Through Life Cycle Interoperability

as developed by
ASD SSG working group

Presented by Yves Baudier,
ASD SSG Chairman
Airbus Group Innovations

PDT Europe 2014, 14-15 October 2014, Paris
Contents

1. The role of the ASD SSG within the e-business standard governance
2. The challenges of Through Life Cycle interoperability
3. The ASD SSG recommendations
4. On Going initiatives
ASD association

20 member countries*
30 member associations
Representing more than 2000 companies
and around 675,000 employees
ASD SSG members and links

Product development requirements
- 3D Mechanical interop. WG
- 3D Composite interop. WG
- Electrical Harness interop. WG
- PDM interop. WG
- Multi-disciplinary simul. interop. WG

Through Life requirements
- Through Life-cycle interop. WG

Product support requirements
- Link with the ASD ILS Council driving the ILS suite of specifications: STE100, S1000D, S2000M, S3000L, S4000P, S5000F, S6000T, SX000i, SX001D, SX002D

Supply Chain requirements
- Supply Chain interop. WG

Data Quality requirements
- Data Quality WG

PDT Europe 2014, 14-15 October 2014, Paris
ASD SSG public web site
http://www.asd-ssg.org/

The ASD Strategic Standardization Group (SSG)

Overview
The Strategic Standardization Group (SSG) was set up in October 2008 by a group of European manufacturers, A&D associations and military governmental agencies in order to share efforts of development of common A&D e-Business standards and associated harmonized European policies for operational use.
Radar screen

Available external standards

Monitor external development

Candidate

Adopted

ASD development

Participate in external development

E-Business SSG

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Example of ASD SSG results
Statement on ISO 14306 JT Ed1 and Ed2 - 11 January 2012

JT version 9.5 has successfully reached the International Standard (IS) status in December 2012, as ISO 14306 "JT file format specification for 3D visualisation" (also known as "JT Edition 1").

ASD recognises the use of ISO 14306 as suitable for 3D light visualization, limited to the 3D tessellated geometry and 3D "JT BREP" representations - See JT blog.

As stated in ISO 14306: "The following are outside the scope of this International Standard:
- The implementation of, or definition of a run-time architecture for viewing and/or processing JT data;
- Long term data retention;
- Non-faceted geometric data exchange"

In accordance with this, ASD does not recommend its members to use ISO 14306 for CAD 3D exact geometry data exchange or for CAD 3D long term archiving – See LOTAR blog.

In accordance with ISO /TC 184 /SC 4 resolution J of June 2012 Stockholm meeting regarding the ISO JT Ed 1 Ballot, ASD supports the development of ISO 14306 Edition 2 "including but not limited to replacing XT Brep and JT Brep with STEP curve, surface and Brep entity definitions and extending the scope to include external references to support semantic PMI for assemblies and other requirements from AP 242". The related New Work Item Proposal was adopted by ISO in December 2012.
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Aerospace and Defence Industry characteristics

- Small number of large prime contractors,
- Global marketplace,
- Large global supplier network shared among primes and other industries with an average supplier size of 20-50 employees,
- Long product and service life cycles that far exceed the life of software, equipment and people,
- Continuous innovation in products, processes and services for new capabilities and for regular technology upgrade programmes.
- In many cases this is also subject to rigorous certification requirements.
- The Industry has also seen the development of new service contract models that include electronic customer services, management of the in-service phase and feedback from service into the design phase.

Need to manage design, product and service information throughout the product lifecycle, including rigorous configuration management and the long term retention of information, where the data is ‘created once and used many times’. 
Data explosion through the life cycle
The PLM Platform of the Future will be federative and PLM Interoperability will be enabled by standards.
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ASD SSG “Through Life Cycle interoperability” report
A critical strategic lever for competitiveness

The objective of this document is to develop a vision of Through Life Cycle Interoperability for Aerospace & Defence and to propose recommendations.

Executive Summary:
- Vision
- The business challenge
- Benefits
- ASD SSG answer

Table of content
1. Introduction
2. The interoperability challenge
3. Status of interoperability standards
4. Required standards architecture
   4.1 Global requirement
   4.2 Interoperability Framework
   4.3 Envisioned standards backbone
   4.4 Proposed recommendations
The core suite of STEP standards for PLM interoperability
Proposed recommendations

1. **Strengthen the STEP architecture approach** to 1) ensure interoperability between STEP standards and 2) provide unambiguous implementation methods (including for new information technologies, e.g. OSLC).

2. Ensure that **3D visualisation format standards** used in the industry are **consistent with STEP standards**

3. Ensure the **common data model** for the **ILS specifications** is **consistent with STEP AP239**.

4. Promote the **ASD-AIA ILS suite of specifications** and seek to manage **coherence with ATA specifications** where needed by the industry.

5. Participate in the development, and interoperability testing of the **next generation of PDM/PLM web services**.

6. Facilitate **data interoperability in the Aerospace and Defence Supply Chain** and align business process between Supply Chain stakeholders.

7. Supports the setting-up of **implementer forums** (e.g. PDM implementer forum) to test and validate the implementation of the standards-based solutions.
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<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Actions</th>
</tr>
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<tbody>
<tr>
<td>1. Strengthen the STEP architecture approach</td>
<td>STEP future architecture activities started. Joint workshops with AIA organised. Feed &amp; support ISO/TC 184/SC 4 FAWG</td>
</tr>
<tr>
<td>2. Ensure that 3D visualisation format standards used in the industry are consistent with STEP standards</td>
<td>Recommendation on 3D PMI semantic representation from ASD SSG to SC4 in development. Support of JT V2</td>
</tr>
<tr>
<td>3. Ensure the common data model for the ILS specifications is consistent with STEP AP239.</td>
<td>ASD SSG supports the development of AP239 ed 3 standard and associated recommended practices. Convergence requires also clarification on mapping mechanisms by the STEP future architecture group.</td>
</tr>
<tr>
<td>4. Promote the ASD-AIA ILS suite of specifications and seek to manage coherence with ATA specifications where needed by the industry.</td>
<td>Need to clarify where the coherence is needed by industry: --&gt; European industry workshop to be organised</td>
</tr>
<tr>
<td>5. Participate in the development, and interoperability testing of the next generation of PDM/PLM web services.</td>
<td>SSG to track progress and try to influence.</td>
</tr>
<tr>
<td>6. Facilitate data interoperability in the Supply Chain and align business process between Supply Chain stakeholders.</td>
<td>Discussions planned with AIA to discuss Supply Chain standards.</td>
</tr>
<tr>
<td>7. Supports the setting-up of implementer forums to test and validate the implementation of the standards-based solutions.</td>
<td>SSG involved in AP242 ed 1 benchmark. Development of the PDM/IF white paper (in progress)</td>
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</table>
Industry performance will rely more and more on Through life cycle interoperability

PLM must be seen as a federation of PLM platforms

A coherent set of standards is needed to enable interoperability

The ASD SSG intends to influence the emergence of this set of standards

Your support and contribution is needed!
Thank you!

Questions?