Enhancing MBD with TECHNIA Software

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SHAPING THE FUTURE OF PRODUCT CREATION

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# Q-Checker

Is everything there, and correct?

- MDB requires 3D modelling standards & users that follow these rules
- Q-Checker supports the verification regarding **Existence**, **Correctness** and **Consistence**

- Examples:
  - Wrong start model used
    - Features are not ordered correctly
    - Result: Downstream processes can't access required information
  - Missing Meta Data
    - supplier name, material, weight, surface treatment, legal notes, …
    - Result: Parts cannot be released
  - FT/A Fake dimension
    - Result: Errors in subsequent processes and in manufacturing of parts
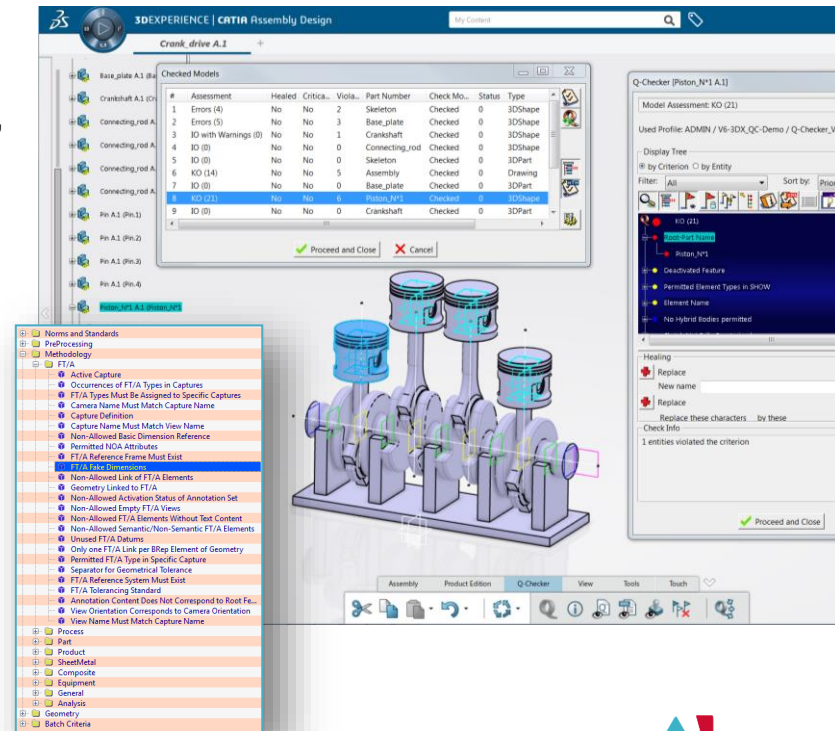
xCompare

Powerful Change Reports

- The Solution…
  - Track all design and engineering changes
  - Fully integrated in CATIA or LiteBox3D
  - Interactive and Batch Comparison

- Key Benefits…
  - Save time with comparing models
  - Increased reliability
  - Fulfil legal or company requirements regarding documentation through detailed and flexible reporting
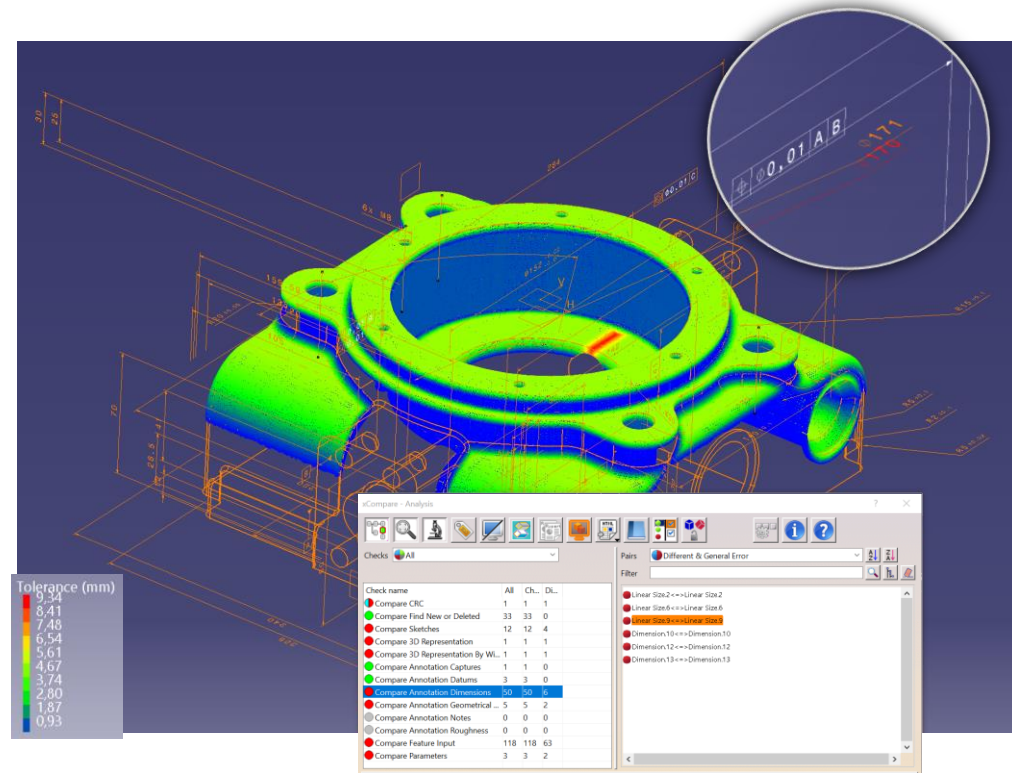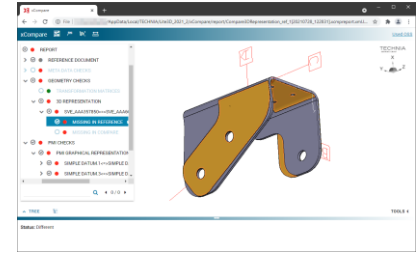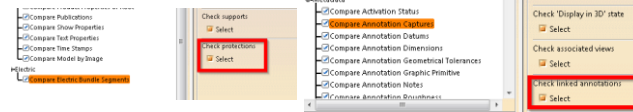
xCompare

