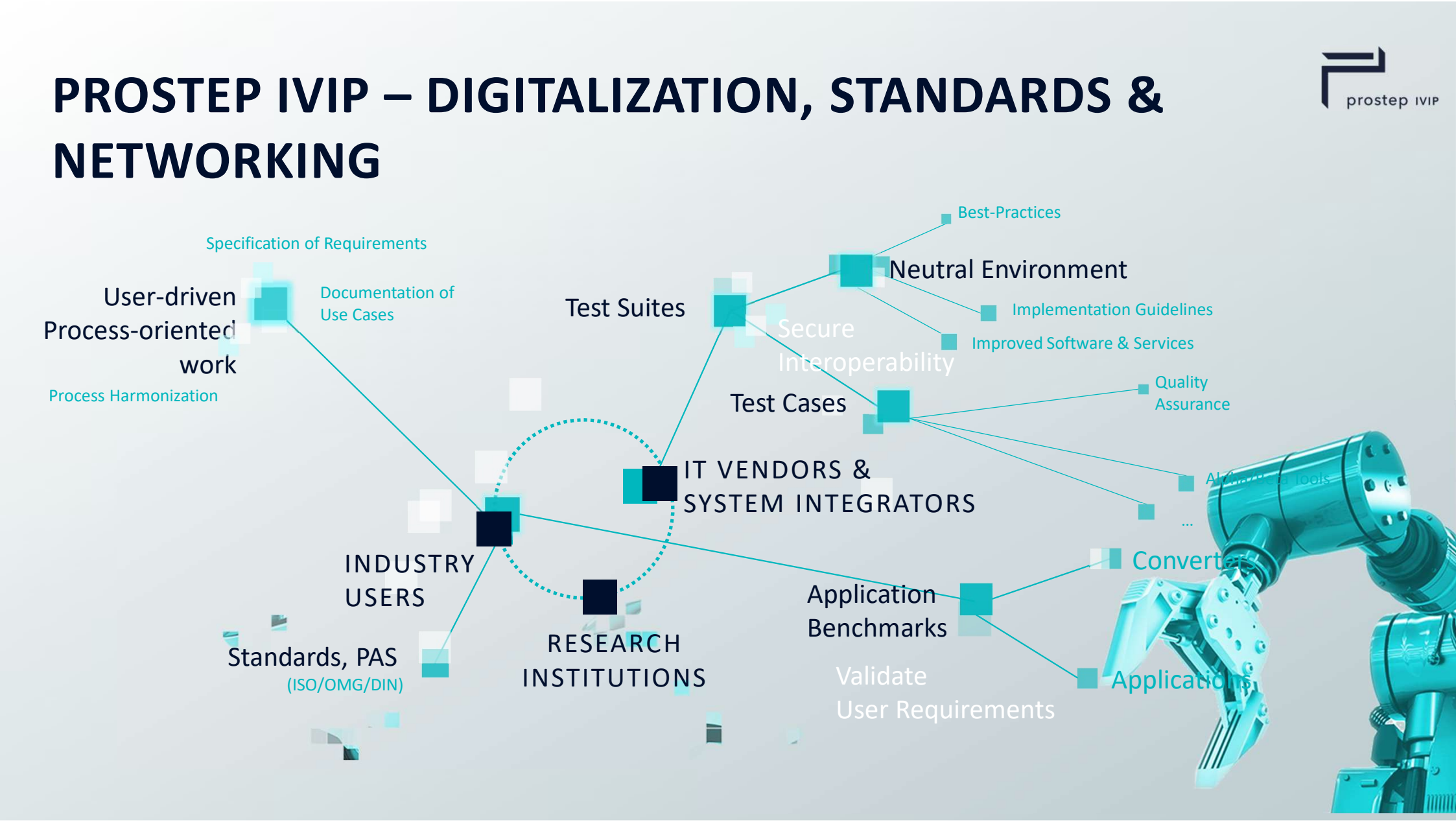
PROVIDING RESULTS OF INDUSTRIAL RELEVANCE FAST AND FLEXIBLE

Defining Standards & Industrialization for Digital Transformation:

- e.g. ISO 10303 (STEP), ISO 14306 (JT), LOTAR, OMG ReqIF
- Dozens of prostep ivip, VDA, VDMA Recommendations
- Tons of White Papers and Recommended Practices

Together with Partners to bring the relevant standard(s) to the market:

PROSTEP IVIP – DIGITALIZATION, STANDARDS & NETWORKING



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TECHNICAL WORKING PROGRAM

TECHNICAL PROGRAM FACTS & FIGURES

prostep ivip

25 Projects

3 Benchmarks

5 Topic specific events
4 onsite, 1 online

1 Project successfully started

Over 80 actively participating member companies

International collaboration across 4 continents

PROJECT CLUSTERS

1 OPENNESS

Standardization Strategy Board (SSB)
Code of PLM Openness (CPO)
psiOntologies

2 INTERNATIONAL STANDARDIZATION

ISO 10303 (STEP AP242)
ISO 14306 (JT)
OMG ReqIF
DIN SPEC CPO
DIN SPEC JT

3 PRODUCTION COLLABORATION

3D MDM@Cloud
CBPC

4 DATA DRIVEN ENGINEERING COLLABORATION

Collaborative Digital Twin (CDT)
Vehicle Electric
ReqIF
SmartSE
FDX (Functional Data Exchange)
JT
DDP (Digital Data Package)
ECAD/MCAD
MBx-Interoperability Forum
LOTAR
PSMS

1 OPENNESS

Openness and integration capability are indispensable for digital continuity in heterogeneous system landscapes.

The prostep ivip association is a promoter of open PLM systems and the efficient use of engineering IT standards in systems engineering.

FACTS

3 Project groups
22 members involved
International collaboration across **4** countries

2 INTERNATIONAL STANDARDIZATION

The prostep ivip association works on alinging the collaboration requirements from industry.

In doing so, we lay the foundations for international standards and make companies more independent of their IT-systems and system suppliers.

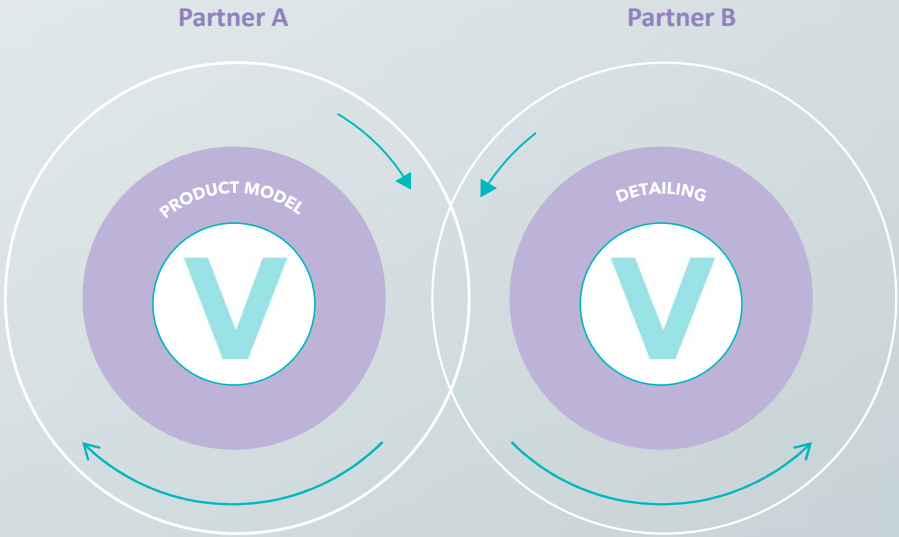
FACTS

5 Project groups
20 members involved
International collaboration across **7** countries

3 DATA DRIVEN ENGINEERING COLLABORATION

Improving cross-domain and cross-company collaboration is the mission of the prostep ivip association.

