

Business Collaboration through STEP AP242



3DEXPERIENCE®

Florian PORCHER – Dassault Systèmes

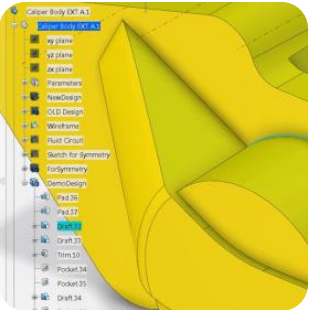
Thu., 1 October 2026 | nh Frankfurt Airport West | Raunheim, Germany

R&D INVOLVEMENT IN STEP GROUPS

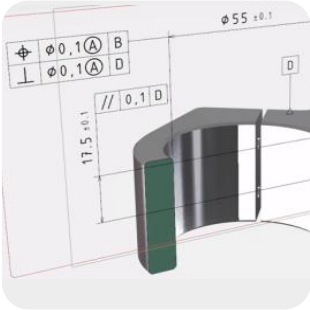
- **Member of ISO/TC184 (AFNOR/IDMI), AFNeT (FR), PDES Inc (US) and prostep ivip (DE)**
 - Strong collaboration with STEP experts to enhance Business Collaboration and Long Term Archiving.
 - Contribution to and validation of STEP Recommended Practices.
 - Participation to STEP AP242 Day.
- **Cooperation on archiving with Aerospace joint group LOTAR**
 - Data model definition (tessellation, PMI, ...).
 - Participation to LOTAR pilots to validate data models.
- **Key actor through AFNeT in Implementor Fora**
 - Participation to all CAX-IF Test rounds since TR2J (1999).
 - Participation to PDM-IF.



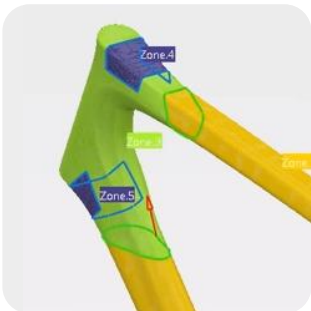
STEP | MAJOR SUPPORTED FUNCTIONALITIES



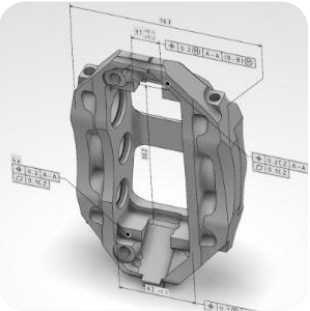
Exact Geometry,
Product Structure



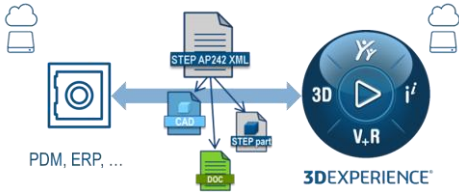
Graphic PMI,
Validation Properties



Composite,
Tessellated Geometry

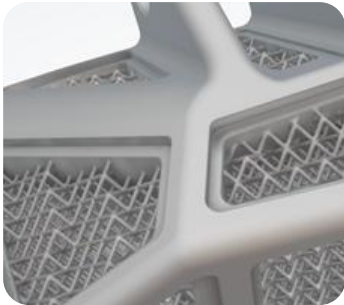


Semantic PMI,
PDM



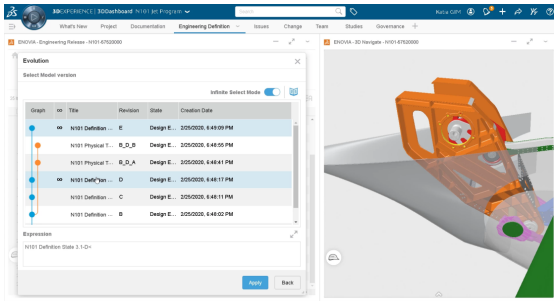
Kinematics
Exchange Service
UDA*, Composite*, PMI*

3DEXPERIENCE R2025x



Kinematics*
Exchange Service*
UDA*, Composite*, PMI*
Polyhedral geometry

3DEXPERIENCE R2026x



STEP AP242 Ed4
Kinematics*
Exchange Service*
(Export Effectivities,
Issue)

3DEXPERIENCE R2027x



V5-6R2025

V5-6R2026

V5-6R2027

* Enhanced with STEP AP242 Ed3, Ed4

STEP AP242 CAD | PRODUCT & MANUFACTURING INFORMATION

- Continuous improvement of STEP PMI support.
- Collaboration with STEP community on Graphic and Semantic PMI.
 - Continuous feedback from DS expert about lack in STEP to support evolving ASME-ANSI and ISO standard.
- In Progress: Persistent ID prototyping.



