



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

LOTAR
an
Executive
Summary

LOTAR

LOng Term Archiving and Retrieval of Digital Data

Intelligent Manufacturing Systems
Manufacturing Technology Platform Meeting
June 28, 2010

Dr. Steve Ray
IMS MTP Project Development Coach
U.S. Region
steve@steveray.com

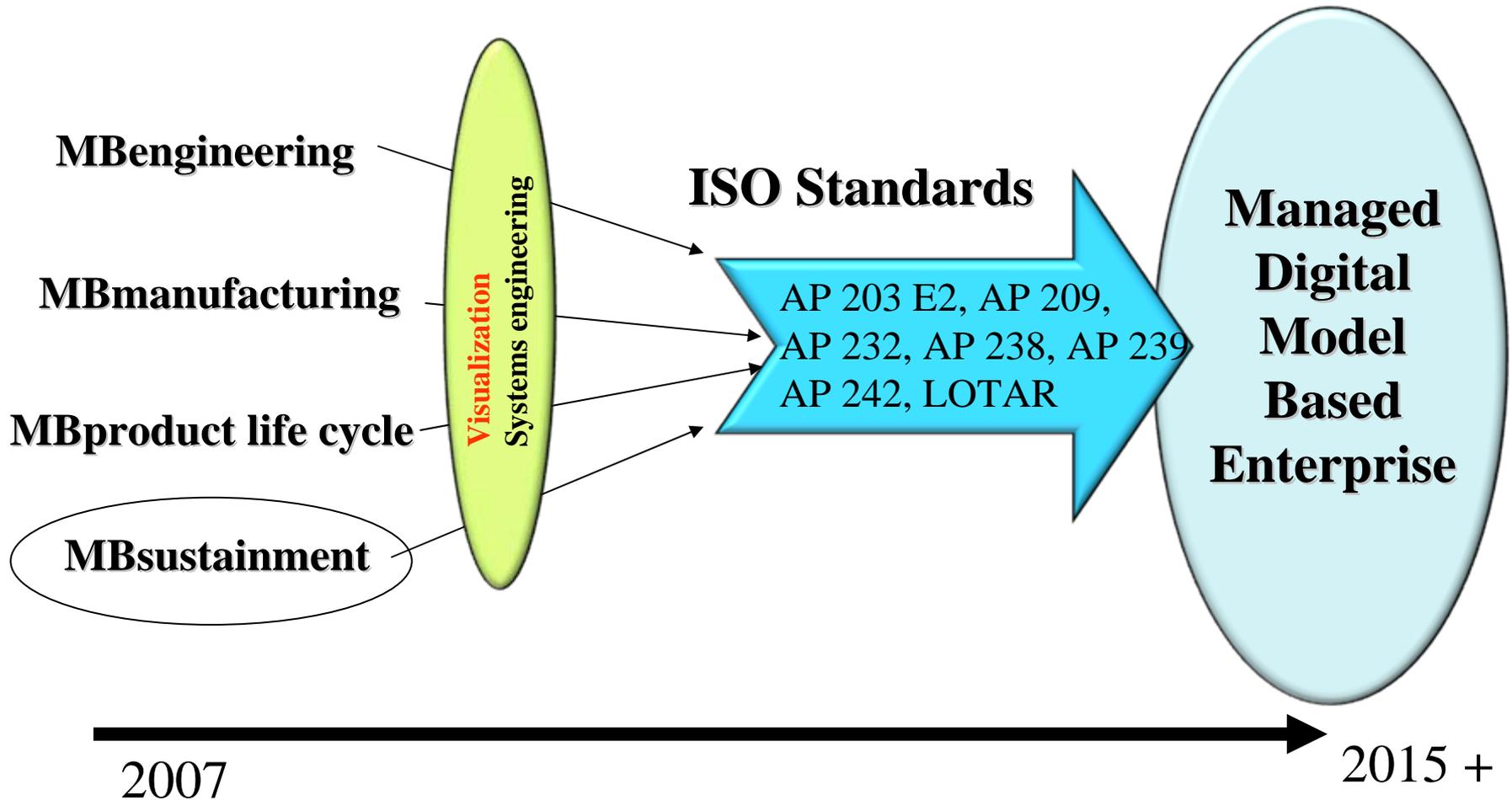
*With thanks to
Rick Zuray of
Boeing for the
presentation
material*



The Digital Vision



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)





Mission



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

Mission

It is the mission of LOTAR International to globalize a standards based archival and retrieval mechanism for digital product and technical information through the ongoing harmonization and standardization efforts of Aerospace and Defense organizational affiliations.

