



AeroSpace and Defence
Industries Association of Europe

Through Life Cycle Interoperability

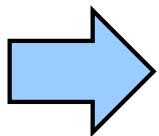
as developed by
ASD SSG working group

Presented by Yves Baudier,
ASD SSG Chairman
Airbus Group Innovations

PDT Europe 2014, 14-15 October 2014, Paris



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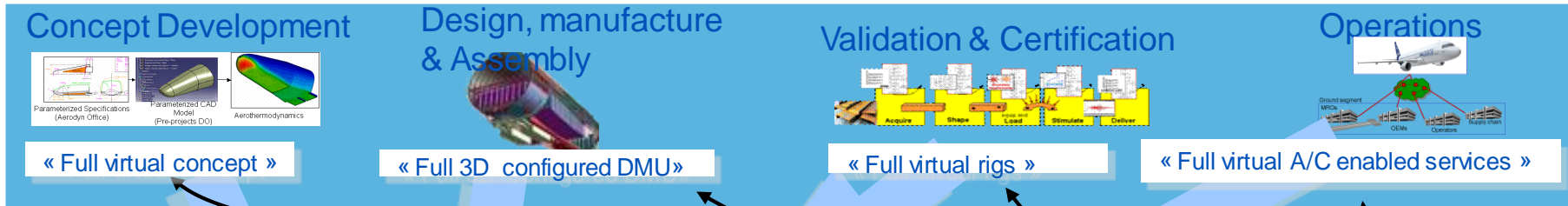


1. The role of the ASD SSG within the e-business standard governance
2. The challenges of Through Life Cycle interoperability
3. The ASD SSG recommendations
4. On Going initiatives



Strategic Standardisation Group

Standards Governance

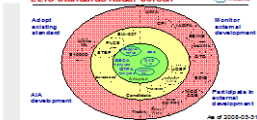


Strategic Standardisation Group

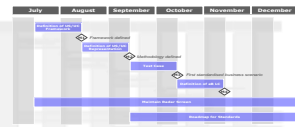
Business Scenario & Use Cases



EEIC Standard Radar Screen



Radar Screens



Roadmaps

IT vendors

Standardisation bodies & projects

ASD SSG members and links



Product developpt 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

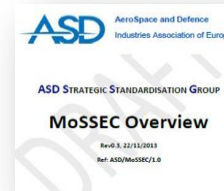
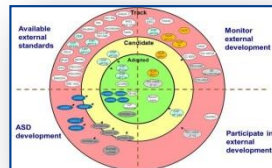
Supply Chain interop. WG