STEP AP242 CAD | IN WORK TOPICS

- Kinematics

- Kinematics mechanism with Motion coupling STEP AP242 Ed4
- Next steps: High Order kinematic pair, sub-mechanism (upcoming Ed5).

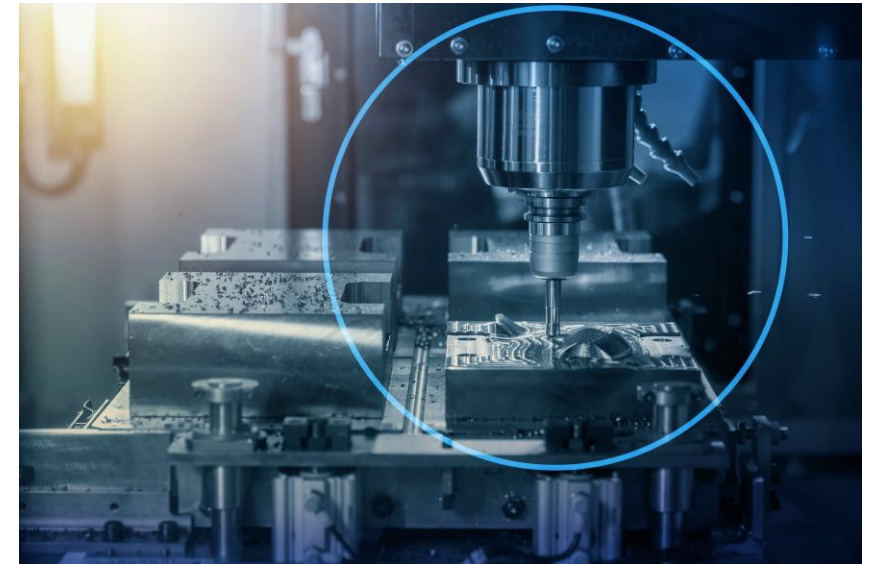


- Applicative data

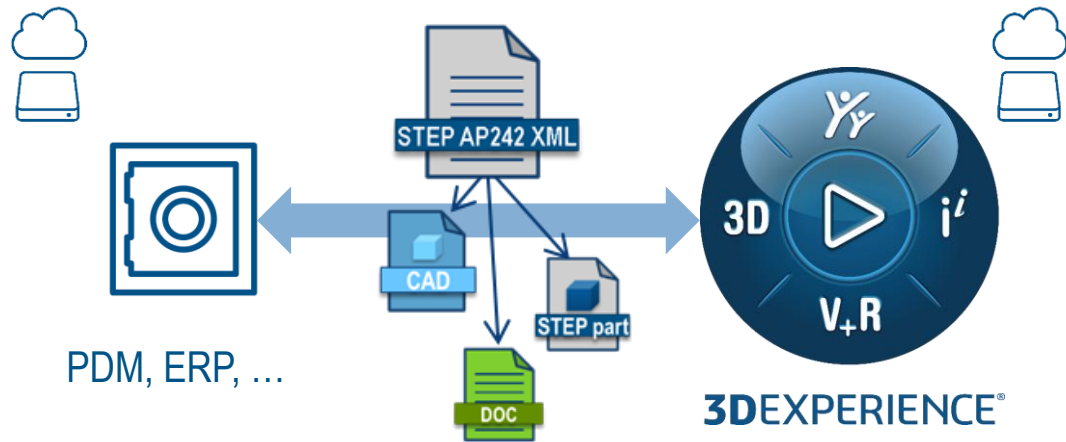
- Preserve Parameter set, Geometric set and User attributes in exchange
- Composite design next step: Integrate latest Recommended Practices.

- Persistent Id

- Key functionality for downstream consumption and Iterative design.
- Next steps: Continue participation to CAX-IF Test rounds with broader support. Leverage persistent Id in **3DEXPERIENCE** iterative design exchange use cases.



STEP AP242 PDM | COLLABORATION IN 3DEXPERIENCE



Derived Format Generation

ISO STEP AP242 XML Ed4 for Enterprise Integration and Collaboration.