We bundle user requirements, develop standards and make recommendations for collaboration in product development and production.

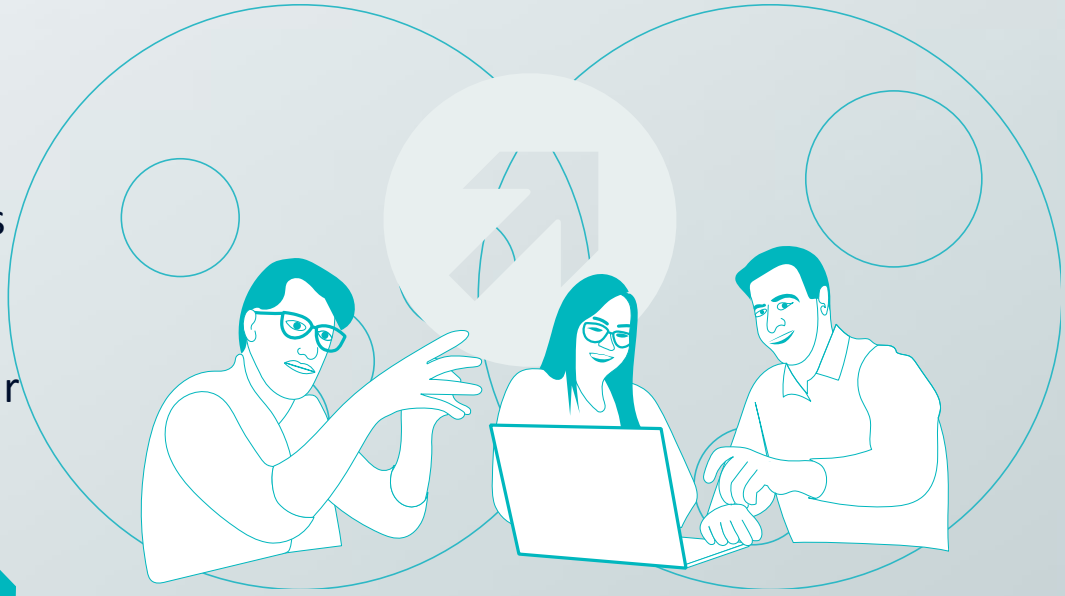


FACTS

17 Project groups
70 members involved
International collaboration across **7** countries

4 PRODUCTION COLLABORATION

Cross-company cooperation is often hindered by heterogeneous IT systems in production. That is why the prostep ivip association also supports its member companies in integrating their digital manufacturing processes.