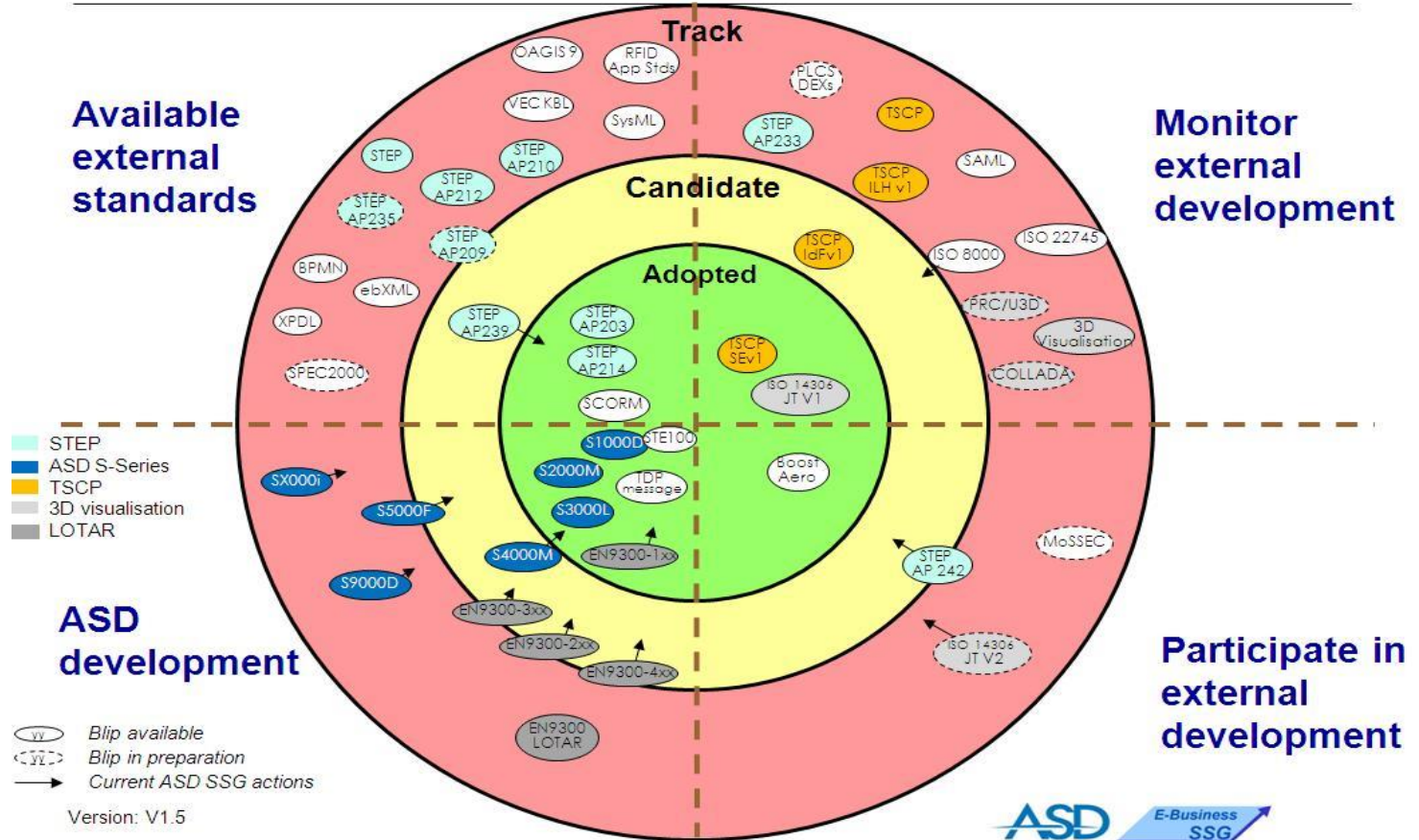
Data Quality requirements

Data Quality WG




The screenshot shows the ASD SSG public web site interface. At the top left is the ASD logo and the E-Business SSG logo. The main header reads "ASD Strategic Standardization Group" and includes a "Welcome!" message. A navigation menu contains the following items: Welcome, Terms of Reference, Members, Work Groups, Projects, Radar Chart, Results, Meetings, Planning, Publications, and Contacts. Below the navigation is a banner image of an aircraft engine with the ASD logo and the text "AeroSpace and Defence Industries Association of Europe". The main content area is divided into two columns. The left column has sections for "Parent organisations" (listing ASD and ASD-STAN with their respective websites) and "Web Content Display" (announcing a new ASD SSG leaflet for download). The right column has a section for "About ASD Strategic Standardization Group" with the heading "The ASD Strategic Standardization Group (SSG)" and an "Overview" section. The overview text states: "The Strategic Standardization Group (SSG) was set up in October 2008 by a group of European manufacturers, A & D associations and military governmental agency in order to share efforts of development of common A&D e-Business standards and associated harmonized European policies for operational use."





Example of ASD SSG results

Statement on ISO 14306 JT Ed1 and Ed2 - 11 January 2012

The screenshot shows a web application interface for the ASD Strategic Standardization Group. At the top right, there is a "Welcome!" message and a dropdown arrow. Below this is a navigation menu with the following items: "Projects", "Radar Chart", "Results" (which is highlighted with a red arrow), "Meetings", "Planning", "Publications", and "Contacts". The main content area displays a document titled "Statement on ISO 14306 JT Ed1 and Ed2 - 11 January 2012". The text of the statement is as follows:

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 blip](#).

As stated in ISO 14306: "The following are outside the scope of this International Standard:

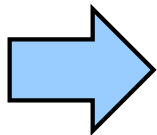
- The implementation of, or definition of a run-time architecture for viewing and/or processing JT data;
- Long term data retention;
- non-faceted geometric data exchange"

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 blip](#).

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.

