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**EqHub + AAS = A True DISC Love Story from
Norway's Offshore Supply Chain**



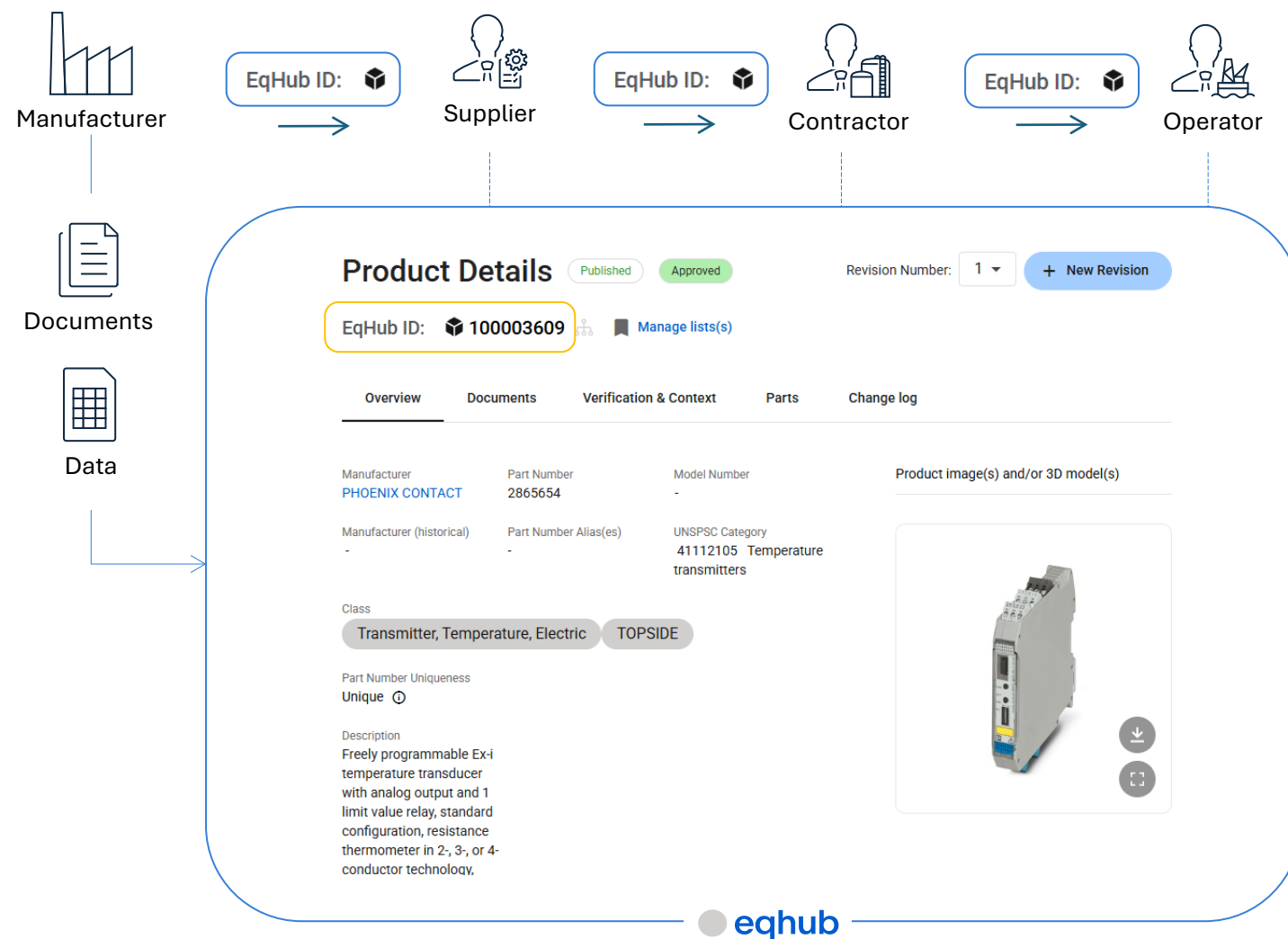
EqHub + AAS

A True DISC Love Story from Norway's
Offshore Supply Chain



EqHub overview

- EqHub is a technical information library for equipment, based on industry agreed formats
- Manufacturers or agents add the information
- Certified Verifiers review and approve the information
- Only the EqHub ID is delivered
- Benefits**
 - Re-use across projects and operators
 - Information available earlier
 - Data can be used to support work processes



Samples of existing integrations: Equinor modification projects



Contractor

EqHub ID: 

Operator

- Equinor receives Tag indexes with EqHub Id's from Modification contractors
- The EqHub ID is made available in their engineering system (STID) without any manual activity
- A Click on the EqHub ID opens the product in EqHub
- More than 80.000 Tag's received with EqHub ID so far

Functional Location	Maint. Plant	Plant name	Semi / EqHub Id	Doc type	Document Number	Doc ...	Technical ...	Object ID	Description
1131-86-RO560	1131	Kollsnes CC1000	100011173	A01	10007026192	EQHUB	Equipment	13857911	EqHub ID 100011173 Gateway, Media
1131-86-RO559	1131	Kollsnes CC1000	100011173	A01	10007026192	EQHUB	Equipment	13857910	EqHub ID 100011173 Gateway, Media
1131-86-RO552	1131	Kollsnes CC1000	100014207	A01	10007146971	EQHUB	Equipment	13857904	EqHub ID 100014207 Power supply unit, EI
1131-86-RO555	1131	Kollsnes CC1000	100014207	A01	10007146971	EQHUB	Equipment	13857906	EqHub ID 100014207 Power supply unit, EI
1131-86-RO558	1131	Kollsnes CC1000	100014207	A01	10007146971	EQHUB	Equipment	13857909	EqHub ID 100014207 Power supply unit, EI
1220-60A-CT02	1220	Snorre A Platform	100017046	A01	10007353396	EQHUB	Equipment	13857878	EqHub ID 100017046 Media, Filter
1220-60A-CT02	1220	Snorre A Platform	100017097	A01	10007359782	EQHUB	Equipment	13857877	EqHub ID 100017097 Actuator, Electric
1220-60A-CT02	1220	Snorre A Platform	791204	A01	10006302544	EQHUB	Equipment	13857879	EqHub ID 791204 Valve, Needle
1320-EAN-7516-06...	1320	Kårstø Gassled TSP	886401	A01	10007012994	EQHUB	Equipment	13857876	EqHub ID 886401 FIXTURE,LIGHT
1320-EAN-7516-14...	1320	Kårstø Gassled TSP	886785	A01	10006842210	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1320-EAE-7516-14...	1320	Kårstø Gassled TSP	886785	A01	10006842211	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1766-IT-69-2601B	1766	Oseberg Sør platform	100000619	A01	1000665074	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1766-IT-69-2601A	1766	Oseberg Sør platform	100000619	A01	1000665074	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1320-83-FB-390B	1320	Kårstø Gassled TSP	100005540	A01	1000691571	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1320-83-FB-400B	1320	Kårstø Gassled TSP	100005790	A01	1000691890	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1218-HTS31214F	1218	Gina Krog Platform	100009813	A01	1000698696	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1218-HTS31214E	1218	Gina Krog Platform	100009813	A01	1000698696	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1218-HTS31214D	1218	Gina Krog Platform	100009813	A01	1000698696	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1220-6"FEAC202R...	1220	Snorre A Platform	100013579	A01	1000736152	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1220-6"FEAC202R...	1220	Snorre A Platform	100013579	A01	1000736152	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1220-6"FEAC202R...	1220	Snorre A Platform	100013579	A01	1000736152	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT
1220-6"FEAC202R...	1220	Snorre A Platform	100013579	A01	1000736152	EQHUB	Equipment	13857875	EqHub ID 886785 FIXTURE,LIGHT

