

## Annual Report of LOTAR International for 2016

LOTAR is a project group managed under the AIA, ASD-Stan, PDES, Inc. and ProSTEP iViP consortium. The project goal is to develop, test, pilot, publish and maintain standards designed to provide the capability to archive and retrieve digital product and technical information, including CAD, PDM, Composite Design, Electrical Harness, Engineering Analysis and Simulation, and 3D Visualization data, in a standard form that can be read and reused throughout the product lifecycle, independent of changes in the IT application environment originally used for creation. The multi-part standard covers the information content as well as the processes required to ingest, store, administer, manage and access the information. It is published as EN/NAS-9300.

### Tasks

Goals of the project include:

- Developing a standard series (EN/NAS 9300) for archival and retrieval of product & technical data
- Standardization of methods, process modules and data models
- Providing methods, process modules and data model(s) to enable long-term archiving and retrieval of 3D CAD with PMI, PDM, 3D Composite Design, Electrical Harnesses, Engineering Analysis & Simulation, 3D Visualization and other types of data
- Development of recommendations for practical introduction of long-term archiving of relevant data in the industry
- Advancement of commercial-off-the-shelf solutions based on user requirements by close cooperation with the CAX-IF, the PDM-IF, and conjoined funded pilot projects

### Milestones 2016

- Part 007 Ed.3 “Terms and References”, part 020 “Governance and Preservation Planning” and part 120 Ed.2 “CAD 3D Explicit Geometry with Presentation of Product and Manufacturing Information” will be sent for ballot to AIA and ASD Stan before end of 2016.
- Numerous pilot projects have been conducted to validate newly developed technical approaches. In addition to extending the scope for Product and Manufacturing Information, two domains launched their very first tests: Electrical Harness, based on the currently in-development STEP AP242 Ed.2, and Engineering Analysis and Simulation (EAS), based on AP209 Ed.2, the selected information model and neutral format for LT archiving of structural analysis.
- The EAS team also established cooperation with NAFEMS to discuss simulation data management topics in a greater context; it has organized a presentation of the team objectives and of the capabilities of the STEP AP209 standard to the CAE vendors, with the target to have robust STEP AP209 interfaces developed in commercial tools.
- The PDM team published Technical Specifications for long-term archiving of PDM information, and supports the development of STEP AP239 Ed.3, and its harmonization with AP242 Ed.2, which will provide the technical basis for the LOTAR standard’s Part 200 series.
- The LOTAR project has updated the five-year roadmap of the NAS/EN9300 standard, and has continued to manage the interdependencies with the other ISO standardization projects and associated Implementor Forums (CAX-IF and PDM-IF).

### Outlook 2017

- The publication of several parts of the LOTAR standard is planned.
- The “PMI – Mechanical” WG will finalize the part for “Product and Manufacturing Information” for archiving of PMI semantic data, associated to graphic presentation, as well as the part assembly-related information. The Mechanical WG will prepare new parts for 3D definitions to include machining features, and will continue to monitor the progress of the AP242 works for holes and fasteners.
- The PDM workgroup is highly dependent on the progress of development of AP239 Ed. 3 and its harmonization with AP242 Ed. 2. Hence, PDM work will rest in 2017, and restart when AP239e3

reaches a state of maturity that supports the requirements of this workgroup. Members will participate in AP239e3 and AP242e2 development, and the PDM-IF, during 2017 and coordinate with other workgroups in anticipation of restarting in 2018.

- The Composites workgroup will finish the Part 300 “fundamental and concepts for long term archiving and retrieval of advanced composite design”, will work on validation properties, and conduct pilots in this domain.
- The Electric Harness team plans to complete the definition of essential information and validation properties as well as to provide public test cases for the pilot project based on STEP AP242 ed2 pre-DIS.
- The EAS group will draft the parts 600 and 620 for this domain, and support broader testing of exchange of structural analysis models in AP209 Ed.2 by the CAE Implementor Forum.
- The launch of LOTAR activities related to model-based systems engineering will be discussed by the participants, with the preparation of the start of a new WG in 2018.
- The LOTAR project will propose to the relevant associations the organization of a joint American and European meeting in September of 2017 for the governance and road mapping of the ISO product information and 3D visualization standards used by the Aerospace and Defense industries.
- There is an increasing number of Aerospace and Defense manufacturers implementing the LOTAR standards for operational projects. Now five companies use the LOTAR standard in operation, and four other are developing solutions for their new projects based on 3D MBD methods.

## Participants

### Europe:

Europe: AFNeT, Airbus Commercial, Airbus Defense & Space, Airbus Helicopter, SAFRAN.

### Americas:

BAE Systems, Boeing, Embraer, General Dynamics, GE, Goodrich, Honeywell, Lockheed Martin, NIST, Sandia National Laboratories.

## Chairmen:

### Europe

Jean-Yves Delaunay

Airbus

[jean-yves.delaunay@airbus.com](mailto:jean-yves.delaunay@airbus.com)

### USA

Rick Zuray

Boeing

[richard.s.zuray@boeing.com](mailto:richard.s.zuray@boeing.com)

## Project Coordinators:

### Europe

Jochen Boy

ProSTEP iViP

[jochen.boy@prostep.com](mailto:jochen.boy@prostep.com)

### USA

Jeff Holmlund

Lockheed Martin

[jeffrey.a.holmlund@lmco.com](mailto:jeffrey.a.holmlund@lmco.com)