POSC Caesar Association
Projects and Activities

MIMOSA Open Meeting, Houston 2018-12-05

Nils Sandsmark
Summary

• POSC Caesar Association (PCA)

• Projects:
  • ILAP – Integrated Lifecycle Asset Planning
  • ILAC – Extending ILAP – integrating schedule, cost weight and estimation
  • READI – REquirement Asset Digital lifecycle Information

• ISO/IEC:
  • Activities on models/ontologies and reference data
  • Smart Manufacturing Reference Model(s)

• Opportunities for cooperation between MIMOSA and PCA
POSC Caesar Association (PCA)

PCA is:
• A Norwegian based standardization organization that collaborates globally

Purpose:
• PCA improves business efficiency within the industrial energy sector by connecting information

Vision:
• Connecting all information in the industrial energy sector

Value proposition:
• Information connection will reduce cost by at least 20%
Co-operation in our interest and for our benefit

Integrated Lifecycle Asset Planning

ILAP presentation
November 2018
Co-operate to achieve a higher goal

- ConocoPhillips, ENI, Equinor and AkerBP has funded the project since 2012

- EPIM is project executer

- PCA standardize and facilitate global co-operation

- MIMOSA supports PCA and review and comment on drafts

- ILAP is a project within IOGP ISSC

Note: Every Norwegian contractor supports this initiative
We pay at least double – for less quality!

1. Oracle Primavera
   Contractor establish schedule

2. SAP
   Then punch the same data in operator systems

3. Excel
   Sometimes data needs to be punched into other software systems also

I Norwegian oil and gas industry >200 persons are payed for this work
Cost > 20 million euro

Note: Very simplified
ILAP project goals

1. Publish an international standard for schedule data terms, ISO15926-13

2. Develop adapters that supports the standard and schedule software P6, SAP, Excel and MS Project

3. Market the standard to get support and use of it
▪ The first ILAP software was intentionally a tin can solution to avoid IT risk

▪ We have released a second version to be updated to ISO standard

▪ Currently we’re working on improving adapter user interface

▪ We have started planning a server cloud solution with full automation of transfers
Implementation in Equinor

- ILAP has been in production from May 2018

- Started in Project division with brownfield projects (Safran to SAP), implemented at two contractors

- From late October, both the Offshore and the Onshore division has continued implementation

- Goal is that ILAP is fully implemented in Equinor within 31.12.2019
The ILAP project is in dialogue with three different industries in Norway:
- Railway (large projects)
- Electrical production and distribution (large projects)
- Construction (large projects)

The ILAP is usable for many industries like renewable, roadbuilding, ship and other

This is due to that we have built the standard on common planning theory and practice
Extending ILAP – integrating schedule, cost weight and estimation

Transformation of project control within oil and gas industry
- Converting the data language between every software creates huge transactions costs.

- This “conversion” industry has an annual turnover of more than 10 billion dollars a year.

- We’re paying the bill for these transaction costs.

- When will we reduce it?
ILAC project goals

1. Publish an international standard for cost weight and estimation data terms

2. Develop adapters that supports the standards ILAC standard software

3. Market the standard to get support and use of it
Co-operate to achieve a higher goal

• ConocoPhillips, ENI, AkerBP and Equinor have done the pilot project (EPIM project)

• Mimosa and PCA standardize and facilitate global co-operation

• ILAC is presented to the IOGP ISSC
READI – REquirement Asset Digital lifecycle Information
EG-lederkonferansen 2018
Stavanger

Erik Østby
08 November 2018

Initiated by the Sector Board Petroleum

Confidential
Opportunities to improve quality and efficiency in existing work processes and cooperation through digitalization has not been captured widely in the industry.

“This initiative is important for achieving lasting improvements. I would urge the industry to support the project.”

Terje Søviknes Oil and Energy Minister, Norway

Recommendations for Digital field development process

- Purpose full collaboration to harvest effects of digitalisation
- Standardised digital plant information
- ...accelerating the current digitalization of the NORSOK standards – particularly NORSOK Z-TI
The journey from paper based to “digitalized” NORSOK standards

Paper based NORSOK standards

Company specific requirements

STI - updated and common requirements in a digital format

READI - Common requirements. Machine readable for automated verification/validation

Application for business process improvements

READI JIP: Knowledge base for Technical Information requirements expressed as rules.
Means to reach the goals of cost reductions and a more competitiveness Oil & Gas industry

- Support for the definition of machine- and human-readable requirements.
- More efficient verification of requirements.
- Easily discovery of inconsistent requirements.
- Remove ambiguity in the definition of requirements.
- Better searching capabilities to find requirements.
### Participants

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The READI JIP will be executed in three phases

Scope for Phase 1 is information requirements to valves
Ontology – the enabler to change the industry practice
One goal for READI

To help the industry to write “good” requirements that machines can validate and verify automatically
ISO/TC 184/SC4 Industrial data – Main ISO committee for PCA

Data quality (8000)

Product Classification

Oil and Gas - 15926

Product characteristics - 22745

Product Definition data
STEP - 10303

Visualisation (14306, 17506, 18681)

Industrial terminology (22745)

Product Libraries (13584)

Factory Interfaces (15531, 18629, 18828)
Boeing: The System Engineering «V» – Is it still relevant In the Digital Age?
Main ISO/TC 184 activities for PCA

- WG 6 Oil and Gas Interoperability (OGI) (MIMOSA)
- SC4 Industrial Data
  - Improve ISO/TR 15926 Core RDL
    - Improvements from PCA RDL – RDL 2 (PCA)
    - Missing CFIHOS items (USPI)
  - Living Lab for triple store for reference data
    - Reference data for ISO 10303-239 & 242 (Aerospace, Defense and Automotive) and ISO 15926 (Oil, Gas, Process and Power) (PCA)
  - Core industrial data set of terms (PCA)
    - Common ontology for SC4
  - New standards
    - ILAP and ILAC (PCA)
    - ISO/TR 15926-14: *Data model adapted for OWL 2 Direct Semantics* (PCA)
    - ISO 15926-10: *Conformance testing* (USPI)
    - ISO/TS 15926-6 ed. 2: *Methodology for the development and validation of reference data* (USPI)
  - Geometry and Topology Ontology Efforts – Joint SC4 activity
PCA also participate in

ISO/IEC JWG 21 Smart Manufacturing Reference Model(s)

JWG 21 deliverables:
- An ISO/IEC Technical Report describing:
  - Objectives
  - Scope
  - Excising reference models
  - A meta modeling approach to harmonize models
Scandinavian Smart Industry Framework
Relation to “RAMI” and “NIST”
Open Industrial Interoperability Ecosystem (OIIE) is defined by:

- Standard Use Cases
- Standard Events
- Standard Info Models
- Standard APIs
- Standard Administration
Opportunities for cooperation

• WG 6 Oil and Gas Interoperability (OGI)
  • ISO 18101 parts
  • Use Cases
  • Pilots

• Projects:
  • Mapping between ISDD and RDL 2 (“New IIMM” WG)
  • ILAC – Extending ILAP – integrating schedule, cost weight and estimation
  • ILAP – Integrated Lifecycle Asset Planning Ed.2
Thank you for your attention