STID Gullfaks C (1112) v

14-TT 1279
Safety critical heat conservation, 14-PT 122, well C-16

Upload media

INSTRUMENT FIELD EQUIPMENT

Tag Status: **PLANNED**

Type: **TT TEMPERATURE TRANSMITTER**

System: **14 WELLHEAD SYSTEMS (PROD. STIMULATION)**

Area: **M17 WELLHEAD MODULE B (SOUTH)**

Discipline: **J INSTRUMENTATION ENGINEERING**

Contractor: **ASO APPLYS@RCO**

Superior tag: **14-INSTRUMENT-FIELD-EQUIP**

Date installed: **-**

Project: **M.O050C.25.C.0008**
Brønn C-27 reboiling som produsent

Doc refs (5) Tag refs (1) EIT reports (0) Other refs (2)

Search by Doc No. or Title Filter ☐ Show all statuses

TR2381 Safety critical documents (1)

Doc No.	Title
C017-A-000-PE-348-09	P & I DIAGRAM GAS INJECTION

Package (1)

Doc No.	Title
M.O050C.25.C.0008-1400-C02	Varmekonservering ekstra brønner (MPB)

Product typical information (1)

ID	Description	Source	Manufacturer	Model	Part No
100000177	EqHub ID 100000177	SAP - Equipment 13857211	ROSEMOUNT	248	248DX11P2WA3WP5B5M5Q4F6WR3

eqhub Home Manufacturers Requirements Content Search Verifications Projects My IDs Administration

Published by: R. I. (EMERSON AUTOMATION SOLUTIONS AS) on 05.09.2023

Revision Number: 1 [+ New Revision](#)

Product Details Published Approved

EqHub ID: 100000177 [Add to my List\(s\)](#)

Overview Documents Verification & Context Parts Change log

Manufacturer: **ROSEMOUNT** Part Number: **248DX11P2WA3WP5B5M5Q4F6WR3248** Model Number: **248**

Manufacturer (historical): **-** Part Number Alias(es): **-** UNSPSC Category: **-**

Class: **Transmitter, Temperature, Electric**

Part Number Uniqueness: **Unique**

Description: **The Rosemount 248 Wireless Temperature Transmitter is a cost-effective and reliable wireless solution for process monitoring. Coupled with the self-organizing network of WirelessHART® technology this**

Status: **UA** Engineering code: **A** Rev Date: **2025-11-12** Project: **M.O050C.25.C.0008**

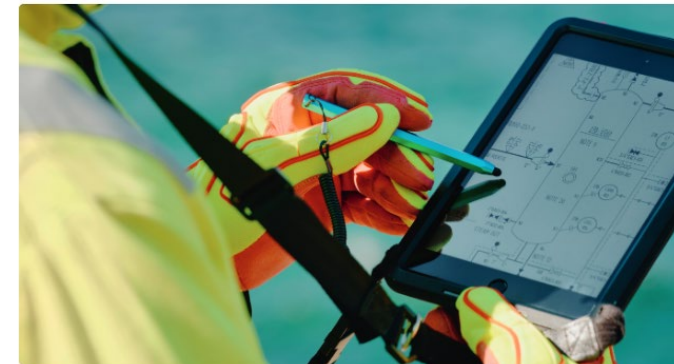
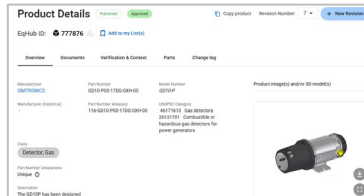
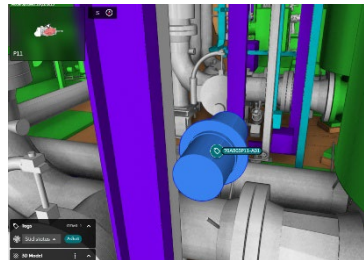
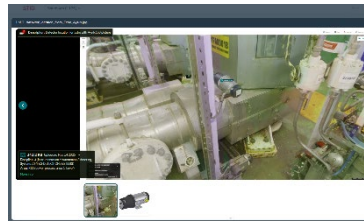
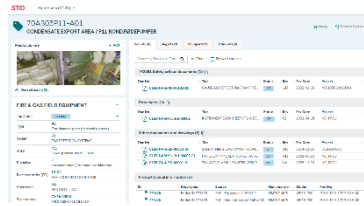
Product image(s) and/or 3D model(s)



Samples of existing integrations: Equinor operation



- All this information, and more, is made available to the field operator through handheld pads



Samples of existing integrations: Hugin A



Supplier

EqHub ID:



Contractor



- Aker Solutions receives Tag indexes from hundreds of suppliers
- A click on the link will open the product in EqHub
- So far, over 65.000 Tags received with EqHub ID's