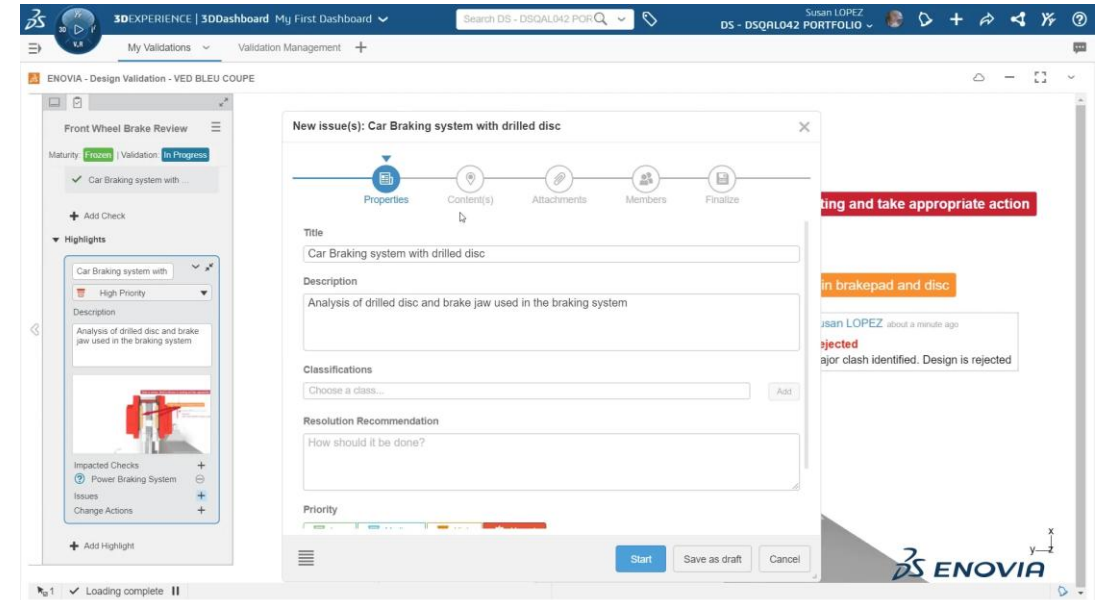
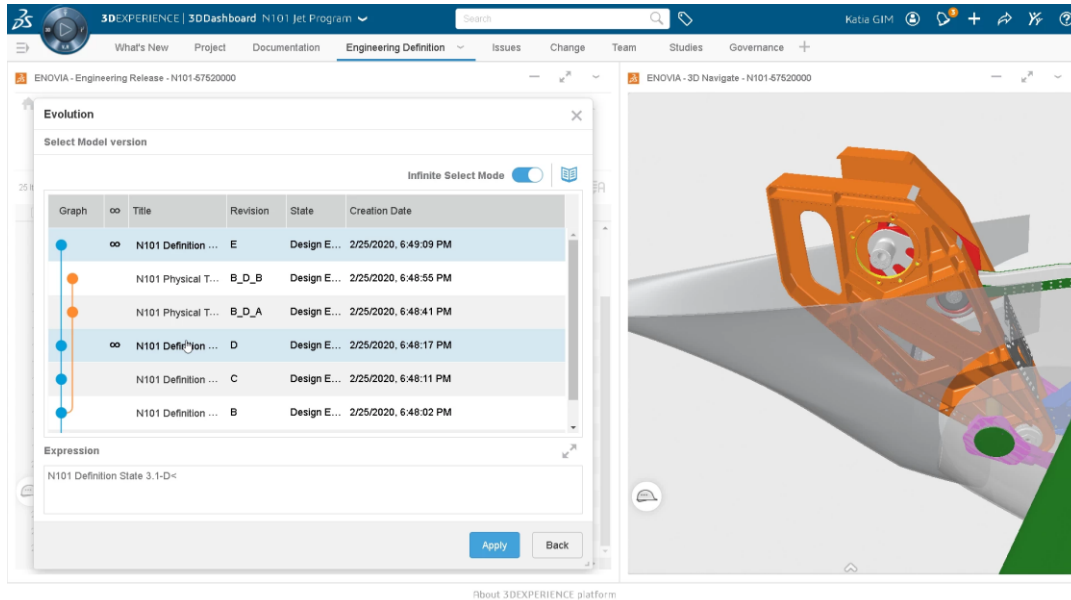
- Exchange of assemblies referencing CAD files (STEP or native) and non-CAD documents (PDF, Office,...).
- STEP PDM Collaboration with **lifecycle, configuration and customized PDM system** (Update, Versioning, Effectivities).

Automatic STEP Generation

- OnDemand or Driven by rules.(ex: Maturity of part).
- Stored in **3DEXPERIENCE** and available for Download.

