

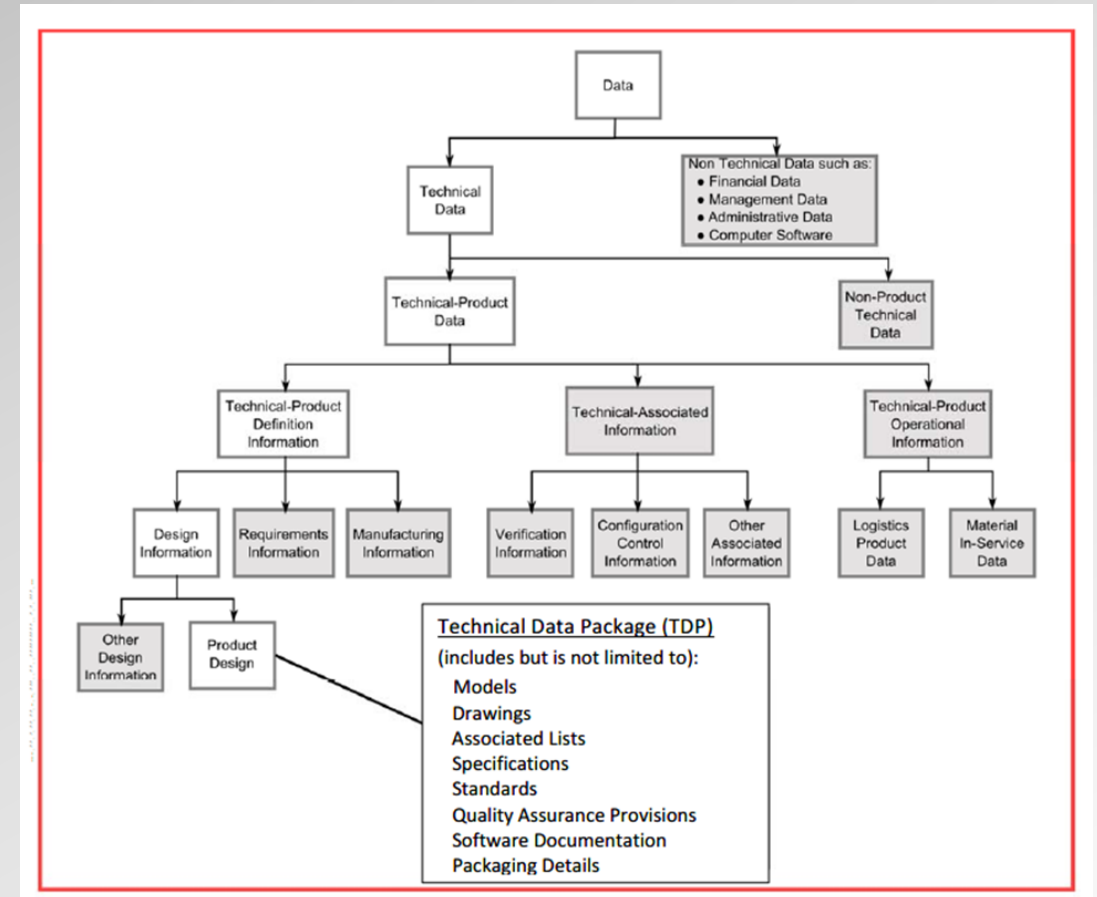
Standards-Based Technical Data Packages

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Thu., 1 October 2026 | nh Frankfurt Airport West | Raunheim, Germany

Technical Data Package: What is a TDP?

- The purpose of the TDP is to provide a technical description of an item which is clear, complete and accurate and in a form and format adequate for its intended use.
- 3 types of TDPs typically
- Conceptual Level
- Development Level
- Product Level
- 2 Types of TDPs
- 2-Dimensional Based TDP
- 3-Dimensional Based TDP