What's New

- Continuous updates influenced by our customers

New options in checks

Difference in Text content:
NOTES: 1. ASSEMBLY MUST BE PLAINLY MARKED WITH FORD PART NUMBER LABEL AND FORD TRADEMARK #2 LOCATED APPROXIMATELY AS SHOWN. 2. ASSEMBLY MUST BE CODED TO IDENTIFY YEAR, MONTH AND DAY OF MANUFACTUREPER FORD METHOD WITH 6 NUMERIC CHARACTERS INCLUDING SHIFT. 3. ENGINEERING APPROVAL OF SAMPLES FROM EACH SUPPLIER IS REQUIRED PRIOR TO AUTHORIZATION OF
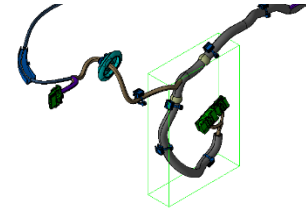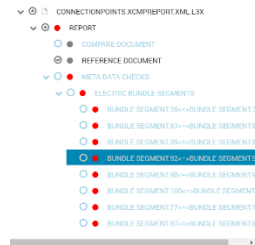

Highlight the differences in HTML reports
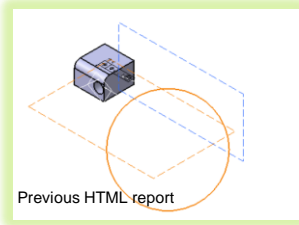
Previous HTML report

Latest HTML report

3DHTML report added to xCompare JTJT

Handing with 3DHTML report improved

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3D as the Universal Language of Engineering

Drawingless process as "3D as a language"

- Deliver the appropriate information to the right time to the right place…
  - When sharing drawingless information, there are two consuming scenarios (that might also overlap in some cases), that leads to format requirements, that might get in conflict.

DRAWINGLESS PROCESS

DISPLAY

HUMAN READABLE

- *cost free visualization tools available on market*
- *supported on all types of operation systems*
- *simple and easy to use for non-CAD-user*
- *performance ensured on weak office hardware*
- *full visualization coverage for all contained information*

MACHINE READABLE

PROCESS

- *full processing coverage for all contained information*
- *PMI semantic support for downstream reuse*
- *format openness for wide system coverage and support*
- *standardized format for long term reliability*
- *BREP support for data exchange (e.g. CAD)*

3D as the Universal Language of Engineering

"3D as a language" process formats and tools

- Chose your downstream supply process and format wisely…
  - So, there are some more or less proper formats existing, supporting the drawingless process. Depending on your demand, it can be one of these formats or a combination of formats.

Results of ProSTEP iViP Analysis „3D-Formate im Engineering-Umfeld - ein Vergleich" (Edition 2, 2013)
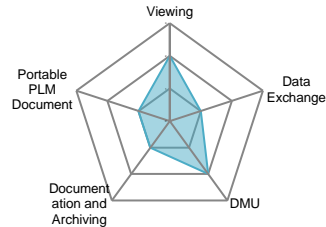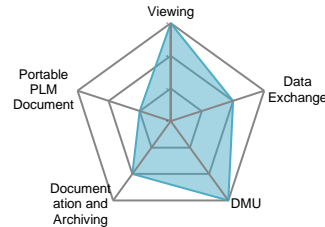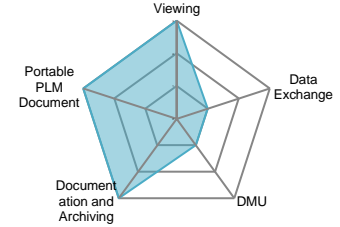
STEP (AP242)	3D XML	JT	3D PDF
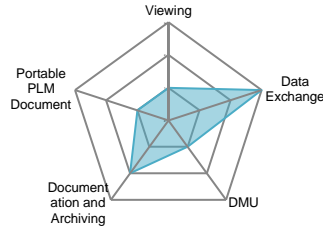
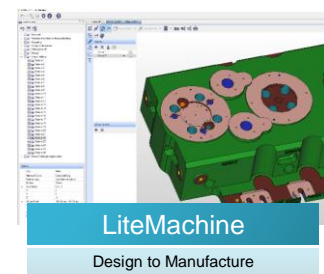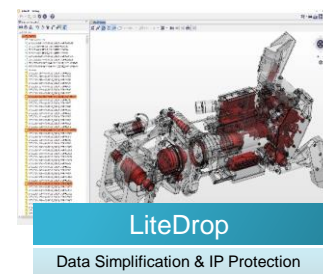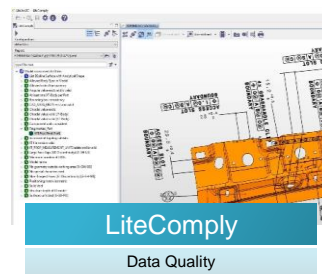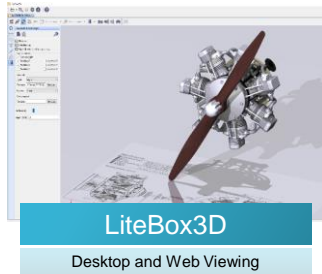| STEP (AP242)	3D XML	JT	3D PDF
👎 DISPLAY	👉 DISPLAY	👍 DISPLAY	👍 DISPLAY
👍 PROCESS	👎 PROCESS	👉 PROCESS	👎 PROCESS