STEP AP242 PDM | IN WORK TOPICS

Main activity with PDM-IF is the study of the Use cases and of Recommended Practices for:



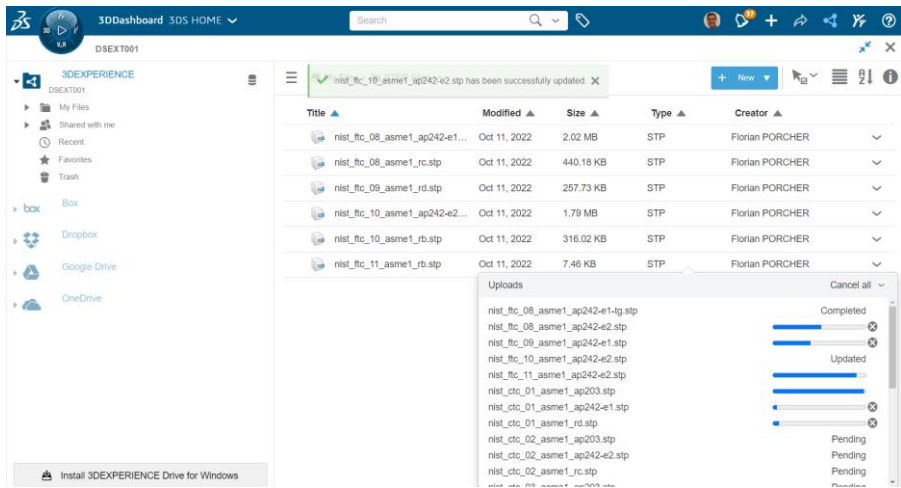
- Configuration.
- Issue Management.
- Fastener.

3DPLAY AS STEP VIEWER

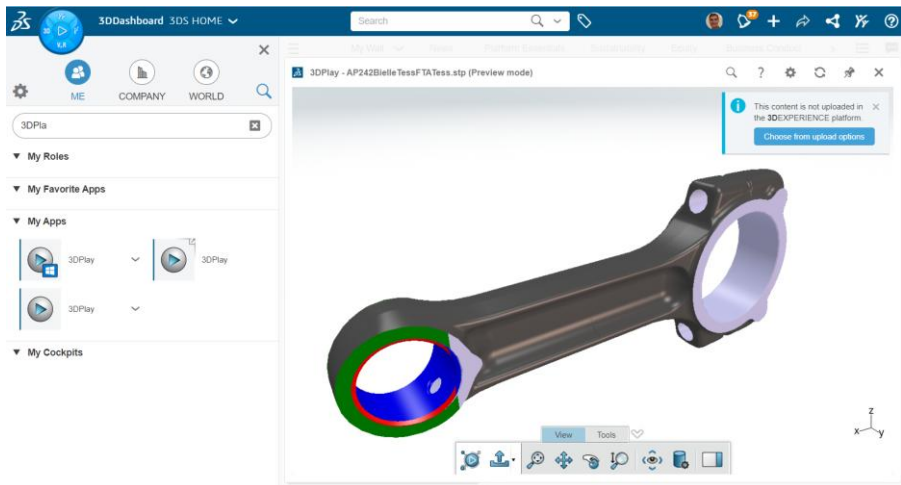
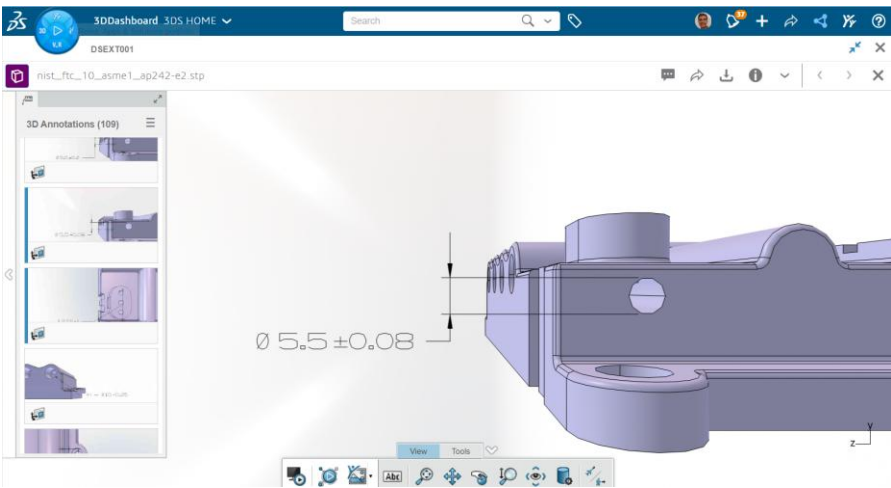
Upload
in 3DDrive



