*e*Business Standards Reuse, Convergence and Deployment

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AIA Sets Industry-Level Policy

"The Aerospace Industries Association represents the nation's major manufacturers of commercial, military and business aircraft, helicopters, aircraft engines, missiles, spacecraft, materiels, and related components and equipment."

- As of May 27, 2003 AIA membership comprised of 79 member companies and 147 associate member companies
- Member company CEO's establish overall direction through AIA's Board of Governors

http://www.aia-aerospace.org

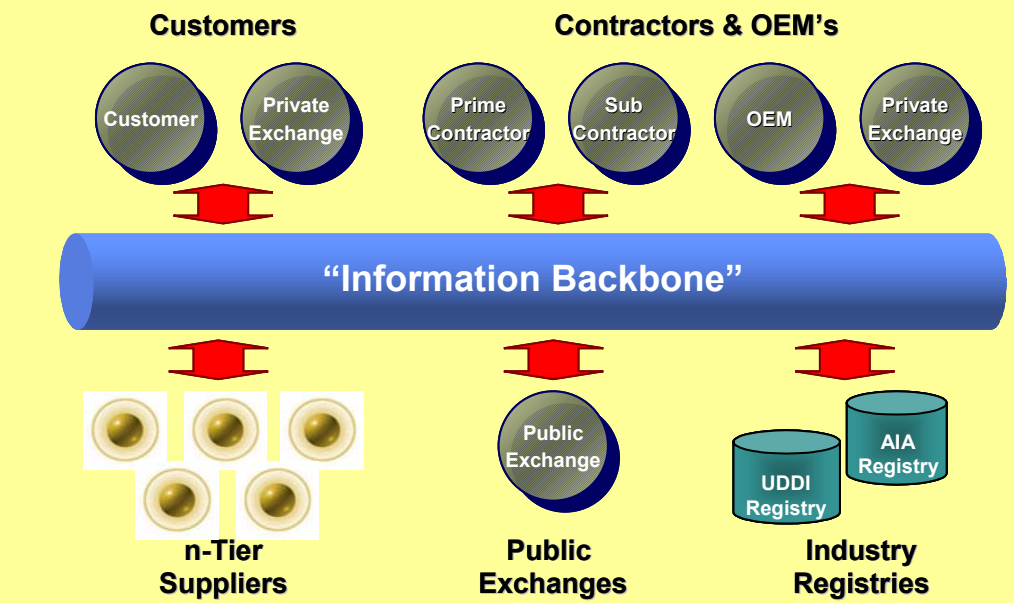
Address industry-wide issues and establish industry-wide policy

*e*Business End-State Vision

AIA members are committed to the following vision for *e*Business across our industry:

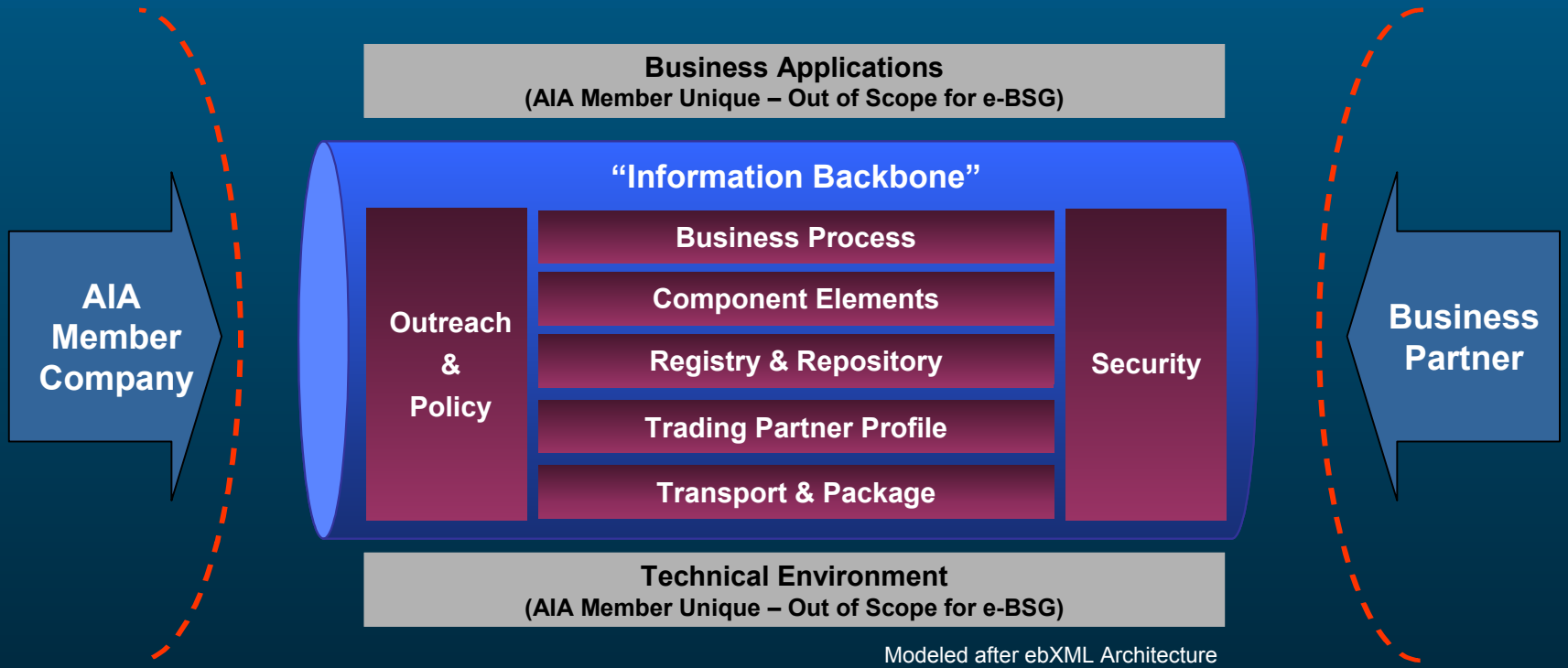
All participants in the aerospace value chain will be able to exchange information relative to product design, business relationships, transactions, and product support across an information backbone which is open and accessible to all.

