
AUTOMATIONML SUCCESS STORIES: SECURE PLUG & WORK, PCFF, MOMO

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Ettlingen



Karlsruhe



Ilmenau



Lemgo

Content

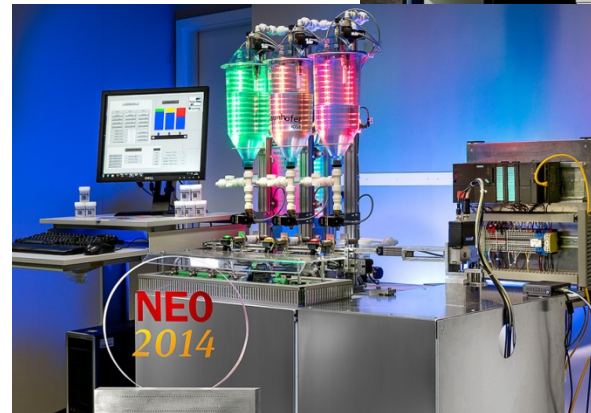
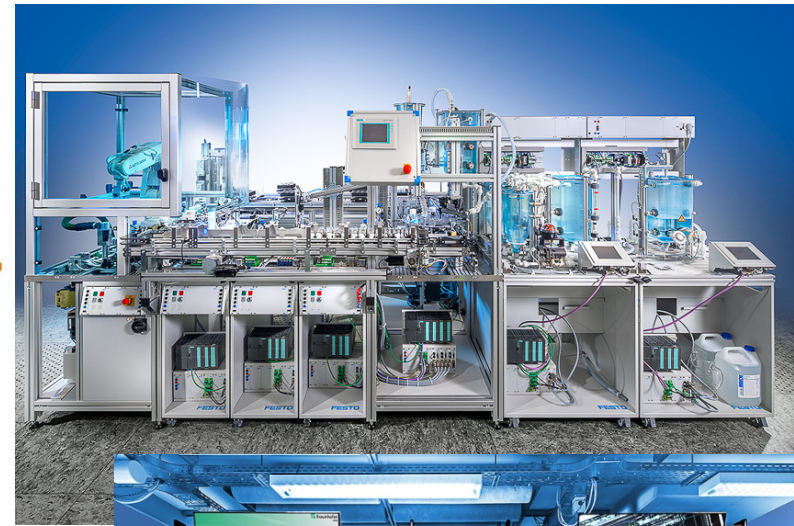
1. Principles and more
2. Project „Secure Plug & Work“
3. Project „PCFF – Plug & Control for flexible conveyors“
4. Project „MoMo – Mobile Monitoring“

Principles and more

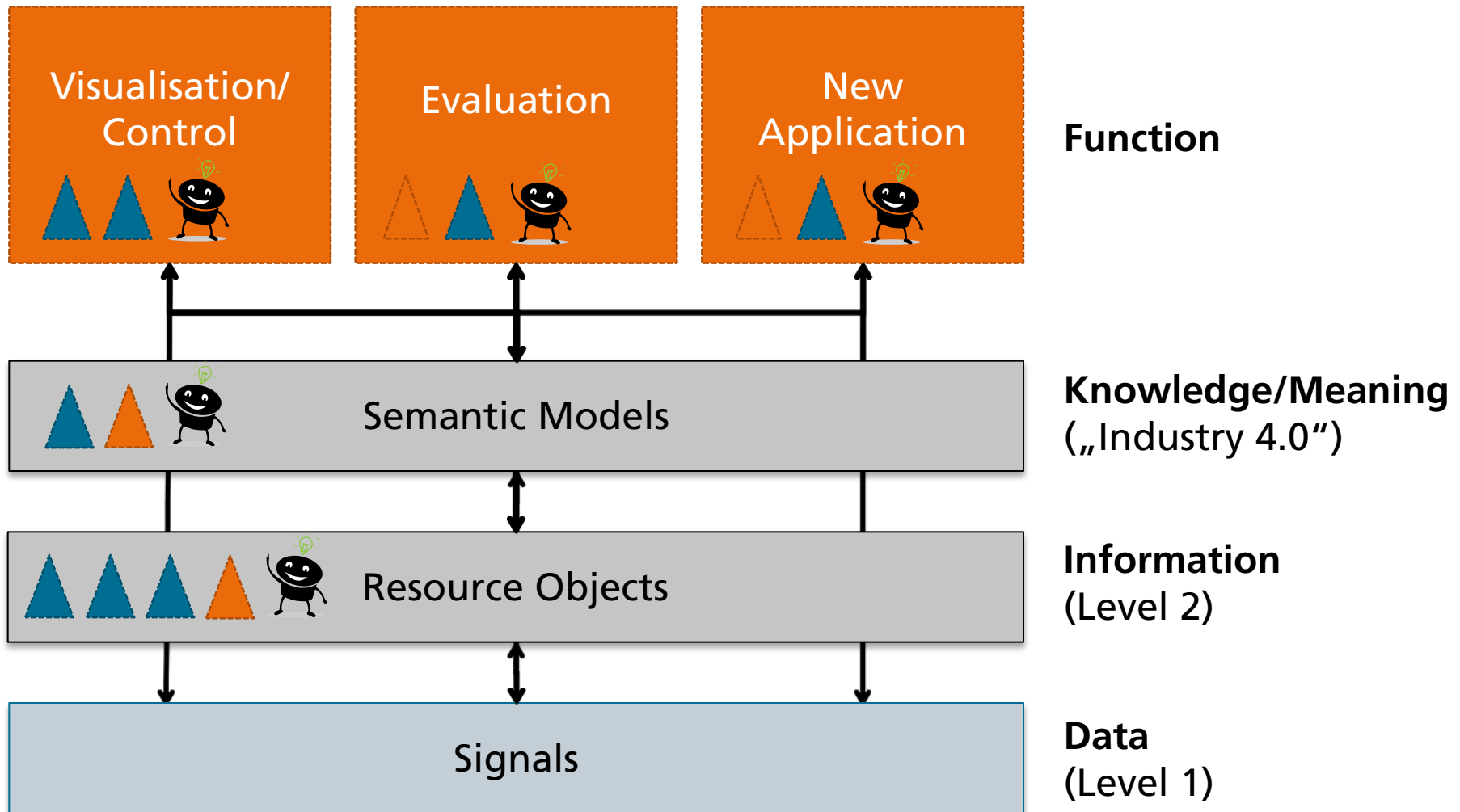
- (Self-)Description via AutomationML **<AutomationML/>**
- Assistant-Functions and Accumulation/Fusion
- Communication/
Data-Management/
Identification/
Validation via OPC UA
- Combination with Middleware,
Fieldbus-Technologies,
IT-Security-Components,
Hardware
- Test/Realization of
Components/Systems of
industrial partners and
accordingly inhouse demo
systems