Information Exchange | Hugin A - Equipment

FPQ-ER268-LA-00002
Index (Tag) - Instrument Field

PACKAGE: ER268 | REVISION: 10 | FILTER BY CLASSIFICATION: Instrument Field

View only. Deliverable status is review

Export to excel | View

	Object state	Tag Number	Classification	Structure	Model (& Part) Number	Serial No.	EqHub ID	Dry Weight	ATEX Marking	Protection Type	Gas
180	Active	D-44PY4414B	Positioner	CONTROLS	DVC6000/6200 Series	F004098714		5	II 1 GD	Ex ia	IIC
181	Active	D-44PY4453	Positioner	CONTROLS	DVC6000/6200 Series	F004098728		5	II 1 GD	Ex ia	IIC
182	Active	D-44PY4459A	Positioner	CONTROLS	DVC6000/6200 Series	F004098733		5	II 1 GD	Ex ia	IIC
183	Active	D-44PY4459B	Positioner	CONTROLS	DVC6000/6200 Series	F004098734		5	II 1 GD	Ex ia	IIC
184	Active	D-44PY4511	Positioner	CONTROLS	DVC6000/6200 Series	F004237979		5	II 1 GD	Ex ia	IIC
185	Active	D-44TE4525A	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
186	Active	D-44TE4525B	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
187	Active	D-44TE4525C	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
188	Active	D-44TE4526A	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
189	Active	D-44TE4526B	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
190	Active	D-44TE4526C	Temperature Ele...	Sensor G...	2113-1-179		100012491	0.7		Simple apparatus	
191	Active	D-44TE4527A	Temperature Ele...	Sensor			100012491			Simple apparatus	
192	Active	D-44TE4527B	Temperature Ele...	Sensor			100012491			Simple apparatus	
193	Active	D-44TE4527C	Temperature Ele...	Sensor			100012491			Simple apparatus	
194	Active	D-44TE4529	Temperature Ele...	Sensor			100012491			Simple apparatus	
195	Active	D-44TE4531	Temperature Ele...	Sensor			100012491			Simple apparatus	
196	Active	D-44TE4532	Temperature Ele...				NA			Simple apparatus	IIC
197	Active	D-44TE4534	Temperature Ele...				NA		II 2 G	Simple apparatus	IIC

Product Details

EqHub ID: [100012491](#) [Add to my List\(s\)](#)

Overview | Documents | Verification & Context | Parts | Change log

Manufacturer: THERMO SENSOR | Part Number: 2113-1-179 | Model Number: -

Manufacturer (historical): - | Part Number Alias(es): - | UNSPSC Category: 41112225 Resistance temperature detector RTD

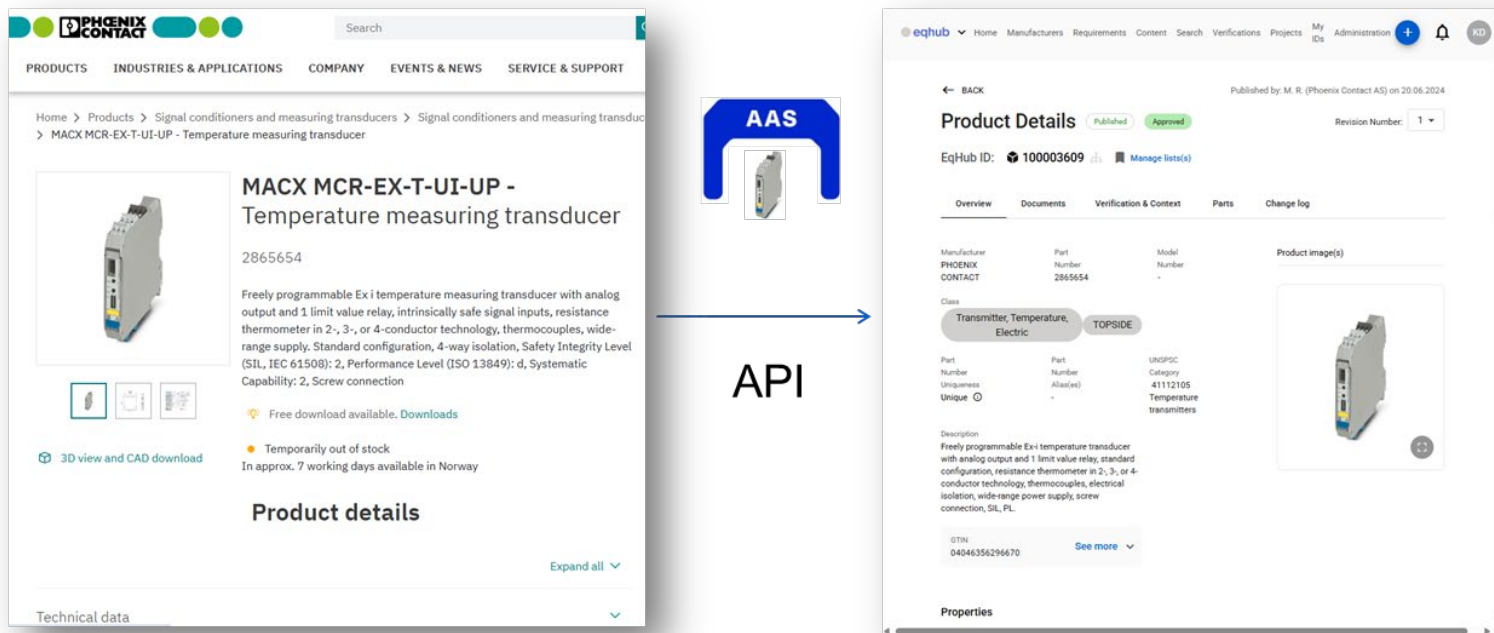
Class: Element, Temperature, Resistance | TOPSIDE

Part Number Uniqueness: Unique

Description: Connection wire: 1000 nm flexible connection wire 4 x 0.14 mm², individually and overall insulated with Teflon (PTFE) with inner shielding braid.

EqHub and AAS

- Together with Phoenix Contact we have worked on a pilot using AAS.
- For EqHub, this is an important step forward to integrate information directly from manufacturers.
- Other manufacturers are using the same format.

