

# How to Get Started – Level 3 Model Based Definition

## Native Model CAM- Disconnected Enterprise

The chart below defines level 3

Design Data (CAD)	Technical Data Package	Change and Configuration Management Data	External and internal Manufacturing Data Exchange	Quality Requirements, Planning, and Inspection Code Generation	Enterprise Collaboration and data Exchange
<p>-2D drawing creation &amp; information content.</p> <ul style="list-style-type: none"> <li>- Presents geometry and part annotations from the model. No information defined in the 2D drawing</li> </ul> <p>3D model creation &amp; information content</p> <ul style="list-style-type: none"> <li>- Defines all part geometry</li> <li>- Defines all part annotations (including notes, dimensions, PMI, etc.)</li> </ul> <p>Model/drawing associatively</p> <ul style="list-style-type: none"> <li>- 2D drawings are an output of the 3D model and verified (2D drawings or the exception)</li> </ul> <p>Supplementary Data (Notes, Parameters, non-geometric data)</p> <ul style="list-style-type: none"> <li>- Notes are defines in the 3D model</li> </ul> <p>Checking &amp; Model Quality</p> <ul style="list-style-type: none"> <li>- 3D model geometry and part annotations validated not to define any annotation content</li> </ul> <p>BOM</p> <ul style="list-style-type: none"> <li>- eBOM managed in PLM</li> <li>- eBOM linked to CAD models</li> </ul>	<p>-Collection of elements into TD</p> <ul style="list-style-type: none"> <li>- Structured, manual collection of digital TDP data</li> </ul> <p>-Management of TDP</p> <ul style="list-style-type: none"> <li>- Manual digital delivery of TDP data</li> </ul>	<p>-Release and change processes</p> <ul style="list-style-type: none"> <li>- Model Based</li> </ul> <p>-Element Management (supplementary data, 3Dmodels/Drawing)</p> <ul style="list-style-type: none"> <li>- 3D model is managed</li> <li>- 2D drawing created by exception and managed in sync with 3D model</li> </ul> <p>-Authority</p> <ul style="list-style-type: none"> <li>- Geometric definition is defined by the B-REP if the 3D and 2D drawing defines the PMI- Both are considered authoritative for their respective data</li> </ul>	<p>-Process for providing PMI Data to Mfg and inspection and any other groups that may need PMI</p> <ul style="list-style-type: none"> <li>- Native 3D CAD model, 3D lightweight viewable and eBOM manually sent to mfg suppliers both internal and external (also support neutral file exchange)</li> </ul> <p>-Mfg Process Generation (Process Plans &amp; Work instructions)</p> <ul style="list-style-type: none"> <li>- Exported 3D neutral models used to generate process plans and work instructions</li> </ul> <p>-Mfg Code Generation</p> <ul style="list-style-type: none"> <li>- Controlled within PLM System and alerts downstream users of changes to the code and product definition.</li> </ul> <p>-Mfg Data Management (Process plans &amp; work instructions)</p> <ul style="list-style-type: none"> <li>- Managed in separate mfg database</li> </ul> <p>-Mfg Process Associatively (Process Plans &amp; Work Instructions, tooling)</p> <ul style="list-style-type: none"> <li>- No associatively to design models</li> </ul>	<p>-Quality/Inspection Code Generation</p> <ul style="list-style-type: none"> <li>- Use copies of native 3D design models to generate NC/CMM programs</li> </ul> <p>-Quality Requirement Data Management</p> <ul style="list-style-type: none"> <li>- Managed in separate database outside of PLM</li> </ul>	<p>-Design Data provided to internal enterprise</p> <ul style="list-style-type: none"> <li>- Differentiated user access to all model data based on user roles within the organization</li> </ul> <p>-Design Data use by the internal enterprise</p> <ul style="list-style-type: none"> <li>- Product data inputs are re-mastered or exported 3D neutral model used</li> </ul> <p>-Design Data provided to external Design Authority</p> <ul style="list-style-type: none"> <li>- Native 3D CAD model, 3D lightweight viewable and eBOM sent to external enterprise using automated methods.</li> </ul>

This capability level is the first to consider the 3D model are combined with the drawing as the master source of the product definition. At this level the drawings are considered exceptions and an output of the model but may contain the PMI while the model is the geometric definition. It also utilizes Product Lifecycle Management tools and the use of a 3D lightweight viewable for the deliverable. This viewable is a CAD neutral file that can deliver the full product definition throughout the enterprise. They can replace the drawing. This level substantially reduces errors and time over the other levels due to reducing the reliance on drawings.

Summary:

- 3D Models share authority with the drawing as the master
- Drawings are created by exception
- The model is leverage throughout the lifecycle
- The TDP is manually created
- There is little or no connectivity with the extended enterprise
- Internal use of Product Lifecycle Management tools

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