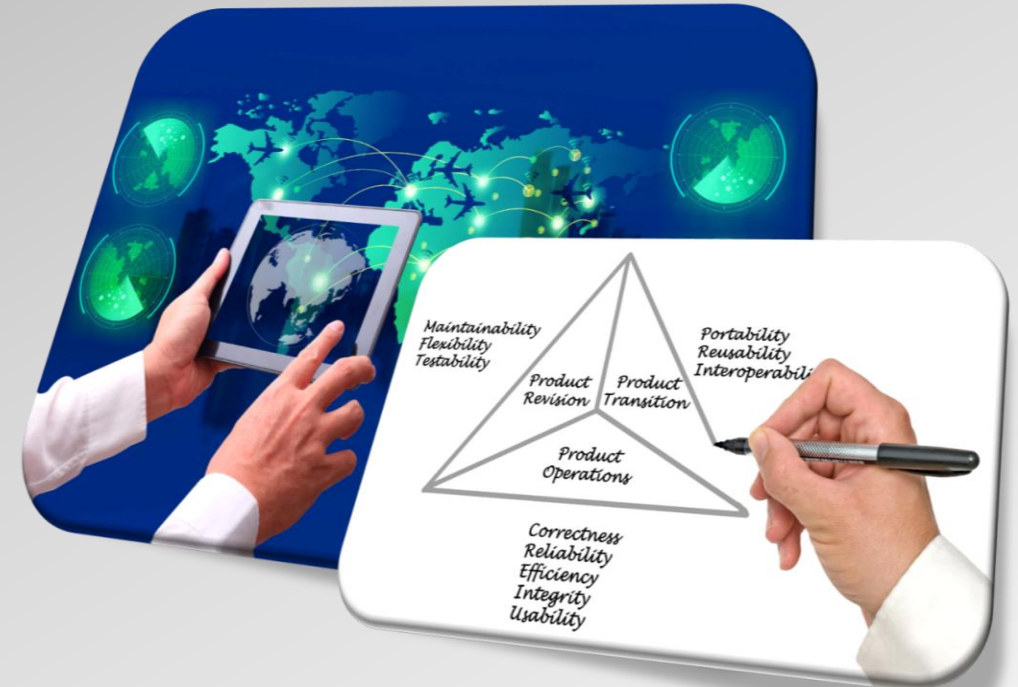
Current TDP Process Flow & Challenges

- Legacy data systems introduce technical debt risks
- Manual intervention in process is error prone (high metadata failure rate)
- Non Compliant TDPs: Missing files, incorrect metadata — no current automated validation/verification
- Large volume of data — hard to consume and use
- Not always presented to the consumer in an intuitive fashion
- **Strong emphasis on uplifting the data to 3D/model-based driving new requirements for the TDP – transition not easy**



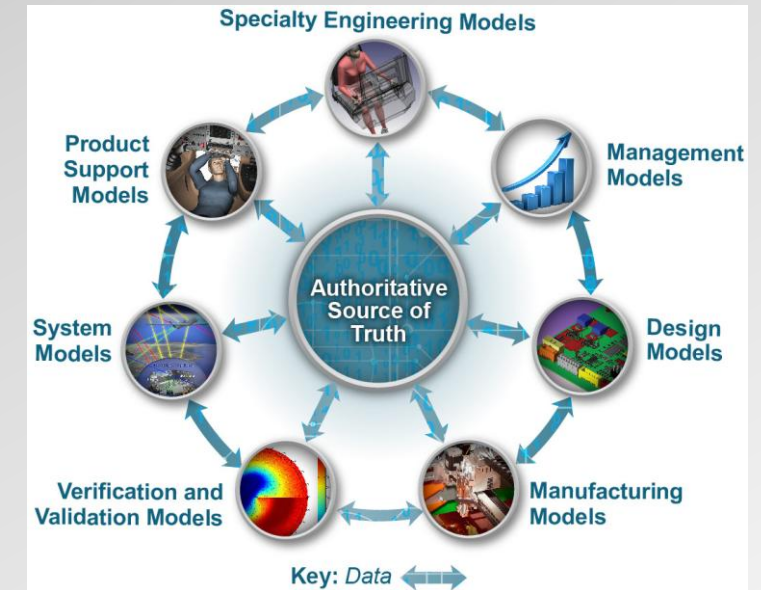
REPLAY Project

- Trusted and certified standards based digital **RE**pository for **P**roduct **L**ifecycle data interoperability and **A**rchival **sY**stem
- **Reducing operational costs for technical data packages**
- The requirements to support TDP deliveries are getting more complex and some automation is needed to stay compliant and efficient



