MIMOSA/PCA
Operations & Maintenance
Special Interest Group
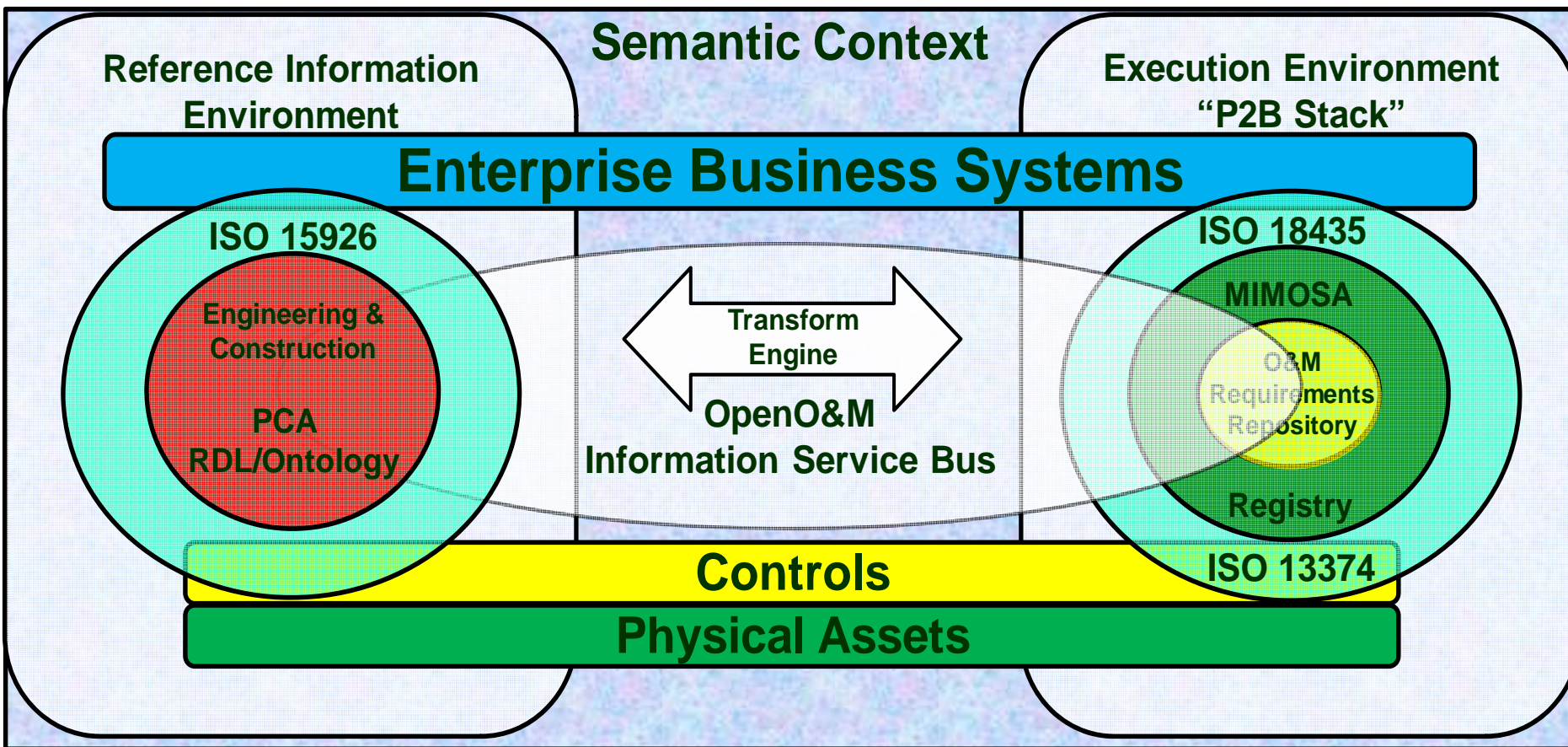
Sun, 24 March 2013

Agenda

- Background and requirements for the SIG

- Relationship to other SIGs and broader community

- Deliverables, Status and Results

- Conclusions, issues and plans for further work

Context for Collaboration

Semantic Context

Reference Information Environment

Execution Environment "P2B Stack"

