V6 Introduction and Overview

October 2010
Introduction to V6
What is V6? - Introduction

- V6 is a web based PLM solution.
- It comprises of three layers: Creation, Sharing and Experience.
- It realises six key values:
  
  1. Global collaborative innovation
  2. Lifelike experience
  3. Single PLM platform for IP management
  4. Online creation and collaboration
  5. Ready to use PLM business processes
  6. Lower cost of ownership

- The V6 portfolio consists of a number of products that are organised by domain and logical product groups based upon relevant applications. All products across these domains are built with the same technology and can be deployed together as part of a single V6 system or separately.
What is V6? – The Create Layer

CATIA V6

SIMULIA V6

DELMIA V6
What is V6? – The Share Layer

- ENOVIA V6 is divided into four major domains
- 102 Products (R2010) comprise the entire ENOVIA portfolio

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What is V6? – The Experience Layer
Product Support / EOL Road Map

- V5R1
- V5R19
- V5RX
- EOD: End-of-Development
- EOS: End-of-Support
- EOL: End-of-Life
- EOD: Not Planned
- EOS: Not Planned
- EOL: Not Planned

New V5 Releases & Service Packs

Transition

- CATIA V4: 2001
- ENOVIA VPM V4

Time

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V6 Product Naming and Lifecycle Overview

26 Months

"BETA Program"

Program Services
20 Months

Extended Support Fee
Maximum 12 months

Pre-GA Deliveries Corrective Maintenance Delivery

2009

V6R2010 GA

2010

V6R2010x GA

2011

4 Months
V6R2010 Deployment & Testing

10 Months
V6R2010 Production use
V5/V6 Equivalence - From V5 CATPart & CATProduct to V6
Technical Highlights of CATIA V6 – Data Type

Documents Migrated in V6
- CATPart, CATProduct, CATDrawing, CATAnalysis, CATMaterial, Catalog, Non CATIA Document such as xls file for Design table, jpg ..

Data Migrated in V6
- All features in the CATPart (Part Design, GSD, Composite, Sheet Metal, etc.)
- Product Structure (References Product, Instances, Publication..)
- Contextual links, References links, Assembly constraints
- Material; Drawing, 2DLayout, FT&A
- Knowledge Parameter, Formulas, Design table, Rules, Check
- Other application data: FSK, Fasteners (ABF), DMU Data, Rendering, KIN, Analysis, Electrical, Tubing Machining.

All data created by V5 applications, that have an equivalent in V6, are migrated.
Technical Highlights of CATIA V6 – Data Mapping

The following picture shows a V5 structure and its equivalent V6 Structure.

- V5 Structure
- Equivalent-V6 Structure

- Product
- 3D Part

‘Part1_Representation’ is a 3D Shape Representation.
Data Mapping

V5

- Part
- Shape
- Component
- Applications
- Product
- Drawing
- Cgr
- PPR tree
- Process
- Analysis

V6

- Product
- 3D Shape
- Technological Rep.
- Drawing
- PPR Context
- Process
- Simulation
- Context
- Specifications
- Results
- Animation

Originated from DS Slide
## Impact of Migration CATIA V5 File to CATIA V6

<table>
<thead>
<tr>
<th>Migration type</th>
<th>V5</th>
<th>V6</th>
<th>V5/V6 Migration Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometric modeler</td>
<td></td>
<td>identical</td>
<td></td>
</tr>
<tr>
<td>Part Specifications</td>
<td></td>
<td>identical</td>
<td></td>
</tr>
<tr>
<td>Product structure</td>
<td>Assembly documents</td>
<td>V6 Product Structure</td>
<td></td>
</tr>
<tr>
<td>Link infrastructure</td>
<td>Multiple link formats</td>
<td>Unified, robust link model</td>
<td></td>
</tr>
<tr>
<td>Workbenches &amp; processes</td>
<td></td>
<td>Enhanced</td>
<td></td>
</tr>
</tbody>
</table>
Simple Comparison for assembly file