"Information Backbone" spanning the Aerospace & Defense Industry



EB Interoperability Framework

Industry-level interoperability enabled by common framework that defines scope and elements of the "Information Backbone"



Modeled after ebXML Architecture

Priorities and Highlighted Projects

- **Open Standards-based Interoperability**
  - EDI Implementation Conventions (focus on Procurement)
  - EDI XML Standard (Interim standard)
  - Aerospace XML
  - Metadata Harmonization with ISO 11179 Compliant Naming Convention (UDEF)
  - Transactional Business Process Models

- **Information Security**
  - Secure Collaboration Framework for US/UK Defense
  - Security 'Code of Conduct'
  - Aerospace Industry position and recommendations:
    - » Registry and repository
    - » Identity & access management
    - » Secure messaging and Internet-based transport
    - » Integrated infrastructure
  - Assessment of Implications of Web Services to Aerospace industry

- **Multi-Partner Collaboration**
  - Industry standard Trading Partner Agreement and Collaborative Protocol Agreement
  - Collaborative Business Process Models

Metadata Harmonization Project (MHP)

Sample Mapping Matrix Extract

UDEF ID	UDEF Role or Type of Object	UDEF Object	UDEF Type of Property	UDEF Property	EIA-836			EDI (X12)	
					Name	Definition	Valid Values	Name	D
3_6.35.8		Enterprise	Defense Logistics Assigned	Identifier	CAGE Code	A Commercial and Government Entity (CAGE) ...	5 alphanumeric character	DE 98 + DE 66/ Code M4	
ah.3_10.35.8	Manufacturer	Enterprise	NATO Assigned	Identifier	NSCM Code	A standard NATO supply code ...	string	DE 98/ Code M9 + DE 66/ Code 37	

Phase One Summary

- Focus on four topics
  - Enterprise Identification
  - Document Identification
  - Product Identification
  - Asset Identification
- Four standards – EIA-836, X12, STEP, UCC
- Goal – to understand the process and the necessary resources to proceed into second phase
- Completed – August 2002

Phase Two Summary

- Include additional standards such as ATA Spec 2000
- Require support from tool
- Require XMLization of the UDEF
- Require UDEF transfer to non-profit
- Web Service Demo – May 2003
- Full Scale Pilot – 3rd Qtr 2003
- Target completion – November 2003

Universal Data Element Framework

Description

The UDEF is a rules based metadata naming convention that follows the naming principles of ISO 11179 and supports the ebXML core components naming convention. Once a data element concept has been mapped to the UDEF, the data element can then be assigned a UDEF derived structured unique ID.

Business Problem

- Point-to-Point Interfaces are the Norm
- Mappings are Time Consuming Process
- Lack Consistent Naming Convention
- Lack Standard Data Names/Structure
- System Experts Often Retained to Support Interface Development

Major Milestones

- Adoption by EEWG – Jan 2002
- Training Material – Jan 2003
- UDEF Conversion to XML – May 2003
- Transfer to Non-Profit – Aug 2003
- Pilot with Non-Profit – Nov 2003
- Launch UDEF global host – Feb 2004

How Implemented by AIA Company

- Large Companies
  - Learn the UDEF Naming Convention
  - Assign UDEF ID to Each Element of Metadata
- Small Companies
  - Buy UDEF Supported Applications

Dependencies

- Suitable Non-profit accepts responsibility for maintaining the UDEF global registry
- Support by other standards bodies
- Software vendor support within applications

UDEF Scope

Transactions – Structured Data

- Purchase Orders
- Purchase Order Changes
- Purchase Order Acknowledgements
- Purchase Order Change Acknowledgements
- Invoices
- Remittance Advice
- Request for Quote
- Request for Quote Response
- Shipping Schedule
- Etc.