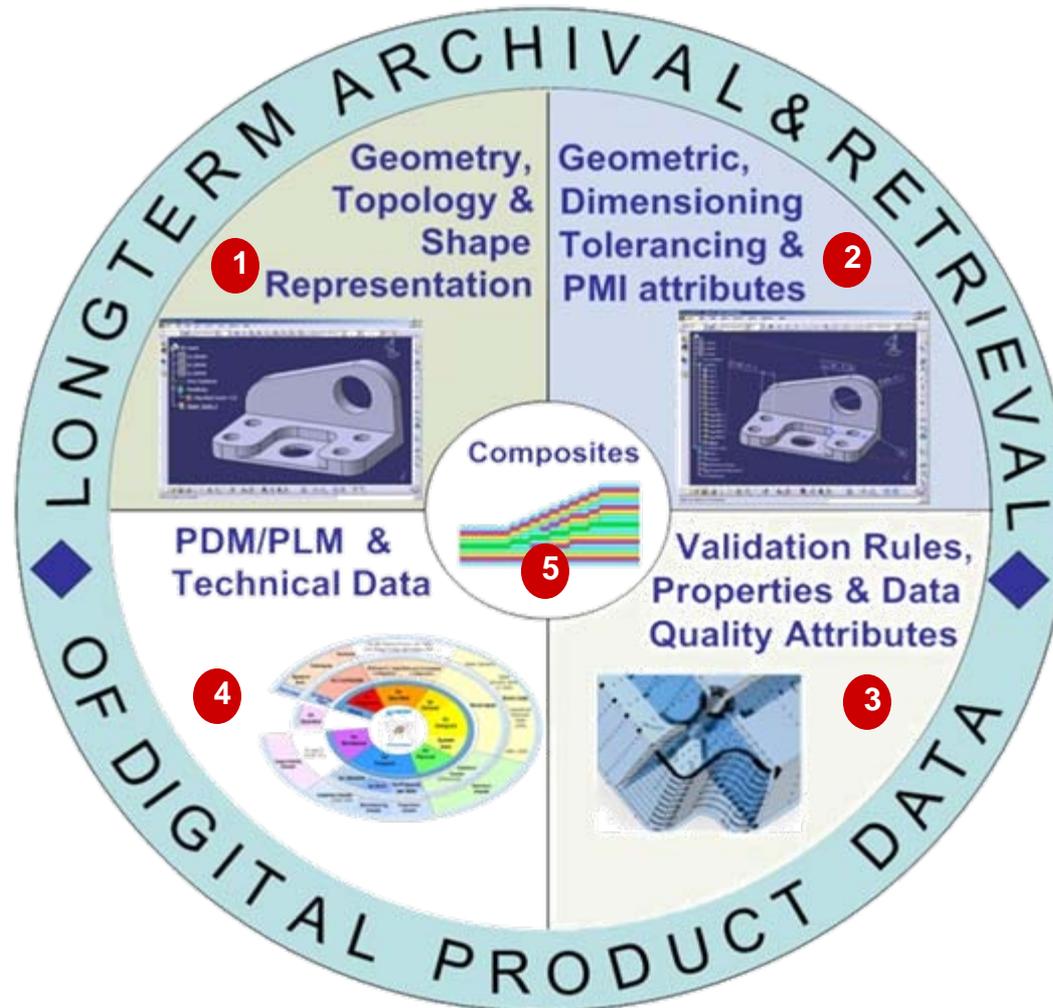


Long Term Archiving and Retrieval of Digital Data (LOTAR)



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

The Five (5) Major areas addressed by LOTAR...





