

# AFNeT – prostep ivip STEP AP242 Day

17 October 2018

Airbus, Toulouse



Presentation by Trevor Leeson  
Theorem Solutions

# CAD functional capabilities supported by the STEP AP242 interface

Products STEP <> NX & STEP <> JT

	CAD information	Implementation Format		Level of implementation		
		P21- AIM	XML BO M.	Pilot	IF test	COTS
3D geometry	3D exact BREP representation	✓	✗			✓
	3D tessellated BREP representation	✓	✗			✓
	presentation (color, layers, transparency, invisibility, etc)	✓	✗			✓
3D Product & Manufacturing Information - PMI (GD&T, 3D annotations, 3D symbols, UDA)	graphic presentation	✓	✗			✓
	semantic representation	✓	✗			✓
Assembly structure	1 STEP file with assembly structure and 3D geometry	✓	✓			✓
	1 assembly with references to CAD 3D files)	✓	✓			✓
	nested assemblies with references to CAD 3D files)	✗	✗			✗
Kinematics	Motion	✗	✗			✗
	Mechanism	✗	✗			✗
Composite design	Ply definition based on exact surface	✗	✗			✗
	Ply definition based on 3D tessellated solid BREP	✗	✗			✗
Electrical Wiring Harness	Topology (AP242 ed2 DIS)	✗	✗			✗
	Wire list (AP242 ed2 DIS)	✗	✗			✗
STEP compressed file		✓	✓			✓
Validation Properties	3D geometry, PMI, assembly structure, composite	✓	✓			✓

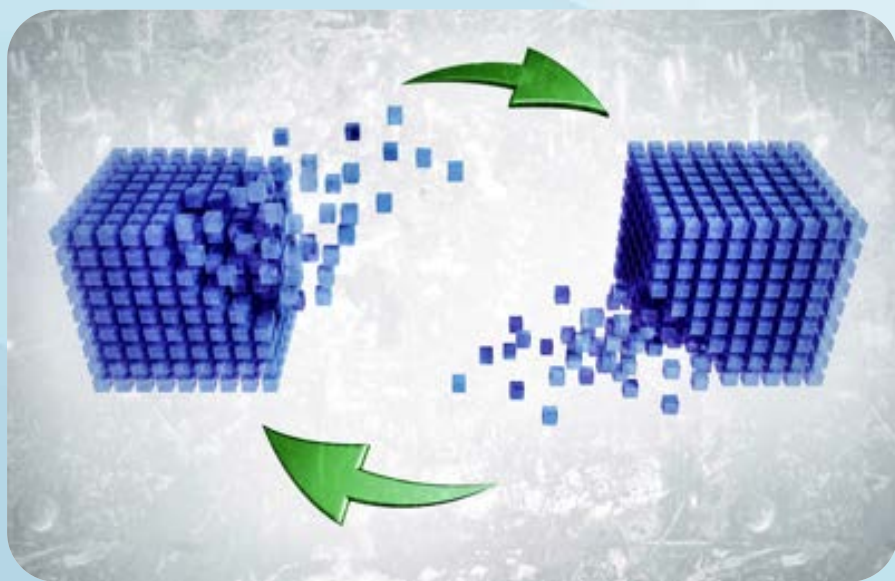
# PDM functional capabilities supported by the STEP AP242 interface

Product STEP <> NX & STEP <> JT

PDM information	Implementation Format		Level of implementation		
	P21- AIM	XML BO M.	Pilot	IF test	COTS
"As Designed" PDM product structure	✓	✓			✓
Nested PDM product structure	✓	✓			✓
Assembly validation properties	x	✓			✓
Lifecycle management	x	✓			✓
Document structure	x	✓			✓
Person and organization	x	✓			✓
Date and Time	x	✓			✓
Classification	x	✓			✓
Material properties	x	✓			✓
Customized PDM properties	x	✓			✓
Configuration management - based on effectivities	x	✓			✓
Configuration management - based on specifications	x	✓			✓

Additional information on the version(s) of the COTS AP242 interface: to be described by the PLM vendor – PLM integrator

# STEP AP242 Supported Products



*CADverter*



# STEP Focused Solutions

The following STEP based products are now considered to be “Focused Solutions”