3D as the Universal Language of Engineering

"3D as a language" process formats and tools

- Focus on JT…
    - TECHNIA Lite3D platform → a professional JT portfolio driven by customer input with solid release cycle. ISO based own JT toolkit with full control and best performance.
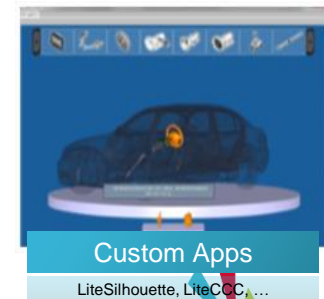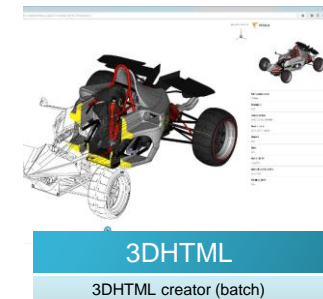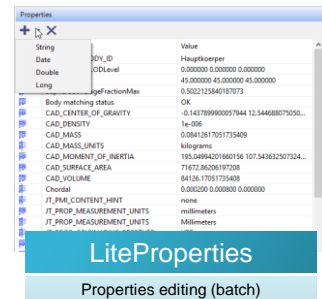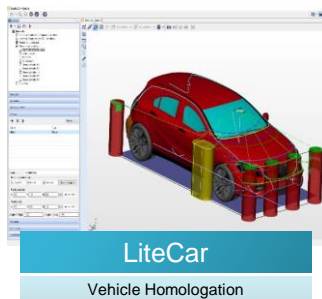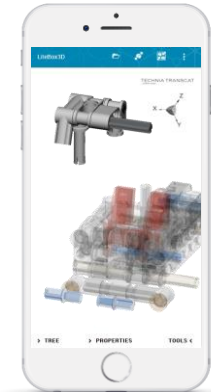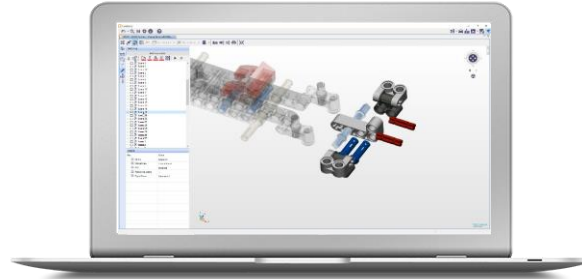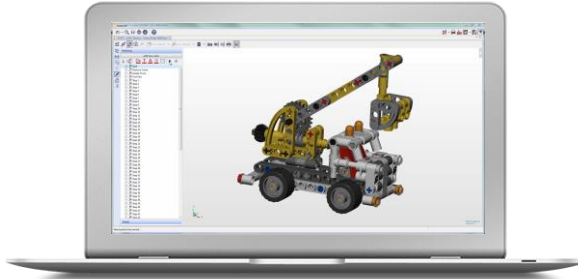

LiteBox3D
Desktop and Web Viewing

xCompare
Validation

LiteComply
Data Quality

LiteDrop
Data Simplification & IP Protection

LiteMachine
Design to Manufacture

LiteCar
Vehicle Homologation

LiteImage
Image Capturing (Batch)

LiteProperties
Properties editing (batch)

3DHTML
3DHTML creator (batch)

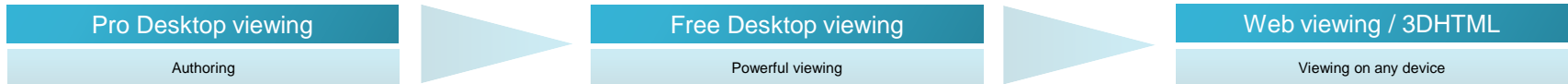**Custom Apps**
LiteSilhouette, LiteCCC, …

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3D as the Universal Language of Engineering

"3D as a language" process formats and tools

- Focus on JT… reuse JT in downstream to create added content and information
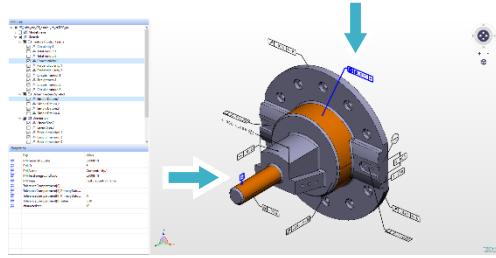 - Work instructions with LiteBox3D → easy to create & share, view on every device, revision stable

Pro Desktop viewing	Free Desktop viewing	Web viewing / 3DHTML
Authoring	Powerful viewing	Viewing on any device

Lite3D

What's New in our LiteBox3D viewers

- Continuous updates influenced by our customers

Step AP242 support

Support of JT 10.5
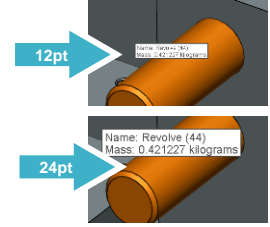MultiXT B-Rep and STT data

Highlighting of associated PMIs

Dockerized Web viewer

Multiple UI&UX improvements…
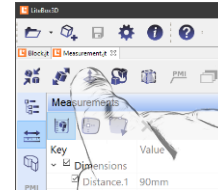
Multi-Touch support