NEO2014
DER INNOVATIONSPREIS DER
TECHNOLOGIEREGION KARLSRUHE

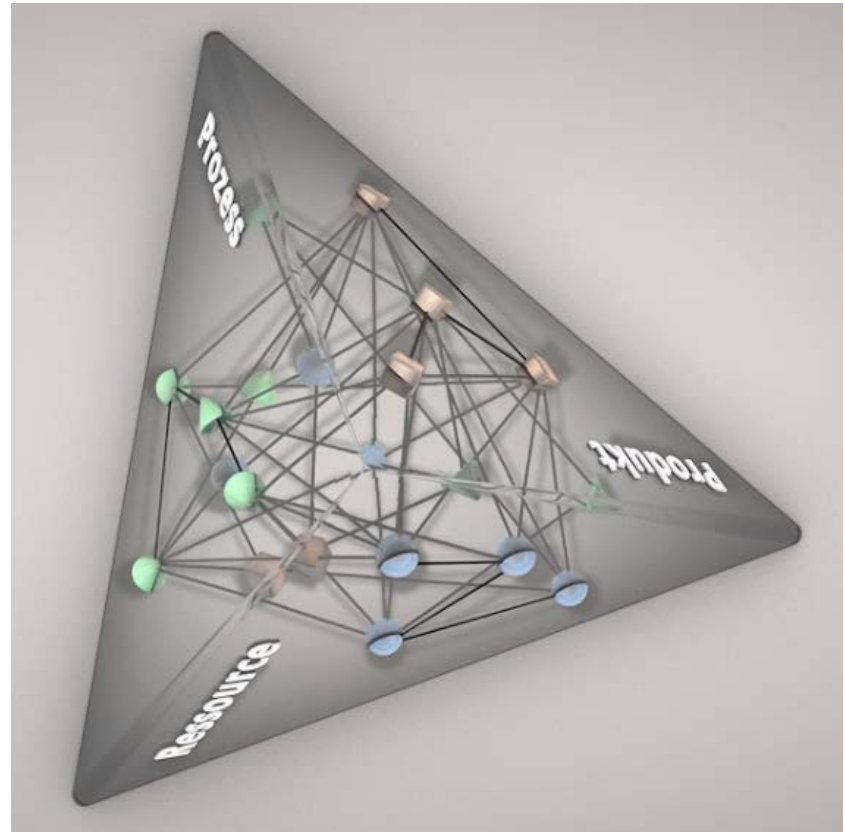
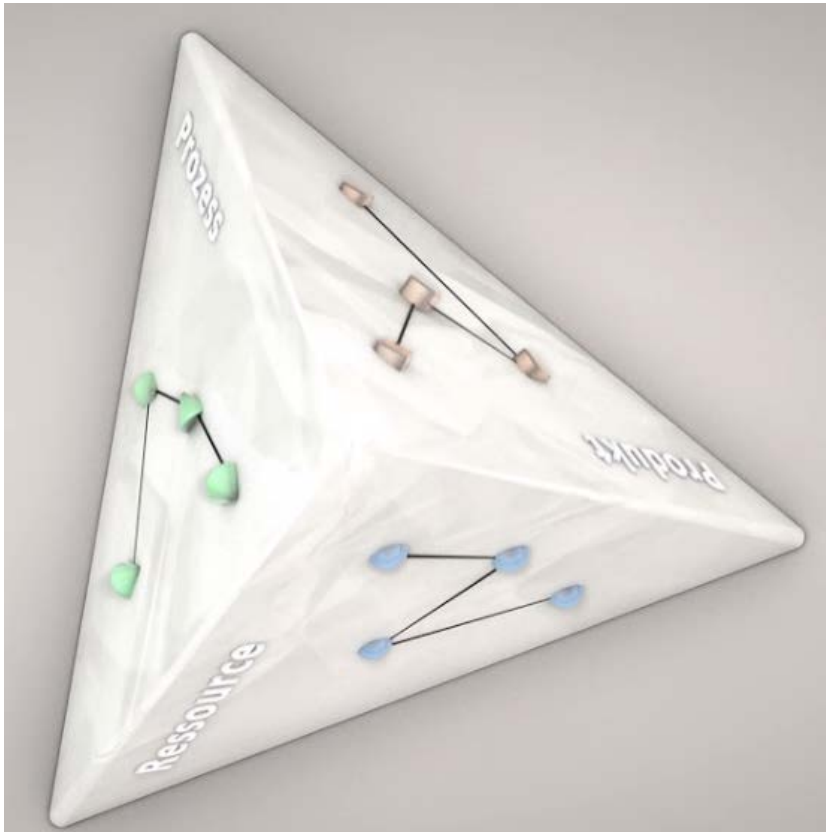
OPC UA™