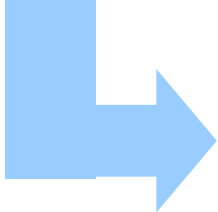
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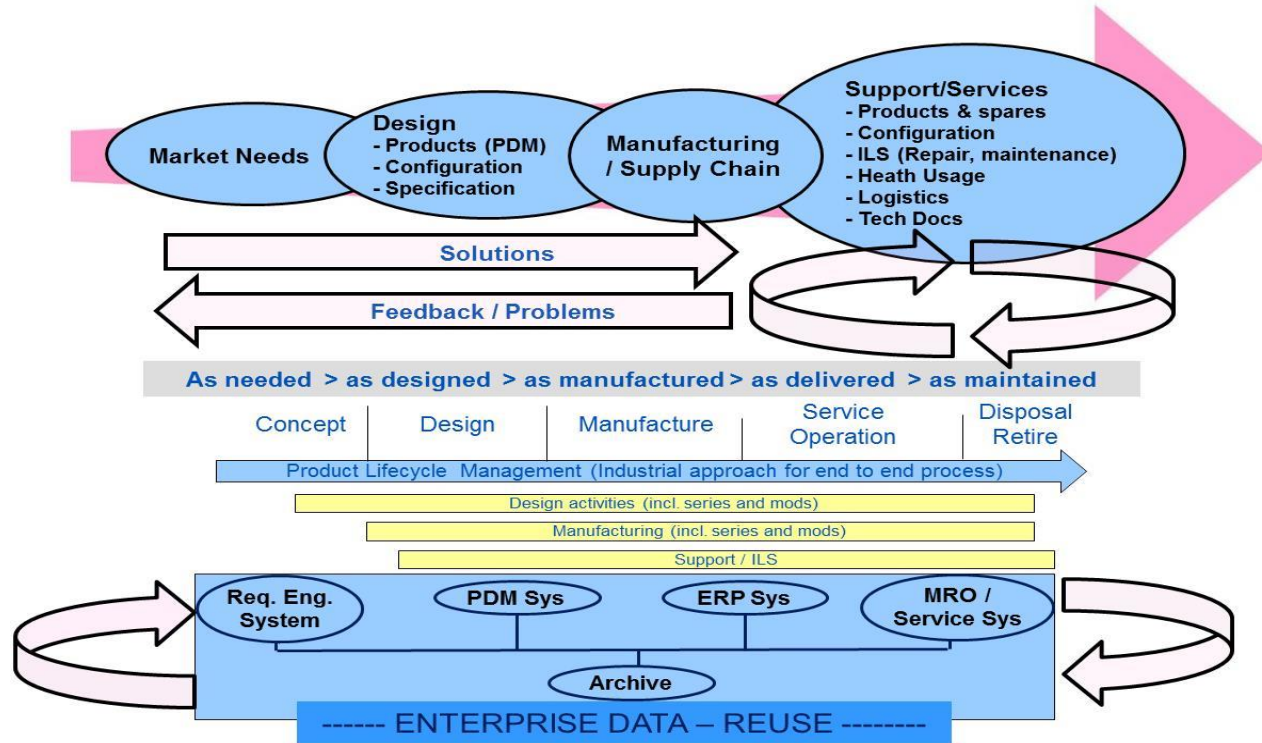
Aerospace and Defence Industry characteristics

- 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.

