LOTAR

The LOTAR International Project is a working group managed under the AIA, PDES Inc., ASD-STAN and ProSTEP iViP consortium. The project goal is to develop, publish and maintain standards designed to provide the capability to archive and retrieve digital product and technical information, including 3D CAD, PDM, and technical data, in a neutral 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 both the information content and the processes required to ingest, store, administer, manage and access the information.

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, 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 and conjoined funded pilot projects

Milestones 2012

Four workshops have been conducted; two in the USA (March – Gaithersburg, MD; September – Charleston, SC) and two in Europe (June – Toulouse, France; December – Darmstadt, Germany) with a growing number of participants.

The 3D CAD with PMI working group successfully completed the external ballot of the data domain specific Part 120 Edition 1 (3D CAD with PMI Polyline Presentation), which will be published beginning of 2013. Besides the ongoing work on Part 120 Edition 2 (3D CAD with Semantic PMI Representation), the work on Part 125 (Assembly PMI Graphic Presentation) was started.

The PDM working group completed the work on the data domain specific Part 200 (Fundamentals and Concept), which is now being reviewed by the LOTAR project team. Significant progress has been made on Part 210 (Long-term archiving of "as designed" resolved product structures). In this context, the team strongly supported the harmonization of STEP AP239 PLCS with the AP242 Business Object Model for PDM. Close cooperation was achieved with the "Meta Data for Archive Packages" team.

The working group on long-term archiving and retrieval of 3D Composite Design successfully performed interoperability testing for composite design test parts, and is working on the data domain specific parts of the LOTAR standard which will be the result of this working group.

Two working groups started their technical work in 2012: The Electrical Harness working group is currently focused on the identification of use cases for physical harness design and construction, and electric harness installation. The 3D Visualization team is also identifying use cases and works closely together with the other working groups for domain-specific visualization scenarios.

The LOTAR project continued its close coordination and cooperation with the STEP AP242 project and the CAx-IF. The integration of the 3D Tessellated Geometry data model and the development of the mechanism for External Element References were supported in particular, including successful proof of concept tests. The consistency of related standards is in general closely observed and managed, to guarantee a stable definition of the data models, processes and semantic definitions for the archived data.

The LOTAR project was presented at: ProSTEP iViP Symposium in Germany, GIFAS Conference in France, 3D Collaboration and Interoperability Congress in USA and other conferences. In addition the public LOTAR internet homepage at http://www.lotar-international.org/ is being constantly updated and extended. In addition to one page for each working group, information about which user companies have already implemented LOTAR-based solutions in their processes will be added beginning of 2013.

Outlook 2013

The following milestones are planned for 2013:

- Publication of Part 020 "Governance and Planning",

- Continued work on Part 120 edition 2 (3D CAD with Semantic PMI Representation), and Part 125 (Assembly PMI Presentation), with support from pilot projects,

- Publication of Part 200 (PDM), completion of Part 210 Edition 1 (Long-term Archiving of "as de-signed" Product Structures), start work on Part 210 Edition 2 ("as designed" Product Structures with effectivities and options management) and Part 220 ("as planned" Product Structures),

- Draft Part 02x for "Meta Data for Archive Packages" with draft Recommended Practices for AIP header file,

- Contribution to the preparation of STEP AP242 Edition 2, to support the long-term archiving of 3D CAD with extended PMI Representation, Composite Design, Electrical Harnesses…

- Draft LOTAR Guideline for long-term archiving and retrieval of 3D visualization,

- Integration of additional partners into the project group,

- Continuation of close cooperation with the CAx-IF, including joint meetings at all four LOTAR work-shop 2013,

- Coordination among PLCS, AP242 and LOTAR communities toward the creation of a unified Imple-mentor Forum for PDM,

- Extension of the LOTAR public web site.

Participants

Europe :

Airbus, Cassidian, Dassault Aviation, Eurocopter, IAI (Israel Aerospace Industries), Safran

Americas :

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

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