Unique Datamodels (yesterday, today, tomorrow)

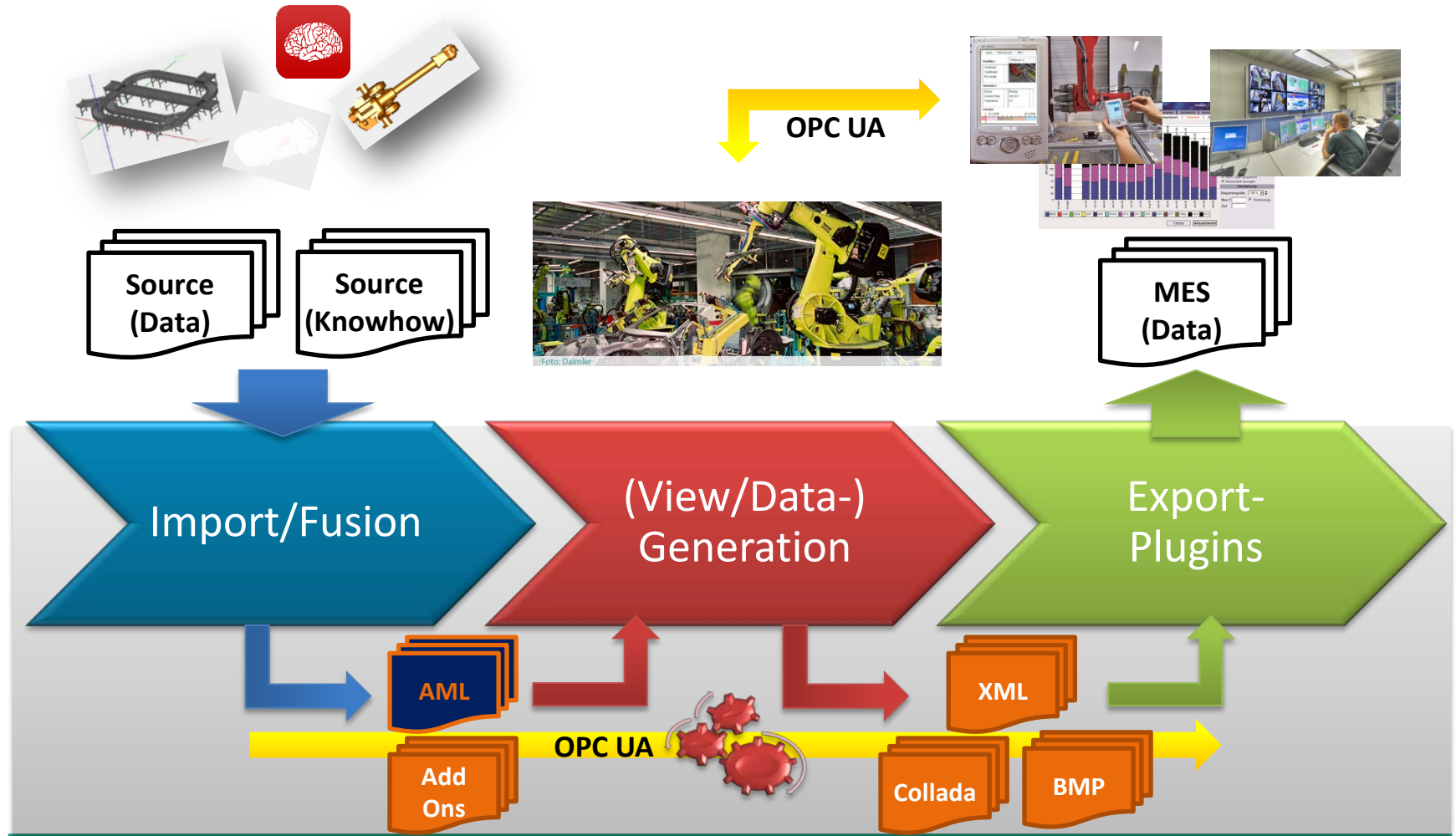


Integrated Datamodel and Use of Informations



Important: Not only one data model necessary, but also the linking of different models in a unique manner (e.g. via assignment rules)