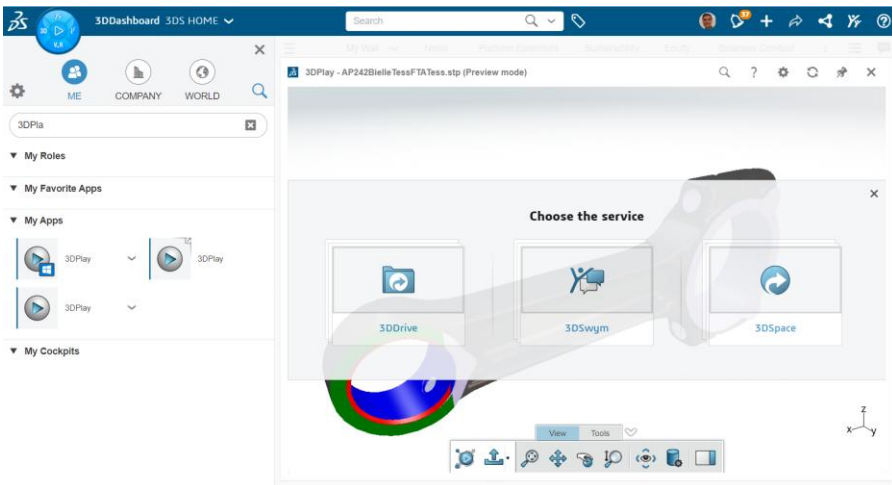
Drag & drop
in 3DPlay *



Preview
in 3DPlay



Upload to



* Limited to STEP AP242 with Tessellation.

CONCLUSION

- Dassault Systèmes R&D will continue to contribute to both development and implementation of STEP Standards.
- Client need is captured through direct relationship and via « User-Group Use Cases » (defined and tested in Implementers Fora)
- Next milestones
 - Prototype support of STEP AP242 Ed5.
 - Expand semantic coverage of STEP within our solution with focus on Persistent ID.
- Detailed STEP support within our solution can be found here:
 - <https://www.mbx-if.org/home/cax/implementation-coverage/>
 - <https://www.mbx-if.org/home/pdm/implementation-coverage/>

3DEXPERIENCE R2027X STEP PDM SUPPORT

PDM information		Implementation format								Level of implementation		
		AP242 Ed1 (TC)		AP242 Ed3		AP242 Ed4		AP242 Ed5 (2027)		Pilot	IF test	COTS
		P21-AM	XML-BOM	P21-AM	XML-DM	P21-AM	XML-DM	P21-AM	XML-DM			
General	PDM Representation of Document and Assembly Structure	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	CAX Representation of Document and Assembly Structure	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	Support of STEP Part21 (.stp) geometry files	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	Support of ISO 14306 (.j) geometry files	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	RelationshipObjectRelationship between PartView Usage and Occurrence Usage	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	not planned	NO
Bill of Material	Geometry on Assembly Node	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	"As Designed" PDM product structure	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	"As Planned" PDM product structure	N.R.	PARTIAL	N.R.	NO	N.R.	PARTIAL	N.R.	PLANNED	YES	YES	YES
	Multi-BOM Links	N.R.	PARTIAL	N.R.	NO	N.R.	PARTIAL	N.R.	PLANNED	YES	YES	YES
	Nested PDM product structure old (specified reference mechanism)	YES	n/a	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
External References	Nested PDM product structure new (external reference mechanism)	N.R.	n/a	N.R.	PLANNED	N.R.	PLANNED	N.R.	PLANNED	NO	in preparation	NO
	Incremental Exchange (reference mechanism)	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	NO	YES	YES
	Incremental Exchange (EER mechanism)	N.R.	n/a	N.R.	n/a	N.R.	PLANNED	N.R.	PLANNED	NO	in preparation	NO
	Delta Exchange (reference mechanism)	N.R.	n/a	N.R.	NO	N.R.	PLANNED	N.R.	PLANNED	NO	not planned	NO
	Delta Exchange (EER mechanism)	N.R.	n/a	N.R.	n/a	N.R.	PLANNED	N.R.	PLANNED	NO	in preparation	NO
Complementary Geometries	Complementary Documents, one File/Geometry within each Document	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	NO	in preparation	NO
	Complementary Files within one Document, one Geometry within each File	N.R.	YES	N.R.	NO	N.R.	NO	N.R.	PLANNED	NO	in preparation	NO
	Alternative Documents	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	NO	NO
	Alternative Files within one Document	N.R.	PLANNED	N.R.	PLANNED	N.R.	PLANNED	N.R.	PLANNED	NO	not planned	NO
	Alternative Geometries within one File/Document	N.R.	PLANNED	N.R.	PLANNED	N.R.	PLANNED	N.R.	PLANNED	NO	not planned	NO
Forced Alternative Geometries (i.e. flexible part or sheet metal)	Alternative Parts	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	NO	NO
	Alternative Documents within one Part	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	not planned	NO
	Alternative Files within one Document/Part	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	not planned	NO
	Alternative Geometries within one File/Document/Part	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	not planned	NO
	Alternate Parts on Part Level	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	NO
Alternate / Substitute Parts	Alternate Parts on Part Version Level	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	NO
	Substitute Parts on Part View Usage Level	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	NO
	Substitute Parts on Part Occurrence Usage Level	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	NO
	Mirrored Parts via same Geometry	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	NO	NO
	Mirrored Parts via different Geometry	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	NO	NO