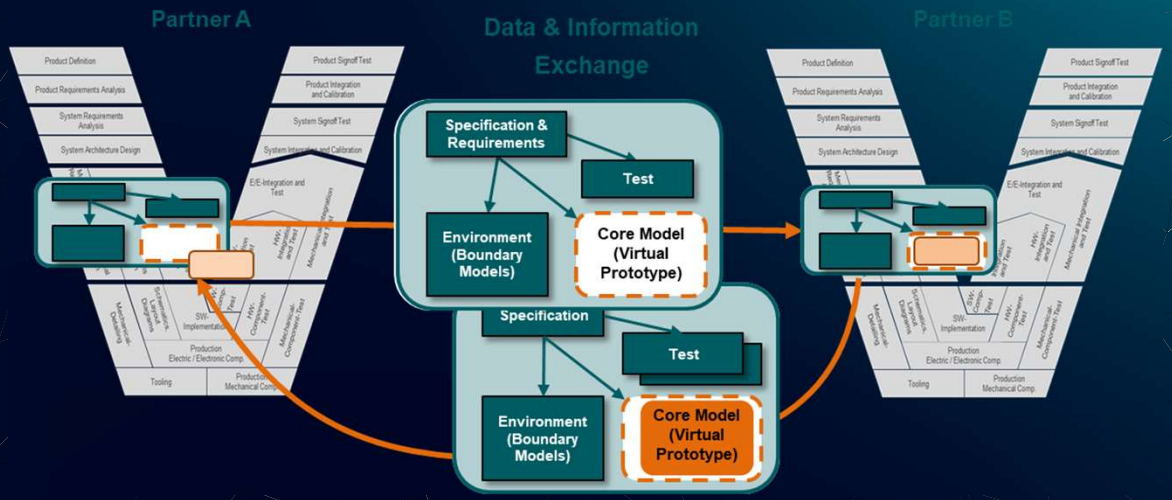


FACTS

2 Project groups
10 members involved
International collaboration across **2** countries

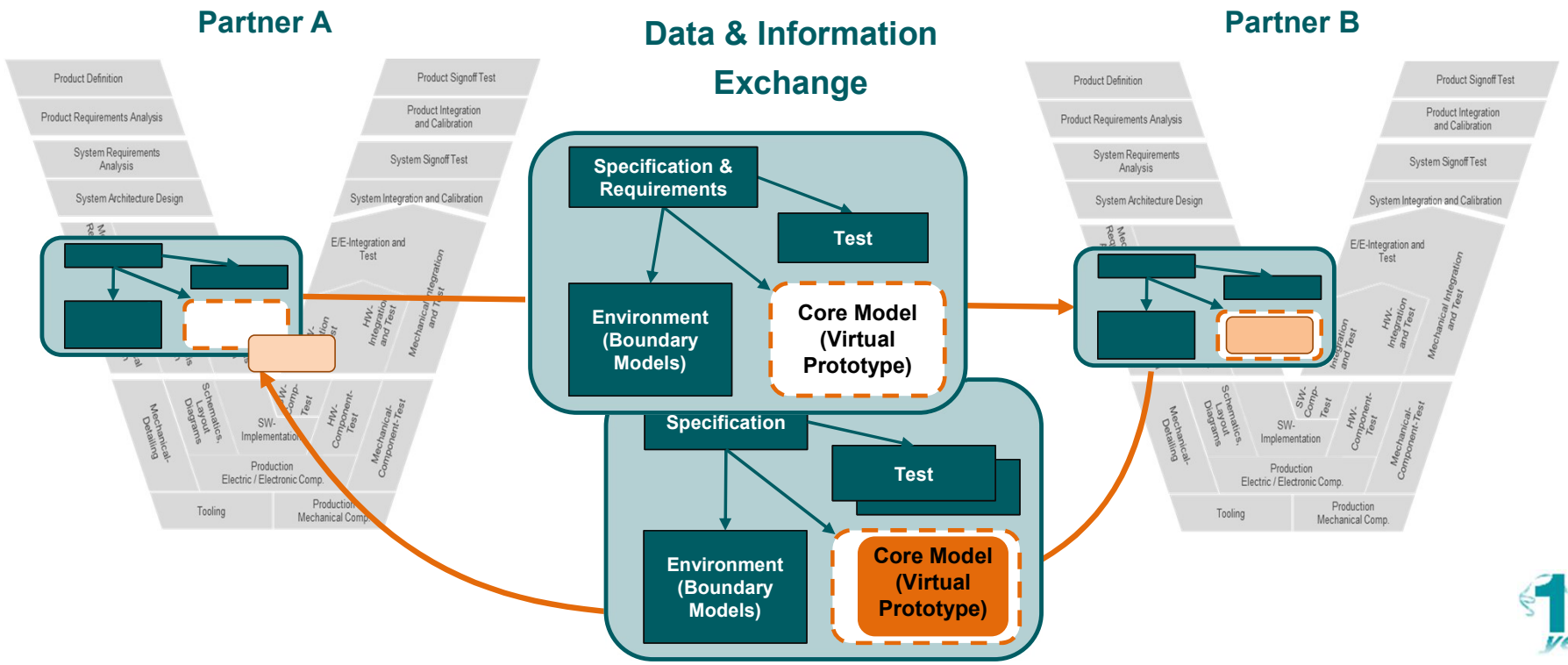
prostep IVIP

Smart Systems Engineering – Smart SE



smart Systems Engineering

Motivation Smart Systems Engineering (SmartSE)
Collaborative Simulation-based Engineering



In Scope: Exchange of all artefacts required for an efficient, cross-company simulation-based engineering like specifications, requirements, test cases, simulation models and model meta data.

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Smart Systems Engineering (SmartSE)
10 years SmartSE – what have we reached?

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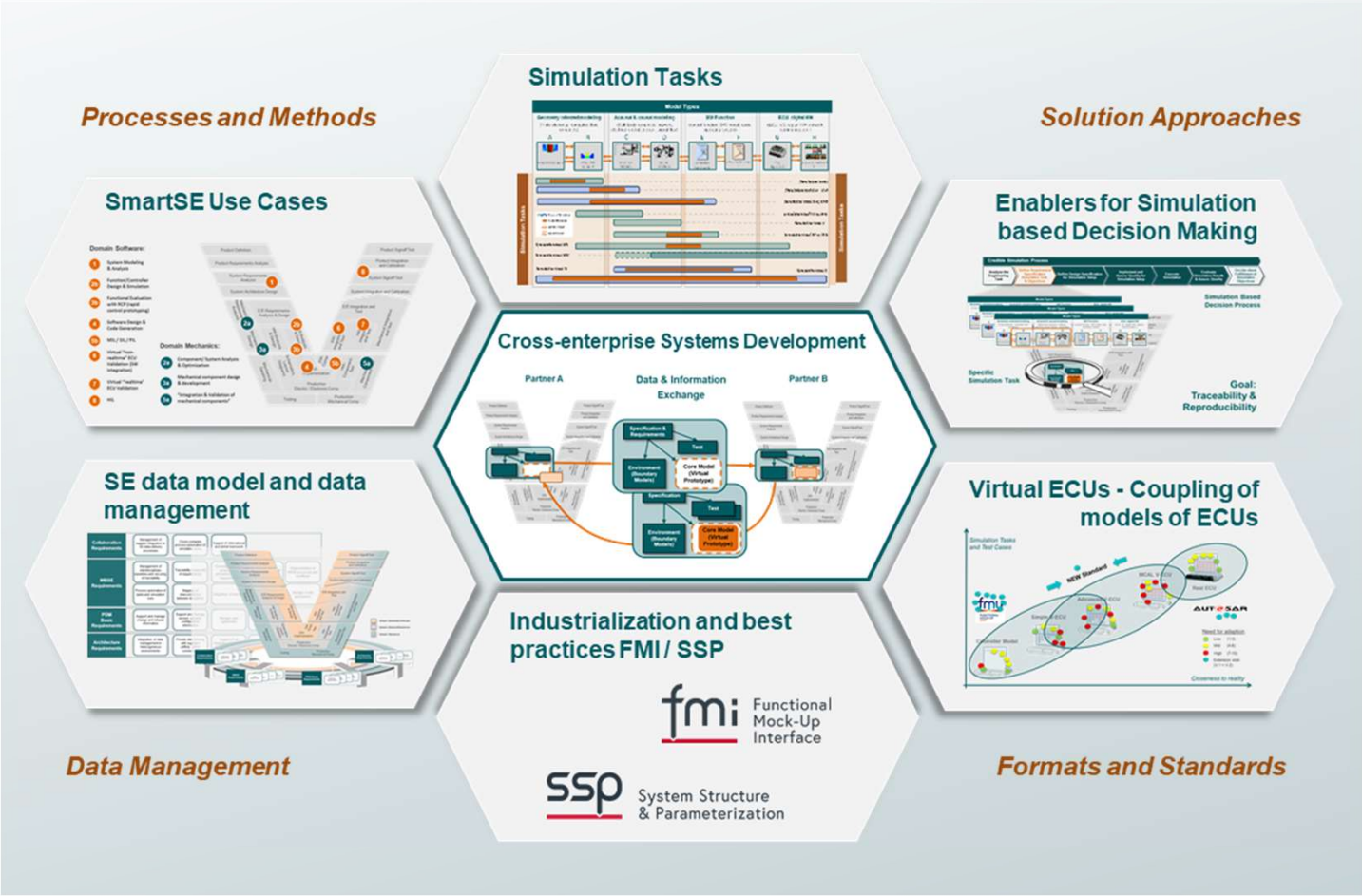
Smart Systems Engineering (SmartSE)
Selected SmartSE Projects Results - Solution Cluster

Enabling collaborative simulation-based engineering

Smart solutions and enablers for the exchange of all artefacts required for an efficient, cross-company simulation-based engineering like specifications, requirements, test cases, simulation models and model meta data.