- Migrated to new technology
- Single solution for products that support STEP AP203, AP214 & AP242 functionality
- On going enhancements including implementation Recommended Practices

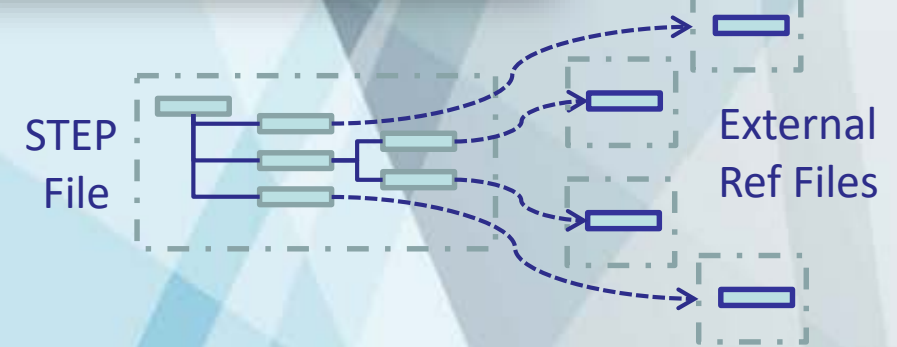
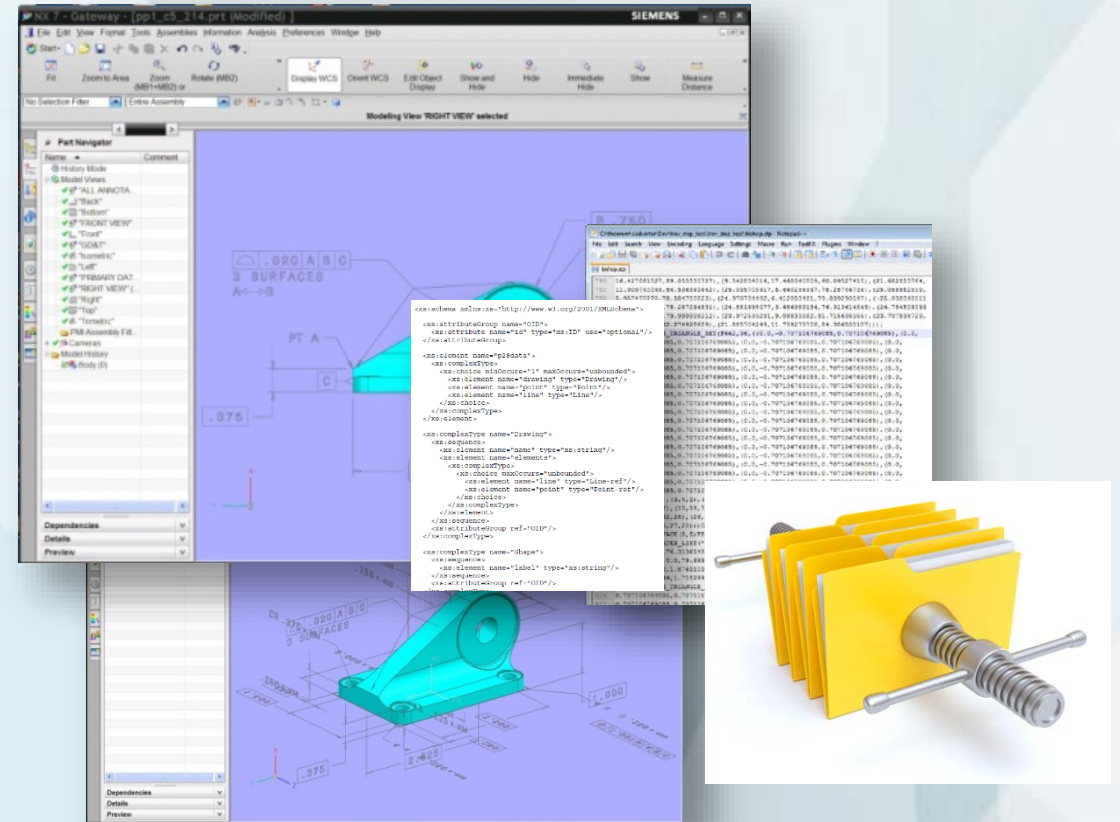
## STEP (AP242/AP214/AP203) Focused Solutions