Attributes, Properties	Lifecycle management (LifeCycle, ApplicationDomain, Approvals)	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	Person and organization	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	Date and Time	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	Properties without unit (Real, Integer, Boolean, ...)	N.R.	n/a	N.R.	n/a	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	Classification	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	User defined attribute (applying to one given CAD model)	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	Customized PDM properties (applying to all parts, all documents, etc.)	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	Property Groups	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	File Properties (Format, Content, Creation, Size)	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	Multi-identification (identifiers from different context (organization, etc.))	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	SuppliedObjectRelationship: one object for each context	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Bounding Box for performant scan through large product structure	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	not planned	NO
	PartViewRelationship.Id (FindNumber)	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	NO	NO
	WorkRequest + Activity	N.R.	PARTIAL	N.R.	NO	N.R.	NO	N.R.	NO	YES	NO	NO
	WorkOrder + Activity	N.R.	PARTIAL	N.R.	NO	N.R.	NO	N.R.	NO	YES	NO	NO
Configuration Management	Visual Issue Management (VIM) incl. SavedView and Red Lining	N.R.	n/a	N.R.	n/a	N.R.	PLANNED	N.R.	PLANNED	NO	in preparation	NO
	based on Effectivities	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	based on Specifications	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	YES	YES	YES
	based on Version Branch Effectivities	N.R.	n/a	N.R.	n/a	N.R.	PARTIAL	N.R.	PLANNED	NO	in preparation	NO
	Filtering Information (e.g. ProductConfiguration)	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PLANNED	YES	YES	YES
Compression	stpA	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	stpZ	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	stpZ	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	YES	YES	YES
	Assembly validation properties (number of children, notional centroid based on cubes)	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	YES	YES	YES
	LOTAR Product Structure Validation Properties (LOTAR Part 205)	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
Export Control	Security Classification	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Certification	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Export License (Contract)	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Part	n/a	n/a	NO	n/a	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO	NO
	PartVersion	n/a	n/a	NO	n/a	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO	NO
Persistent Ids (for EER)	PartView	n/a	n/a	NO	n/a	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO	NO
	Occurrence	n/a	n/a	NO	n/a	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO	NO
	WorkRequest	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	WorkOrder	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Observation	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
Mating (combined with xMCF)	Activity	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	ProductClass	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	ProductConfiguration	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Specification	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	NO	in preparation	NO
	AssemblyGroup (MatingGroup, MatingConnection)	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	PLANNED	NO	in preparation	NO
Material and Properties	NestedMatingConnection	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	PLANNED	NO	in preparation	NO
	PDM Representation of Material	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	CAX Representation of Material	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Alternative Material	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	CoatingLayer	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
Part Evolution and Interchangeability	SurfaceCondition	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Stock management	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Together-with	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Obsolescence of a Part	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO
	Interchangeability relationship	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	NO	in preparation	NO