Heavily influenced by finance and procurement functions and ERP type applications

Relevant open standards – X12, EDIFACT, ebXML, OAGIS, RosettaNet

Collaboration – Unstructured Data

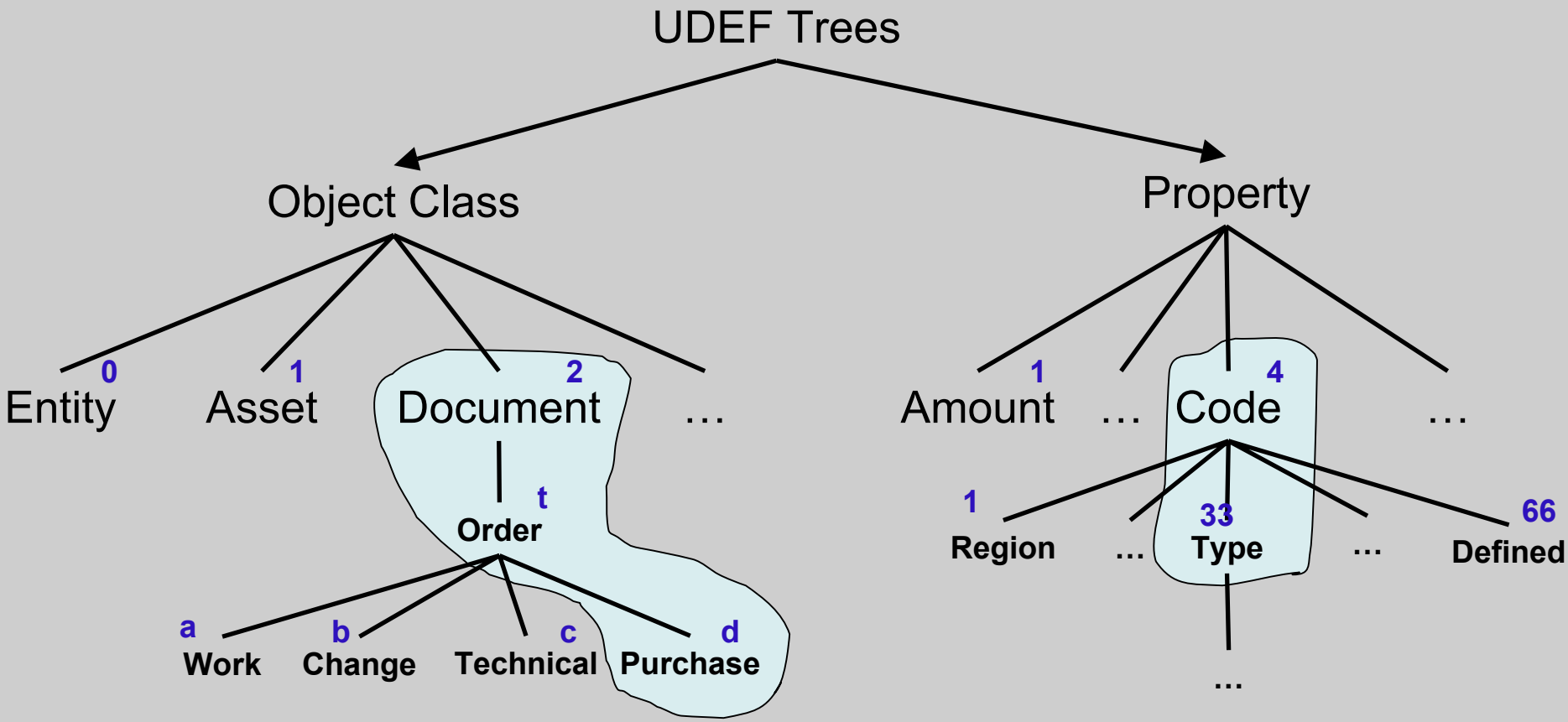
- Mission Requirements
- Concept of Operations
- Specifications
- Product Designs
- Engineering Change Proposals
- Trade-off Studies
- Test Reports
- Meeting Minutes
- Plans
- Schedules
- Presentations
- Etc.

