

Oil & Gas – A unified ontology Reservoir and Production

Frédéric Verhelst, VP Real-Time & Dec. Support
Chairman PCA SIG Reservoir and Production

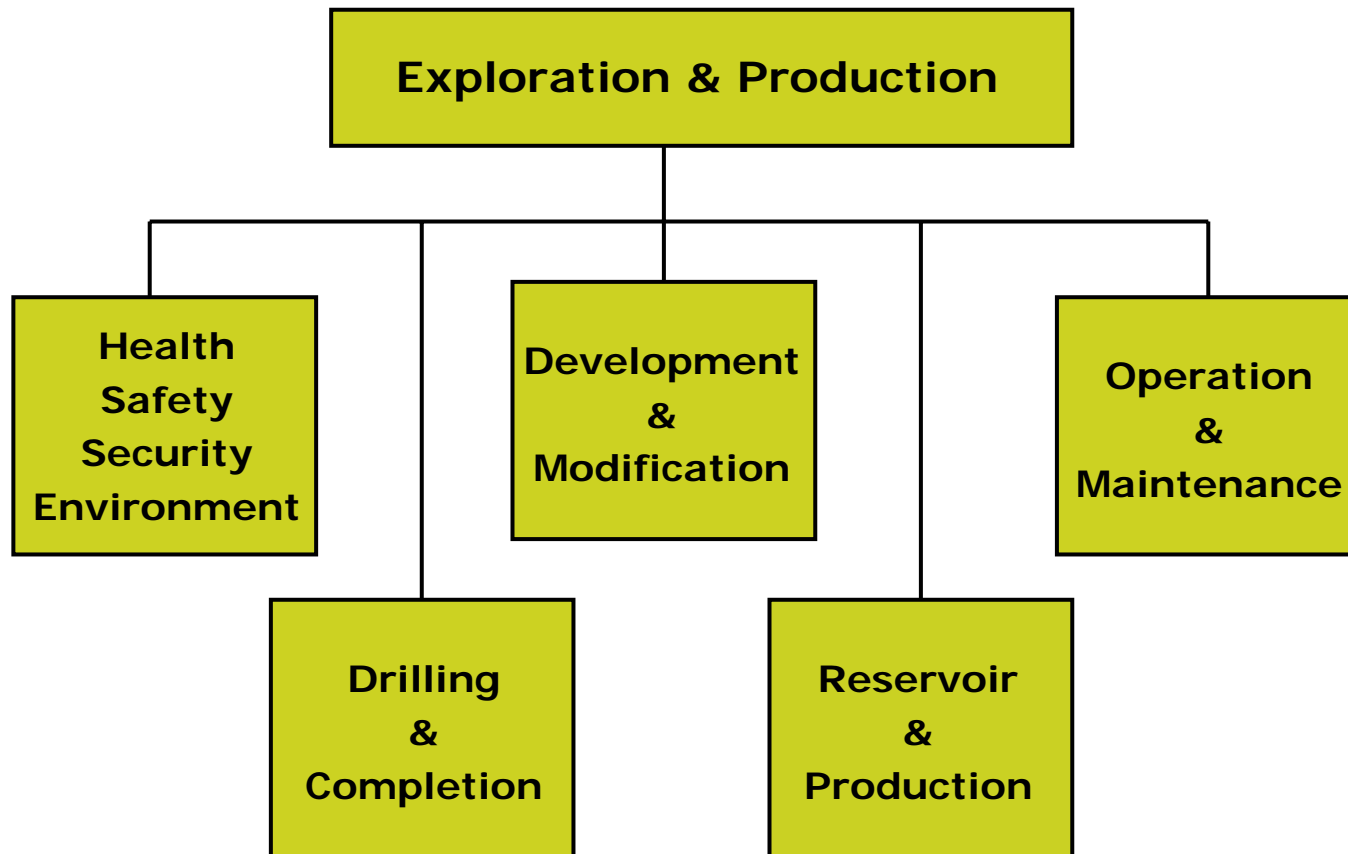
Agenda

- Introduction to the PCA SIG Reservoir and Production
- Integrated Operation in the High North project (IOHN) – Reservoir and Production part
- What will IOHN mean for the oil and gas ontology?