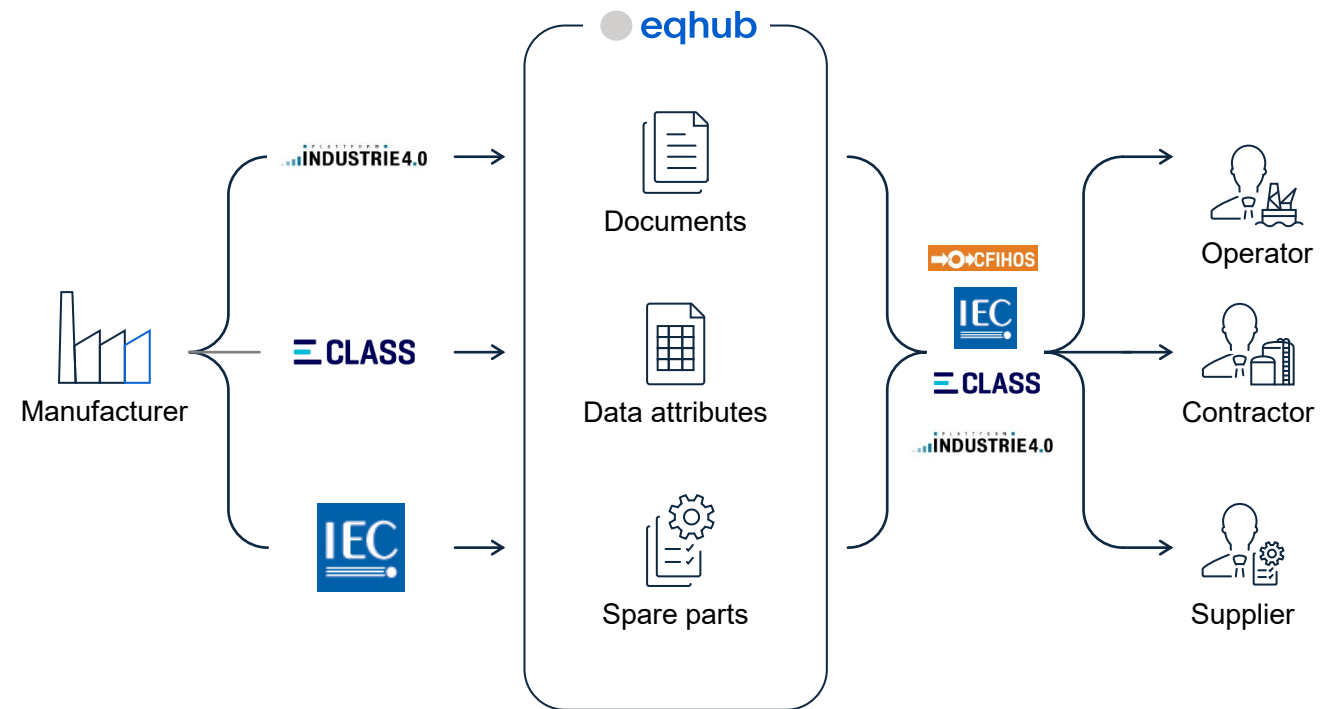


EqHub and AAS

We discovered that mapping to different standards is important.

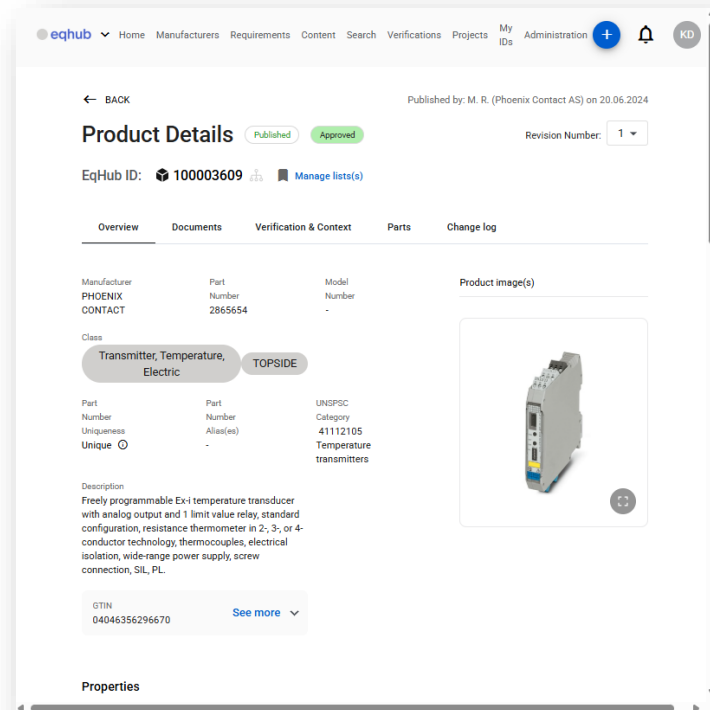
Working with DISC and standard organisations, we have now started the mapping and alignment to several standards.

- **In near future:**
- EqHub will be able to receive data in different formats from manufacturers
- Present data in different formats to end users
- Being ready for future requirements like Digital Product Passport

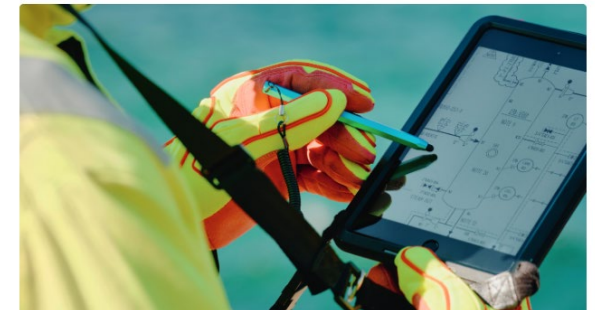


EqHub and AAS

- As EqHub is integrated with operators' systems, any product change notification will be available for all users in the field.
- Experience of products could go the other way.



The screenshot shows the EqHub web interface. The top navigation bar includes links for Home, Manufacturers, Requirements, Content, Search, Verifications, Projects, My IDs, and Administration. The main content area is titled 'Product Details' and shows the EqHub ID 100003609. It includes tabs for Overview, Documents, Verification & Context, Parts, and Change log. The 'Overview' tab is active, displaying a table with columns for Manufacturer (PHOENIX CONTACT), Part Number (2865654), Model Number, and Product image(s). The product image is a small image of a grey electronic component. Below the table, there is a description of the product: 'Freely programmable Ex-i temperature transducer with analog output and 1 limit value relay, standard configuration, resistance thermometer in 2-, 3-, or 4-conductor technology, thermocouples, electrical isolation, wide-range power supply, screw connection, SIL, PL.' The bottom of the page shows the GTIN 04046356296670 and a 'See more' link.