Enterprise Business Systems

ISO 15926

ISO 18435

Engineering & Construction

MIMOSA

O&M Requirements Repository

PCA RDL/Ontology

Transform Engine

OpenO&M Information Service Bus

Registry

ISO 13374

Controls

Physical Assets

ISO TC 184/WG 6

Overall SIG Mandate

- **Purpose**
  - develop and publish input to MIMOSA and PCA which properly incorporates the Operations and Maintenance oriented concepts and methods established by the OpenO&M initiative and certain ISO standards (including ISO 15926 and ISO 18435) in the joint MIMOSA/PCA solution set
  - output from the SIG published in the annex of the ISO OGI TS along with the resulting updates (proposed and actual) to the related standards
  - works for the consistency and the quality of the PCA reference data in their defined domain and for making these data completely compliant with the data model in ISO 15926 Part 2.

- Facilitate discussion degrees of interoperability required to support the complete life-cycle based on agreed-upon open, supplier and geographically neutral standards and specifications

- Supports the improvement of the composite, evolutionary architecture used in the OGI Pilot, using ISO 15926 for the Reference Data Library, along with a portfolio of other appropriate existing standards to enable the levels of interoperability required to support the use cases incorporated in the OGI Pilot

Relationship to other SIGs and Broader Community

- **Community Setting**
  - The SIG shall ensure that the oil and gas industry achieves interoperability of O&M data with Engineering data by:
    - enabling bidirectional consistency of engineering and O&M data throughout the facility lifecycle
    - Producing outputs that shall be used in real industry projects and lead to extensions of and/or updates to ISO 15926 and/or MIMOSA CCOM which will be codified in the ISO OGI Technical Specification

- **External Relationships**
  - **SIG hosts the OGI Pilot and packages results as input to ISO OGI TS**
    - will contribute to industry Use Cases, Compliance Data Sets and Specifications/Standards used in the OGI Pilot activities
    - Provides input to ISO TC184/WG 6 working on the ISO OGI TS based on the proven results in the OGI Pilot
  - **PCA/MIMOSA IT Architecture SIG, PCA Geometry SIG, Proteus 2 SIG, MMT SIG**
  - **EDRC Project**
    - Common requirements for HEED and OGI Pilot
    - Focused mappings for specific equipment data areas

Interoperability Definitions

- **IEEE:** The capability…

  - of two or more systems or elements to exchange information and to use the information that has been exchanged.

  - for units of equipment to work together to do useful functions.

  - that enables heterogeneous equipment, generally built by various vendors, to work together in a network environment.

  - of two or more systems or components to exchange information in a heterogeneous network and use that information.

- **SEI:** The ability of a set of communicating entities to

  - (1) exchange specified state data

  - (2) operate on that state data according to specified, agreed-upon, operational semantics

Scoping - SIG

- Interoperability from an O&M Perspective
  - Enable the operation of systems performing in an agreed upon process
  - Process exemplified by the chosen use cases
  - Trusted systems agree to take over particular tasks within a use case

Scoping – Pilot relationship

- Examine increasing sets of data as incrementally produced by the OGI Pilot

- Pilot determines what has to be understood beyond the standards to enable required degrees of interoperability

- What needs to be in use cases and data sets

- Pilot serves as incubator and interoperability testing platform

- OGI Pilot PM – Alan Johnston

- All OGI Pilot artifacts published on the MIMOSA website
 - http://www.mimosa.org

Scoping – ISO OGI TS

- Under development by ISO TC 184/WG 6
  - Convener Alan Johnston, Co-Convener Nils Sandsmark
  - Current members – Norway, Netherlands, UK, Canada, USA, Japan
  - Australia – via Liaison with ISO TC 108/SC 5
  - Brazil, France, Germany – In dialog ?
- Documents what is required and proven in the OGI Pilot
- Will describe and incorporate by reference
  - Portfolio of Standards and Specifications to support full life-cycle interoperability
  - Use Cases, Metadata, Practices, Methods
- Required to reach the specific business goals of providing clear language to help owner/operators and suppliers have agreed upon international language for RFI/RFP/RFQ