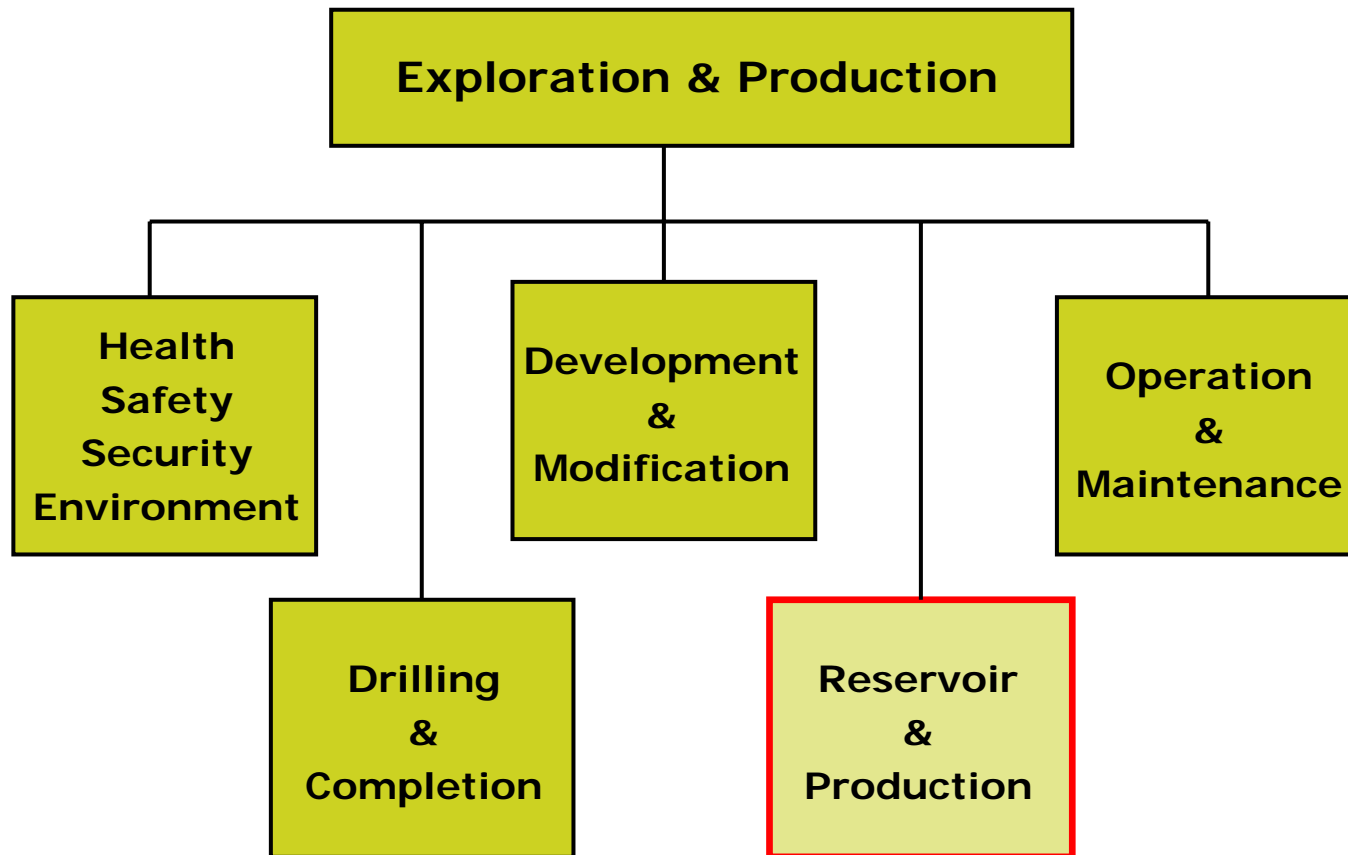
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Overview of the different SIGs within PCA