Roadmap for the LOTAR project to the Future



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

Today

Actions

Future

People

- Team and Sub-projects in place
 - Telecons/Meetings/Off-sites
- LOTAR Consortium Formed
 - MOU/Charter
- Process Steering Council established
 - Bi-annual review

- Improve project management
- Expand technical involvement in project support
 - Solicit new membership

- High-performing culture
- Focus on functional excellence and project metrics
- Growth opportunities within and outside Aerospace Industry

Process

- Model Based 3D vs 2D Paper
- Neutral format for data retention (STEP) Polyline Presentation
- STEP Validation

- Improve communication of Model Based Environment
- Improve pilot activity with solution providers
- Reduce validation cycle time

- Leaner & more efficient processes
- Semantic Representation of PMI Data
- Integrated verification and validation process
- Complete end to end LOTAR process

Technology

- Ineffective and inefficient tools
- Limited use of technologies
- Technology maturation limited

- Develop clear requirements with supporting use cases
- Consider technologies outside the box

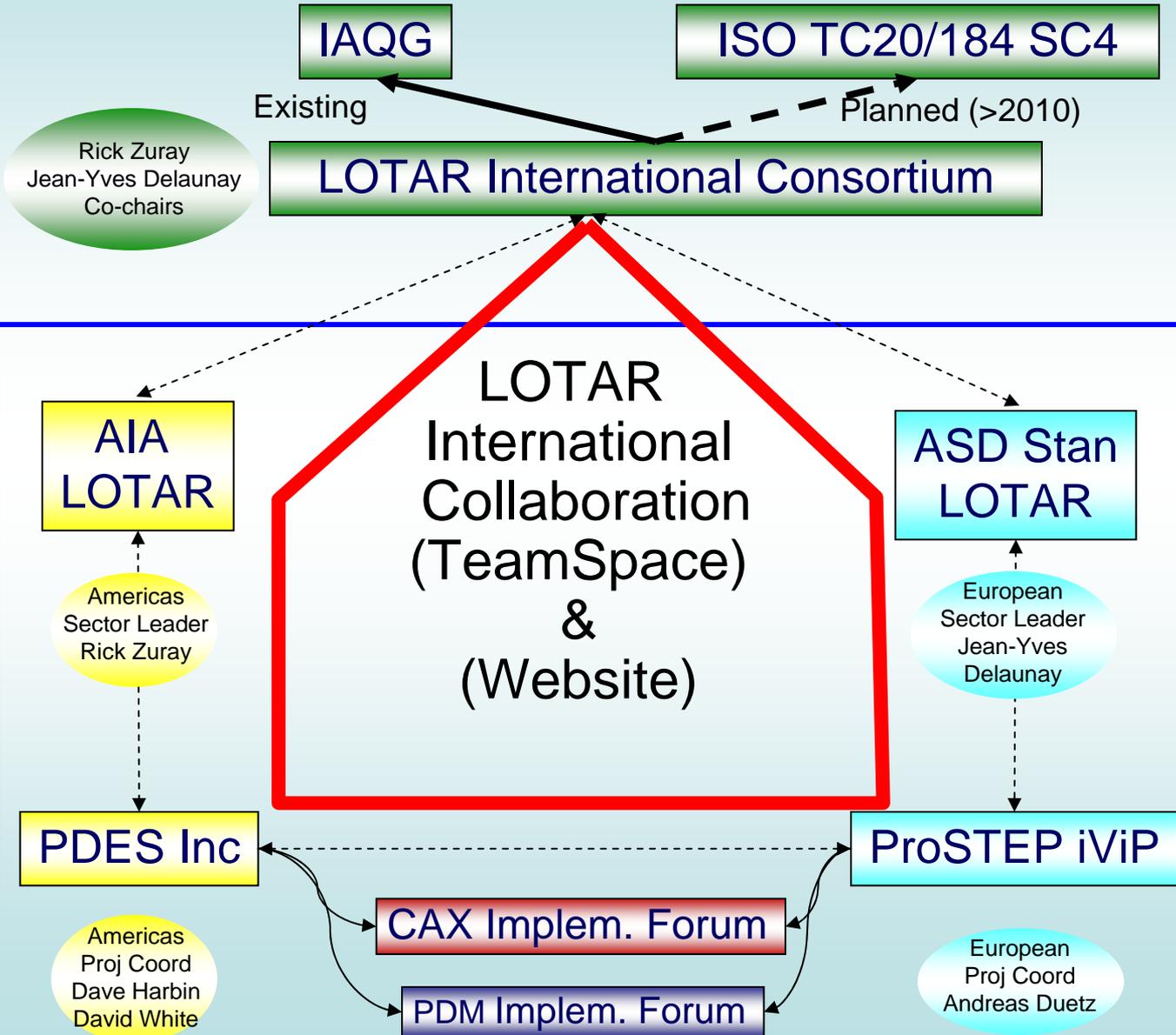
- Single source of data retention
- Seamless Design reuse

Continuous improvement and customer-focused

The LOTAR International working group is operated under the AIA, PDES Inc., ASD-STAN and the ProSTEP iViP consortium.