Principles and more



SecurePLUGandWORK



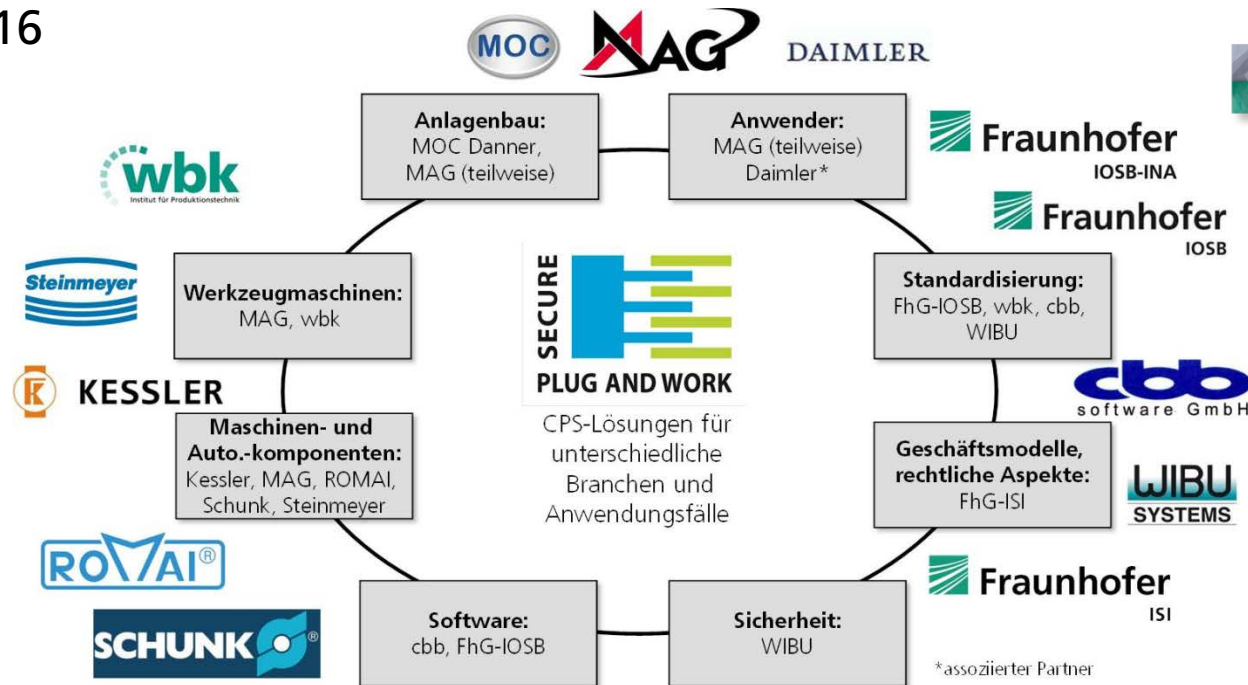
GEFÖRDERT VOM



Bundesministerium
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BETREUT VOM

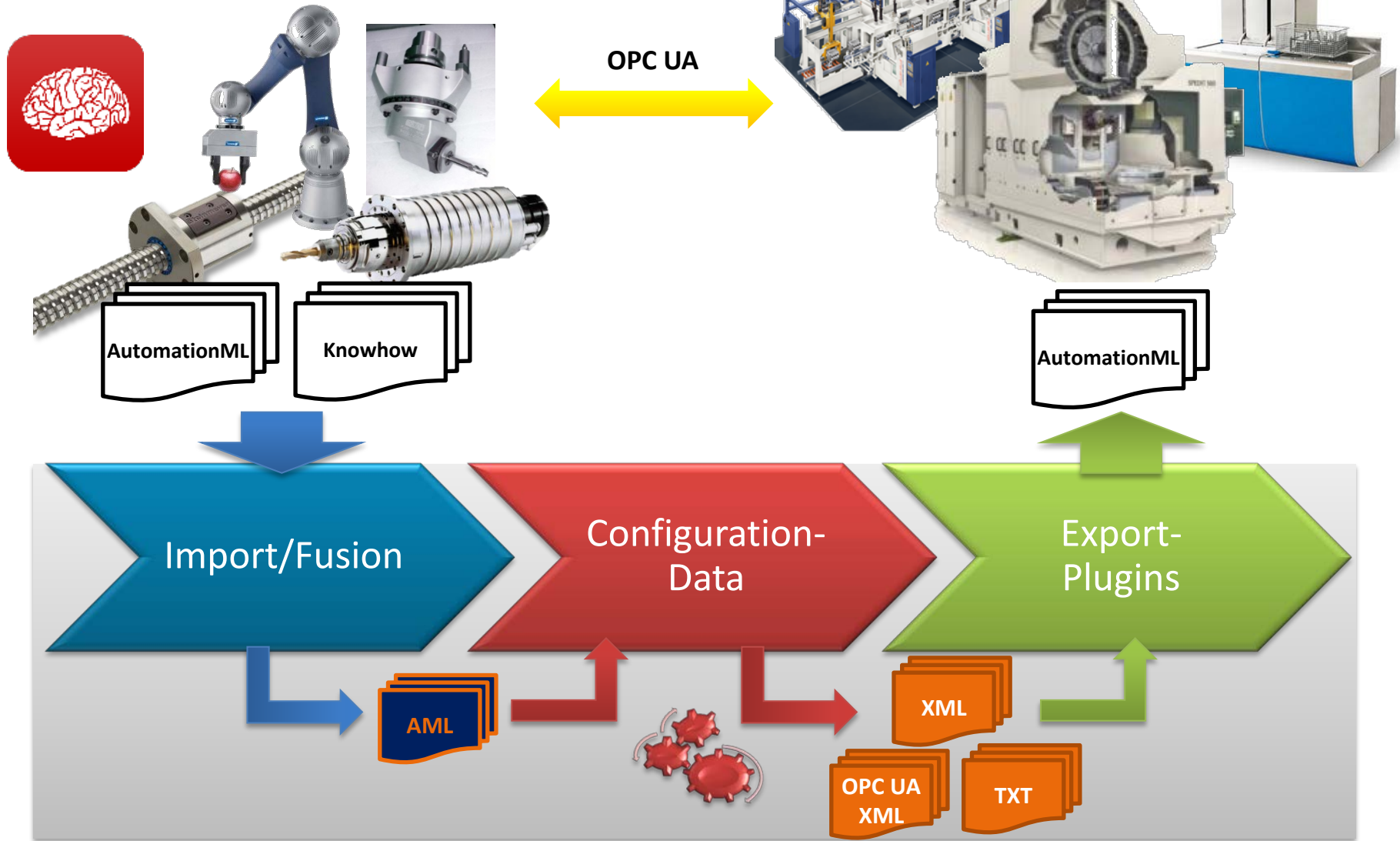
BMBF-Project: Support Code 02PJ2590 ff
2013-2016