Overview of the different SIGs within PCA



Members of SIG Reservoir and Production

- Frédéric Verhelst, Epsis
Chairman
- Marc Bezem, UiB [TBC]
Co-Chairman
- Espen Halvorsen, StatoilHydro
Co-Chairman
- Terje Aaberge, Vestlandsforskning
Editor of POSC Caesar's web site
- Nils Sandsmark, DNV
Administration of POSC Caesar, TAG, RDS and relation to ISO
- Thore Langeland, OLF
Coordinator SIG-meetings

Tasks of the SIG Reservoir and Production

- Propose further **enhancement** of ontology
- **Quality assurance** of the ontology and related domains
- **Communication** with relevant stakeholders
 - Update part of POSC Caesar's web site
 - Participation in the Technical Advisory Group meetings

Wiki-site for Reservoir & Production SIG

RpSig - PCA SIG - Trac - Mozilla Firefox

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http://trac.posccaesar.com/wiki/RpSig

POSC Caesar Association

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Production and Reservoir SIG

The focus of the Production and Reservoir SIG is to establish and maintain correct and reliable reference data related to petroleum production and reservoir management.

Relevant activities

- [Daily Production Report](#)
- [PRODML](#)
- [WITSML production reporting](#)
- [Monthly Production Report](#)

Links

- [Daily production report elements represented as a hierarchical structure](#)
- [The ISO 15926-2 standard represented as a hierarchical structure](#)

Contact: [Frédéric Verhelst](#)

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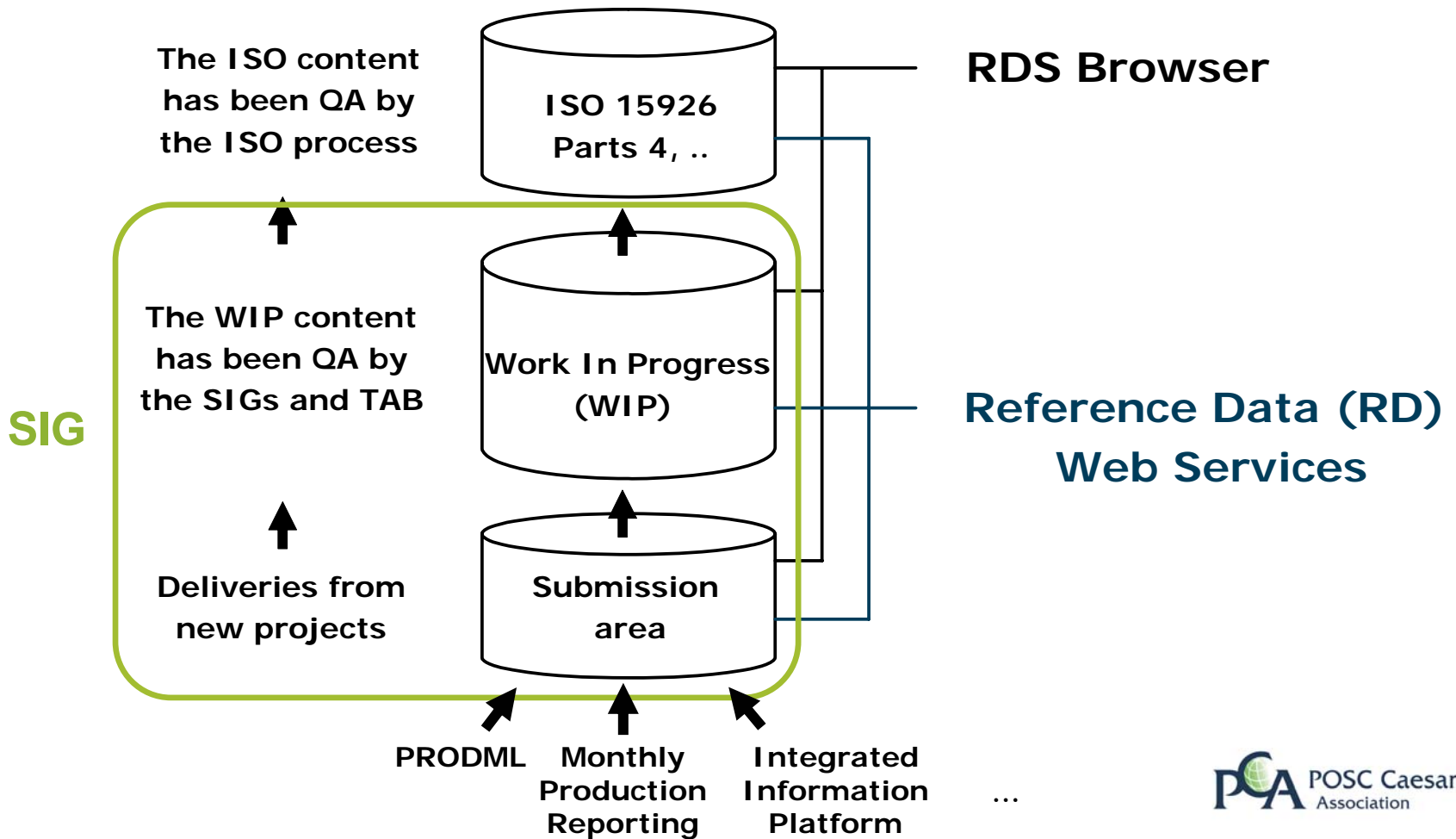
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Powered by Trac 0.10.3
By Edgewall Software.