Support for international characters

Wires in front

Points in front

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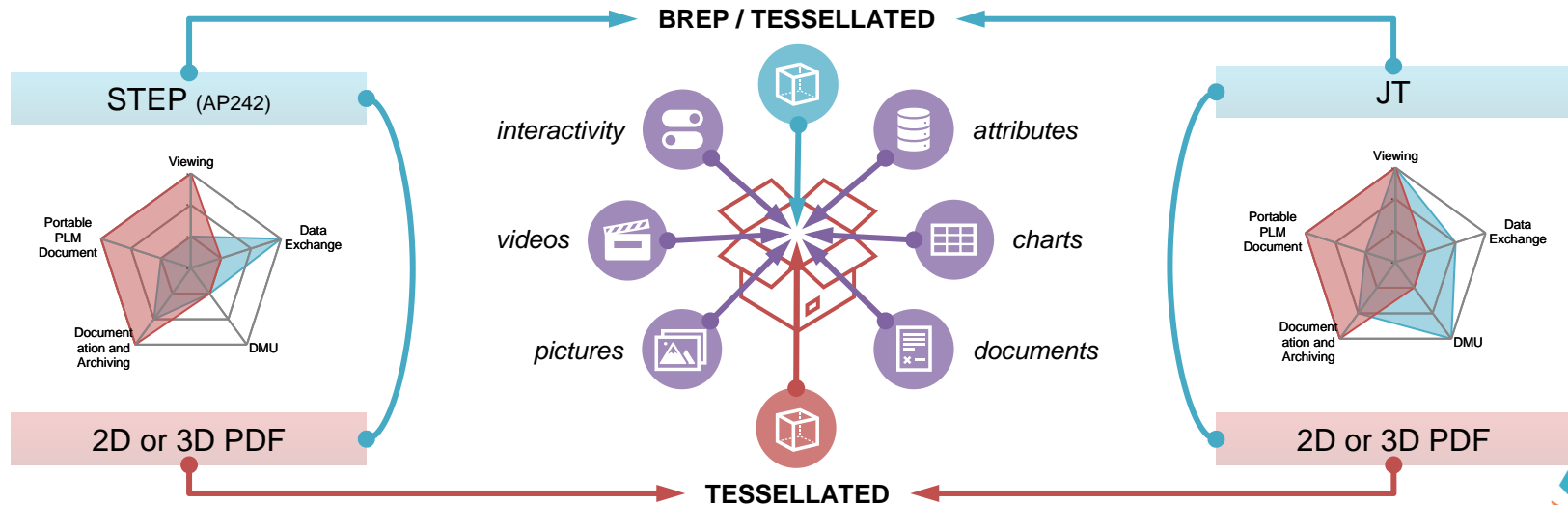
3D as the Universal Language of Engineering

"3D as a language" process formats and tools

- So, what to do…
  - While there is no all-inclusive format existing, that is covering all our demands for drawingless process support, it might be a good point thinking about combinations. Especially the PDF format is applicable due to its container characteristic, that allows the fusion of diverse media into a readable document and the capability for embedding additional files, that can not be displayed by the viewer (e.g. BREP).

BREP / TESSELLATED

STEP (AP242)

JT

interactivity *attributes*

videos *charts*

pictures *documents*

2D or 3D PDF

2D or 3D PDF

TESSELLATED

Viewing, Portable PLM Document, Data Exchange, Documentation and Archiving, DMU

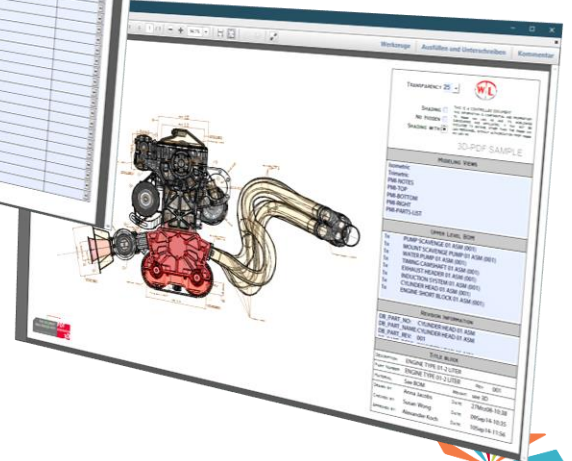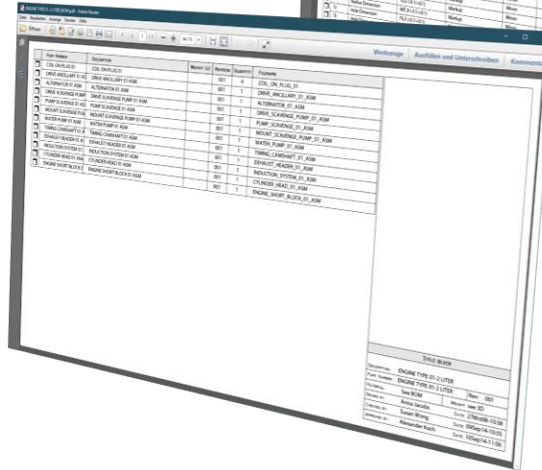# 3D as the Universal Language of Engineering
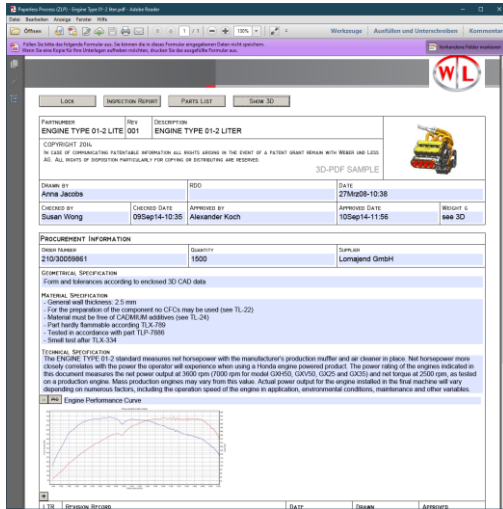
"3D as a language" process formats and tools

- So, what to do…
  - 3D PDF as process format → example:

front page

part list

inspection report
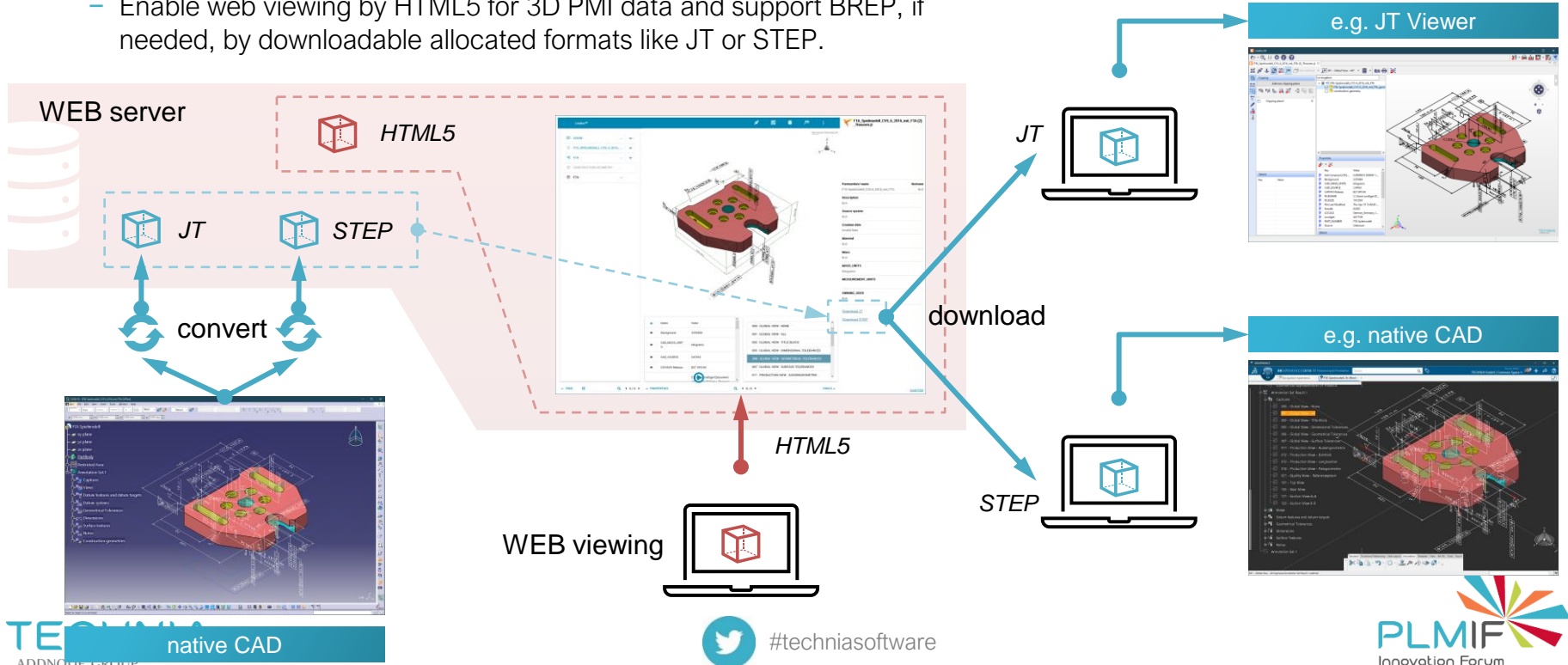
3D + PMI visualization
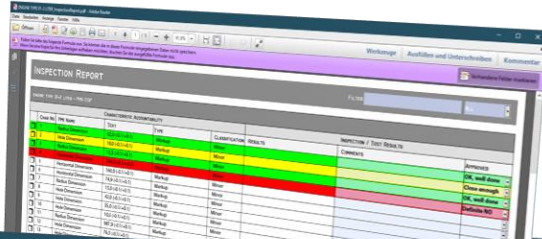
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3D as the Universal Language of Engineering

"3D as a language" process formats and tools

- So, what to do...
  - Enable web viewing by HTML5 for 3D PMI data and support BREP, if needed, by downloadable allocated formats like JT or STEP.


WEB server

HTML5

JT   STEP

convert

native CAD

WEB viewing

HTML5

download

JT

e.g. JT Viewer

STEP

e.g. native CAD

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3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Make all involved competences to a part of your process…
  - Use cloud capabilities to connect all project members to access real time information and data.

WEB INTERFACE
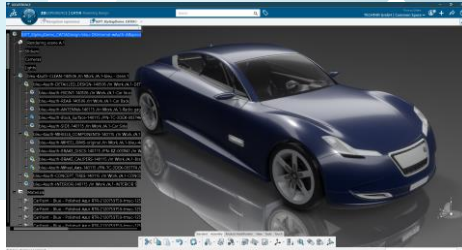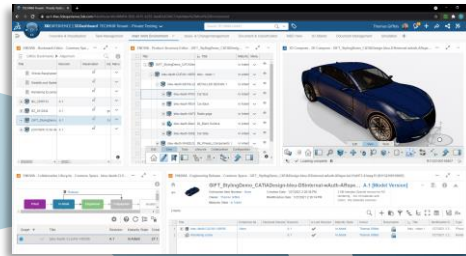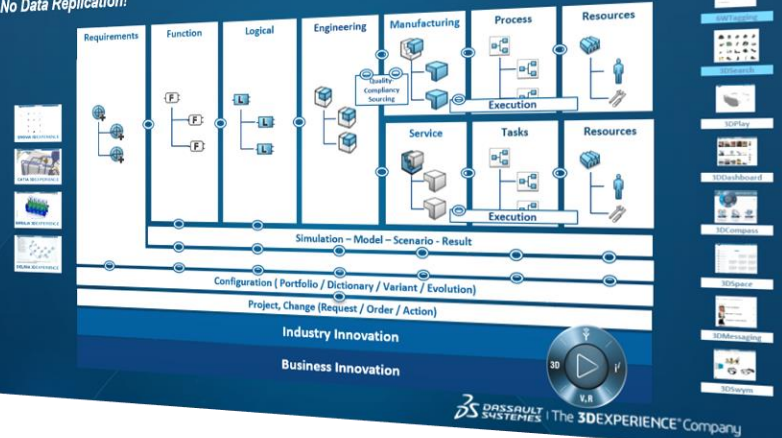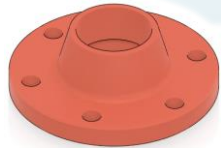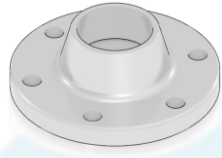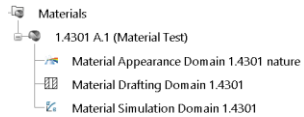
LOCAL CLIENT INSTALLATION

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3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Use additional functionalities of 3DEXPERIENCE…
  - Visualize, calculate, simulate, …