PTKA
Projektträger Karlsruhe
Karlsruher Institut für Technologie

<http://secureplugandwork.de/>

SecurePLUGandWORK



- Highlights
 - Domain machine tools, clutch systems, industrial washing machines
 - Fusion in AML
 - Type libraries, e.g. feasible modules and options
 - Configuration data, e.g. data from test beds
 - Information about process data, e.g. Profinet variable, OPC UA variable
 - Generation of configuration data for OPC UA server/middleware/commissioning, towards integration of components in machines and machines to interlinked plants
 - Utilisation of AutomationML data between companies for online communication →
Storage of AutomationML data direct at the component or plant
 - Online communication and validation of AutomationML →
Combination of OPC UA with software/hardware security aspects

SecurePLUGandWORK



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Projektträger
Forschungszentrum
Karlsruhe (PTKA)

PCFF – Plug & Control for Flexible Conveyors



BMWi-Project: Support Code ZIM KF2074712KM2
2013-2015

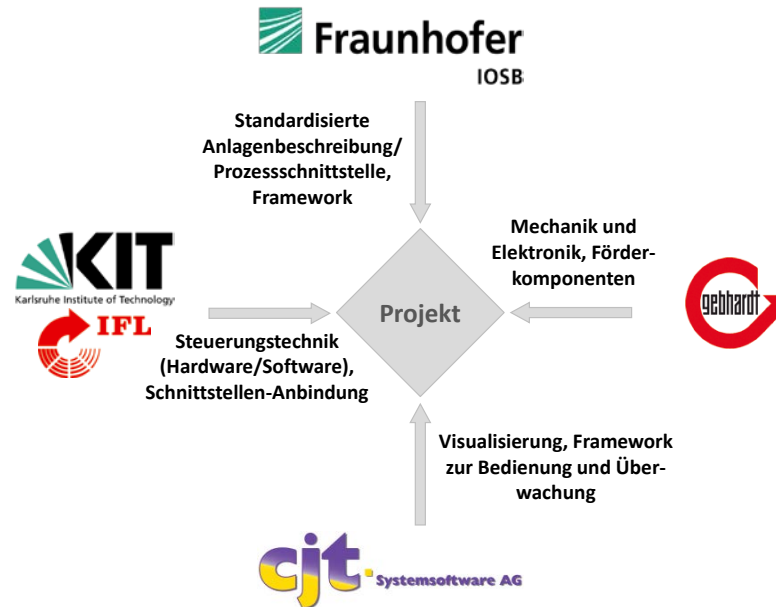
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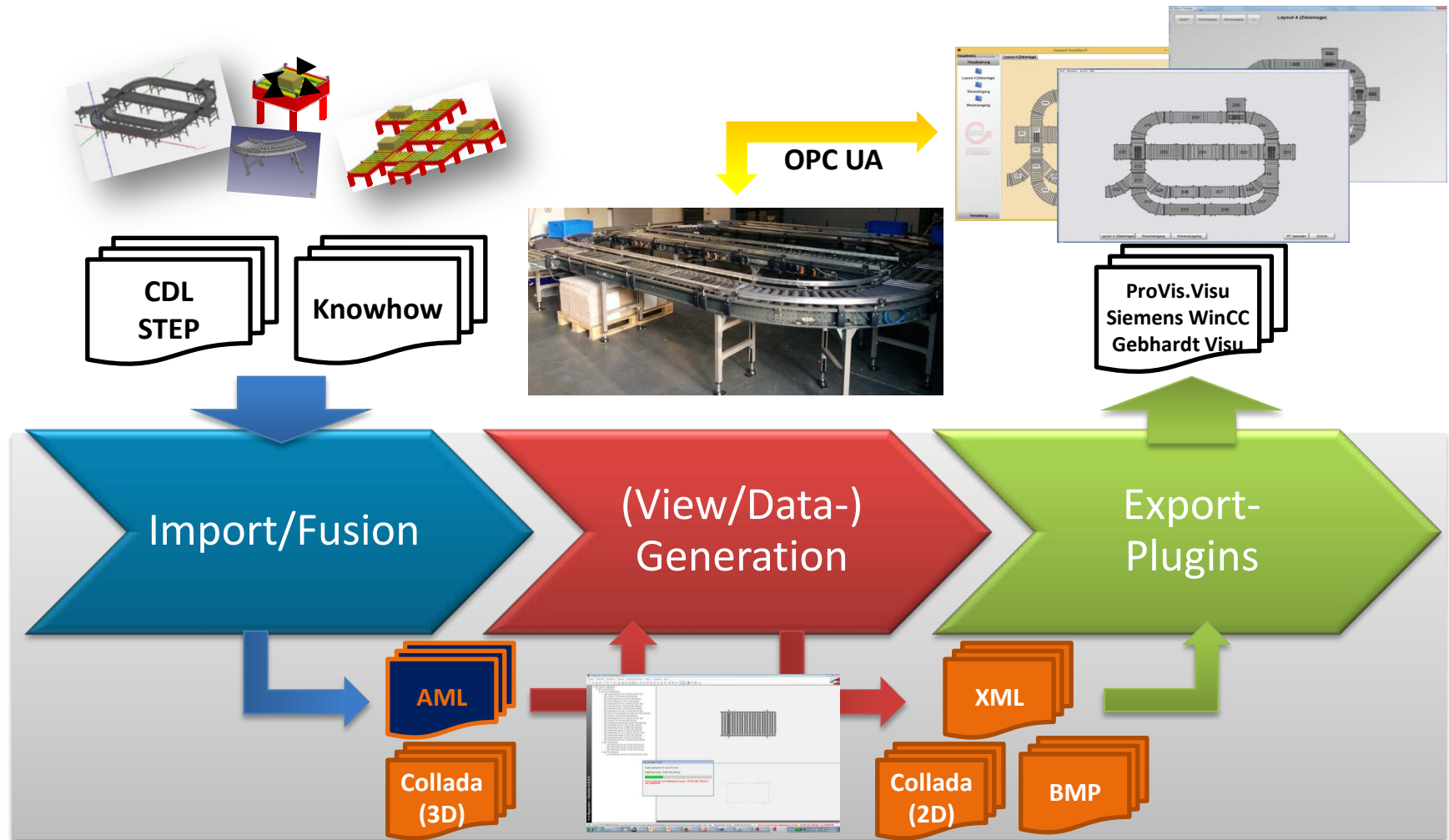