Visit the Trac open source project at
<http://trac.edgewall.org/>

<http://trac.posccaesar.com/wiki/RpSig>

Relationship of SIG with POSC Caesar's RDS

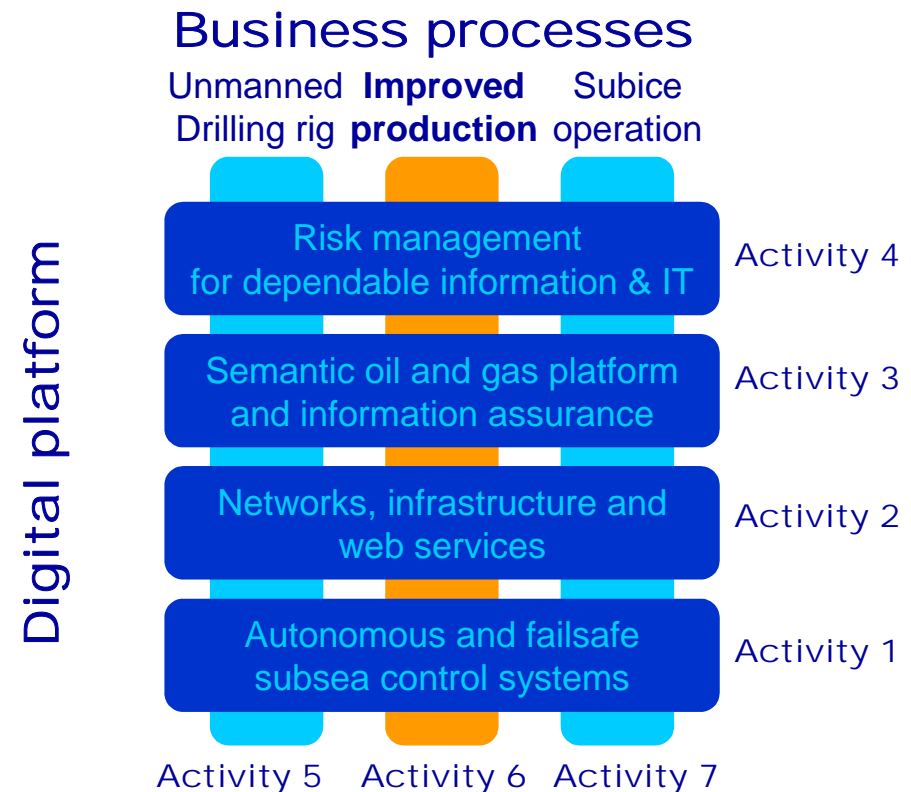


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Integrated Operations in the High North

- Joint Industry Project:
 - May 2008 – April 2012
 - 90 M NOK / 20 M USD
 - 25+ organisations
- Project manager:
 - Nils Sandsmark



