

EO-Number M000-2000 289 0.000



Start Query

- STD
 - HYD
 - ELEC
 - Large
 - Other
 - Static
 - Dynamic
 - Accentuate
 - Identify
- Visualization Effects

Info ?
Invert Help



JT meets 3Dx

JT Day 2023

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History

Due to CAD Migration from VPM / 3dcom to V6R2013 it was needed to compare source and target data

Due to VPM Multisite conflicts a comparison of all local sites to a central site was needed

This result in a custom tool (Enovia Navigator) in 2013 to access all Databases to monitor data migration and support users on data preparation.

In 2003 i had the opportunity to see how Daimler Truck is working with JT. Since Dassault file formats are closed source we had no possibility to read their content directly so we bought the first 3DEvolution licenses for some kind of test drive.

After the data migration ended in 2018 we had a new issue to solve:

Dassault discontinued their 3DLive product with no new product which was in used in our assembly line.

This leads to the usage of Enovia Navigator for Metadata and jt2go for 3D visualization

Starting with a self designed JT reader we joined JT Open programme to have access to official API to load data faster.

Since 2020 we embedded 3D Visualization inside the tool, reconverted all data with 3 LOD (to be able to load full machines on office laptops) and renamed the tool to 3DNavigator.

To optimize licence costs 3DN is used for 3dxml export for Catia Composer, general Step and PLMXML/jt Data Exchange and most metadata export for cost calculation, quality and release department.

Overview

Custom 3D Viewer for all departments – 3DNavigator

→ Used for Viewing, Data exchange, Metadata Reports, frozen Geometry Exports, CGI Preparation, Manufacturing 3D

Export Process

→ Export all 3D Single Parts (3D Representations) on every Save operation (no Checkin/out at Claas)

3DX Data Analysis

→ Data Analysis for 3Dx internal cgr Conversions, Large Structure and Loop Analysis on a daily basis

Conversion

→ Convert to JT

All Export and Conversion jobs store core Data in specific DB, in case of JT also Bbox, Surface, Volume

All Files are on central netapp

Files needed by endusers get downloaded to their local cache

Export

Data Source



Data DB



Export Layer

3DXML with Authoring STEP AP213 CGR Light 3DRep

Convert Layer

JT Tessellation only (3 LOD) JT Brep 3DNOoffline (on demand or by customer order)

Export Formats

3DXML with Authoring

- Base for JT Conversion
- 3DRep Extract to prepare custom 3DXML for Review creation

STEP

- In case of electrical/weld geometry converter might create issues s Step gets base for Conversion
- 3DNavigator can create new Step files (one file or assembly mode) based on given single parts

CGR Light

- Used in 3Dx for explore layer visualization but get sometimes converted wrong by 3dx resulting in nothing shown
- Using analysis data can show design issues or 3dx conversion issues

Conversion Formats

JT Tessellation only

- Save bandwidth by skipping brep portion
- 3 LOD, close to perfect, medium and very rough setting
- Several visualization modes in 3DNavigator allow to display a mixture of all lods plus Step or partially bboxes only

JT Brep

- Used for CGI Data Preparation
- Partially used with custom mixed mode plmxml pointing to Jt or Step depending on the use case

3DNOoffline

- Used for Data Preparation of full machines in production including specific SAP Data
- Allows to freeze certain development points for later reviews
- High performance format to load entire machine below 60 sec on office notebooks including all Claas specific data

Technologies used

JT Conversion

CoreTechnologie 3DEvolution

JT Loading:

JT Open API using custom c++ to communicate with 3DN

Step creation

Custom Step writer

3D Visualization API

Eyeshot 2022 for .net framework

3DNavigator

Visual Basic 😊

Cgr Loading

3dx internal js for webviewer

3Dx Database access

Central web services with oracle connection to query original data

Demo of 3DNavigator

Showcase of 3DNavigator to show usage of specific function (Workplace Timeline)

Maybe better a video than a live demo, depends on bandwidth of wifi