New material strategy, using core- and cover-material for more real-life definition. Supporting all information for simulation and high-end visualization.
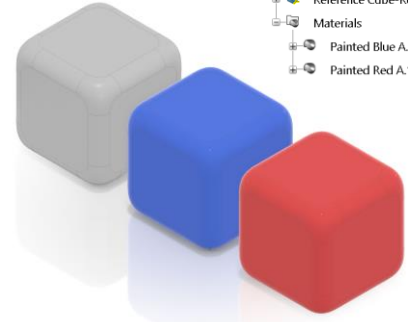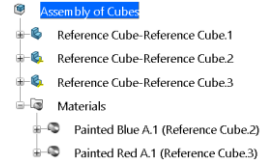

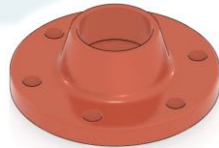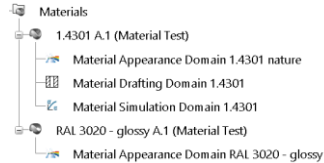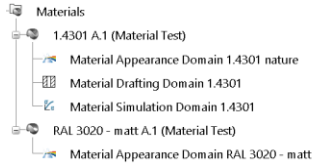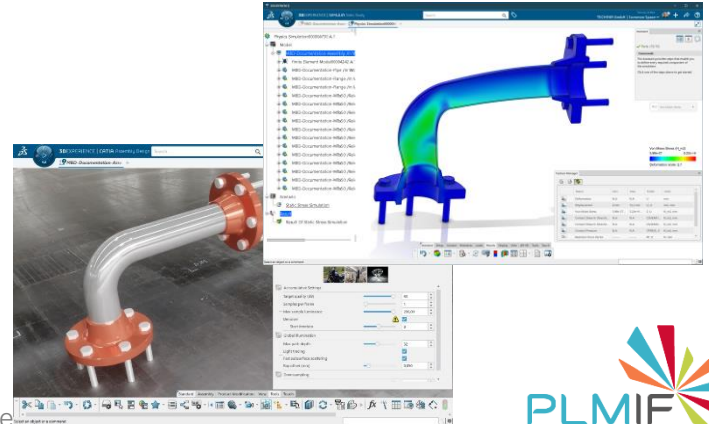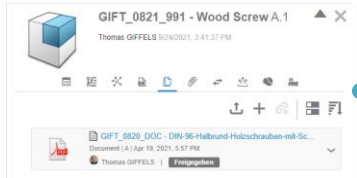manage cover-material on instance level
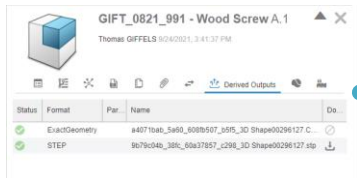
3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Use additional functionalities of 3DEXPERIENCE…
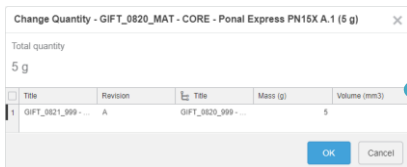 - Make your BOM close to reality > volume parts / alternatives / specifications / …

add specifications and attachments

provide derived outputs

add mass- and volume objects
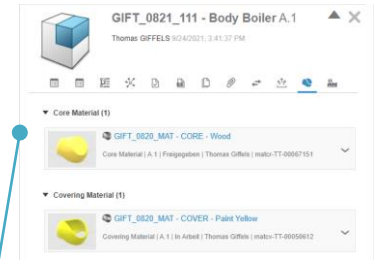
manage core- and cover material

define alternatives for usage

add manufacturing information

GIFT_0821_991 - Wood Screw A.1
Thomas GIFFELS 9/24/2021, 3:41:37 PM

GIFT_0820_DOC - DIN-96-Halbrund-Holzschrauben-mit-Sc...
Document | A | Apr 19, 2021, 5:57 PM
Thomas GIFFELS Freigegeben

GIFT_0821_991 - Wood Screw A.1
Thomas GIFFELS 9/24/2021, 3:41:37 PM

Derived Outputs

Status	Format	Par...	Name	Do...
✓	ExactGeometry	a407 1bab_5a60_608fb507_b5f5_3D Shape00296127.C...	
✓	STEP	bb79c04b_38fc_60a37857_c298_3D Shape00296127.stp	↓

Change Quantity - GIFT_0820_MAT - CORE - Ponal Express PN15X A.1 (5 g)

Total quantity
5 g

	Title	Revision	Title	Mass (g)	Volume (mm3)
1	GIFT_0821_999 - ...	A	GIFT_0820_999 - ...		5

OK   Cancel

ENOVIA - Engineering Release - GIFT_0821_100 - Locomotive Assembly

GIFT_0821_100 - Locomotive Assembly A.1 [Model Version]

Enterprise Item Number : None   Creation Date : 9/24/2021 4:57:34 PM   No description
Owner : Thomas GIFFELS   Modification Date : 9/24/2021 4:59:03 PM
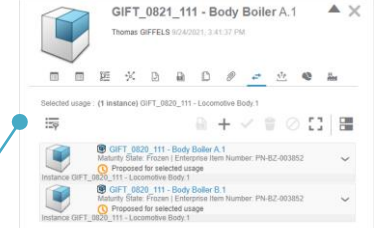Maturity State : In Work

2 Items

	Title	Quantity	Maturity State	Revision	Is Last Revision	Reservation	Owner	Change History
1	GIFT_0821_110 - Body Assembly	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
2	GIFT_0821_111 - Body Boiler	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
3	GIFT_0821_112 - Body Exhaust	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
4	GIFT_0821_113 - Body Lamp	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
5	GIFT_0821_114 - Body Cabin	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
6	GIFT_0821_117 - Body Roof	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
7	GIFT_0821_118 - Body Base	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
8	GIFT_0821_991 - Wood Screw	12	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
9	GIFT_0821_992 - Connection Pin	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
10	GIFT_0820_MAT - CORE - Ponal Express PN15X	5.0 g	Released	A.1		🔒	Thomas Giffels	✕
11	GIFT_0821_120 - Chassis Assembly	2	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
12	GIFT_0821_121 - Chassis Axle	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
13	GIFT_0821_122 - Chassis Wheel	2	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
14	GIFT_0821_123 - Chassis Bearings	1	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕
15	GIFT_0821_991 - Wood Screw	2	In Arbeit	A.1	✓	🔒	Thomas GIFFELS	✕