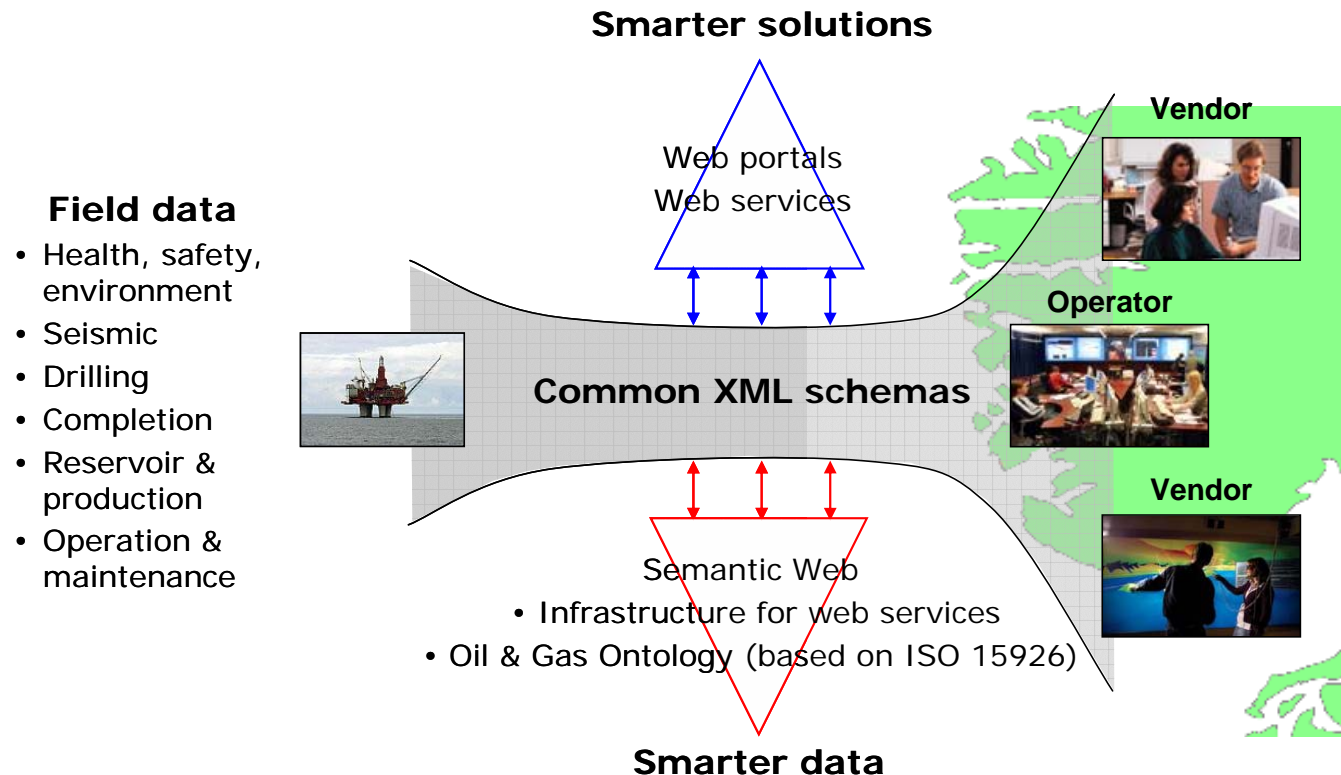
High North / Arctic regions

- Characteristics
 - Well instrumented (redundancy)
 - **Remoteness**

- Main challenges:
 - **Maintain security and regularity**
 - Production optimisation



Second generation Integrated Operations



*Ontology = A hierarchical data structure containing concepts, relationships, properties and rules for a specific domain