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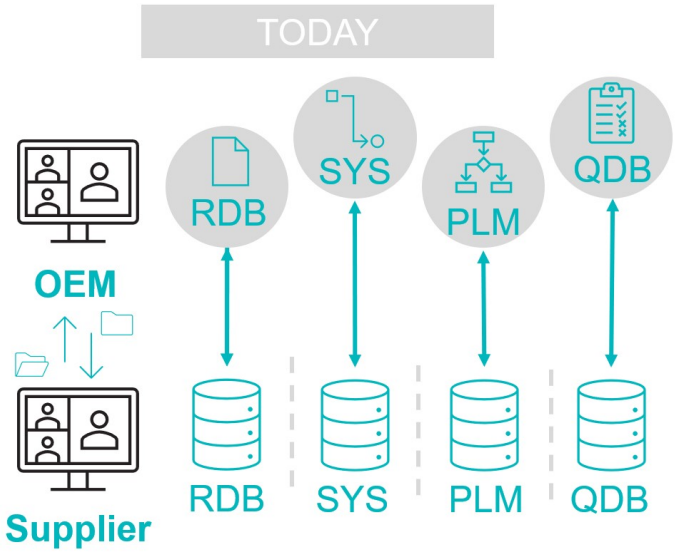
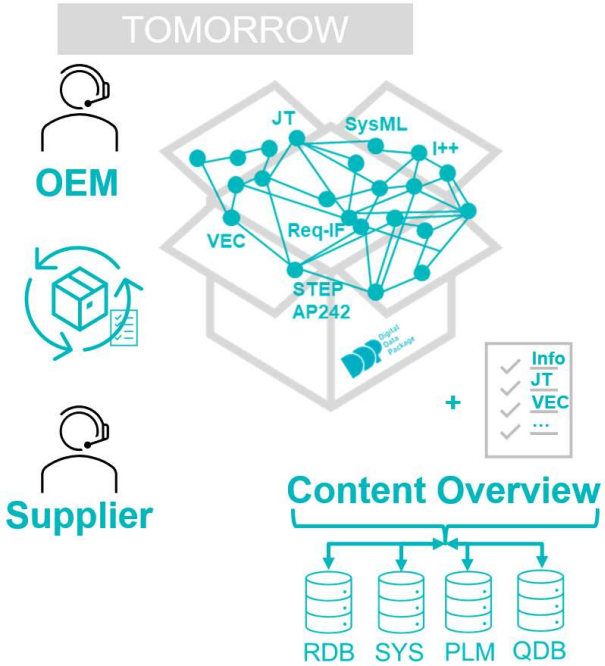
Spinning the digital thread across enterprises

DDP enables cross-domain collaboration in MBSE

Today various standards for exchanging domain-specific data in systems engineering exist. However, the items contained therein can't be linked and thus a cross-domain collaboration and data exchange is poorly supported



This project address the lake of a data exchange standard which allows for a cross-company and cross-domain exchange of linked systems engineering data under consideration of an end-to-end configuration management.



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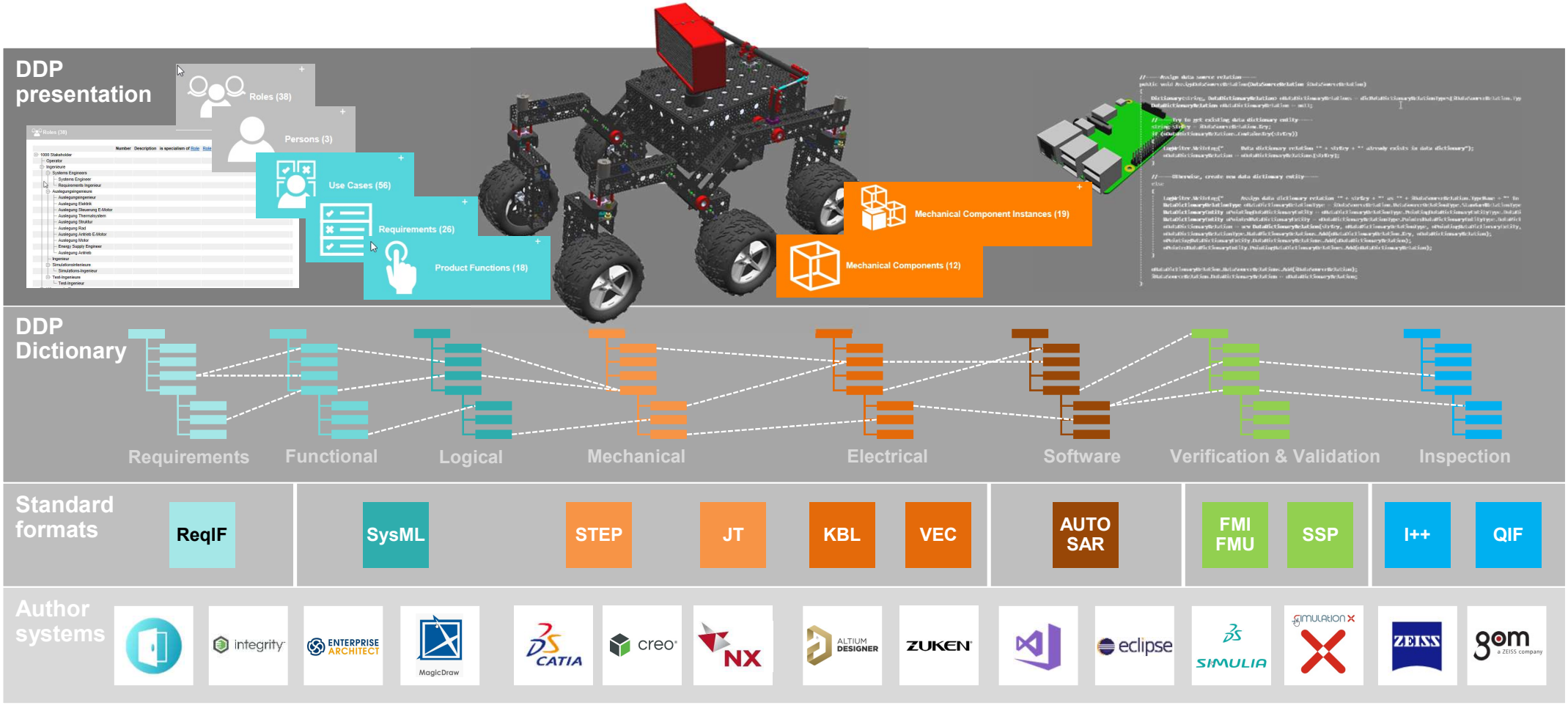
Architecture of the Digital Data Package