GIFT_0821_111 - Body Boiler A.1
Thomas GIFFELS 9/24/2021, 3:41:37 PM

▼ Core Material (1)
GIFT_0820_MAT - CORE - Wood
Core Material | A.1 | Freigegeben | Thomas Giffels | matcc-TT-00067153

▼ Covering Material (1)
GIFT_0820_MAT - COVER - Paint Yellow
Covering Material | A.1 | In Arbeit | Thomas Giffels | matcc-TT-00056612

GIFT_0821_111 - Body Boiler A.1
Thomas GIFFELS 9/24/2021, 3:41:37 PM

Selected usage : (1 instance) GIFT_0820_111 - Locomotive Body:1

GIFT_0820_111 - Body Boiler A.1
Maturity State: Frozen | Enterprise Item Number : PN-BZ-003052
Proposed for selected usage
Instance GIFT_0820_111 - Locomotive Body:1

GIFT_0820_111 - Body Boiler B.1
Maturity State: Frozen | Enterprise Item Number : PN-BZ-003052
Proposed for selected usage
Instance GIFT_0820_111 - Locomotive Body:1

GIFT_0821_991 - Wood Screw A.1
Thomas GIFFELS 9/24/2021, 3:41:37 PM

	Title	Make/Buy	Outsourced	Revision
	GIFT_0821_991 - Wood Screw	Buy		

TECHNIA
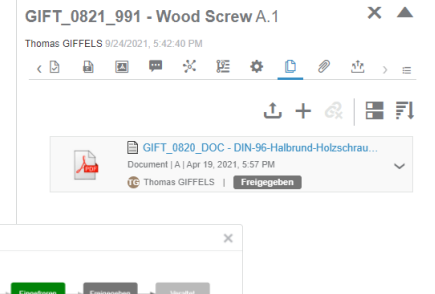ADDNODE GROUP

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3D as the Universal Language of Engineering

Integrate and involve instead of provide
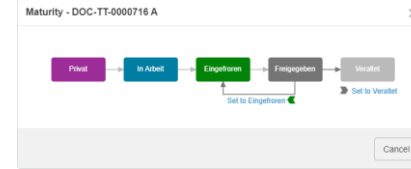
- Use additional functionalities of 3DEXPERIENCE…
  - Integrated attachment / specification management (documents and more)
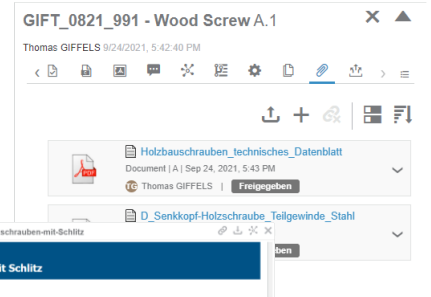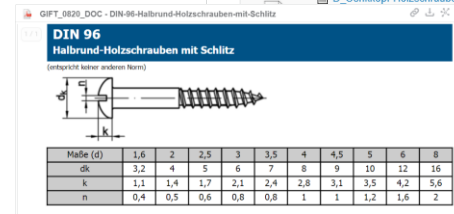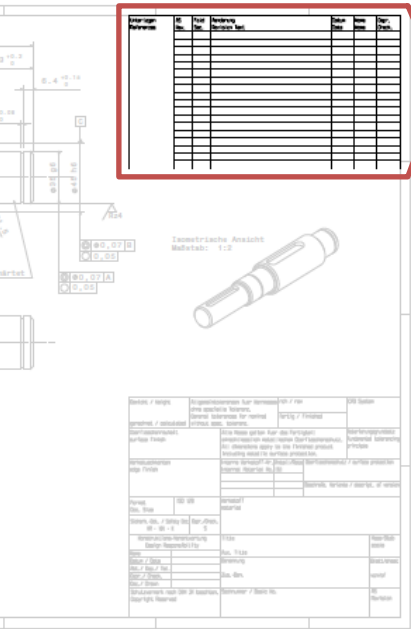