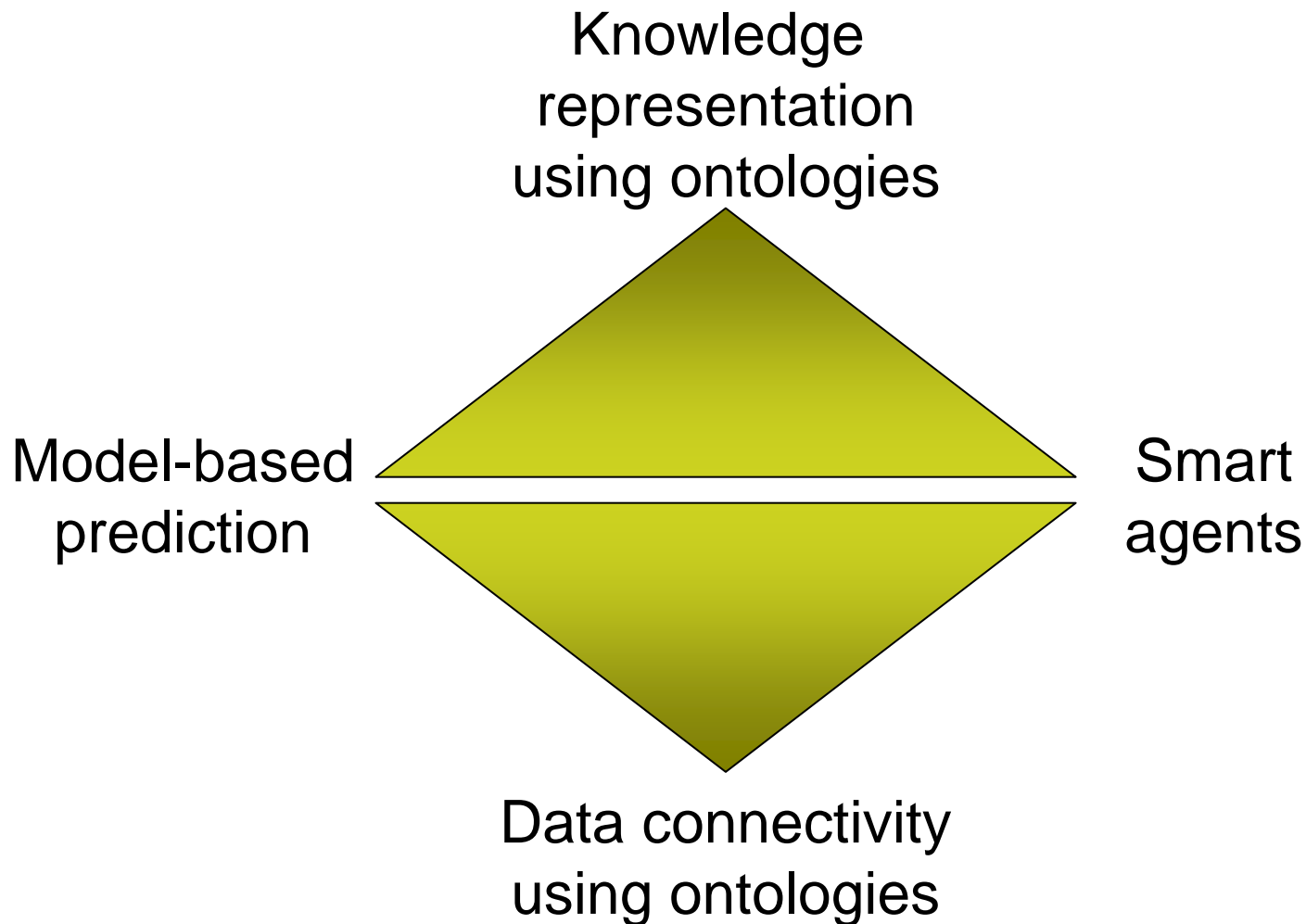
A key enabler for the High North!