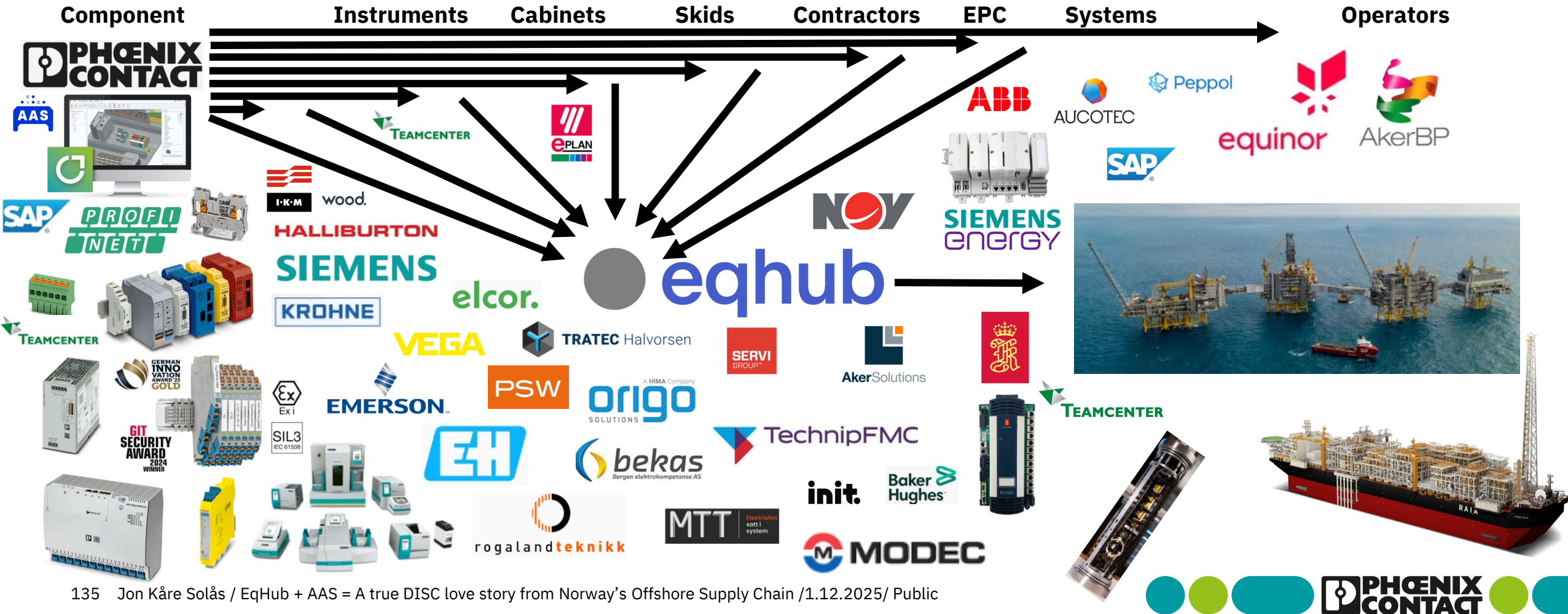


**EqHub +
Asset Administration Shell
=
A true DISC Love Story
from Norway's Offshore
Supply Chain**

Jon Kåre Solås
jsolAAS@PhoenixContact.com

EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

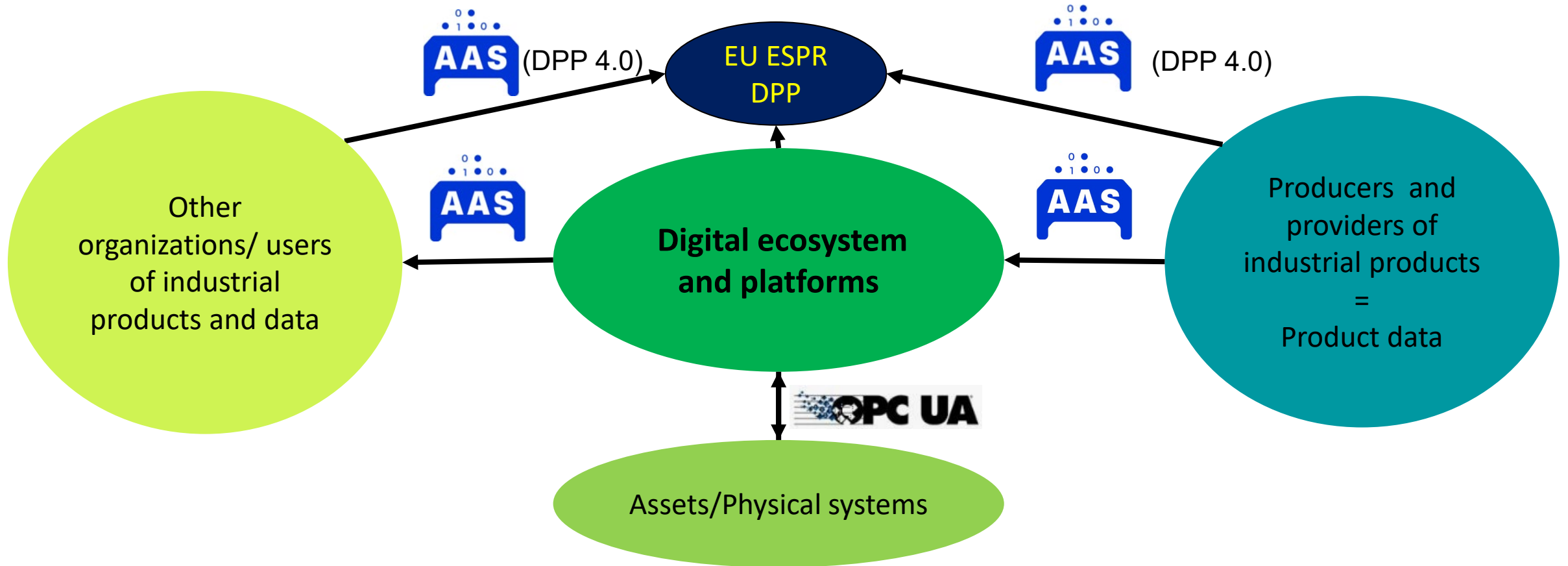
Phoenix Contact in the perspective of Offshore Oil and Gas



EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

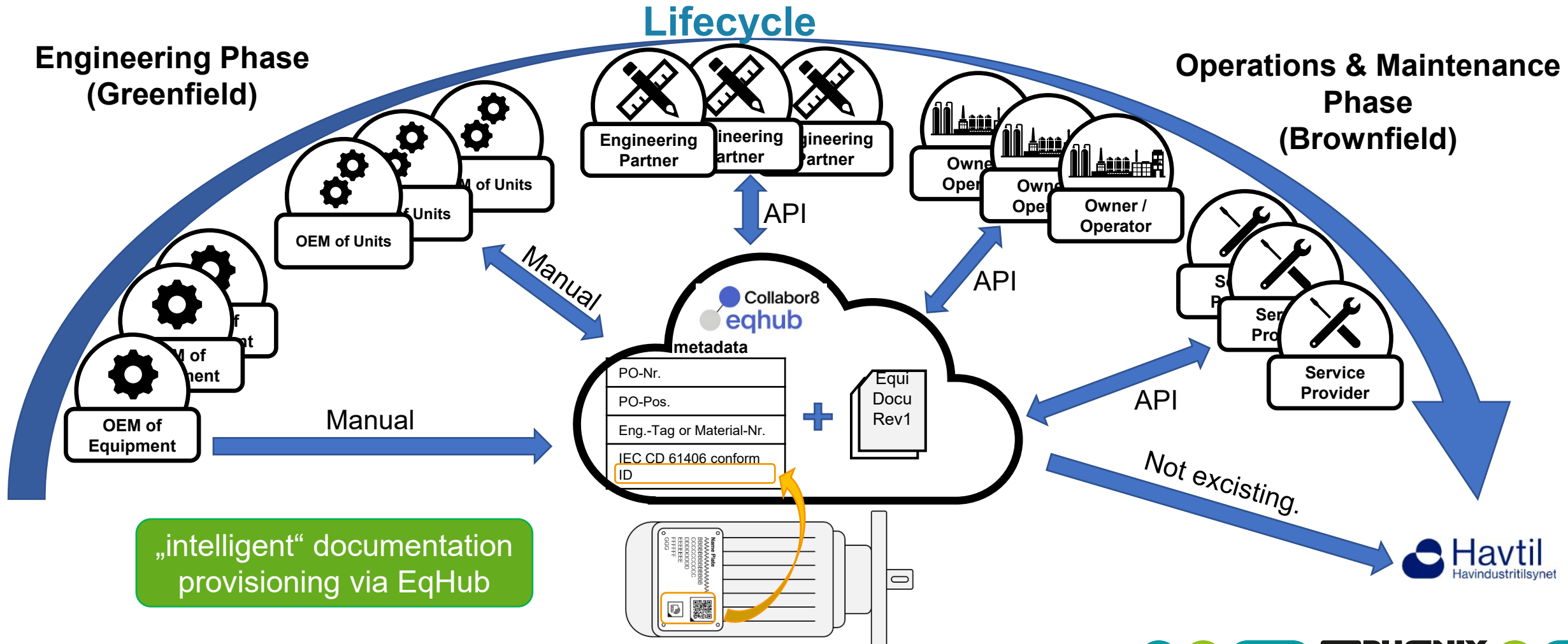
The holistic picture:

