How to Get Started – Level 5 Model Based Definition

Integrated Manufacturing- Integrated Internal Enterprise

The chart below defines the Model Based Enterprise Capability Level 5:

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
-2D drawing creation & information content. - Presents geometry and part annotations from the model. No information defined in the 2D drawing 3D model creation & information content - Defines all part geometry Defines all part annotations (including notes, dimensions, PMI, etc.) Model/drawing associatively - 2D drawings are an output of the 3D model and verified (2D drawings or the exception) Supplementary Data (Notes, Parameters, non-geometric data) - Notes are defined in a managed database Checking & Model Quality - 3D Model geometry and part annotations validated-semi automation using PLM based tools. 2D drawing validated not to define any annotation content (semi automation using discrete tools) BOM - eBOM managed in PLM eBOM linked to CAD models	-Collection of elements into TD - Automation collection of digital TDP data by PLM -Management of TDP - Manual digital delivery of TDP data	-Release and change processes - Model Based -Element Management (supplementary data, 3Dmodels/Drawing) - 3D model is managed 2D drawing created by exception and managed in sync with 3D model -Authority - 3D model	-Process for providing PMI Data to Mfg and inspection and any other groups that may need PMI - Native 3D CAD model, 3D lightweight viewable and eBOM manually sent to mfg suppliers both internal and external (also support neutral file exchange) -Mfg Process Generation (Process Plans & Work instructions) - Native 3D CAD models used to generate process plans and work instructions -Mfg Code Generation - Association to model and controlled within PLM system -Mfg Data Management (Process plans & work instructions) - Managed in the same PLM system as design models and all manufacturing data is derived from models. -Mfg Process Associatively (Process Plans & Work Instructions, tooling) - Fully associative to design models	-Quality/Inspection Code Generation - Use native 3D design models to generate NC/CMM programs (Parallel Process) -Quality Requirement Data Management - Fully managed in PLM	-Design Data provided to internal enterprise - Differentiated access to all model data based on user roles within the organization. The differential access to data will also be segregated with respect to attribute data within the model or it's associated part -Design Data use by the internal enterprise - Native 3D CAD model, 3D lightweight viewable leveraged by the internal enterprise -Design Data provided to external Design Authority - Native 3D CAD model, 3D External PLM access to native 3D CAD model, 3D lightweight viewable and eBOM. Access to native models, Neutral models, and metadata decided by the type of relationship with external design authority.

This capability is the first to be truly a Model Based Enterprise. It continues to build upon the previous levels but adds enterprise connectivity. By doing so everyone in the enterprise has up to date access to the product definition and the TDP can be automatically configured.

Summary:

- 3D Models are the master
- Drawings are created by exception
- The model and its meta data are now available across the extended enterprise
- The TDP configuration is automated
- There is full connectivity with the extended enterprise
- Internal and external use of Product Lifecycle Management tools