
Summary of the LOTAR International Workshop June 14th to 18th, 2021 – Online

Over 30 attendees participated by teleconference in the general sessions. Parallel meetings were held with the CAx and EWIS Interoperability Forums.

Project Management

- **Budget:** Reviewed the status of payments of LOTAR 2021 fees by the European and American members and the associated budget plans. Commenced preparation of 2021 statements of work (SoW) based on current budgets and aligned SOWs to support available budget.
- **Signature of the MBx-IF MoU:** Final editorial work to be done on the MoU during a meeting scheduled for June 25, 2021, between members of PDES Inc, prostep ivip and AFNeT associations.
- **Preparation of the MBSE IF:** Potential for future inclusion in the MBx-IF MoU,
- **Preparation of the ballot of part 7 edition 4 for 2021:** Access to the online version of Part 007 is not possible with AIA requirements. Instead, updates will be published more frequently.
- **LOTAR Workshop Plans for 2022/2023:** Agreed on general locations and hosting responsibilities.
- **Working Group Interaction and Integration:**
 - Reviewed examples of how domain parts meet the requirements of the basic and common parts and discussed how we ensure the domain parts are integrated.
 - Discussed dependencies between working groups and how to better integrate, such as the Meta Data work that is being done together with the leaders from each WG.
 - Discussed the need for integrated use cases for both the LOTAR Working Groups and Implementer Forums. Persistent IDs are an example of a need to integrate across domains and IF's.

WG “LOTAR of 3D CAD Mechanical and PMI” (Parts 1XX):

- Continued the review of the Part 100 and update the fundamentals about the tool generation, and also discussed the P132 document “Structural joins for assembly & installation”.
- Agreed on a P132 Pilot #2 Assembly with fastener (user defined properties/features).

WG “LOTAR of PDM information” (Part 2XX):

- Evolved Part 210/230 drafts
 - Reviewed entries in “STEP Relationship” column to tables to show mapping to STEP entity
 - Discussed the preparation of a SOW for a review of the mapping to ISO 10303 Part 4000
 - Clarified the usage of ‘Specification’ vs. ‘Requirement’
- Reviewed OAIS Interoperability Framework draft artifacts to understand potential impacts to WG Parts.
- Basic and Common Part 7 Support - WG identified Part 200/210/230 terms to be added to the part 007.
- Further developed PDM-IF Alternate/Substitute Use-Case (1-way ‘asymmetric’ vs. 2-way ‘symmetric’).

WG “LOTAR of Composite design” (Part 3XX):

- Continued to work on the Part 300 and with emphasis on the terms.
- Contributed to CAx-IF user group with various backlog item definition.
- Discussed modification of the recommended practices.

WG “LOTAR of Electrical Harness” (Part 4XX)

- Reviewed the electrical 2020 pilot of Core Technologie, based on NX ↔STEP AP242 ed2 interface.
- Discussed priorities of requirements for the EWIS Interoperability Forum: for test rounds 4 and 5 (2022).

- Drafted SOWs for the 2021 LOTAR pilots for electrical harness using the mechanism of external element references linking the electrical information and the geometry information.

WG “LOTAR of Model Based Systems Engineering” (Part 5XX)

- A paper describing the Part 520 use case (supported by Modelon) was accepted for publication at the International Modelica Conference 2021. A 2021 SOW has been created to further develop the 2020 demonstrator activities.
- Continued development of the Part 500 and 520 standards documents.
- Continued discussions on the “meta data” topic with the MBSE WG, other WGs and external projects.
- Initiated discussion around the formation of an MBSE IF. To ensure acceptance of the results, this will include coordination efforts with the aligned consortiums: PDES, Inc., LOTAR, AFNeT, prostep ivip, IN-COSE, NAFEMS, Modelica Assoc.; the Solution Providers; and the affected industries.
- The Q2 Workshop was well attended with four 1.5-hour sessions that covered a mixture of “progress tasks” and technical presentations. The latter included presentations on NASA’s 7009A Modelling and Simulation handbook, the use of links in PLM systems, engineering digitalization and integrating Modelica with MBSE models.

CAX Interoperability Forum

The CAX-IF Implementor Group had a successful kick-off meeting for Round 48J. Fifteen participants from nine companies were on-line. Highlights include:

- Reviewed the test suite document, scope for this round includes Composites, Product Manufacturing Information (PMI), AP 242 Domain Model XML Kinematic Mechanism, AP 242 XML Edition 2 Support, Persistent ID for Metrology and Inspection, and User Defined Attributes.
- Reviewed outstanding PMI issues and questions based on testing the NIST FTC.
- Update on new capabilities in NISTs STEP File Analyzer and Viewer.
- Joint meeting with CAX-IF User Group to review requirements and Recommended Practices updates.
- Discussed pilot activities to assess the feasibility of implementing previously untested capabilities the vendors are interested in, e.g., explicit hole definition and flat-to-screen notes.

EWIS Interoperability Forum

- Joint meeting between the User Group and the Implementer Group, to review the scope of test round 3E.
- Presentation of the R3E test suite document, reusing some test cases of R2E. Presentation of the enhancements of the electrail wiring harness recommended practices supporting the test round 3.

Special Session on Meta Data on June 18

- Reviewed types of Meta Data categorized during Meta Data Tuesday sessions.
- Discussed gaps and overlaps in LOTAR process documentation: 006, 010 – 015 (esp. 011), 021
- Discussed OAIS and MoSSEC Information Package versus Manifest meta data organization - Recurring theme of exchange versus preservation. Preservation is exchange over time. Both must account for differing data formats and inconsistent implementations of systems attempting to use the data. Preservation must manage the data within an archive over time to ensure capabilities of current systems can correctly use the information captured in the data.
 - Dependency of Meta Data on OAIS Functional Architecture – what is the essential data required for the architecture functions for an archive (e.g. Representation Information as related to Content Information, and the types of Preservation Descriptive Information).
 - Data standards for MoSSEC and STEP.
- Began development of a Road Map for Meta Data capabilities and interdependent Functional Architecture.