specifications

lifecycle

attachments

viewing

3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Use additional functionalities of 3DEXPERIENCE…
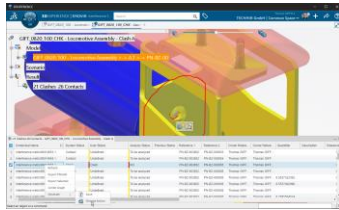 - Extensive capabilities for release- and change documentation…
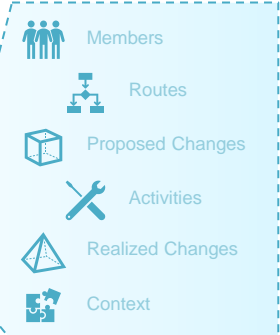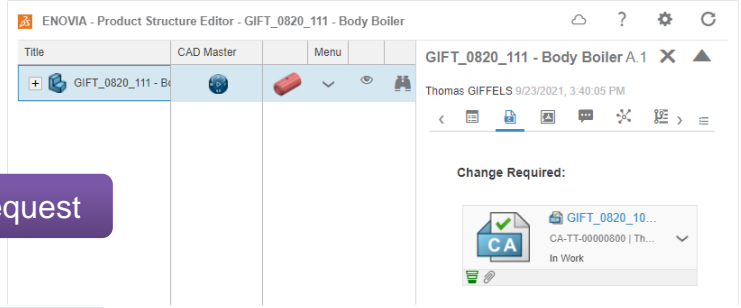
3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Use additional functionalities of 3DEXPERIENCE…
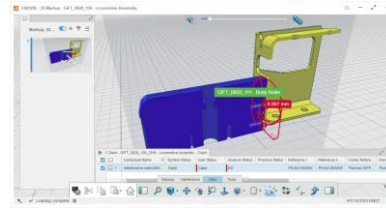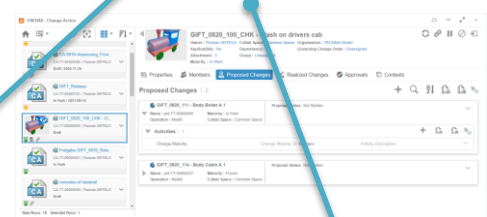 - All connected… an example at a DMU review…
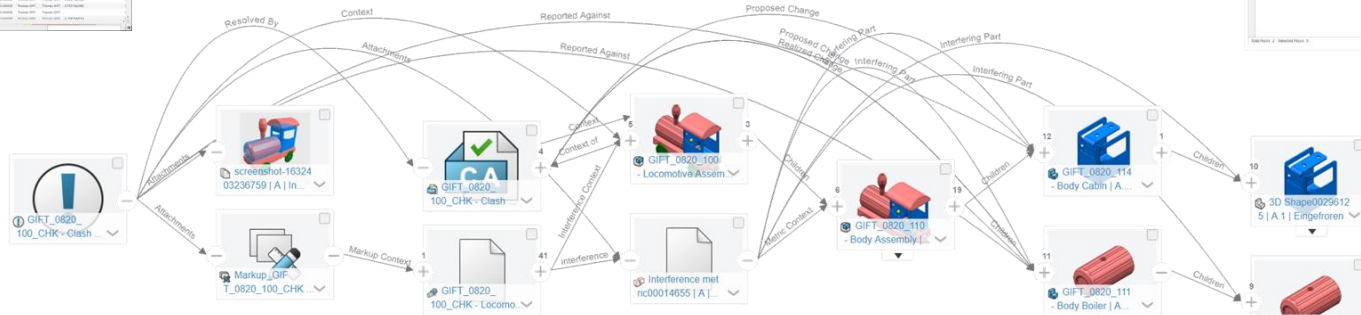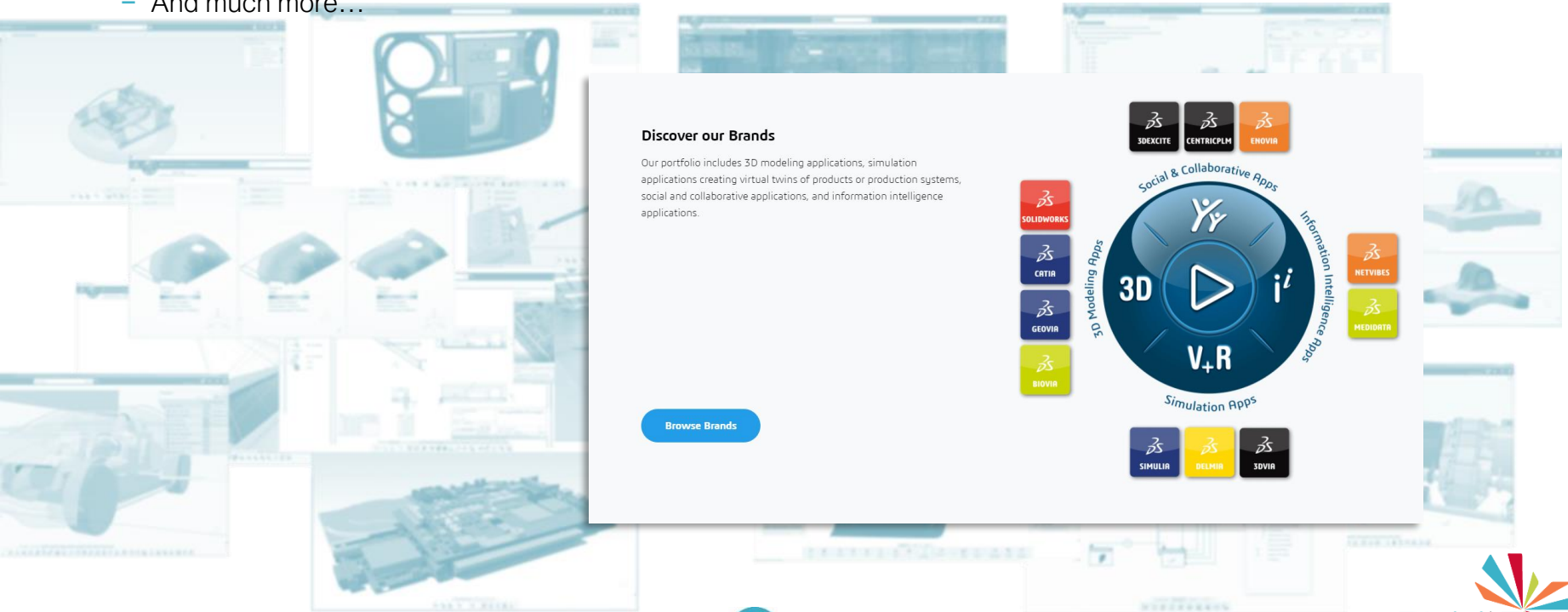

initiate a change

report as issue
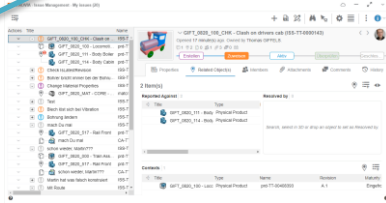
communicate by markup

identify a clash

setup review meetings
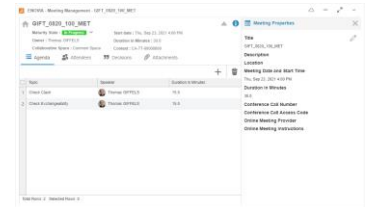
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3D as the Universal Language of Engineering

Integrate and involve instead of provide

- Use additional functionalities of 3DEXPERIENCE…
  - And much more…

PLMIF
Innovation Forum

SHAPING THE FUTURE OF PRODUCT CREATION

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