Courtesy OLF

Goals for activity 6: Improved Production

1. Modular and flexible system to maintain the highest degree of regularity for a remotely operated field in the High North
2. Pilot Second Generation Integrated Operations technologies
 - Sub-goals:
 - Extend ISO 15926 for production optimization
 - Quality assurance of information providers (redundancy)
 - Using semantic web, smart agents, using simple first-principle and empirical models
 - Decision support tool for operational regularity and production optimization
 - Operational conditions vs boundaries
 - Using semantic web and smart agents
 - 2 Pilots: QA info providers / Decision Support

Central role for the Oil & Gas ontology

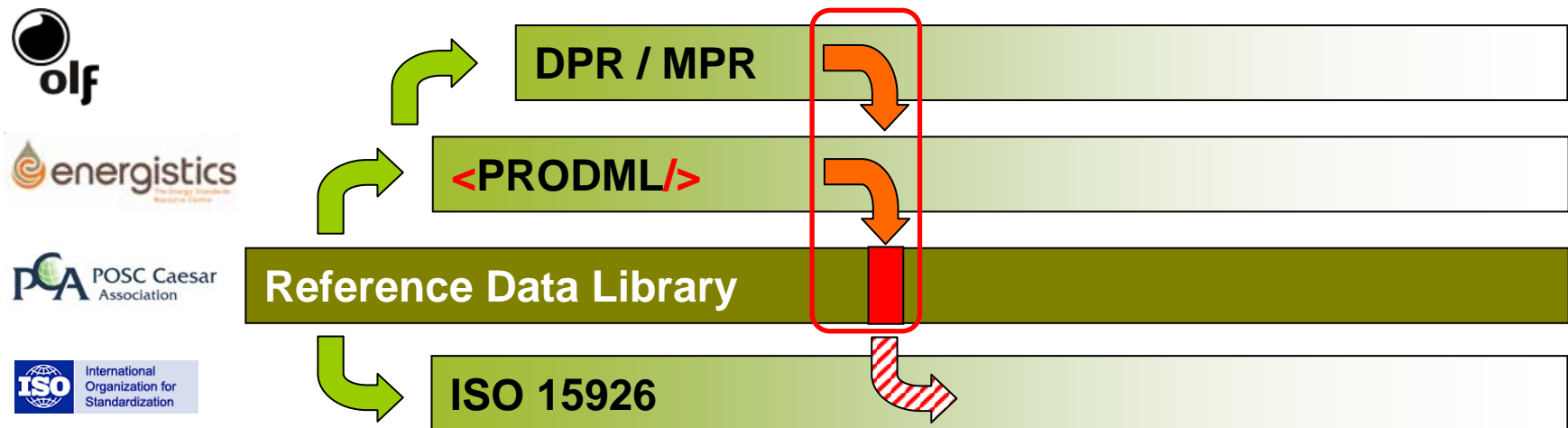


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What will this project mean for ISO 15926?

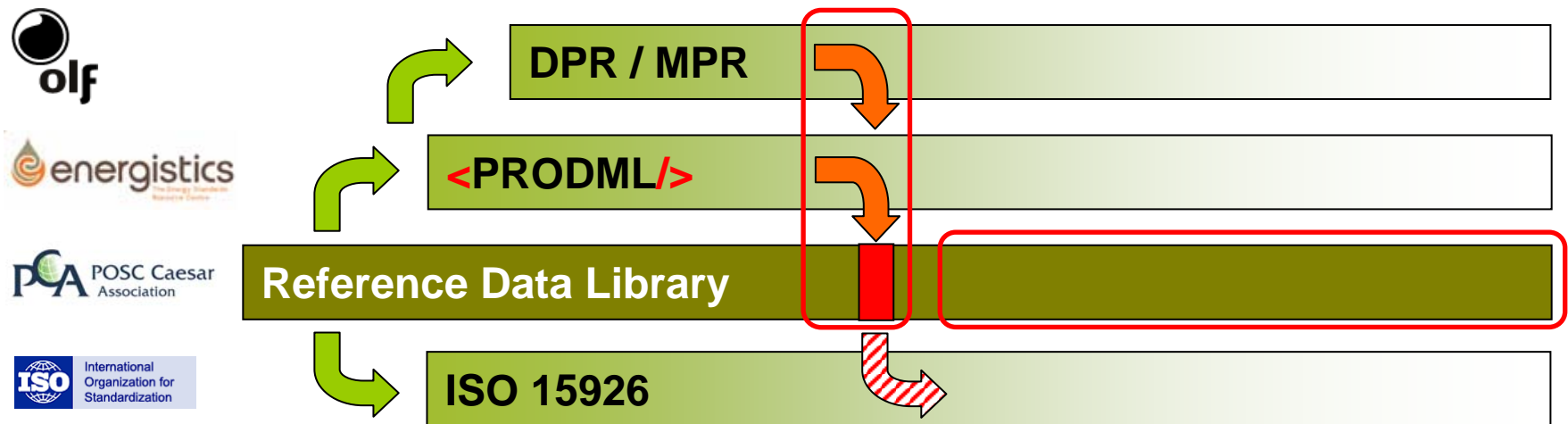
1. Merging XML schemes of PRODML, Daily and Monthly Prod. Report back in PCAs Reference Data Library (RDL) and later ISO 15926