Aug 2009
International Consortium



Aerospace
Regional
Association

PLM
Interoperability
Regional
Association



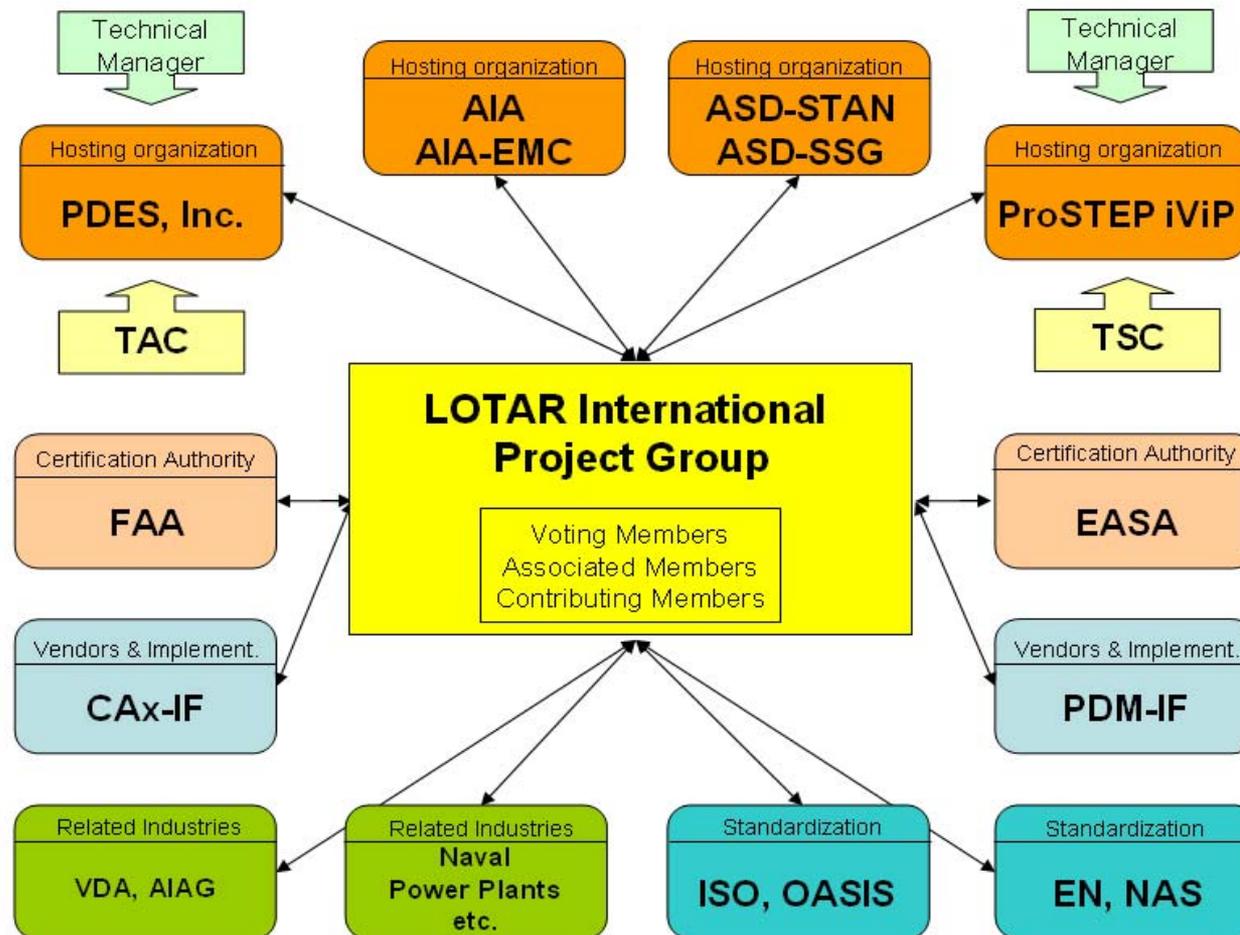
Organization Chart



Aerospace

Stan)