REPLAY Project

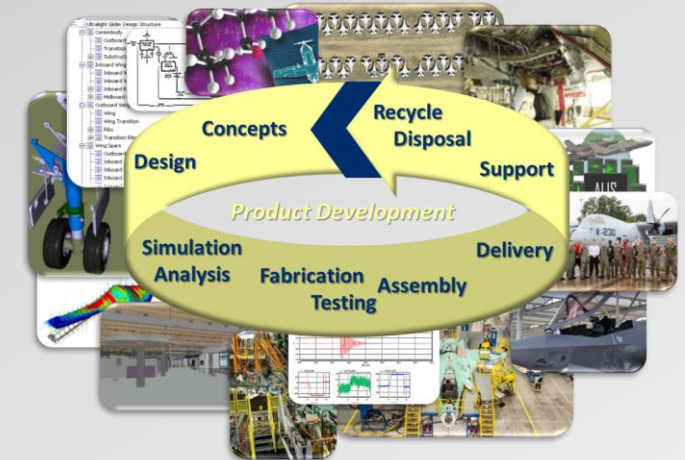
- U.S. DoD Digital Engineering strategy drove industry to change and adopt newer strategies and technology
- New approaches drove new challenges
 - High priority to show how requirements are linked and retained through entire lifecycle
 - Digital Twins
 - New manufacturing and inspection needs
 - LOTAR — data retention of Model Based products in a trusted digital repository
 - Data issues — new data sources, data now in different repositories, Model-based data adds complexity



GOAL: Open standards-based digital repository for Technical Data Packages (TDP)

REPLAY Project

- This project aims:
 - To reduce touch time labor to generate and assimilate a TDP
 - To reduce cycle time to produce/deliver a TDP
 - To reduce processing steps per TDP
 - To increase TDP fidelity & quality by reducing error rates
 - New customer requirements — increased amount of metadata, data types and formats
 - *Model Based definition requiring additional meta-data*
- U.S. Air Force initiative to update PLM repository from legacy JEDMICS instances to common TeamCenter based PLM repository
- Updated methodology for provided TDP updates (e.g., incremental packages to existing baseline)



GOAL: Open standards-based digital repository for Technical Data Packages (TDP)