aufgrund eines Beschlusses
des Deutschen Bundestages



<http://www.zim-pcfff.de>

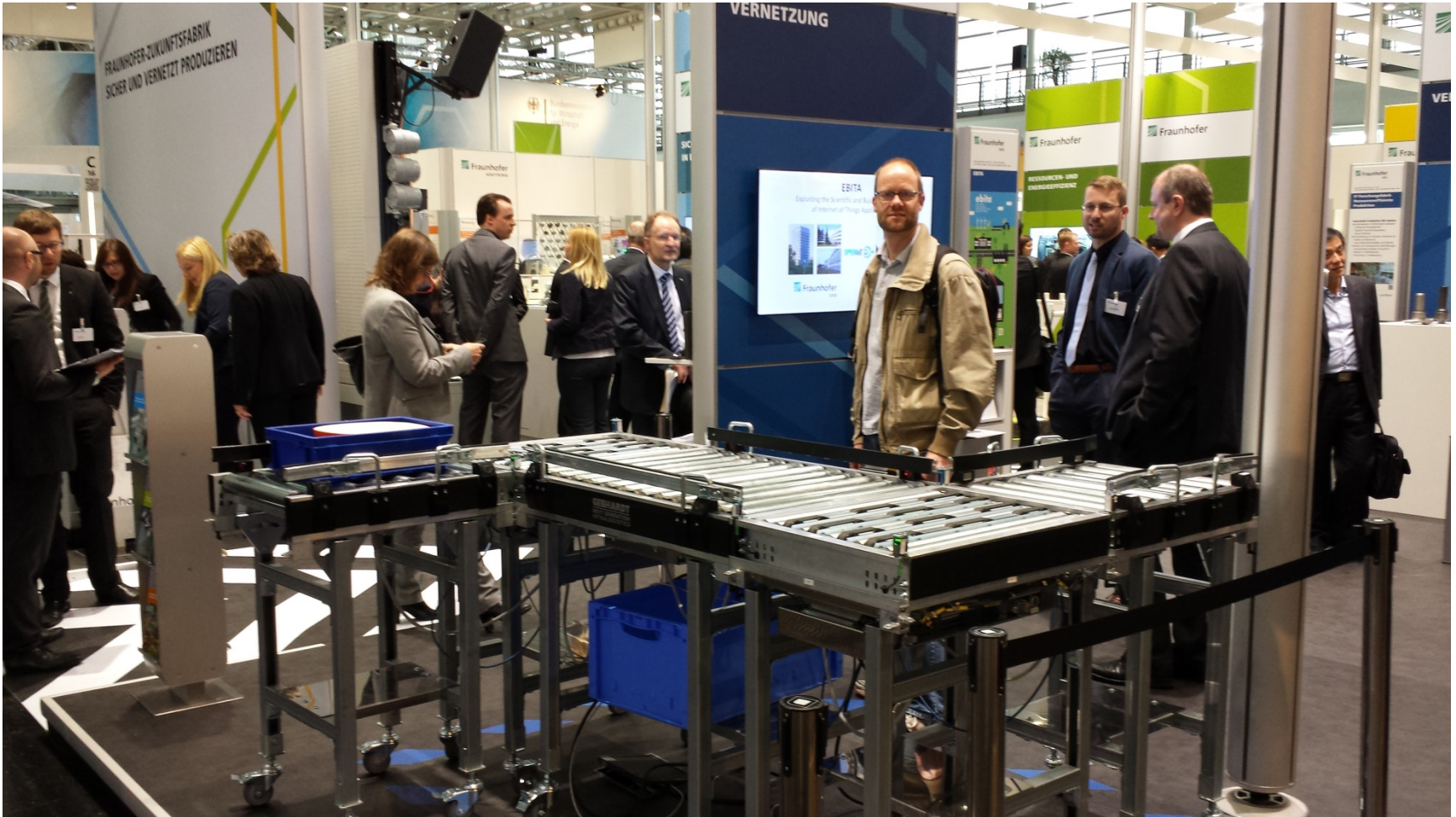
PCFF – Plug & Control for Flexible Conveyors