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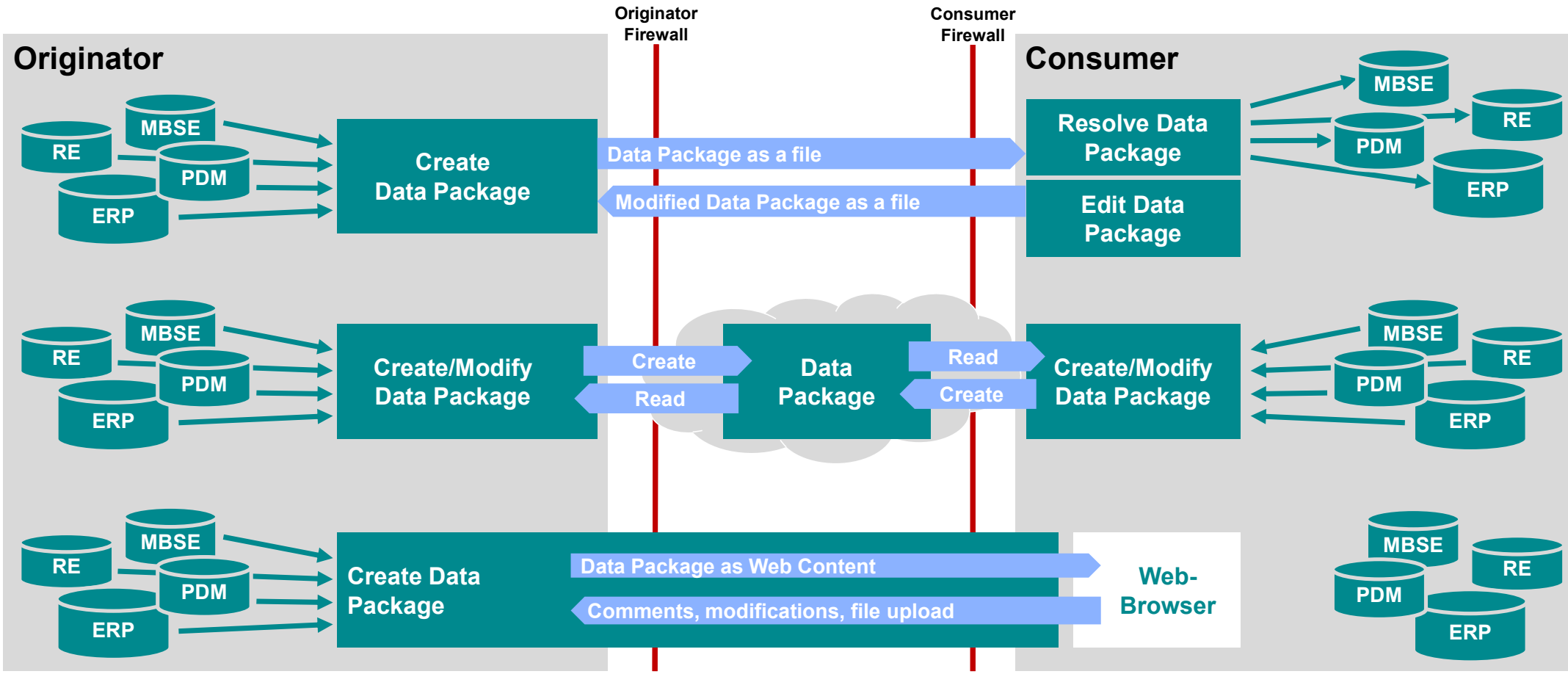
How Organization collaborate using a Digital Data Package



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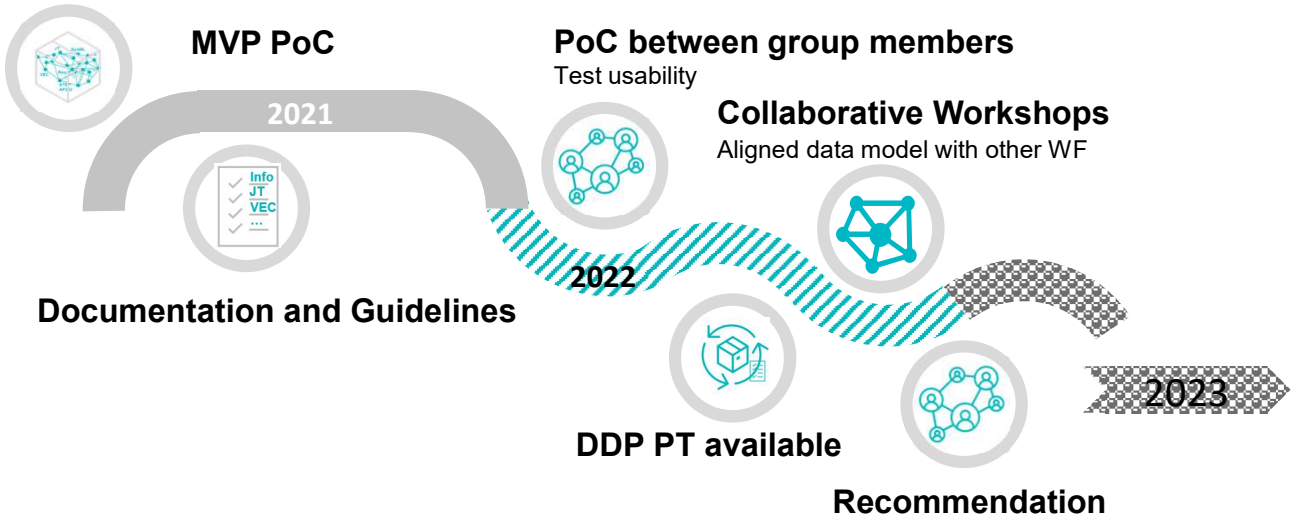
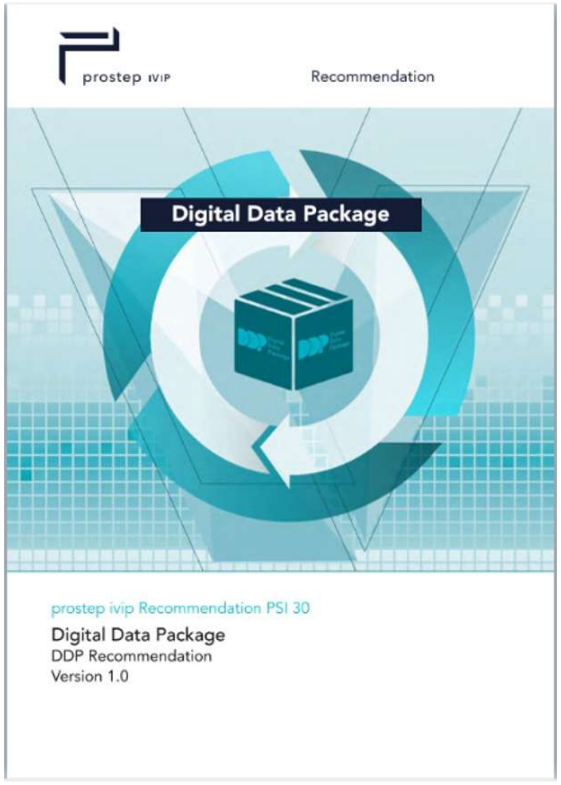
DDP Goals 2023

- **Enhance Formats and Mappings**
- **SysML V2 investigation impact on DDP**
- **Extend DDP dictionary to consider SmartSE, MoSSEC, AAS**
- **Initiate standardization of DDP data model (OMG, DIN)**
- **Enhance model and demonstrators with V&V**
- **Enhance demonstrators with MCAD & ECAD**
- **Develop / publish Best Practices**