- STEP < > NX
- STEP < > JT
- STEP AP242 BOM + JT (e.g. CATIA V5 to JT + STEP AP242 BOM)
- Digital Realities - User Experiences for STEP

# NX <> STEP (AP242/AP214/AP203)

## Main product features

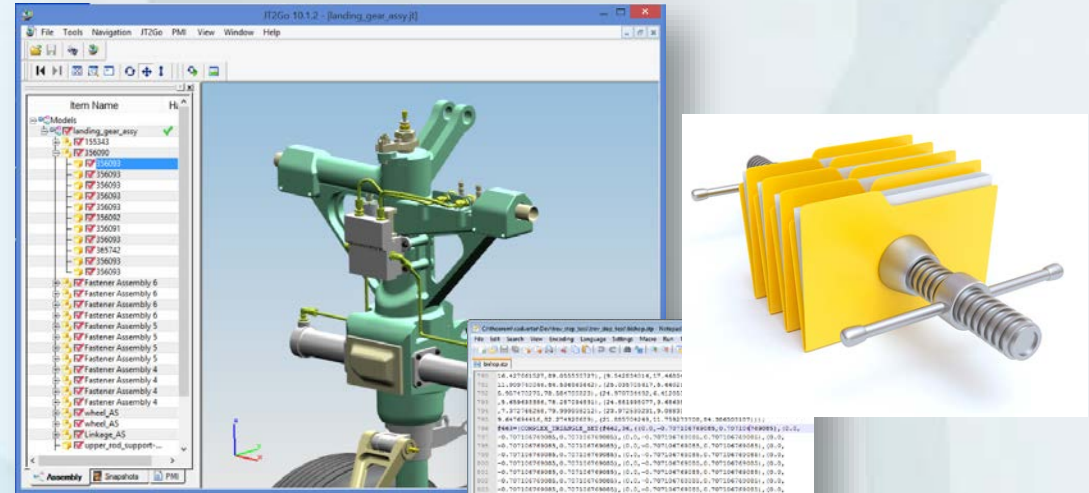
- Selectable STEP output format AP242 /AP214/AP203 using Part 21 or Part 28 output
- Geometry & Assembly Structure
- Tessellated Geometry (AP242)
- 3D Dimensions & Annotations (Presentation & Representation)
- User defined attributes
- Validation properties, including cloud of points for surfaces & edges
- External references to either STEP or native NX data
- STEP Compression .stpZ



# JT <> STEP (AP242/AP214/AP203)

## Main product features

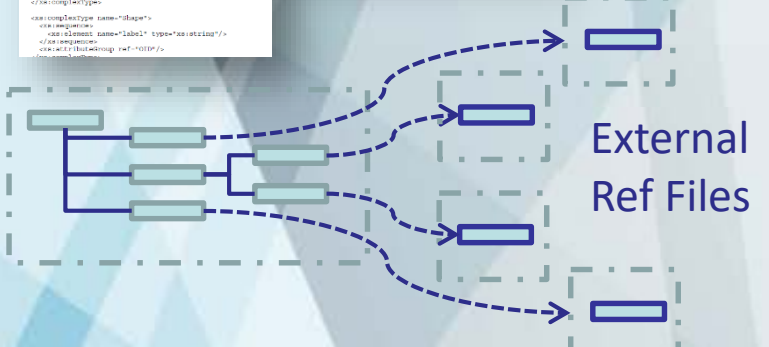
- Selectable STEP format output AP242, AP214 or AP203 using Part 21 or Part 28 output
- Assembly structure as STEP BOM with external references
- Geometry & Assembly Structure
- Tessellated geometry (AP242)
- 3D Dimensions & Annotations (Presentation & Representation)
- User defined attributes
- Validation properties, including cloud of points for surfaces & edges
- STEP Compression .stpZ



```

<!-- schema url: http://www.w3.org/2001/XMLSchema -->
<!-- attributeGroup name="COP" -->
<!-- attribute name="id" type="xs:string" use="optional"/ -->
<!-- attributeGroup -->
<!-- element name="p28data" -->
<!-- complexType name="Traxion" -->
<!-- element name="name" type="xs:string"/ -->
<!-- element name="Component" -->
<!-- complexType -->
<!-- element name="line" type="line-ref"/ -->
<!-- element name="point" type="Point set"/ -->
<!-- complexType -->
<!-- element name="Image" -->
<!-- element -->
<!-- element name="label" type="xs:string"/ -->
<!-- element -->
  