Platform Industrie 4.0: AAS + OPC UA (+ DPP 4.0)



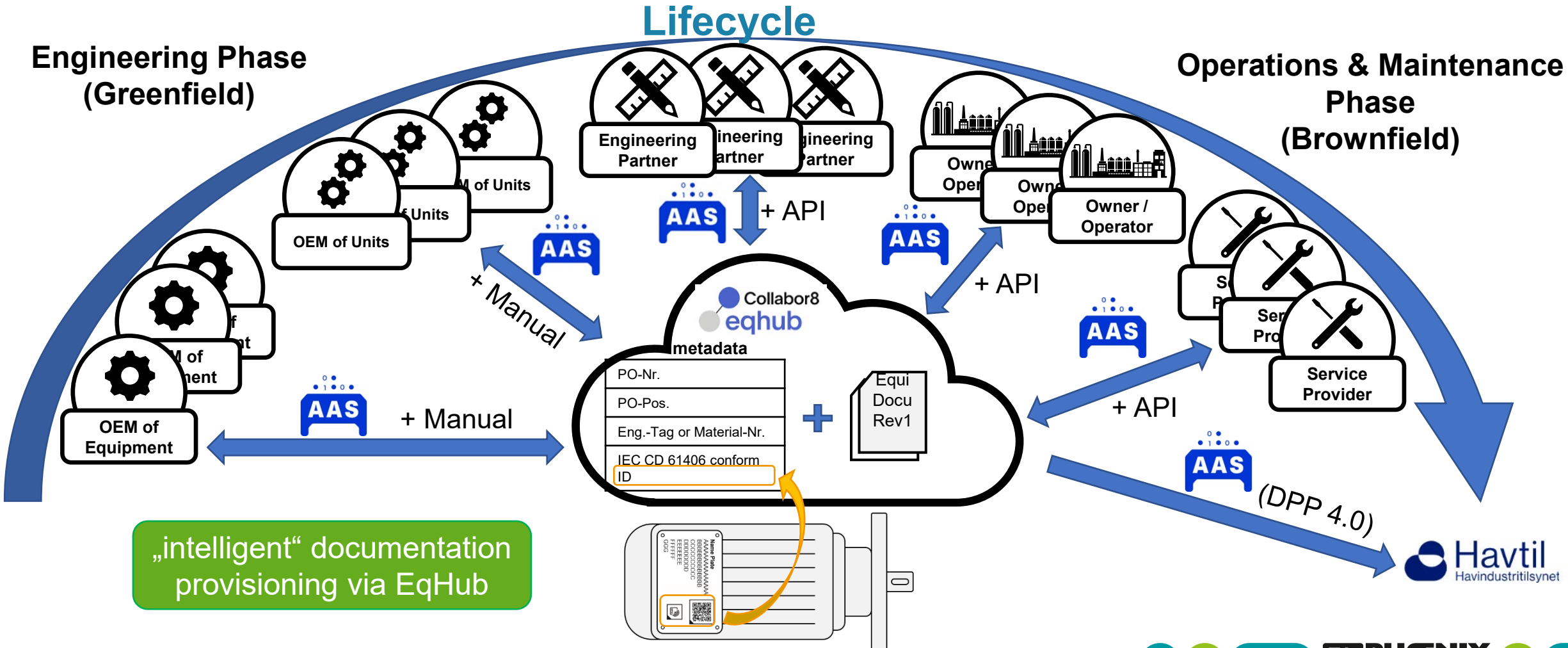
EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub – someone who truly walks the talk



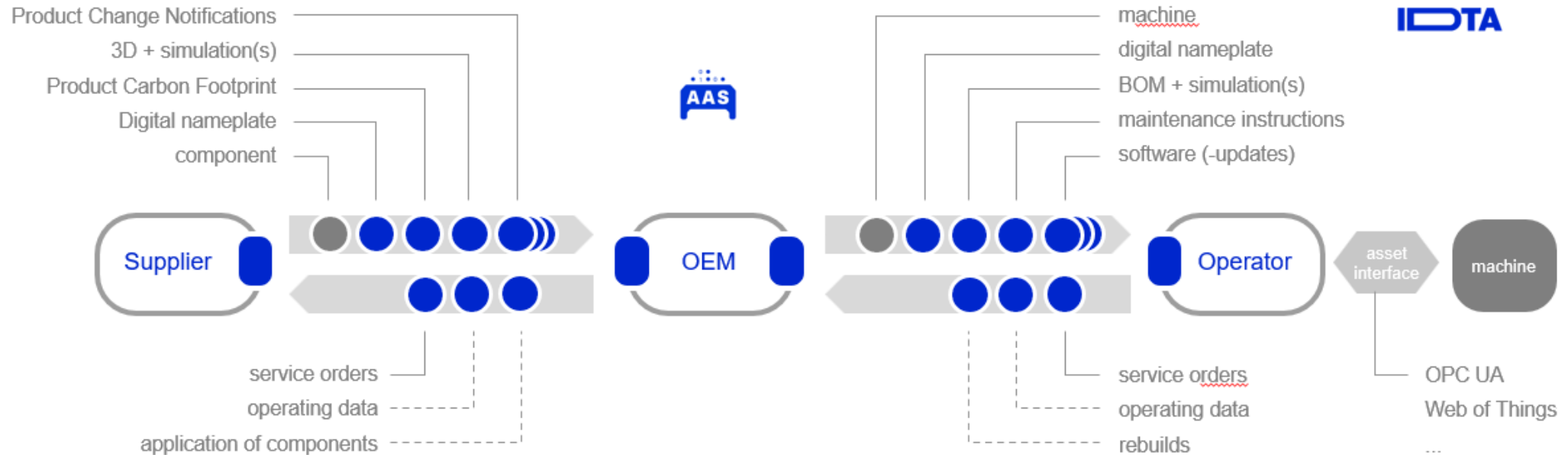
EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub – someone who truly walks the talk



EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub + AAS: Big Picture – Closing the cycles