1. Consolidation

What will this project mean for ISO 15926?

1. Merging XML schemes of PRODML, Daily and Monthly Prod. Report back in PCAs Reference Data Library (RDL) and later ISO 15926
2. Extending RDL / ISO 15926 to cover Production Optimization

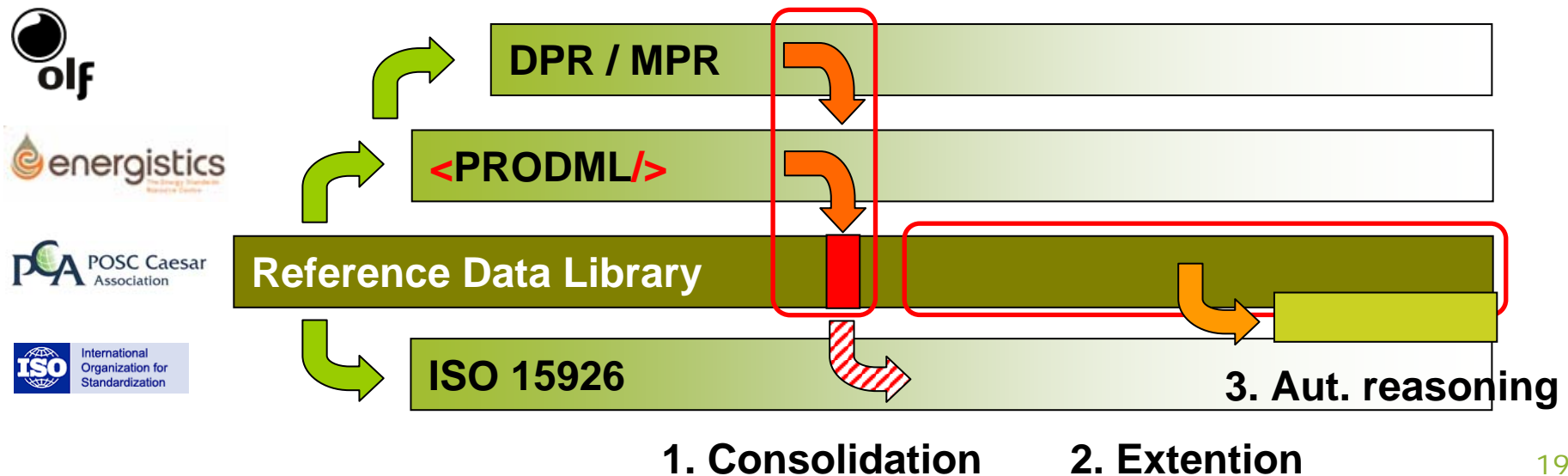


1. Consolidation

2. Extention

What will this project mean for ISO 15926?

1. Merging XML schemes of PRODML, Daily and Monthly Prod. Report back in PCAs Reference Data Library (RDL) and later ISO 15926
2. Extending RDL / ISO 15926 to cover Production Optimization
3. Preparing ontology for automated reasoning by smart agents



Interested in this work?



FV@epsis.no

Thank you for your attention

✧ Epsis connects people and technology to deliver integrated operations. This helps our clients to enhance their decision-making processes, achieve greater efficiency and make better use of resources ✧