LOTAR International: External Relations



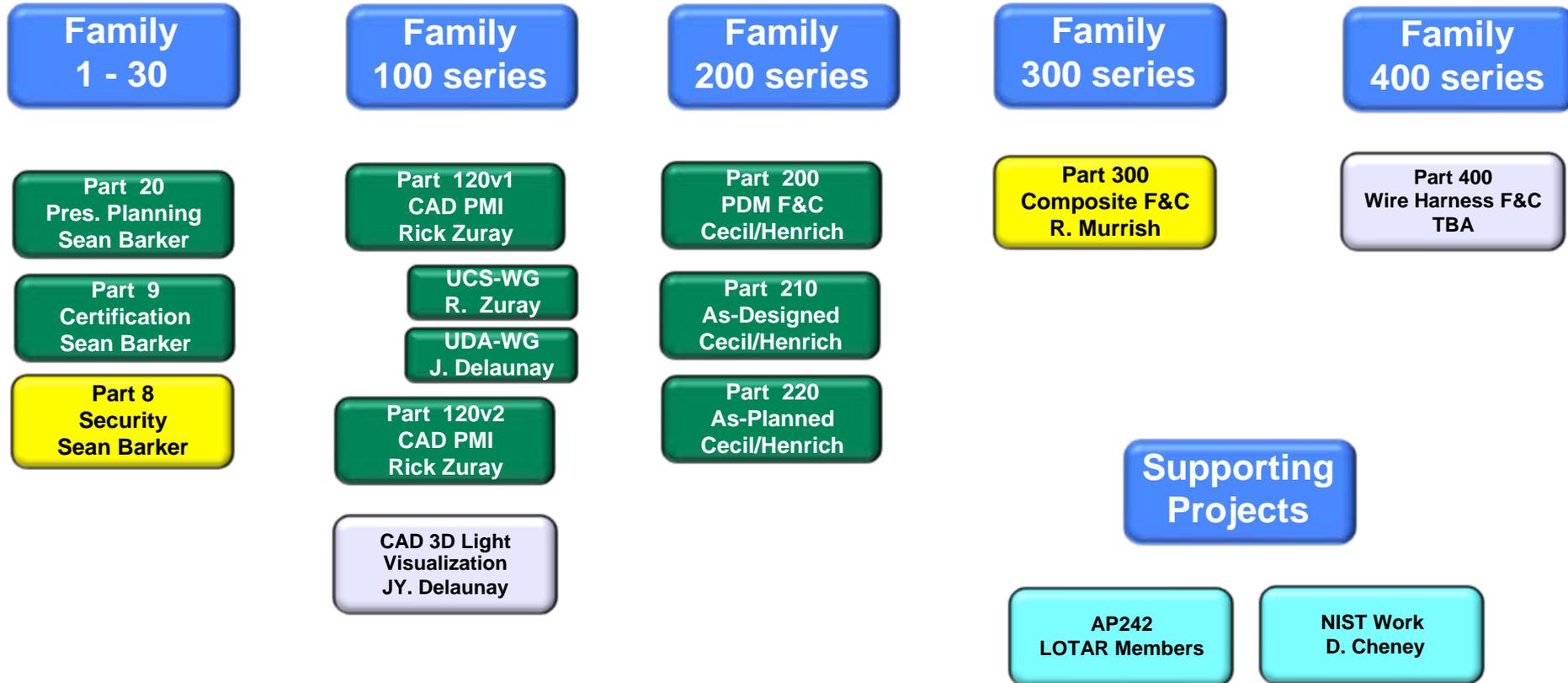


LOTAR 2010 Project Thrusts



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

Technical Working Groups



LEGEND =



UCS = Unicode String
 UDA = User Defined Attributes
 F&C= Fundamentals & Concepts

