The TDP message standard

Technical Data exchange standard of AeroSpace & Def. (ASD) Europe
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EADS Management structure *(changing...)*

- Denis Ranque: Chairman of the Board
- Tom Enders: Chief Executive Officer (CEO)

- Finance
- Strategy & Marketing
- Chief Technical Officer
- EADS North America
- Human Resources

**PHENIX**
PLM Harmonization Center

- Coordination Cassidian Astrium
  - François Auque

- Airbus
- Eurocopter
- Cassidian
- Astrium
Content

• EADS Strategic Standardization Committee

• ASD « Technical Data Package » (TDP) standard background & objective

• TDP message project content & status

• TDP message standard way forward
1. The EVCOM steers the PHC → decides harmonization activities,…

2. The OPCOM manages the portfolio of PLM harmonization projects

3. … with the support of ENABLERS, the competency network of technical contributors to PHC projects
ASD-SSG DEX

• “TDP Message Header DEX”: an ASD SSG specification (ASD-SSG-001) since 5/10/2012
• One of the eBusiness PLM standard elected by ASD SSG
• Published at http://www.asd-ssg.org/tdp-message

ASD recommends the TDP Message Header DEX specification as a relevant standard mechanism to exchange Technical Data Packages.

The TDP Message Header DEX specification identifier is ASD-SSG-001.

The current version is V1.0 published 5/10/2012:

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To know more about the project context, let’s refer to the project web site.
What is a TDP message? (or header or enveloppe)

Overview of the communication of the Technical Data Package standardized message

Company A

Designer 1

Message → CAD / PDM files

Data exchange responsible 1

TDP meta data

File 1 → File 2 → File 3

TDP ("Container")

Selection of the CAD/PDM files to be sent to the Designer 2

Sending/Taking the TDP message for information

Creation of the TDP and sending of the TDP to the DEX Resp. 2

SEINE, PHENIX PLM4GC, BOOST
OASIS PLCS
ASD Strategic Standardization G,
EADS Strategic Standardization C.

Company B

Designer 2

Message → CAD / PDM files

Data exchange responsible 2

TDP meta data

File 1 → File 2 → File 3

TDP ("Container")

Reception of the CAD/PDM files sent by Designer 1
To be completed and sent back
Why TDP message standardization?

Several heterogeneous “local“ TDP methods (e.g. Eurofigther Standards, Airbus Procedures)

Eurofighter Standard for Step Data Exchange (J17.400)
“Data Despatch Note“

MESSAGE, message-identifier
DDN, ddn-sequence-identifier
SENDER, company-name, contact-name, technical-contact-name
RECIPIENT, company-name, contact-name
TIMESTAMP, yyyymmdh.lhhmss
MASTERFILE, physical-file-name, file-change-indicator, security-classification
DOCUMENT, physical-file-name, format, compression, indicator, security-classification
SECURITY, security-classification
CONTRACT, contract-id
COMMENT, comment
SUBSTITUTE, substitute-identifier

Airbus Procedure (AP2650)
“Data Transfer Sheet“

We need a single standard!
TDP message project objective

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• TDP message (or header) aims to gather **simple information for secured transportation**, independent from any protocol for Product Data exchange and sharing

• A typical “Technical Data Package” contains:
  • Product files (one to n digital files)
  • Product metadata (allowing import of product data into the receiving target system)
  • **Data dispatch note (= TDP Message)**: at least sender, receiver and list of all digital files in order to support automatic routing, acknowledgment and validation of transportation etc...

• TDP producer can be different according the phase of the lifecycle:
  • 1st focus on design phase (pilots) -> PDMs systems or CAD tools
  • other phases of the lifecycle -> Requirement Management systems, Simulation Management Systems, Enterprise Resource Planning Systems, Customer Support systems, etc…
Example of a TDP message (EADS PHUSION platform)

**TDP Transfer**

**Information**
- Message identification: amanry_soubeyran-eads_net-20121130_12112100.zip
- Message type: TDPTransfer
- TDP creation date: 2012-11-30 / 12:11:21.0 (UTC+2:0)
- Import context: WP_Engine_Block

**Sender**
- Name: amanry_soubeyran.eads, amanry.soubeyran.eads
- Company: eads
- Mail address: amanry.soubeyran@eads.net

**Receiver(s)**
- Name: Soubeyran, Amaury
  - Company: EADS
  - Mail address: amanry.soubeyran@eads.net
- Name: Tobias
  - Company: AIRBUS
  - Mail address: 
- Name: Arno
  - Company: CASSIDIAN
  - Mail address: 
- Name: Michael
  - Company: ASTRIUM EADS
  - Mail address: 

**Content**
- File name: 2011-09-18_101.JPG
- File size: 2476408
- Data format: image jpeg
TDP Message specifications context

Strategic choice to define the content based on existing set of standards and hub initiatives:

- BOOST (SEINE -> BoostAeroSpace)
- EADS Phenix PLM for Global Collaboration (PHUSION)
- STEP AP232
- Eurofighter
- PLCS community

**Driver**: not to create a new standard but reuse existing ones making it possible to support current practices, standards and trends
TDP Message specifications

TDP Message header format and syntax

• TDP message header schema is defined using a subset of AP239, the only application protocol formalizing messages and envelops (inside modules being part of the STEP Modules library)

• It can be used by any kind of processes not only PLCS

• File syntax is XML, based on ISO Part 28

• Content of the TDP message is covered by AP232 Conformance Class 1, i.e. file related. TDP transportation is for any file, not specifically for document or product parts.
The **schema for the TDP message header is today defined and ready to use**. Both EXPRESS and XML Schema languages were used to define it, and associated specifications for usage in the context of a hub were formalized.

A second version is under preparation through feedback coming from Industrial pilots such as BoostAerospace and Phenix/PHUSION. Recommended practices will be adapted in order to ensure interoperability between different industrial hubs.
TDP Message specifications: next version

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Formalized DEX under preparation

- DEX formalization and submission at OASIS after feedback of the on-going pilot projects;
- Infrastructure for formalizing the DEX is under preparation:
  - DEXLIB technological framework is quite complex and requires a lot of effort to produce a formal DEX
  - PLCSLIB is under validation and will be used as soon as frozen
- Service specification will be considered

S5000F usage of TDP message specifications

- Proposed section about unstructured data will lead to new version of recommended practice

TDP Message specifications implementation

- To be assessed in STEP implementer forum

Alignment with AIA: meeting under preparation
The “Technical Data Package” (TDP) message project:

• identified by ASD-SSG (Aero Space & Defense Strategic Standardization Group – Europe): lack of standard formalizing and providing recommended practices for producing a TDP message (or header) for secured transportation of files

• launched by several European AS&D companies: EADS, Airbus, Cassidian, BoostConseil,… (open to any new member)

• to support eBusiness PLM collaboration through emerging hubs: BoostAeroSpace, EADS Phusion, …

• contact points are Nicolas Figay and Alexandre Fournier.

http://www.asd-ssg.org/tdp-message