Deliverables

- Gap Analysis out of OGI Pilot Phases

- Evaluation Matrix

- RDL additions based on Gap Analysis

- Contribute to Pilot Documentation

Status

- Phase 0 (2011)
    - Initial Debutanizer Design (WP)
    - 2 90-Day Iterations
    - Presentation at Digital Plant 2011
    - Initial Gap Analysis Document
- Phase 1 (2012)
    - Incorporation of requirements by AVEVA, Bentley, Intergraph, IBM
    - Presentation at Semantic Days, ISA Automation Week
    - Revised Gap Analysis: Online Meetings with Geometry SIG
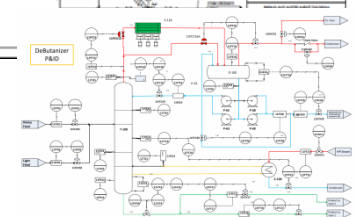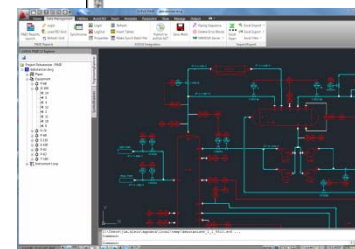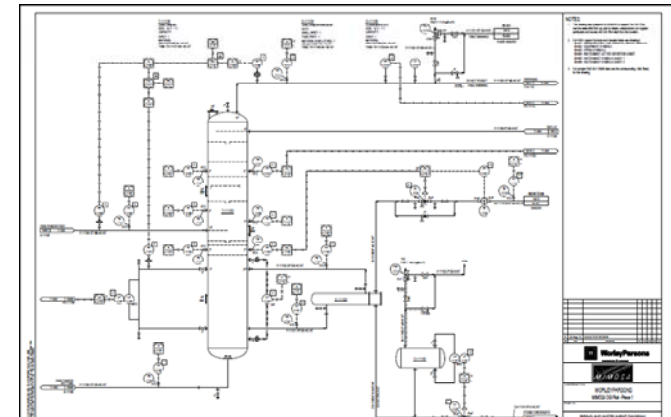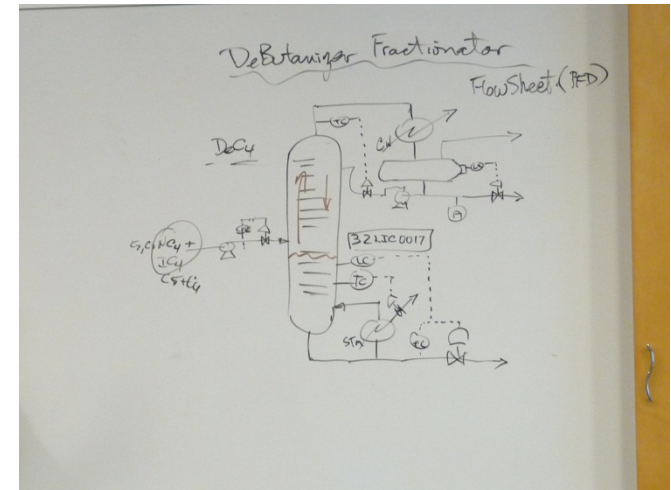
Gap Analysis 1

- O&M SIG
  - RDL addition of port types (including capillary, low voltage, mechanical and signal)
  - RDL addition of Analyser Controller
  - RDL addition of Analyser Transmitter
  - RDL addition of Analyser Element
  - RDL addition of Manual Flow Controller
  - RDL addition of Ball Control Valve
  - Multiple assembly/arrangements using the same functional locations (future requirement for Use Case)
  - Asset installation/removal template (future requirement for Use Case)

Gap Analysis 2

- Geometry SIG (Proteus)
  - RDL addition of Offpage Connector class
  - Canvas dimension
  - Canvas origin (e.g. 0,0 is bottom-left)
  - Symbol definition
  - Symbol rendering positioning
  - Symbol scale
  - Symbol rotation
  - Symbol flip
  - Symbol origin
  - Connection points
  - Connection points and relation to ports
  - Line routing

Next Steps

- Establishment of O&M Sandbox for RDL additions

- Finalise Phase 1 Gap Analysis
  - Switch to Matrix-based evaluation

- Phase 2
  - Next round of extended OGI Pilot data
  - Alignment with HEED/EDRC
  - Extended use case coverage

Phase 2

- Phase 2
  - Phase 1 Demo Review tomorrow (March 25, 2013)
  - Next round of extended OGI Pilot data
  - Alignment with HEED/EDRC on common equipment
  - Inclusion of multiple automation suppliers (Emerson, Invensys, Rockwell Automation, …)
  - Microsoft Participation (ChemRA)
  - Extended use case coverage
    - Continue with Use Case 10 (peer to peer O&M systems provisioning)