<https://www.mbx-if.org/home/pdm/implementation-coverage/>

3DEXPERIENCE R2027X STEP CAD SUPPORT

CAX information		Implementation format												Level of implementation	
		AP242 Ed1		AP242 Ed2		AP242 Ed3		AP242 Ed4 (2025)		AP242 Ed5 (2027)					
		P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM		
3D Geometry	3D exact BREP representation	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	3D tessellated geometry representation	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Polyhedral BREP	n/a	n/a	n/a	n/a	n/a	n/a	YES	n/a	PLANNED	n/a	IF TEST	n/a		
	Presentation (color, layers, transparency, invisibility, etc.)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Over-riding colors (assembly component instances)	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Alternative Representation for same Shape (e.g., B-Rep / Tessellated)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Alternative Part Shapes (e.g., sheet metal before / after stamping)	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Supplemental Geometry (axes, lines, planes...)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Tessellated Supplemental Geometry	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Geometric Validation Properties	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
3D Product & Mfg. Information (PMI) at Part Level	Graphic Presentation (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Semantic Representation (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	PMI Presentation and Representation linked	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Saved View (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Simple Section View	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Advanced Section View	NO	n/a	NO	n/a	NO	n/a	PLANNED	n/a	PLANNED	N.R.	NO	N.R.		
	PMI Presentation Placeholder	NO	n/a	NO	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Hole feature definition	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Graphic PMI Validation Properties	YES	n/a	YES	n/a	YES	n/a	YES	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	PMI Saved View Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
3D Product & Mfg. Information (PMI) at Assembly Level	Semantic PMI Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	N.R.	PLANNED	N.R.	COTS	N.R.	
	Graphic Presentation (Assembly Level)	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PLANNED	n/a	COTS	n/a		
	Semantic Representation (Assembly Level)	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	PARTIAL	N.R.	PLANNED	N.R.	PILOT		
	PMI Presentation and Representation linked	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	NO	NO	NO	N.R.	NO		
	Saved View (Assembly Level)	NO	n/a	NO	n/a	PARTIAL	n/a	PARTIAL	NO	PLANNED	NO	COTS	NO		
	Simple Section View	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	NO	PLANNED	NO	COTS	NO		
	Advanced Section View	NO	n/a	NO	n/a	NO	n/a	PLANNED	n/a	PLANNED	n/a	NO	n/a		
	PMI Presentation Placeholder	NO	n/a	NO	n/a	PARTIAL	n/a	PARTIAL	NO	PLANNED	NO	COTS	NO		
	Graphic PMI Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	N.R.	PLANNED	N.R.	COTS	n/a		
	Saved View Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	NO	PLANNED	NO	COTS	NO		
Assembly Structure	Semantic PMI Validation Properties	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO		
	Single File with Assembly Structure and Geometry	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Single File with Assembly Structure and references to CAD 3D files	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		
	Nested Assembly files with references to CAD 3D files	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		
	External Element References (EER)	NO	N.R.	NO	N.R.	NO	N.R.	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO		
	Assembly Validation Properties	YES		YES		YES		YES		PLANNED		COTS			
	Basic Composite (Ply Laminate Table)	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
Composite Design	Rosette (Cartesian, guided by curve, etc.)	PARTIAL	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	N.R.	PLANNED	N.R.	COTS	N.R.	
	Ply Shape 3D exact shape (contour, cut pieces, core solid)	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Ply Shape 3D Tessellated Representation	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Composite Material	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Composite Validation Properties	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PLANNED	N.R.	COTS	N.R.		
	Mechanism (Low Order Pairs)	N.R.	n/a	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PLANNED	N.R.	COTS		
	Mechanism (High-Order Pairs)	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	PLANNED	N.R.	PLANNED	N.R.	NO		
Kinematics	Motion	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS		
	Kinematic Validation Properties	N.R.	n/a	N.R.	NO	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS		
	User Defined Attributes (UDA) on geometry level	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	User Defined Attributes (UDA) on part level	YES	YES	YES	NO	YES	YES	YES	YES	PLANNED	PLANNED	PLANNED	COTS	COTS	
Properties	User Defined Attributes (UDA) on assembly level	YES	YES	YES	NO	YES	YES	YES	YES	PLANNED	PLANNED	PLANNED	COTS	COTS	
	Groups of UDA	NO	NO	NO	NO	NO	NO	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO		
	UDA Validation Properties	YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		
	Persistent IDs	Part (Product)	n/a	n/a	n/a	n/a	n/a	n/a	YES	NO	PLANNED	NO	COTS	NO	
Part Version		n/a	n/a	n/a	n/a	n/a	n/a	YES	NO	PLANNED	NO	COTS	NO		
Part View (Product Definition)		n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO	NO		
Assembly Component Instance		n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO	NO		
Representation (Generic or Solid/Surface/Tessellated/Supplemental Geo)		n/a	n/a	n/a	n/a	n/a	n/a	YES	NO	PLANNED	NO	COTS	NO		
Topological Elements (shell, face, edge)		n/a	n/a	n/a	n/a	n/a	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
Supplemental Geometry		n/a	n/a	n/a	n/a	n/a	n/a	YES	n/a	PLANNED	n/a	COTS	NO		
Semantic PMI Elements (dimensions, tolerances, datums, etc.)		n/a	n/a	n/a	n/a	n/a	n/a	PARTIAL	NO	NO	PLANNED	NO	COTS	NO	
Saved Views		n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO	NO		
Semantic Hole Definitions		n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO	NO		
Properties (property definition and individual values)		n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO	NO		
Bill of Operational Features		n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
Model Based Notes		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	PLANNED	n/a	NO	n/a		
Parametric Symbol Templates		n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
Manufacturing/Metrology	Surface Texture	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
	Semantic Threads	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
	Cross Domain Exchange	n/a	NO	n/a	NO	n/a	NO	NO	n/a	NO	n/a	NO	NO		
	STEP Compressed File	*.stpZ	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a	
*.stpxZ		n/a	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS		
*.stpA		YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		

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3DEXPERIENCE V5-6R2027X STEP CAD SUPPORT