STEP AP242 Edition 4

AP242 - Overview ed.4 scope

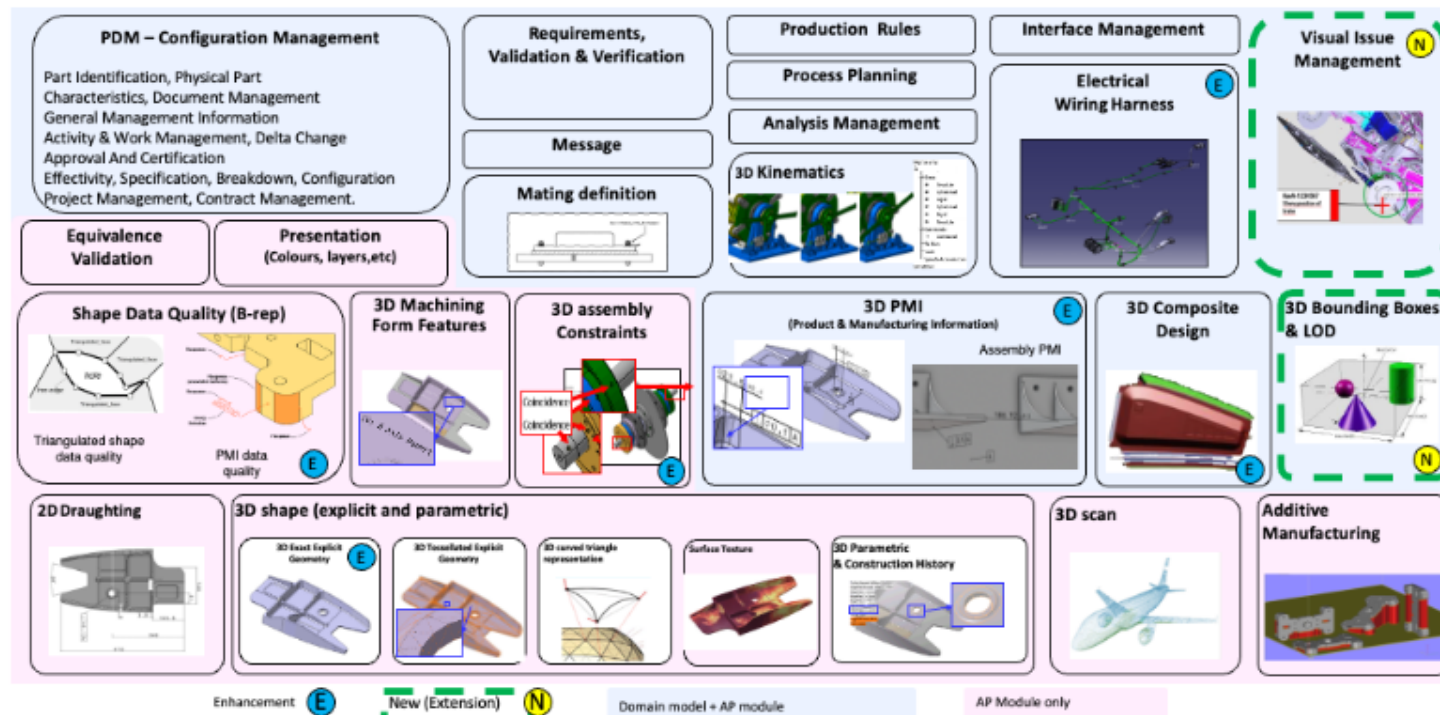


Figure 1 – Overview of ISO 10303 STEP AP242 edition 2 “Managed Model-Based 3D Engineering”

AP239 E2 being leveraged for REPLAY

STEP covers a broad scope of the product definition

Test Data – Mountain Bike



TruePLM and REPLAY Data



jotne connect EXPRESS Data Manager TruePLM[®]

henrik(project_admin)

Projects Catalogues Issues Comparison TDP_demo TDP_demo (ver.5) JP

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Tools

- Folder: **Parts**
- Create element
- Add organisation
- Put product
- Add data file
- Generate document
- Create baseline

Element: **16XMTBFRS8-101**

- Copy
- Cut
- Delete
- Paste
- as relating
- as related
- Element in context
- Structure tree
- Graph
- View history
- Add issue
- Send message

Domain management

- Create subdomain
- Import
- Export

Element properties

Name	Value
Name	16XMTBFRS8-101
Type	DomesticAssembly
Description	FRAME SYSTEM, ASSY
Created by	tuan
Created date	7/5/2024, 2:33:28 PM
Last modified by	tuan
Last modified date	7/5/2024, 2:33:28 PM
Identifiers	
Instance ID	193273546502
Identifiers	
Name	Value
1 CAGE	T 98897
2 Dash No	T -101
3 Finish Code	T
4 Notes	T
5 Source Application	E

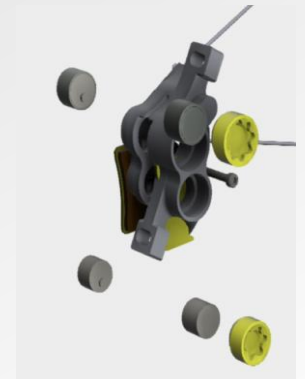
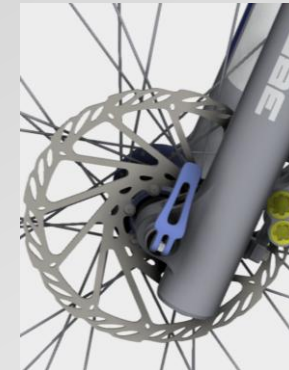
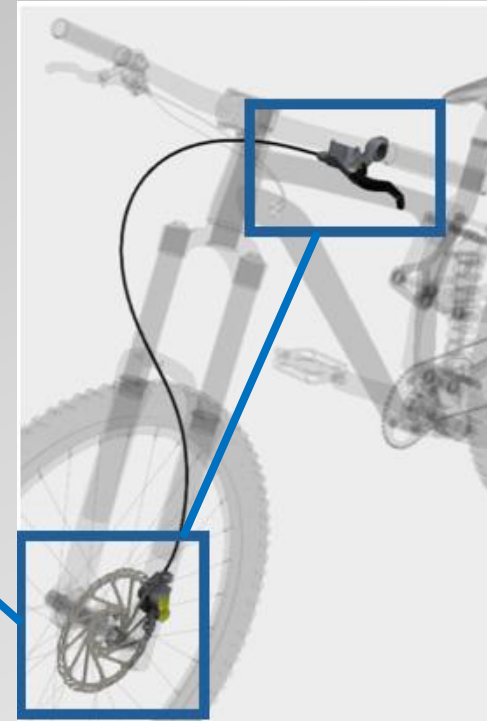
Indentured view - Brake System

jotne connect EXPRESS Data Manager TruePLM jotne_tt(project_manage)