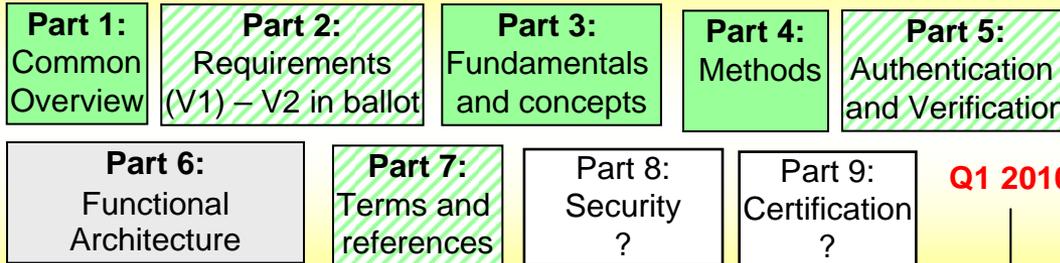


NAS9300 - EN9300 standards 1 – 20 & 100 series Thrusts

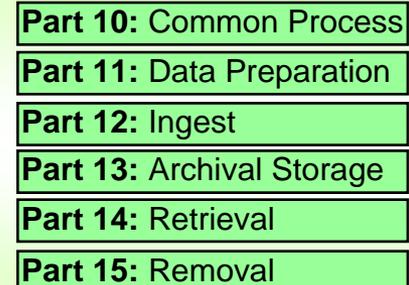


Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

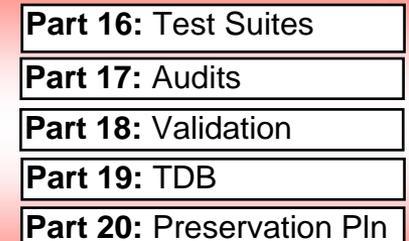
Basic Parts



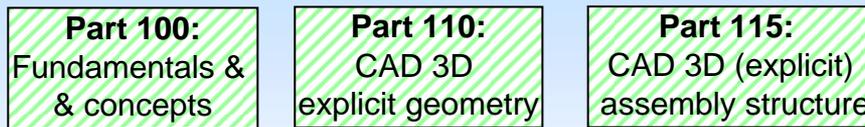
Common Process Parts



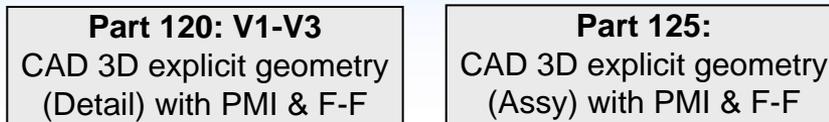
TBD Parts



3D CAD Detail Geometry with PMI & Assembly Parts with PMI



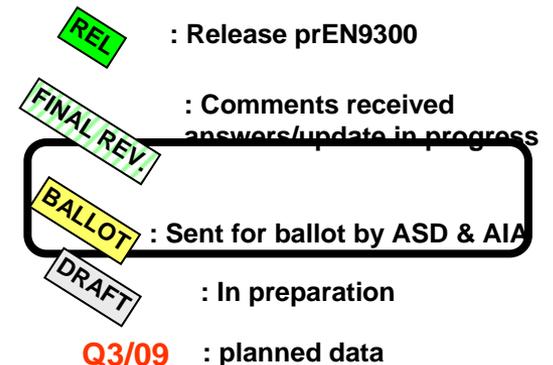
Explicit 3D Geometric Shape Representation



Explicit 3D Geometric Shape Representation including Product & Manufacturing Information (PMI) and Form Features



Explicit 3D Geometric Shape Representation including Product & Manufacturing Information (PMI), Form Features & Parametric Attributes





NAS9300 - EN9300 standard overview

200, 300, 400 series Thrusts + RP/Specs



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

Product Management Data

2009/2010

Part 200:
Fundamentals &
& concepts

Part 210
PDM “As-Design”

Part 220
PDM “As-Planned ”