Links
Knowledge Rep (parameters, relations, Design Table)
<table>
<thead>
<tr>
<th>V5</th>
<th>V6</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRC (Product Root Class)</td>
<td>REMOVED</td>
</tr>
<tr>
<td>Part Reference</td>
<td>Product</td>
</tr>
<tr>
<td>Documents (most of <em>.CAT</em> files)</td>
<td>Representations (several types: 3D Shape,</td>
</tr>
<tr>
<td></td>
<td>Drawing, cgr, V4 model)</td>
</tr>
<tr>
<td>Versioning (Parts) / Revisioning (documents)</td>
<td>Versioning Products / Representations (no more</td>
</tr>
<tr>
<td></td>
<td>revisioning)</td>
</tr>
<tr>
<td>Ref. – Instance links</td>
<td>Contextual link</td>
</tr>
<tr>
<td>Constraints</td>
<td>Oriented Constraints / Contextual constraints</td>
</tr>
<tr>
<td>Technological Package</td>
<td>Technological Representation</td>
</tr>
<tr>
<td>.cgr</td>
<td>Navigation Representation («NavRep»)</td>
</tr>
<tr>
<td>Visu mode (cgr)</td>
<td>No more available</td>
</tr>
<tr>
<td>Product mode (cgr + proxies)</td>
<td>Visu mode</td>
</tr>
<tr>
<td>B-Rep mode</td>
<td>Linkable mode</td>
</tr>
<tr>
<td>Design mode</td>
<td>Edit mode</td>
</tr>
<tr>
<td>VPM Navigator</td>
<td>VPM Navigator</td>
</tr>
<tr>
<td>Authoring Window / Product Structure</td>
<td>VPM Editor</td>
</tr>
</tbody>
</table>
Technical Highlights of CATIA V6 – Concurrent Engineering at the Assembly Level

- In order to facilitate concurrent Engineering
  - By default modifications are possible without lock, providing that the security rules are met
  - Locks may be put on by Users to reserve objects
  - V6 has been design to allow the scenarios where multiple Users can access sub products simultaneously without locking the top product parent.
V6 macros are stored in the database
V6 integrates VSTA, meaning that C# and VB.NET are supported scripting languages along with VBA and VBScript as before in V5.

- The VB.NET capability supports and justifies the current OSCAR re-structuring activity and choice of language.

The V5 document-centric model is replaced with a Reference-instance model relying on a database

- This means that all applications that reference V5 documents, CATProducts, CATParts, CATDrawings, etc, plus “tree-walk” routines will require re-coding since the way to access root automation objects has changed
  - Use the editor instead of document
  - Query PLM Objects instead of opening a file

- Note that the APIs used within a document are compatible in V6
V5 to V6 Comparison – Importing V5 Macros into V6

Documents
- Use the File Based Data Import (FBDI) method to import V5 documents into V6
- Macros embedded into V5 documents are imported by the FBDI as a new V6 macro library
- Macros embedded into Knowledgeware features are kept
- Documents dedicated to store macros are ignored: .CATScript, .catvbs, .catvba

Macro Libraries
- Manually import V5 macro files into V6 macro library
  - .catvba can be exported as .bas files and re-imported into a V6 VBA macro
Technical Highlights of CATIA V6 – The Compass and Robot

- North
  - North Quadrant: People

- West
  - West Quadrant: Shape and Representation

- South
  - South Quadrant: Structure

- East
  - East Quadrant: Links and Knowledge

Components:
- Privileged plane
- Manipulation handle

Attributes:
- Representation - Shape
- Maturity info.

Modification:
- Less than 1 hour ago
- Less than 1 day ago
- Less than 7 days ago
- Less than 30 days ago
- Older
Technical Highlights of CATIA V6 – The Compass

Quadrants examples in 3DLive
Technical Highlights of CATIA V6 – User Interface Bar (1 of 2)

The bar serves as a quick access tool for:

1. Changing of workbench
2. Searching data
3. Examining the links and the impacts of modifications
4. Collaborating with people
5. Propagating the modifications to the database
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Technical Highlights of CATIA V6 – Navigation and Editing Layers

• All the information, stored in the database, can be browsed very efficient and comfortable by the Navigation or “Silver” Layer”

• The Editing or “Blue” Layer enables work on native CATIA V6 data
Technical Highlights of CATIA V6 – Selective Loading

- When working in Assemblies, only the required data can be loaded into the “Blue” Layer.

- If additional 3D Parts / Objects are required to be loaded into the “Blue” Layer, they can simply be selected in the “Silver Layer” and loaded into the “Blue” Layer as well.
Technical Highlights of CATIA V6 – 3D Indexing

- Objects can be filtered and loaded by a new and powerful 3D Indexing Technology - based on a zone query.
Technical Highlights of CATIA V6 – Relational Design

- Dependencies between objects are also stored into the database. Because of that, it is possible to follow the link
  - for each single object (plane, point ...), based on publications
  - in both directions
- The function “SMART OPEN” checks which linked objects are not up to date with the Part / Product intended to load. Only the objects which are required for an update will be loaded automatically into the “Blue” Layer
Technical Highlights of CATIA V6 – Drawing Management

• When creating / opening an Assembly Drawing, only the required objects will be loaded from the database.
  • This kind of granularity is not possible with a Windows File System based application, because the whole Assembly needs to be loaded to retrieve the required information.
Technical Highlights of CATIA V6 – Concurrent Engineering

- Because of the transparent product structure into the database, it is possible, that different users can access and work on the SAME product structure at the SAME time - this is real Concurrent Engineering
Better and better: it’s our way of life.

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