Projects test_cdm_import_2 Parts 16XMTB2000-1 16XMTBBRS8-101

Table view X

Name	Type	Description	cage_code
16XMTBBRS8-101	DomesticAssembly	BRAKE SYSTEM	98897
16XBRS801-402	DomesticPart	FRONT, BRAKE LEVER ASSY	98897
16XBRS806-412	DomesticPart	BRAKE, FRONT, BODY	98897
16XBRS881-101	DomesticAssembly	BRAKE, FRONT	98897
16XBRS801-401	DomesticAssembly	BRAKE, LEVER, FRONT, ASSY	98897
16XBRS250-101	DomesticPart	BRAKE LEVER FRONT	98897
MS35650-103	Part	NUT	81755
NAS5313E3-7	Part	SCREW	80205
16XBRS802-405	DomesticPart	BRAKE, HYDRAULIC LINE, FRONT	98897
16XBRS803-405	DomesticAssembly	BRAKE, FRONT, ASSY	98897
16XBRS008-101	DomesticAssembly	BRAKE, DISC, ASSY	98897
16XBRS805-003	DomesticPart	BRAKE, DISC ASSY	98897
NAS1132-2	Part	SCREW	
16XBRS810-401	DomesticAssembly	BRAKE, CALIPER, FRONT, ASSY	98897
NAS1351-4-6P	Part	SCREW	
16XBRS806-411	DomesticAssembly	BRAKE, FRONT, BODY	98897
16XBRS415-3	DomesticPart	BRAKE LEVER HOUSING	98897
16XBRS416-11	DomesticPart	BRAKE LEVER HOUSING SEAL	98897
16XBRS521-9	DomesticPart	BRAKE LEVER	98897
NAS1351-03-8P	Part	SCREW	80205
NAS1351-06-4	Part	SCREW	80205
NAS1352-04-8	Part	SCREW	80205
MS21083D08	Part	NUT, SELF-LOCKING, HEXAGON	
16XBRS882-101	DomesticAssembly	BRAKE, REAR ASSY	98897



View of files and associated metadata

EDMtruePLM

localhost:8080/EDMtruePLM/#/newhome/167503724750/193273537572

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Projects Catalogues Issues Comparison TDP_demo TDP_demo (ver.5) JP Documents

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Documents V:3 16/0

16XWDS999-25 V:3 0/1

P00CV V:5 0/1

Z-0471 V:3 0/1

Z-G14 V:3 0/1

Z-LAC0471 V:3 0/0

Z-NDTS-222 V:3 0/1

Z-NDTS-513 V:3 0/1

Z-STP15-807 V:3 0/1

Z-STP23-308 V:3 0/1

Z-STP51-302 V:3 0/1

Z-STP51-400 V:3 0/1

Z-STP51-501 V:3 0/1

Z-STP63-001 V:3 0/0

Z-STP63-001 V:3 0/1

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Last modified date	7/5/2024, 2:50:54 PM
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UID	37irmeEieHxu00cFo4um0U
Version	5
document no	P00CV
Classified by	Class
Type	Document
Name	Value
1 CAGE	T
2 Release Date	T 28-MAR-2024
3 Revision	T B
4 Document Type	E ECN
5 Size	E A

EDMtruePLM

localhost:8080/EDMtruePLM/#/newhome/167503724750/193273537684/193273547451

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P00CV V:5 0/1

STEERING SYSTEM, AS Rev:1 V:001

Element properties

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Created date	7/5/2024, 2:33:28 PM
Last modified by	tuan
Last modified date	7/5/2024, 2:33:28 PM
Revision	1 0 0 1
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1 Path	T
2 LM Path	T
3 Release Date	T 28-MAR-2024
4 Source Site	E HAFB
5 Weapon Code	E WF
6 nuclear	T N
7 subsafe	T N
8 control_code	T ME
9 Destination Flavour	E PDF
10 Format	E DOC
11 Source Flavour	E PDF

Closing Comments

- Leveraging data standards to manage the TDP collections allows the ability to relate data of varying levels of fidelity
- Long term data requirements and need for LOTAR increase value and need for effective data stewardship in a trusted digital repository
- Standards based TDP facilitates effective product data lifecycle management
- Alignment with customers, design partners, suppliers and solution providers key to enabling effective use of standards based TDPs



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Thank you for
your time,
your energy,
and your invaluable insights.