3D Composite Design

2010

Part 300:
Fundamentals &
& concepts

Part 310
TBD

Part 320
TBD

3D Light
Visualization

3D Electrical Wiring Harness

Part 400:
Fundamentals &
& concepts

Part 410
TBD

Part 420
TBD

Additional Activities

AP 242
Convergence

NIST
PMI



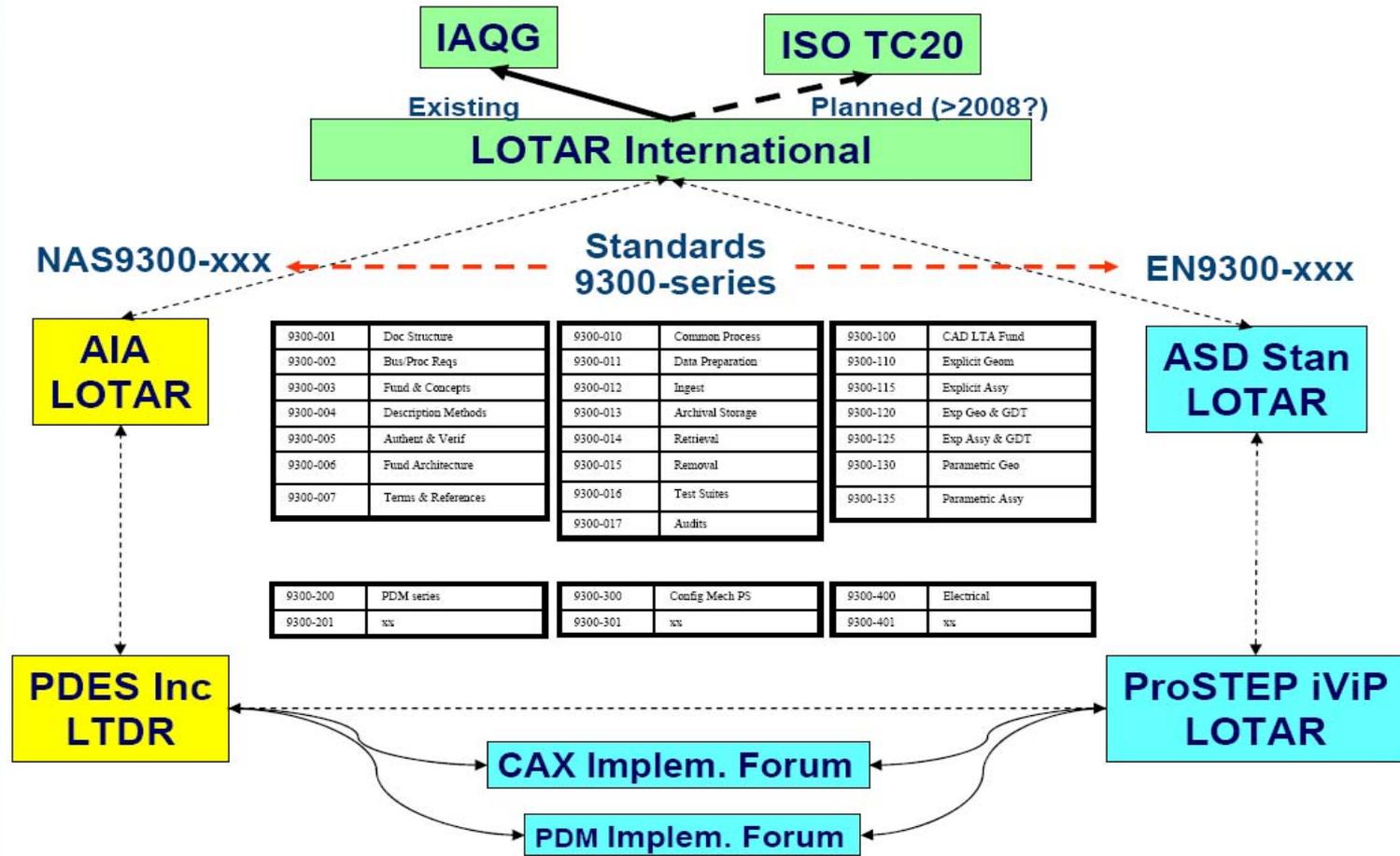
Standards Development



Aerospace

(ASD Stan)

Harmonization at the regional and International levels between Aerospace Manufacturers and PLM interoperability





LOTAR International Work Breakdown Structure (WBS)



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

WP0:
Project Management

WP1:
Development of **Basic Parts**

WP2:
Development of **Common Process Parts**

WP3:
Development of **Data Domain Specific Parts**

WP4:
Implementation of **Pilot Projects**

WP5:
Development of **L-T Archiving Rec. Practices**

WP6:
Harmonization
(AIA, ASD, PDES Inc, ProSTEP iViP, ISO, CAX Impl. Forum, ...)