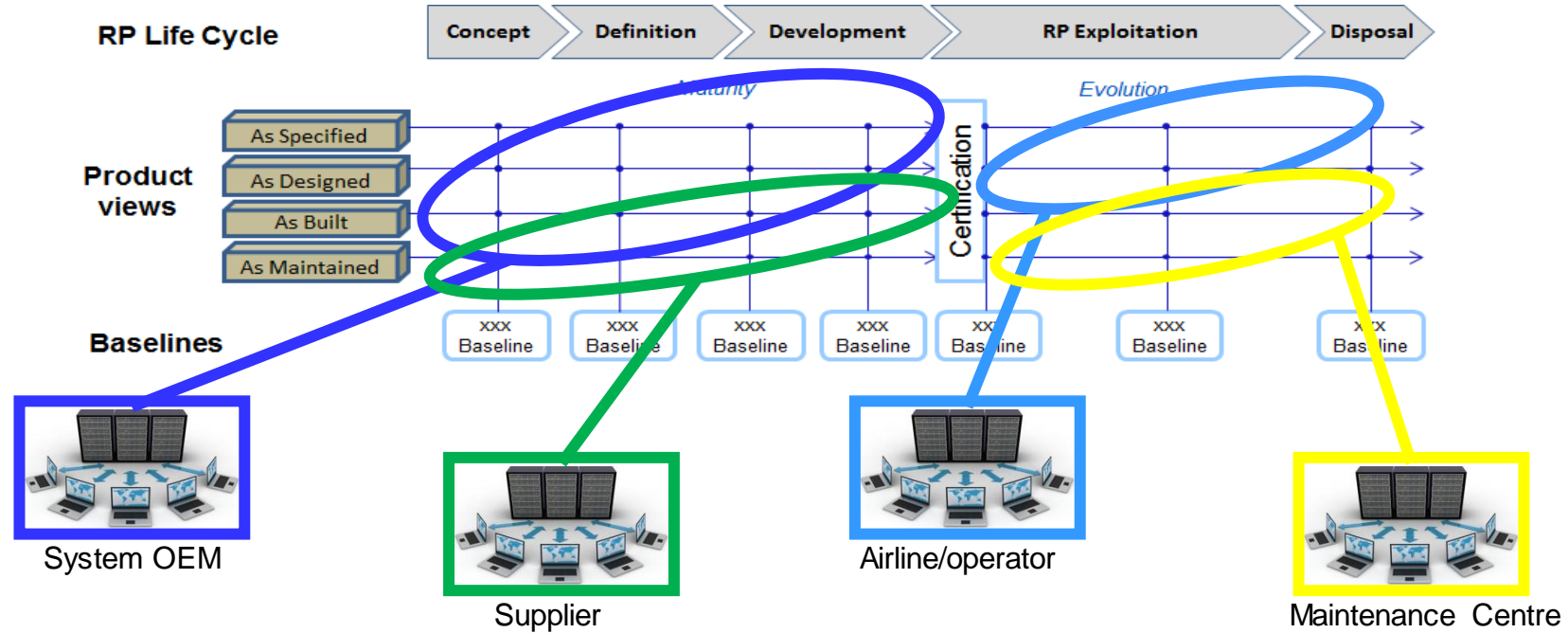


Need to manage design, product and service information throughout the product lifecycle, including rigorous configuration management and the long term retention of information, where the **data is 'created once and used many times'**.

Data explosion through the life cycle

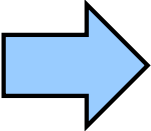


Shaping the PLM Platform of the Future



The PLM Platform of the Future will be **federative** and PLM Interoperability will be enabled by standards

Contents

- 
- A large, light blue arrow with a black outline, pointing horizontally to the right, positioned to the left of the list items.
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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**.*

ASD STRATEGIC STANDARDISATION GROUP

Through Life Cycle Interoperability

A critical strategic lever for competitiveness

Rev 1.0, 9/05/2014

Ref: ASD/TLCI/01

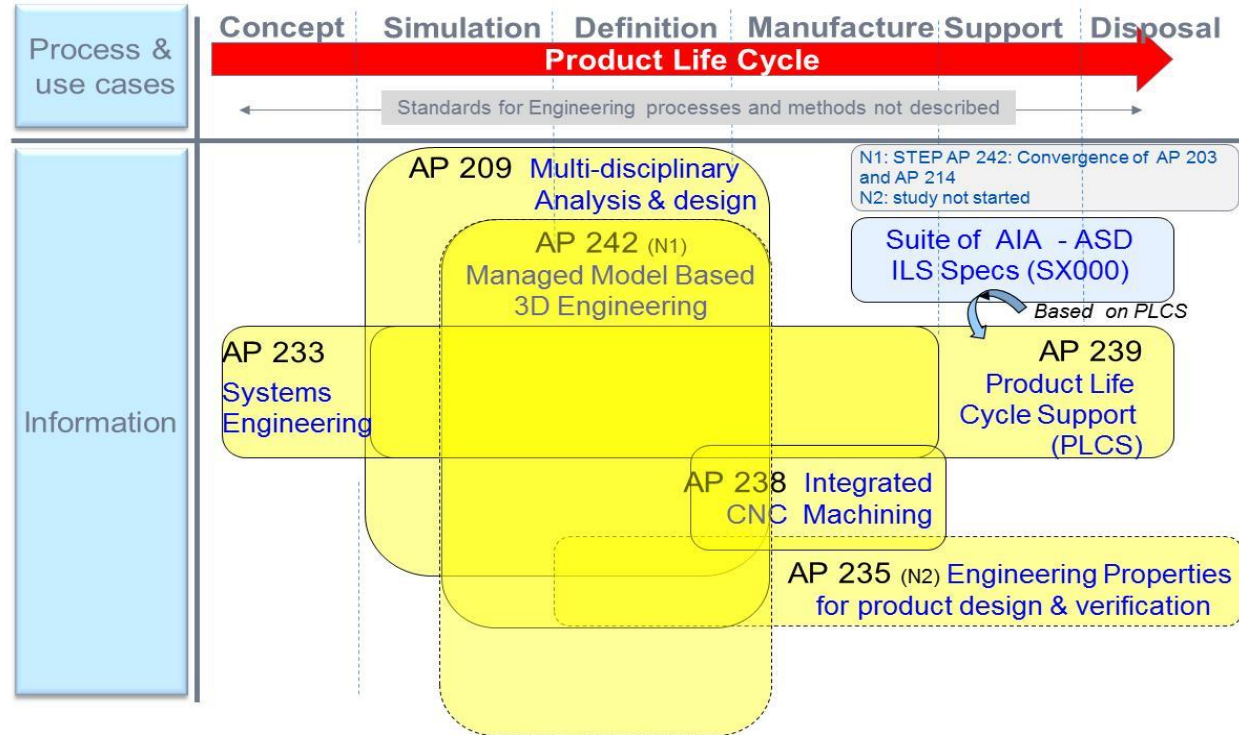
Executive Summary:

- Vision
- The business challenge
- Benefits
- ASD SSG answer

Table of content

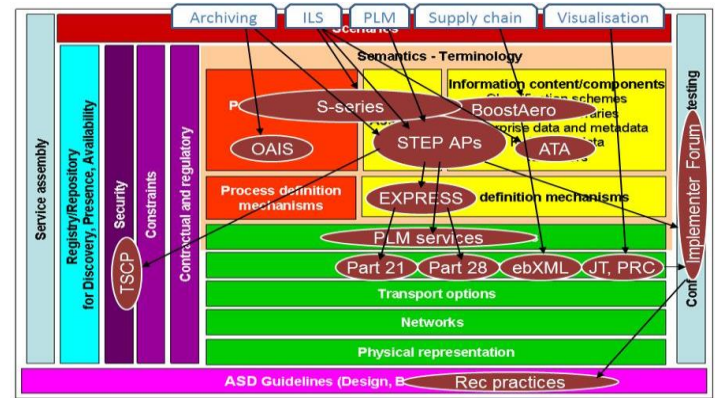
1. Introduction
2. The interoperability challenge
3. Status of interoperability standards
4. Required standards architecture
 - 4.1 Global requirement
 - 4.2 Interoperability Framework
 - 4.3 Envisioned standards backbone
 - 4.4 Proposed recommendations

The core suite of STEP standards for PLM interoperability



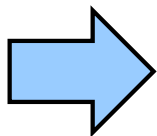
Proposed recommendations

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-AIAILS 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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Ongoing activities

Recommendation	Actions
<p>1. Strengthen the STEP architecture approach</p>	<p>STEP future architecture activities started. Joint workshops with AIA organised. Feed & support ISO/TC 184/SC 4 FAWG</p>
<p>2. Ensure that 3D visualisation format standards used in the industry are consistent with STEP standards</p>	<p>Recommendation on 3D PMI semantic representation from ASD SSG to SC4 in development. Support of JT V2</p>
<p>3. Ensure the common data model for the ILS specifications is consistent with STEP AP239.</p>	<p>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.</p>
<p>4. Promote the ASD-AIA ILS suite of specifications and seek to manage coherence with ATA specifications where needed by the industry.</p>	<p>Need to clarify where the coherence is needed by industry: --> European industry workshop to be organised</p>
<p>5. Participate in the development, and interoperability testing of the next generation of PDM/PLM web services.</p>	<p>SSG to track progress and try to influence.</p>
<p>6. Facilitate data interoperability in the Supply Chain and align business process between Supply Chain stakeholders.</p>	<p>Discussions planned with AIA to discuss Supply Chain standards.</p>
<p>7. Supports the setting-up of implementer forums to test and validate the implementation of the standards-based solutions.</p>	<p>SSG involved in AP242 ed 1 benchmark. Development of the PDM/IF white paper (in progress)</p>

Conclusion

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?