CAx information		Implementation format												Level of implementation	
		AP242 Ed1		AP242 Ed2		AP242 Ed3		AP242 Ed4 (2025)		AP242 Ed5 (2027)					
		P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM	P21- AIM	XML-DM		
3D Geometry	3D exact BREP representation	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	3D tessellated geometry representation	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Polyhedral BREP	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
	Presentation (color, layers, transparency, invisibility, etc.)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Over-riding colors (assembly component instances)	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Alternative Representation for same Shape (e.g., B-Rep / Tessellated)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Alternative Part Shapes (e.g., sheet metal before / after stamping)	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Supplemental Geometry (axes, lines, planes...)	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Tessellated Supplemental Geometry	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Geometric Validation Properties	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
3D Product & Mfg. Information (PMI) at Part Level	Graphic Presentation (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Semantic Representation (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	PMI Presentation and Representation linked	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Saved View (Part Level)	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Simple Section View	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Advanced Section View	NO	n/a	NO	n/a	PLANNED	n/a	PLANNED	N.R.	PLANNED	N.R.	NO	N.R.		
	PMI Presentation Placeholder	NO	n/a	NO	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Hole feature definition	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a	NO	n/a		
	Graphic PMI Validation Properties	YES	n/a	YES	n/a	YES	n/a	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	PMI Saved View Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	N.R.	PLANNED	N.R.	COTS	N.R.		
3D Product & Mfg. Information (PMI) at Assembly Level	Semantic PMI Validation Properties	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	N.R.	PLANNED	N.R.	COTS	N.R.		
	Graphic Presentation (Assembly Level)	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PARTIAL	n/a	PLANNED	n/a	COTS	n/a		
	Semantic Representation (Assembly Level)	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO		
	PMI Presentation and Representation linked	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO		
	Saved View (Assembly Level)	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO	NO		
	Simple Section View	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO	NO		
	Advanced Section View	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO	NO		
	PMI Presentation Placeholder	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO	NO		
	Graphic PMI Validation Properties	NO	n/a	NO	n/a	NO	n/a	NO	N.R.	NO	N.R.	NO	N.R.		
	Saved View Validation Properties	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO	NO		
Assembly Structure	Semantic PMI Validation Properties	N.R.	n/a	N.R.	n/a	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO		
	Single File with Assembly Structure and Geometry	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	Single File with Assembly Structure and references to CAD 3D files	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		
	Nested Assembly files with references to CAD 3D files	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		
	External Element References (EER)	NO	N.R.	NO	N.R.	NO	n/a	NO	Edition 4	NO	NO	NO	Edition 4		
	Assembly Validation Properties	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	NO	COTS	NO		
Composite Design	Basic Composite (Ply Laminate Table)	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Rosette (Cartesian, guided by curve, etc.)	PARTIAL	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Ply Shape 3D exact shape (contour, cut pieces, core solid)	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Ply Shape 3D Tessellated Representation	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Composite Material	YES	N.R.	YES	N.R.	YES	N.R.	YES	N.R.	PLANNED	N.R.	COTS	N.R.		
	Composite Validation Properties	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PARTIAL	N.R.	PLANNED	N.R.	COTS	N.R.		
Kinematics	Mechanism (Low Order Pairs)	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO		
	Mechanism (High-Order Pairs)	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO		
	Motion	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO		
	Kinematic Validation Properties	N.R.	n/a	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO	N.R.	NO		
Properties	User Defined Attributes (UDA) on geometry level	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	User Defined Attributes (UDA) on part level	YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		
	User Defined Attributes (UDA) on assembly level	YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		
	Groups of UDA	NO	NO	NO	NO	NO	NO	PLANNED	PLANNED	PLANNED	PLANNED	NO	NO		
Persistent IDs	UDA Validation Properties	YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		
	Part (Product)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Part Version	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Part View (Product Definition)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Assembly Component Instance	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Representation (Generic or Solid/Surface/Tessellated/Supplemental Geo)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Topological Elements (shell, face, edge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a		
	Supplemental Geometry	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a		
	Semantic PMI Elements (dimensions, tolerances, datums, etc.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO		
	Saved Views	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO	NO		
	Semantic Hole Definitions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	NO	NO	NO		
	Properties (property definition and individual values)	n/a	NO	n/a	NO	n/a	NO	n/a	NO	NO	NO	NO	NO		
	Manufacturing/Metrology	Bill of Operational Features	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a	
		Model Based Notes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	
Parametric Symbol Templates		n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
Surface Texture		n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
Semantic Threads		n/a	n/a	n/a	n/a	n/a	n/a	NO	n/a	NO	n/a	NO	n/a		
Cross Domain Exchange		n/a	NO	n/a	NO	n/a	NO	NO	n/a	NO	n/a	NO	n/a		
STEP Compressed File	*.stpZ	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS	n/a		
	*.stpxZ	n/a	YES	n/a	YES	n/a	YES	n/a	YES	n/a	PLANNED	n/a	COTS		
	*.stpA	YES	YES	YES	YES	YES	YES	YES	YES	PLANNED	PLANNED	COTS	COTS		

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