

Jahrestreffen der ProcessNet-Fachgemeinschaft Prozess-, Apparate- und Anlagentechnik; PAAT2022 21./22. November

Heiner Temmen, Wilhelm Otten, Reiner Meyer-Rössl, Michael Wiedau



- **1. Integrated Engineering Process**
- 2. Asset Lifecycle Information Model
- 3. The white spot "Process Model" DEXPI+
- 4. Global initiatives and alignment

Current engineering process and tool landscape is scattered due to phase and discipline orientation and drawing oriented

DEXPI[®]Data Exchange in the Process Industry



Being faster and more efficient in investment projects as well as plant engineering and maintenance



Integration along the process and across the disciplines by using one single Asset Lifecycle Data Management System





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- 2. Asset Lifecycle Information Model
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What is a digital twin? Information model in process industry





Common view on lifecycle model



DEXPI and ENPRO lifecycle model



ISO 15926 lifecycle model





Functional Design/Asset Specification/Asset in operation



CFIHOS lifecycle model



Functional Requirement/Functional Design/Asset Specification/Asset in operation

Integrated Engineering along the Asset Lifecycle Process and Data Models





One integrated data/information model and CAE-landscape using a common data model



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DEXPI+ provides an open industrial standard for a BFD/PFD Data Model





DEXPI+ Reference PFD Process Data Model (UML)



PFD Iso 10628 extended





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ACHEMA2022

22 - 26 August 2022 | Frankfurt, Germany

PIDMIC

Process Industry Data Model Integration Congress



DEXPI Data Exchange in the Process Industry



Organizations agreed on a common view of the lifecycle and modelling rules





But there is still alignment work to do

GAP Analysis – Results (workshop results)



		Alignm	ent Anzahl 38	VDMA	AAS NAMUR IE	e eclass
fully aligned	Anzahl 6	1	005	Group 4		USPI CI
tany angrica		2	008	Group 4 OP(OPC UA	so
		3	012	Group 3	SEIIA THTH	
Alignment	Anzahl 28	4	018	Group 4		
partly aligned		5	019	Group 3		
		6	020	Group 3	DEXPI+	AMOV
Alignment not aligned yet	Anzahl 38	7	021	Group 2	VDMA	I 4.0 /AAS
		8	024	Group 4	JIP33 to CFIHOS	VDMA
		9	029	Group 1	ISO	ECLASS
		10	030	Group 2	VDMA	CFIHOS
Alignment	Anzahl 12	11	031	Group 1	ISO	VDMA
no alignment necessary		12	033	Group 3	ISO 15926 part 14	IEC
		13	035	Group 4	JIP33 to CFIHOS	NAMUR
Alignment		14	036	Group 3	ISO 15926 part 14	I 4.0 /AAS
upkpowp	Anzahl 6	15	044	Group 1	IEC	CFIHOS
unknown		16	045	Group 4	JIP33 to CFIHOS	FL3DMS
		17	053	Group 3	ISO 15926 part 14	NAMUR

Main areas of alignment and follow up planning

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Areas and actions

- DEXPI (Plant Model) and Asset Lifecycle Model alignment with other initiatives
 - Contribute to CFIHOS RDL working group, MRAIL (ISO 15926)
 - Contribute to ISO15926 Part 14 project, MRAIL
 - USPI project Tagging
 - USPI project FL3DMS
 - Establish DEXPI as Plant Structural Model in AAS (IDTA working group, 80% done)
 - Initiate ECLASS, VDMA, BIM working groups
- DEXPI+ (Process Model)
 - Write Specification and UML-Model
 - Additional requirement for classes in ISO15926
 - Align Automation Engineering requirements with DEXPI+; NAMUR working group
 - Establish DEXPI+ as a process model in the AAS; Wilhelm
- Alignment on content (attributes, specification)
 - Relevant associations:
 - JIP33, CFIHOS, ECLASS, IEC (61987/CDD), VDMA, ISO15926 (only classes), ISO 15926 part 14, NAMUR
 - Areas of alignment:
 - Apparatus/Machines/Piping
 - Automation/Instrumentation
 - Electrical Equipment

O/O or EPC Plant with functional & physical objects

O/O Process with activities & streams

O/O Asset as physical object & actual individual

> Vendor Product as physical object & actual individual



Thank you for your attention!

Q & A