- | | |
|--|--|
| ← | → |
| <ul style="list-style-type: none"> - Data quality - Product quality - ? | <ul style="list-style-type: none"> - Product Change Notifications (PCN) - Security Advisories - Secure Software Distribution - It's up to the industry |

EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub + AAS: APOS 2.0 - Automatic intrinsic safety calculation

Proof of intrinsic safety showcase										NAMUR Open Architecture								
Project name:					Loop1													
Certified by:					X													
Certified at:					Y													
Non-Ex Zone Associated Apparatus					Ex Zone Intrinsically safe apparatus / field device													
II 3(1)G Ex ec [ia Ga] IIC T4 Gc					II 1/2 G Ex ia IIC T6...T3 Ga/Gb					Comparison of the safety data								
U _o	≤				U _i					Proof of intrinsic safety (simple intrinsically safe circuit)								
I _o	≤				I _i					In a simple intrinsically safe circuit without external concentrated capacitances (C _i) and without external concentrated inductances (L _i), the full values of C _o and L _o can be exploited.								
P _o	≤				P _i					Proof of intrinsic safety (mixed intrinsically safe circuit)								
L _o	≥	L _i	+		L _e					Condition for the mixed intrinsically safe circuit with external concentrated capacitances (C _i) and/or external concentrated inductances (L _i). L _i < 1% of L _o or C _i < 1% of C _o . Here, the full values of C _o and L _o can also be exploited. L _i ≥ 1% of L _o and C _i ≥ 1% of C _o . Values of 50% of Co and Lo are to be used here: C _i + C _o ≤ 0.5 C _o L _i + L _e ≤ 0.5 L _o								
C _o	≥	C _i	+		C _e													
Associated Apparatus																		
Name	Type	SerialNumber	Manufacturer	Certificate	Identification	U _o [V]	I _o [mA]	P _o [mW]	L _o [mH]	C _o [nF]								
Power/input isolating amplifier	MACX MCR-EX-SL-RPSSI-I		Phoenix Contact GmbH & Co. KG	BVS 98 ATEX E 054 X	II 3(1)G Ex ec [ia Ga] IIC T4 Gc	25.2	93	587	3	107								
Intrinsically safe apparatus / field device																		
Name	Type	SerialNumber	Manufacturer	Certificate	Identification	U _i [V]	I _i [mA]	P _i [mW]	L _i [mH]	C _i [nF]								
Process pressure measurement	OPTIBAR PC 5060	P190005043221759	KROHNE Messtechnik GmbH	TUV 20 ATEX E 277368 X	II 1/2 G Ex ia IIC T6...T3 Ga/Gb	30	131	983	0.005	0								
Cable capacities and inductance			Manufacturer	Cable length	Cable L ₂	Cable C ₂	Maximum cable length			L _e	C _e							
(Manufacturer specification (Datasheet) or L _e = 1 mH/km, C _e = 110 nF/km)			STANDARD	[m]	[mH/km]	[nF/km]	[m]			[mH]	[nF]							
				100	1	110	972.73			0.1	11							
										L _i + L _e	C _i + C _e							
										[mH]	[nF]							
Inductance (L _i + L _e) and capacities (C _i + C _e)										0.11	11							
Condition / Verification for intrinsic safety					Intrinsic safety ok	Additional condition												
U _o ≤ U _i	25.2	≤	30	YES		Zone at the installation: Zone 0/1												
I _o ≤ I _i	93	≤																



EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub + AAS: It's a team effort!



Estonia:

- For showcasing what's possible with open standards and open source!



Nafise Eskandani

Thank you

aibel

Arsalan Pashar



- Where people + knowledge = new insight and ideas!



equinor

Jan Munkejord

IDTA



Knut Dagsvik
Jørgen Kielland
Pål Hellesnes
Yngve Nilsen



Linn Katrine Høie



We create chemistry

Christoph Attila Kun



Andreas Orzelski

Lutz Jänicke

+++



EqHub + AAS = A true DISC Love Story from Norway's Offshore Supply Chain

EqHub + AAS: It's also a Teams effort!



Thank you

aas-core-works

We provide software tools and libraries to enable others to work with Asset Administration Shells (AAS).
Our main focus is on robust and correct software building blocks, which are then used to build greater stuff.

Quickstart

- [aas-core-meta](#): formalized meta-models
 - [Meta-models rendered as HTML](#)
- [aas-core-codegen](#): tool and library to generate code, schemas, etc
- Schemas and definitions
 - [aas-core-protobuf](#)
 - [aas-core-opcua](#)
- SDKs
 - V3
 - [aas-core3.0-csharp](#)
 - [aas-core3.0-golang](#)
 - [aas-core3.0-python](#)
 - [aas-core3.0-micropython](#)
 - [aas-core3.0-typescript](#)
 - [aas-core3.0-cpp](#)
 - [aas-core3.0-java](#)
 - V3RC02
 - [aas-core3.0rc02-csharp](#)
 - [aas-core3.0rc02-python](#)
 - [aas-core3.0rc02-typescript](#)
- SDK extensions
 - [aas-core3.0-python-protobuf](#)
- Package libraries
 - [aas-package3-csharp](#)
- React editor
 - [aas-package3-react-editor](#)
- Command-line Toolkit
 - [aas-core3.0-cs-swiss-knife](#)
- Test data
 - [aas-core3.0rc02-testgen](#)
 - [aas-core3.0-testgen](#)
- Contributing Institutions

IDA

- Part 2: API
 - Terms and Definitions
 - Preamble
 - Introduction
 - General
 - Query Language
 - API Specification
 - HTTP/REST API
 - Summary and Outlook
 - Annex
 - Change Log
 - Bibliography

Part 2: API / Query Language

all the technical properties, e.g. width of the product. An example is to search for motor starters (`ProductClassification[ProductClassId = 27-37-09-05]`) with a width less than 100 mm (`semanticId = 0173-1402-6A0164006, value < 100`). HandoverDocumentation consists basically of a list of document information according VDI 2770 (`DocumentedEntity[DOI]`). It is expected, that this will be changed to SubmodelElementList like other V3 Submodels. An example is to search for Documents of a certain Class (`semanticId = 0173-1402-AB9999001, ClassId = "03-01"`, i.e. Commissioning) in a certain language (`semanticId = 0173-1402-AA4488006, e.g. value = "nr"`).