WP7:
Communication
(FAA, EASA, ... IT Vendors, Standardization)



Summary



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

- To take full advantage of the benefits of MBD/MBE, it is imperative to retain the 3D **product_definition** in an application neutral format that is usable and not modified over time.
- **STANDARDS** enable the packaging of data and information for enterprise reuse and repurpose applications as well as enables data exchange between the Product Approval Holders and their Supply base with accurate and secure data.
- World-wide military projects are requiring contractors to be compliant to open standards for all facets of engineering, manufacturing and life cycle support



Future



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

A key component to bridge the design, build, and maintenance of our products, within Aerospace companies and their partners and suppliers, is Representation and Full Semantic GD&T both at the detail and assembly levels, however, this is a long term target and it's development will be phased based on technological maturity and industry need.



Conclusion



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)

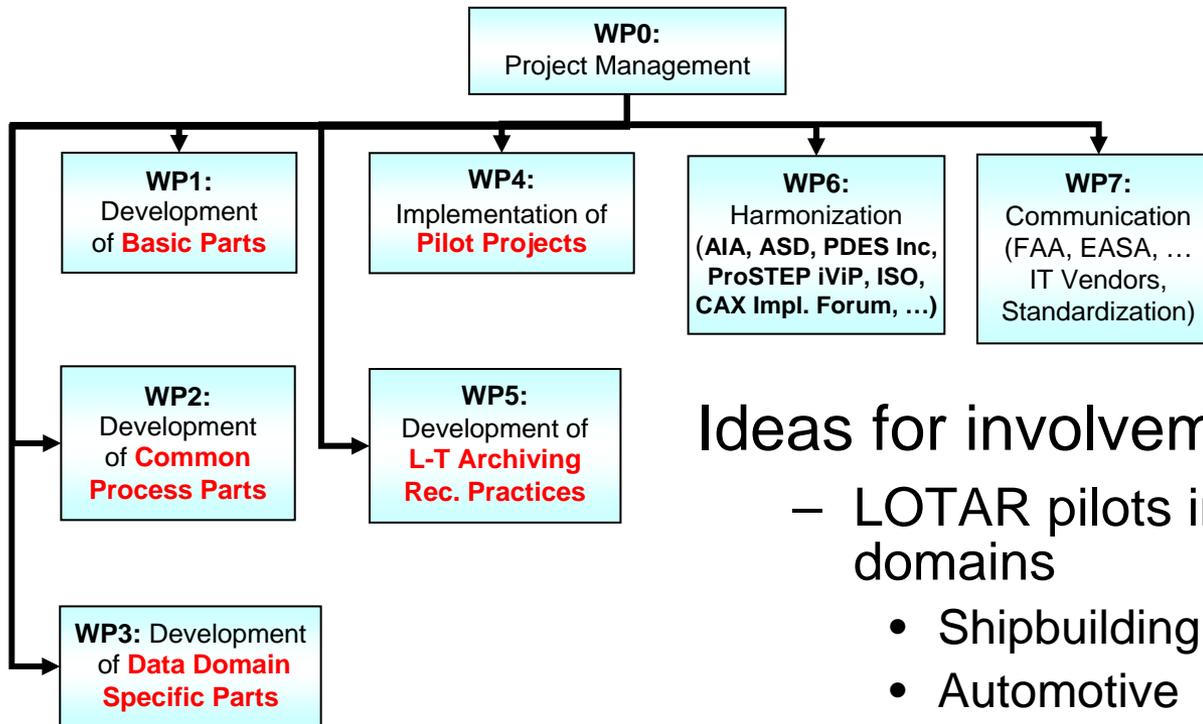
- Model Based Definition enables all the model based effort to take advantage of maturing technologies and proceeding independently
 - Need to harmonize the effort to maximize reuse and repurpose
 - Need to retain and preserve the investment of data and information
- The LOTAR Project enables the packaging of data and information for enterprise reuse and repurpose applications as well as enables data exchange between the PAH and their Supply base with accurate and secure data.



IMS Possibilities



Aerospace Industries Association - Aerospace and Defense Industries Association of Europe – Standardization (AIA-ASD Stan)



Ideas for involvement by IMS regions:

- LOTAR pilots in additional industrial domains
 - Shipbuilding
 - Automotive
- Domain-specific data development
- Other priorities of interest

Goal: To complete an MOA by the September 2010 HOD meeting