Heavily influenced by engineering, manufacturing and program management functions and PDM/Document Management type applications

Relevant open standards – STEP, PLCS, EIA-836

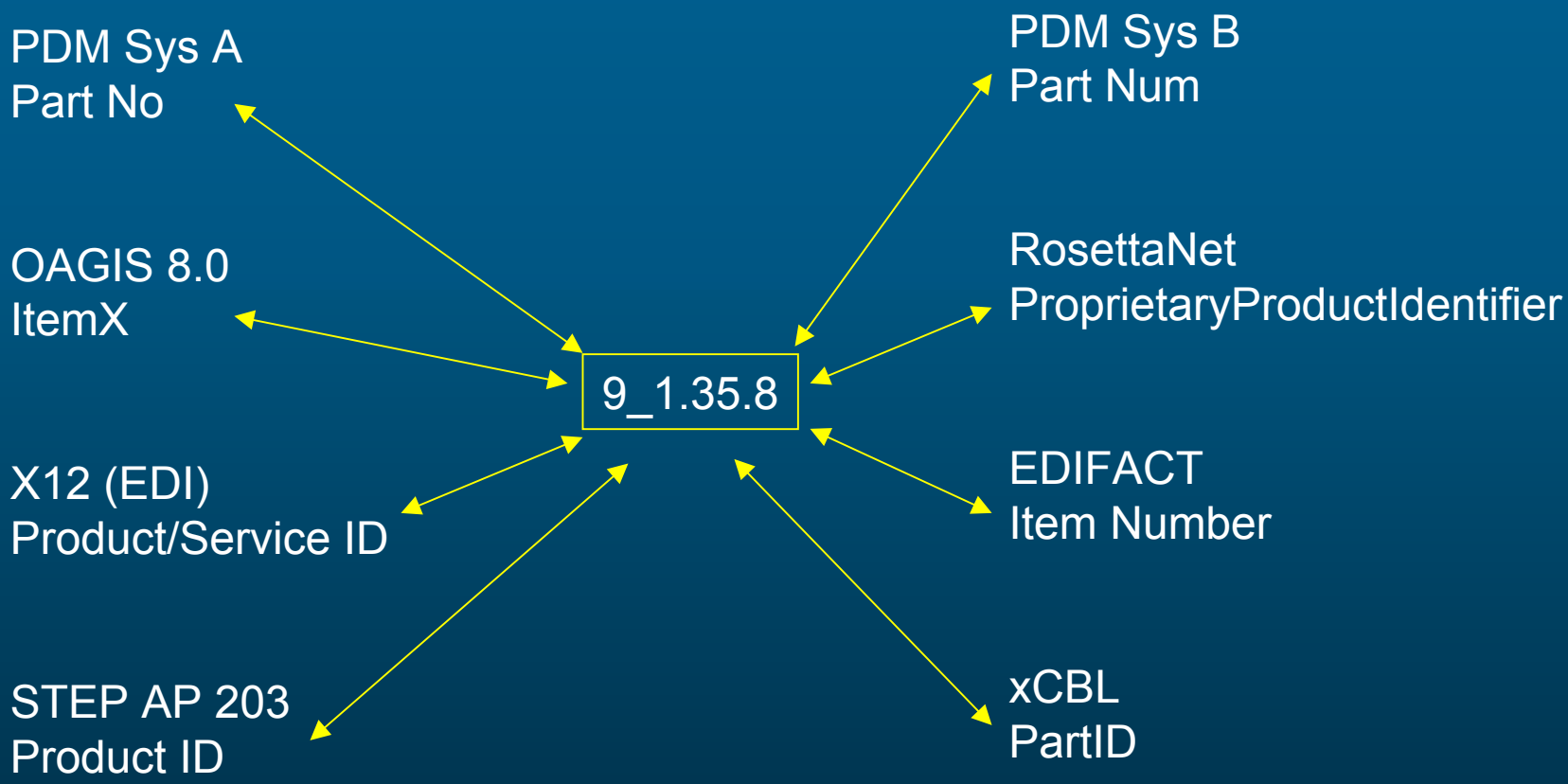
UDEF transcends the transaction and collaboration worlds

Creating A UDEF ID



Purchase Order Document_Type Code UDEF ID = d.t.2_33.4

Multiple Mappings Example



UDEF Universal Identifier

Product(9)_Vendor(1).Assigned (35).Identifier(8)

Observations and Recommendations

Key Observations

- No single XML standard provides a “one-size-fits-all” solution for all industries and all functions within the enterprise that addresses both transactions (typical ERP) and non-transactions (typical PDM and Document Management).
- Industries are reluctant to adopt new standards and technologies that have not been tested and proven

Key Recommendations

- Acknowledge the need for multiple XML standards
- Map the standards together in a single matrix for each industry
- Use a common ISO 11179 compliant naming convention and structured indexing scheme based on UDEF
- NIST support a test bed environment to demonstrate the flexibility and richness of the UDEF in supporting the convergence of standards