PCFF – Plug & Control for Flexible Conveyors

- Highlights
 - Domain conveyor technique
 - Fusion in AML
 - Proprietary CDL (Conveyor Description Language) describes conveyor modules, their logic connection information, and information about the process data
 - 3D data from engineering design(Inventor), converted from STEP to Collada
 - Identification visualisation relevant objects and their process data information through extension of the AML description
 - Layer based generation of logical structures (scenes) for the technology independent visualisation inclusive links between the scenes
 - Evaluation by implementation of adapters for different visualisation tools

PCFF – Plug & Control for Flexible Conveyors



MoMo – Mobile Monitoring

Inhouse Research-Project

2014



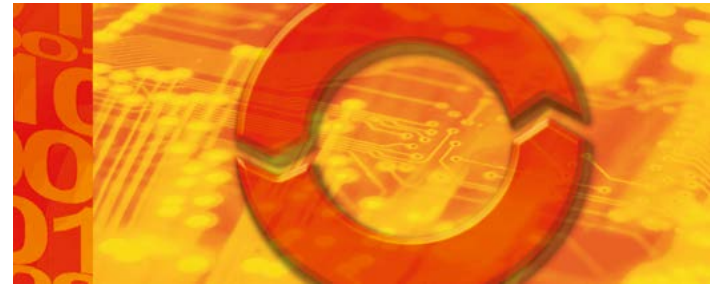
Business Unit „Automation“



Business Unit „Energy, Water and Environment“



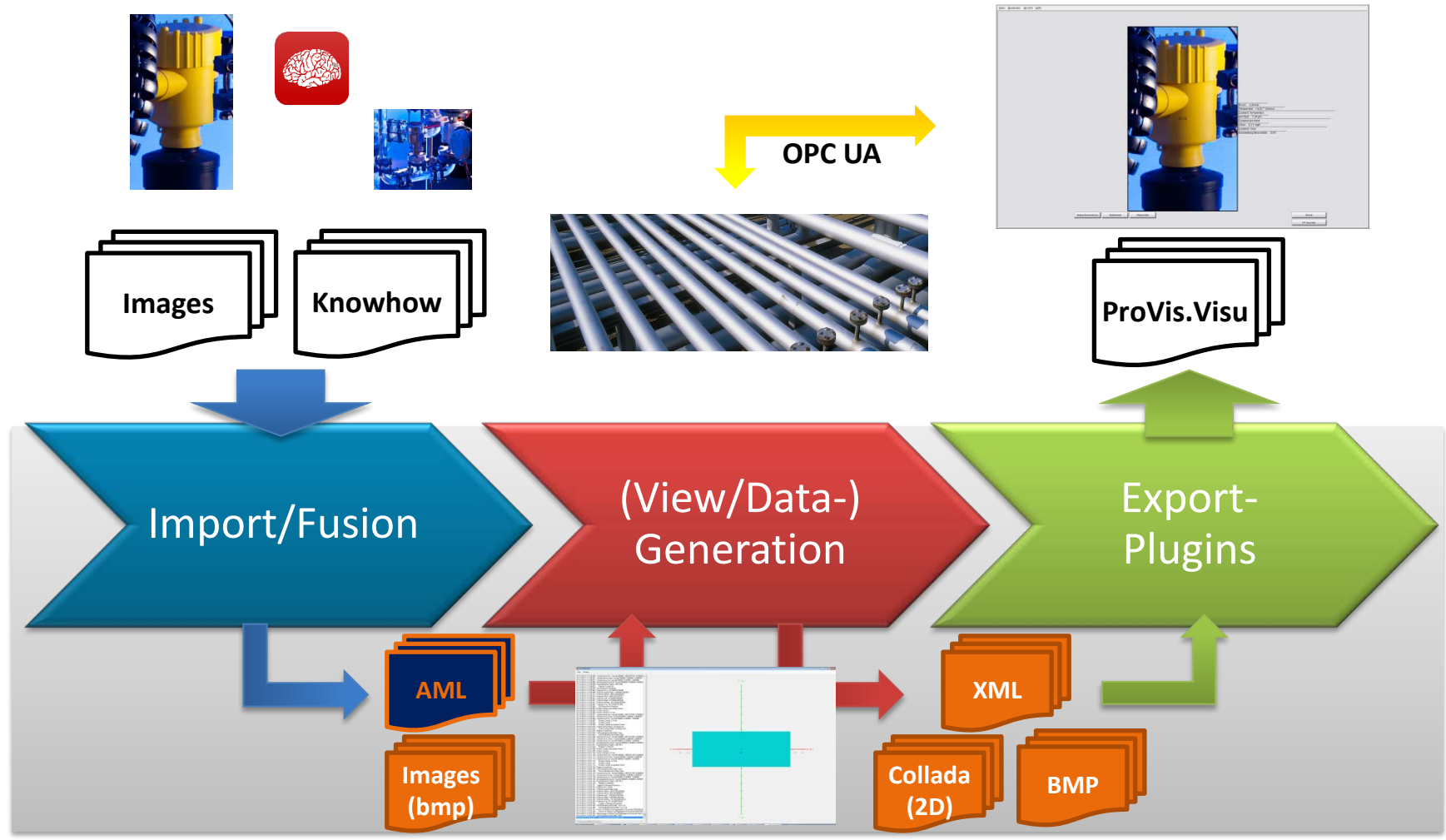
Department „Information Management and Production Control (ILT)“