```

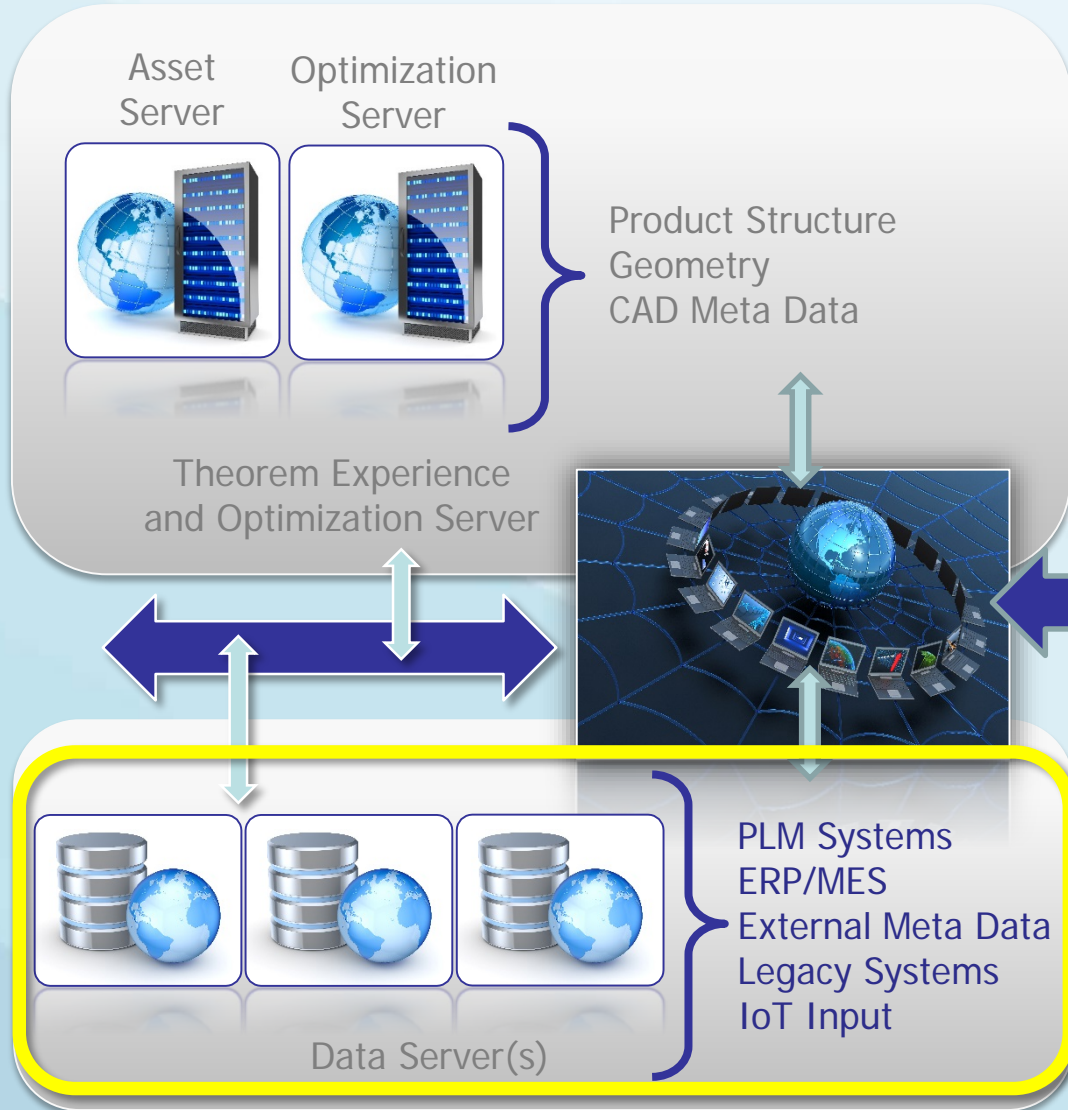
STEP File



External Ref Files

# Digital Realities Implementation

## Data Preparation



## User Experience

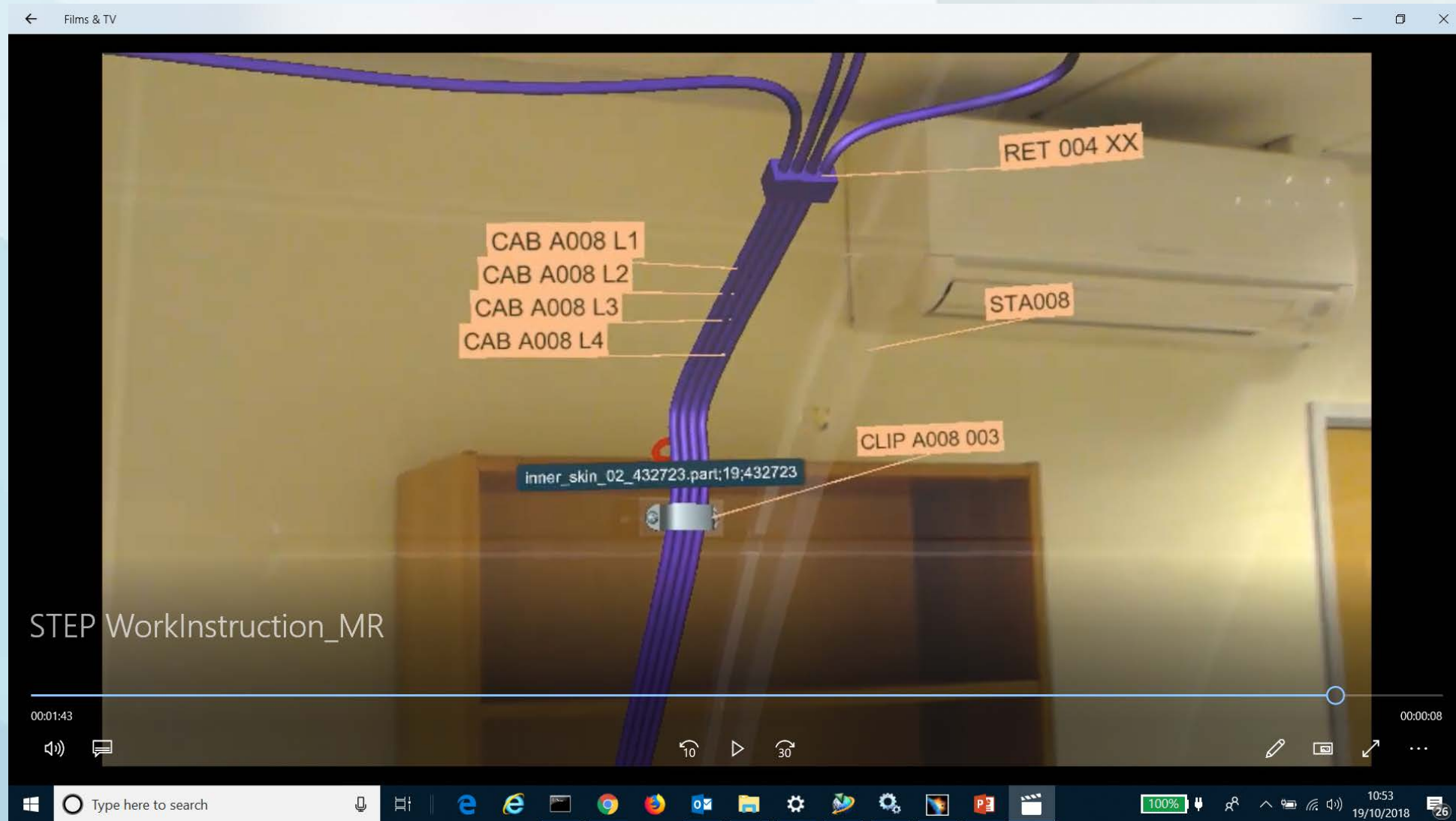


Leverage existing engineering infrastructure and data

Web Services Data Access



# Digital Realities Work Instruction Experience using STEP



For instructions to download a copy of the video used during the presentation please contact either [David.Shackleton@theorem.com](mailto:David.Shackleton@theorem.com) or [Trevor.Leeson@theorem.com](mailto:Trevor.Leeson@theorem.com)



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