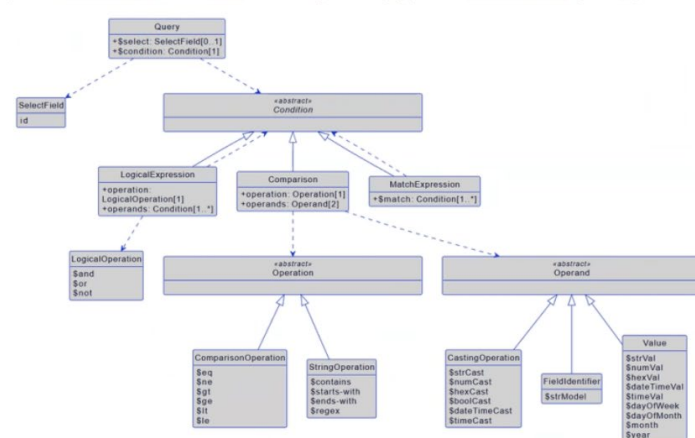
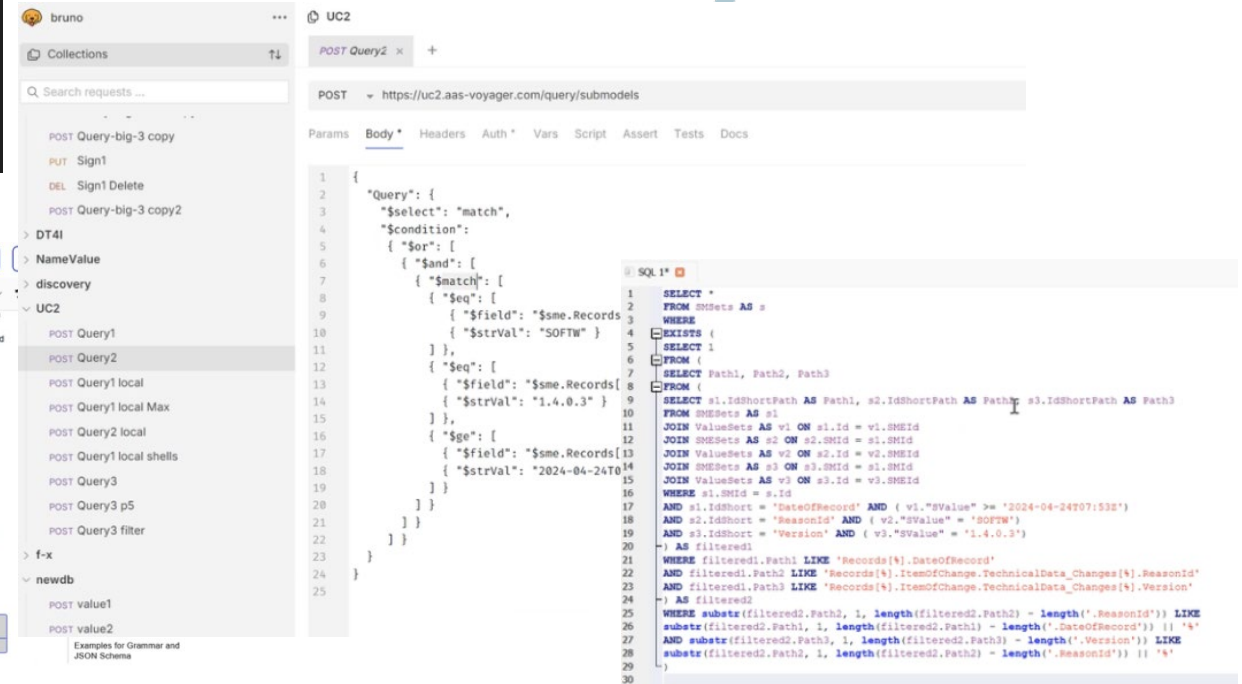


Figure 1. Main elements of the AAS Query Language





Thank you for joining us!



SUMMARY “EqHub and Phoenix Contact” by K Dagsvik & JK Solås at DISC SHOW & TELL 2025

1. Introduction & Context

- The presentation highlights the integration of EqHub (a technical information library for equipment) with the Asset Administration Shell (AAS) standard, demonstrating how digitalization and standardization are transforming Norway’s offshore supply chain.

2. What is EqHub?

- EqHub is a centralized, industry-agreed platform where manufacturers or agents upload equipment data and documents.
- Certified verifiers review and approve the information.
- Only the EqHub ID is delivered to operators, suppliers, and contractors, enabling:
 - Reuse of data across projects and operators.
 - Earlier availability of information.
 - Support for various work processes.

SUMMARY “EqHub and Phoenix Contact” by K Dagsvik & JK Solås at DISC SHOW & TELL 2025

3. Integration in Practice

- **Equinor Modification Projects:** Tag indexes with EqHub IDs are received from contractors and integrated into Equinor’s engineering system (STID) with no manual intervention. Over 80,000 tags have been processed this way.
- **Field Operations:** All relevant information is accessible to field operators via handheld devices.
- **New Builds (e.g., Hugin A):** Aker Solutions receives tag indexes from hundreds of suppliers, with over 65,000 tags linked to EqHub IDs.

4. EqHub + AAS: The Next Step

- A pilot with Phoenix Contact demonstrates direct integration of manufacturer data into EqHub using the AAS standard.
- This approach allows EqHub to:
 - Receive and present data in multiple formats.
 - Prepare for future requirements like the Digital Product Passport.
 - Map and align with various industry standards (e.g., IEC, eCl@ss, CFOS), in collaboration with DISC and standards organizations

SUMMARY “EqHub and Phoenix Contact” by K Dagsvik & JK Solås at DISC SHOW & TELL 2025

5. Benefits of AAS Integration

- Direct access to data from manufacturers ensures data correctness and reduces the need for verification.
- Product change notifications and security advisories can be distributed instantly to all users in the field.
- The system supports feedback loops, enabling operators to provide data quality and product quality feedback to manufacturers, fostering continuous improvement.

6. Holistic Digital Ecosystem

- The vision is a digital ecosystem where product data flows seamlessly from producers to users, leveraging AAS and OPC UA for interoperability.
- The Asset Administration Shell acts as a flexible, standardized container for all relevant product information, supporting legal requirements (e.g., product carbon footprint) and enabling advanced use cases like automatic intrinsic safety calculations

SUMMARY “EqHub and Phoenix Contact” by K Dagsvik & JK Solås at DISC SHOW & TELL 2025

7. Teamwork and Industry Collaboration

- The success of EqHub + AAS relies on collaboration across the value chain—manufacturers, suppliers, operators, and standards bodies.
- The presentation acknowledges the contributions of many individuals and organizations, and highlights the importance of open standards and meeting places for innovation (e.g., NFEA, Estonia’s open-source approach).

8. Key Takeaways

- AAS is a practical example of digital transformation in the offshore industry, delivering:
 - Higher data quality and accessibility.
 - Faster, more reliable integration of equipment information.
 - A foundation for future digital requirements and innovations.
- The approach is flexible: companies can adopt AAS at their own pace, with manual and automated options coexisting.
- The initiative is a team effort, demonstrating the power of industry-wide collaboration

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In Summary

- EqHub’s integration with AAS is streamlining equipment data management in Norway’s offshore sector, enabling seamless, standardized, and future-ready information exchange.
- The project exemplifies how open collaboration, digital standards, and feedback loops can drive efficiency, quality, and innovation across the supply chain



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