Department „Systems for Measurement, Control and Diagnosis (MRD)“

<http://iosb.fraunhofer.de/?fabrik+und+tools>

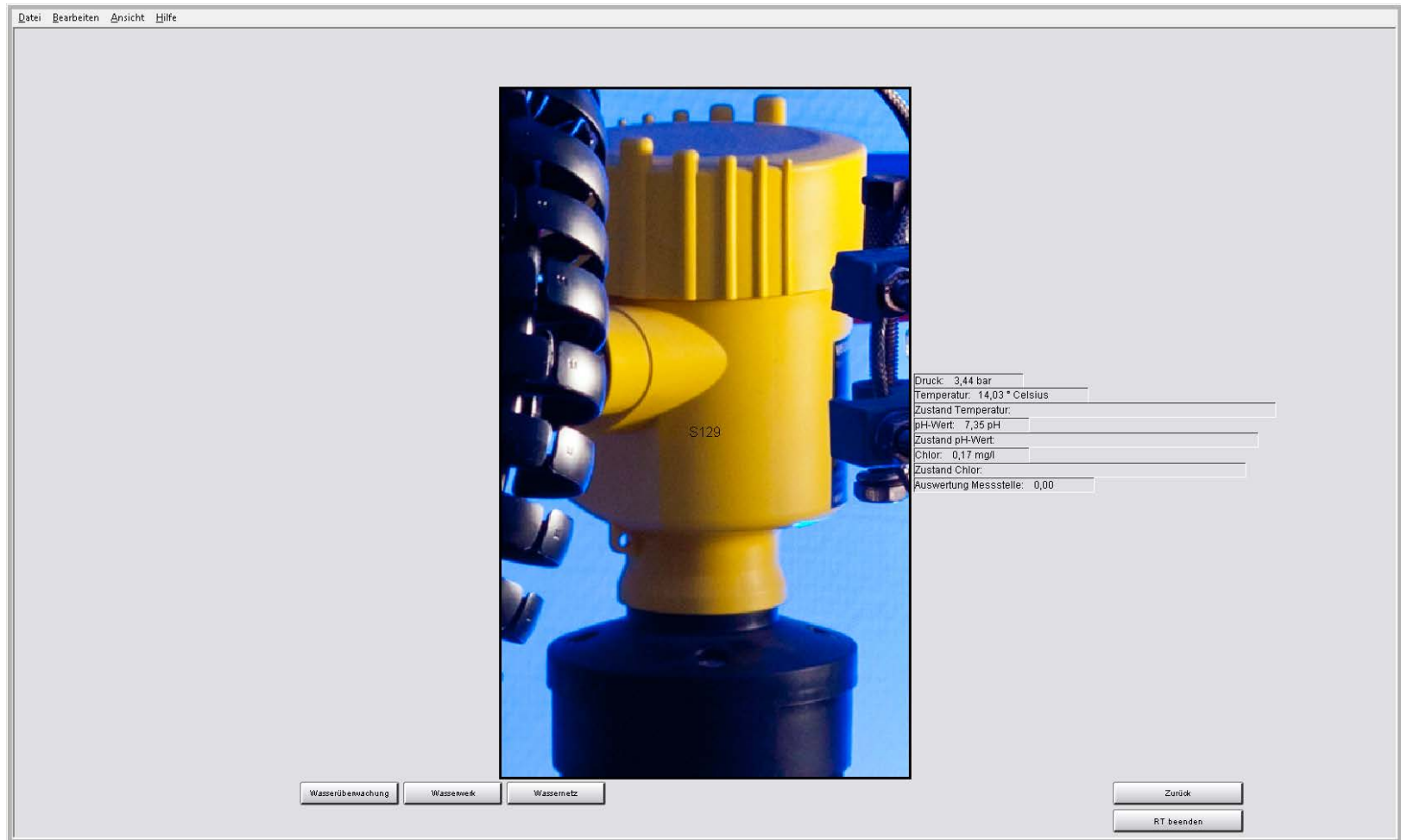
MoMo – Mobile Monitoring



MoMo – Mobile Monitoring

- Highlights
 - Domain water management (pollution monitoring)
 - Fusion in AML
 - Given picture information (photos)
 - Identification visualisation relevant objects and their process data information through extension of the AML description
 - Generation of hierarchical structures (scenes) for the visualisation inclusive links between the scenes
 - Process data evaluation (OPC UA) through external analysis and simulation tool

MoMo – Mobile Monitoring



Thank you for your attention!



Impressum

AutomationML Success Stories:
Secure Plug & Work, PCFF, MoMo, SkillPro, I4.0 Demo Factory

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