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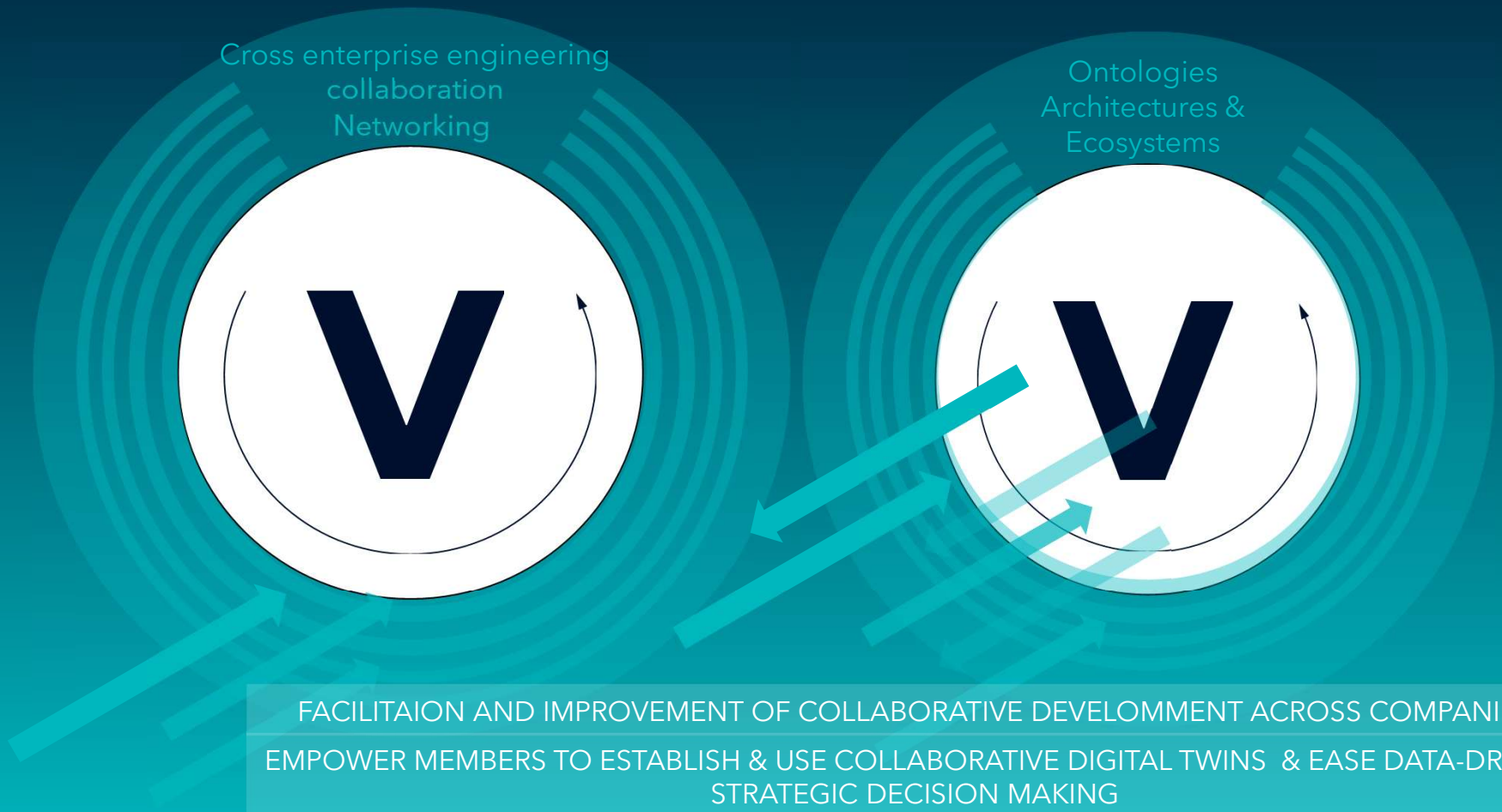
Collaborative Digital Twins

Foundation of future collaboration

Project Start: Collaborative Digital Twins
Foundation of future collaboration



FACILITAION AND IMPROVEMENT OF COLLABORATIVE DEVELOMMENT ACROSS COMPANIES

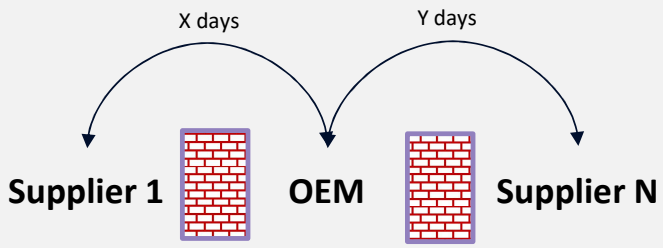
EMPOWER MEMBERS TO ESTABLISH & USE COLLABORATIVE DIGITAL TWINS & EASE DATA-DRIVEN STRATEGIC DECISION MAKING

Collaborative Digital (Engineering) Twins

established weeks

challenging seconds

asynchronous data exchange

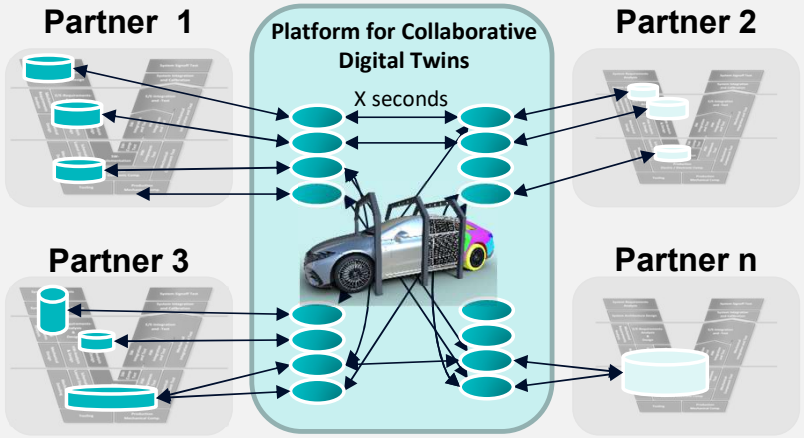


Steps for Data Exchange (loops ignored)

- Extract Data for export
- Convert Data
- Validate extracted Data
- Transfer Data
- Receive Data
- Check Data
- Import Data
- Connect/ Integrate Data
- Archive replaced Data
- Release new Content

CDT

synchronous linked collaboration

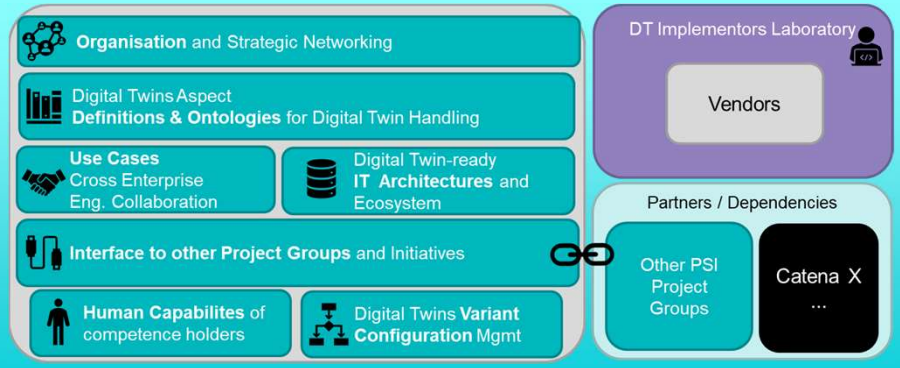


release — recieve

Challenges:

- *IP*
- *Accountability*
- *Know How Protection*
- *Ontology / Semantic*
- Architecture (cloud based)
- Maturity of Models / Data
- Product Line Engineering

CDT



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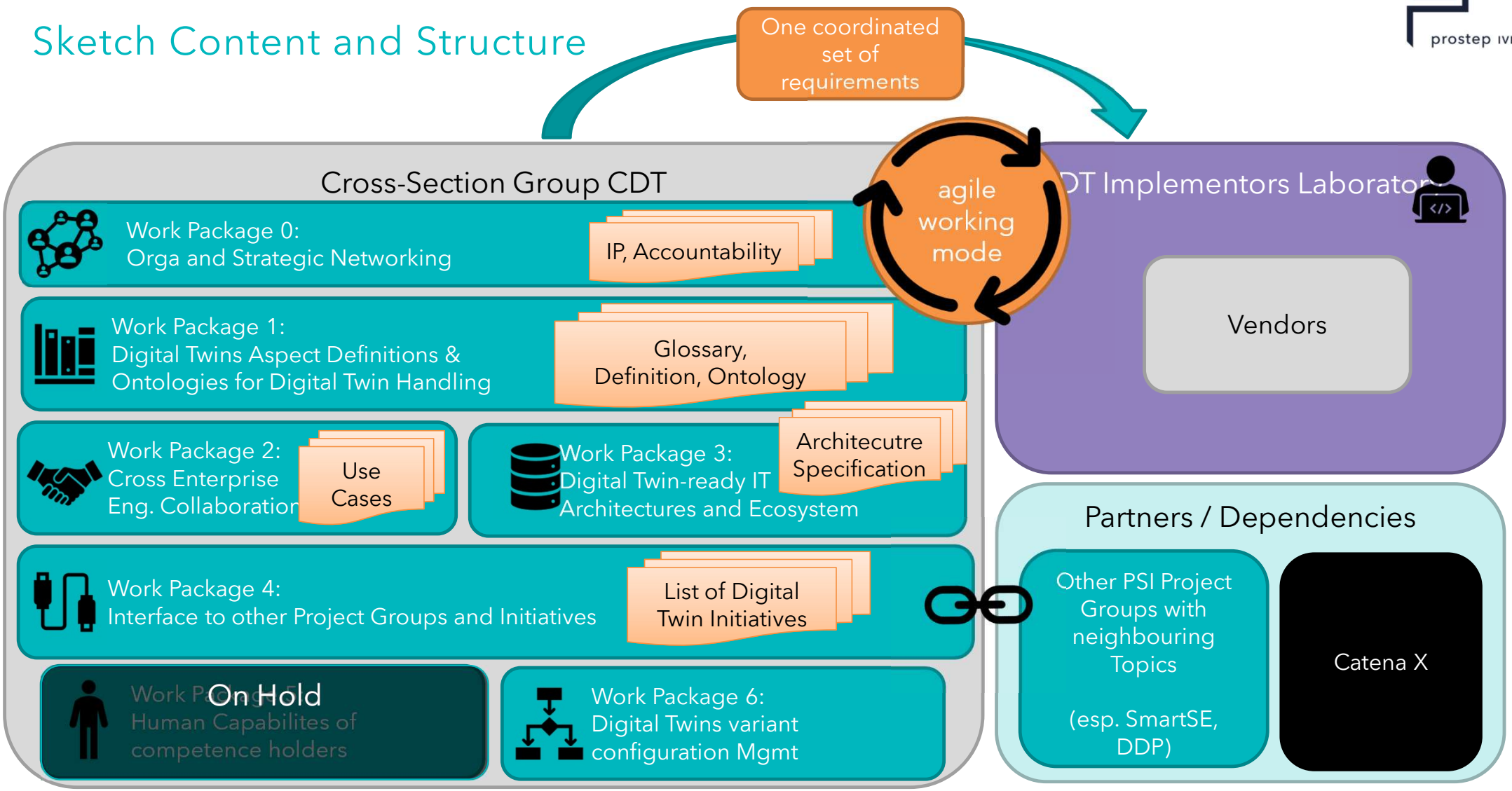
Sketch Content and Structure



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Current Member List

Lead: Mercedes, Schaeffler

Over 100 interested partners

Industrial Appliers / Users

- Airbus
- AVL
- Boeing
- Bosch
- Hella
- Hewlett Packard
- Hyundai
- MAN Energy Solutions
- Mercedes
- Porsche
- Schaeffler
- Stellantis
- Toshiba
- VVR
- ZF

18 Industry Partners

Research Partners

- Fraunhofer IESE
- Fraunhofer IPK
- RPTU Kaiserslautern
- TU Berlin
- TU Darmstadt
- TU Dortmund
- TU Ilmenau

Implementors

- Abat
- Conweaver
- configIT
- HCL
- Karakun
- PDTec
- PROSTEP AG
- SSC-Services GmbH
- Smart Cable
- Threedy
- T-Systems
- TWT

Service Provicers

- :em AG
- Mews
- PROSTEP AG
- SSC-Services GmbH
- Unity

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AI Marketplace

Marketplace for AI services in product creation

Project completion

Supported by:

Federal Ministry
for Economic Affairs
and Climate Action

on the basis of a decision
by the German Bundestag

AI Marketplace

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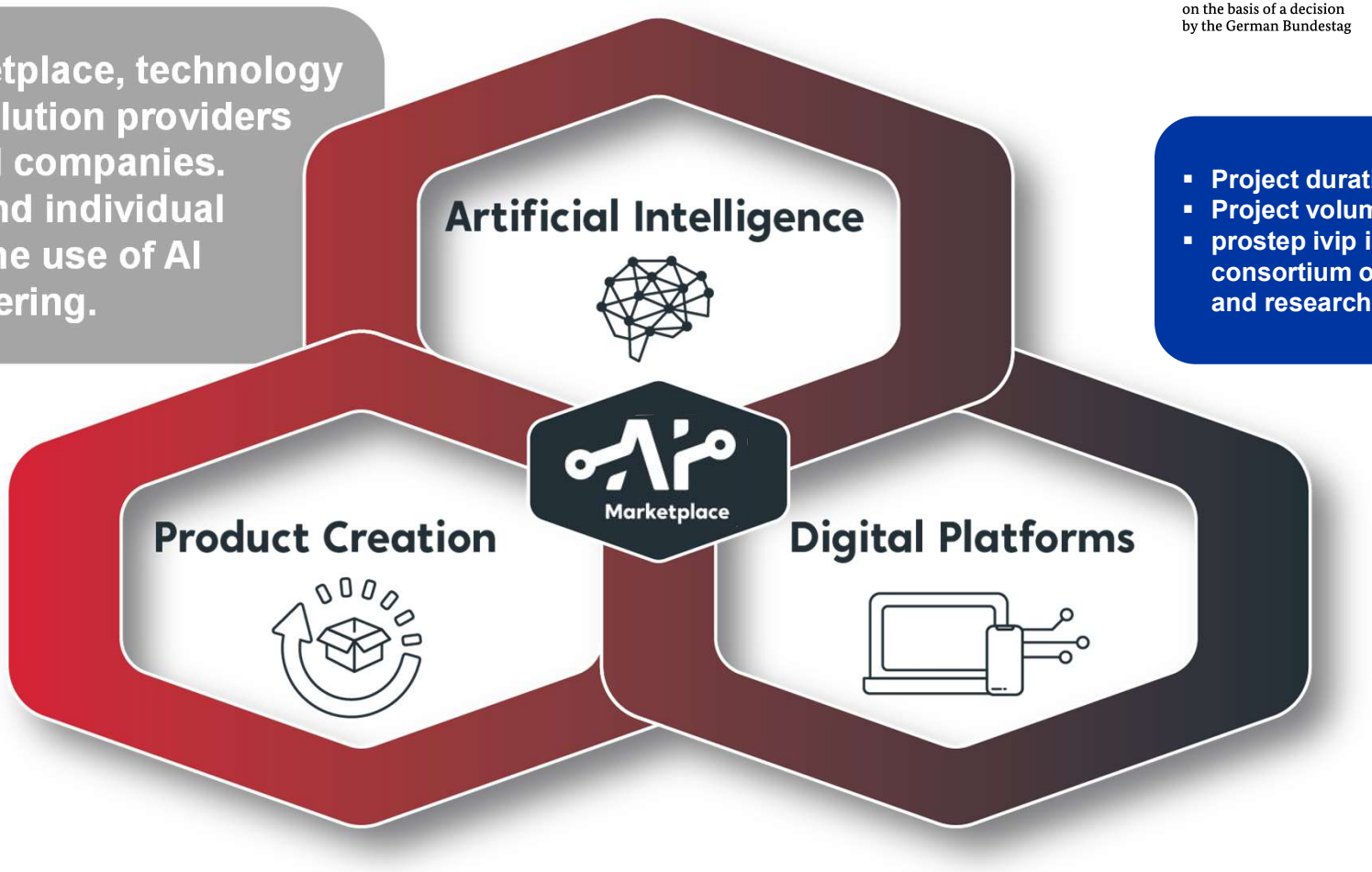
In the AI marketplace, technology experts and solution providers meet industrial companies. Together we find individual solutions for the use of AI in your engineering.



- **Project duration: 2020-2023**
- **Project volume: 16.5 Mio. €**
- **prostep ivip is partner in the consortium of 19 companies and research institutes**

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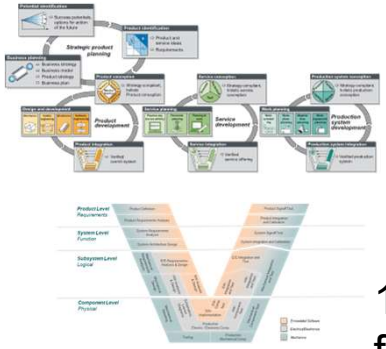
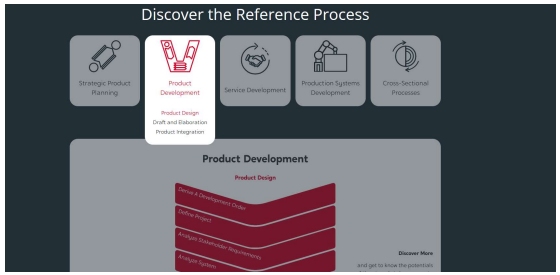
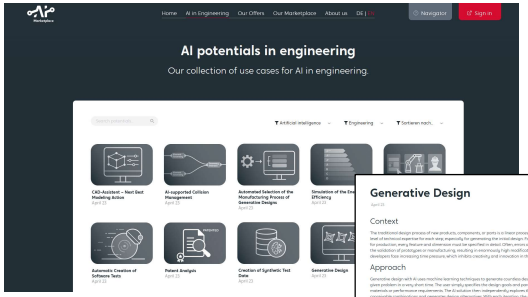
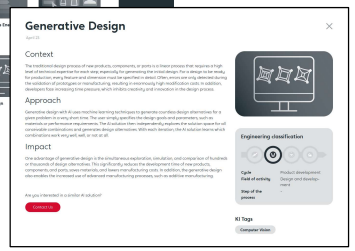
AI Marketplace - Key results prostep ivip -perspective





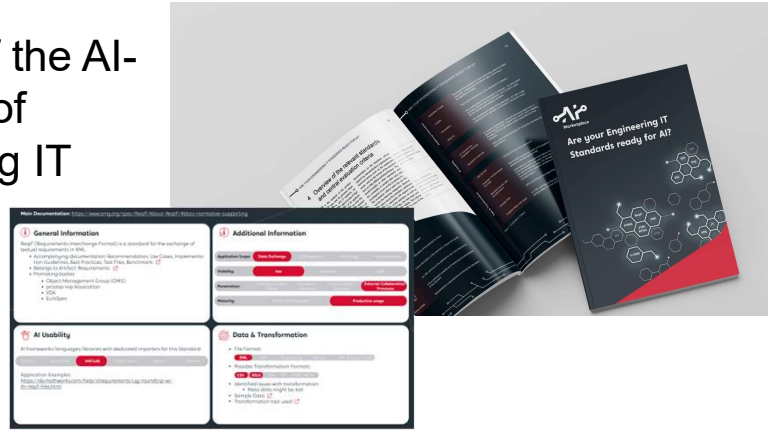
150% reference process for product creation





50 potentials for AI in product creation

Analysis of the AI-readiness of Engineering IT Standards



Networking: Hackathons, Congresses, Events... >7500 people reached!

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Hard work and impressive results of the project groups

>160 Recommendations, White Papers and DIN SPECs

prostep IVIP

JOIN THE PROSTEP IVIP EVENTS

21 September 2023

Hochschule Landshut

VEC DAY

Lösungsansätze, Rahmenbedingungen und Konsequenzen für die zukünftige Bordnetzentwicklung und -Fertigung
(event language german only)

17 October 2023

Airbus | Toulouse

STEP AP242 DAY

Industrials will share their success stories, requirements, and #use cases with you.

24 October 2023

SCHAEFFLER | Herzogenaurach

DAY

Top-class international speakers will report on the practical use and benefits of the national and international standard format for multidisciplinary 3D backbone for digital collaboration.

December 2023

tbd | JAPAN

TOKIO **SE DAY 2023**

Tokyo Systems Engineering Summit 2023: Toward Acceleration for Software Defined Products

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SYMPOSIUM 2024

22–23 MAY
MOC
MUNICH

DIGITAL ENGINEERING

READY FOR SEAMLESS COLLABORATION

More informations Online at
www.prostep-ivip-symposium.org
und LinkedIn prostep ivip association

PREMIUM PARTNER

BMW GROUP · MINI · ROLLS-ROYCE MOTOR CARS LTD · ptc

Any questions?

For more information please visit our website (www.prostep.org) or contact

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