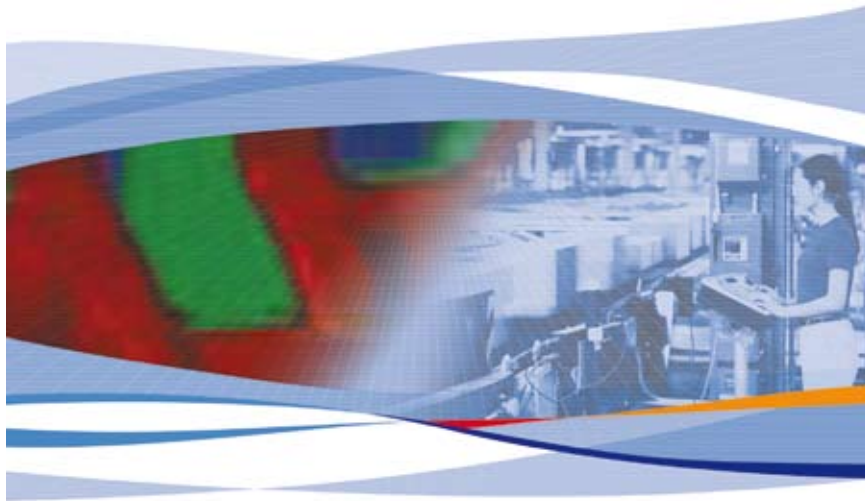


# Powertrain Solutions



Powertrain system planning and development typically focuses on design quality improvement, cycle time reduction, cost effectiveness and workforce efficiency.

With our Powertrain Solution, customers benefit from industry proven methods to help eliminate unexpected bottlenecks and improve return on investment.

### Trends addressed by the Powertrain Solution

- Efficient representation of machined-in assembly
- Digital verification reducing the need for prototypes
- Powertrain 3D Master
- Associative design of Casting and Forging Tools
- Collaboration amongst different manufacturers (hybrid engines)
- Information on engine management systems in PLM

- In Vehicle Software (IVS) requires a robust method of configuration management
- Accelerated Powertrain development through model based calibrations requires more analysis
- 'Intelligent' features require embedded knowledge and high-order data management capabilities
- Additional analysis work carried out by engineers.

### *A proven methodology*

CATIA Powertrain Solution is integrated and centralized around engineering design which encompasses complete product development.

- Promote innovation by evaluating more design alternatives faster
- Re-use knowledge from previous projects
- Enhance collaboration between engineering disciplines
- Virtual manufacturing integration to reduce manufacturing costs
- Product simulation integration at each phase of development.

***From design to engineering, the CATIA Powertrain Solution enables you to manage continuous business transformation.***



## *Using industry proven methods for Powertrain design.*

### **Knowledge Based Engineering (KBE)**

Integration of KBE tools into CATIA has eliminated the need for external applications. Out of the box CATIA functionality allows for KBE tools to be integrated in CATIA. CAA based external applications are costly to maintain but using knowledgware and VB scripting requires little to no maintenance.

### **Meshing**

Integration of in-process meshing and some analysis reduces the need to import and export data. Importing and exporting data to a dedicated meshing tool is time consuming and often requires rework of the part to be able to perform analysis. Using CATIA meshing allows the mesh to be associative with the part; when the part changes so does the mesh resulting in less rework to prepare the data and faster analysis results.

### **Templates**

Usage of template products empowers customers to build company knowledge directly into their data and makes for easy reuse of the models.

Templates help to:

- Reduce initial part set up time
- Ensure the parts contain the right IP required with integrated rules and checks
- Provide a common format for part set up which leads to more robust and dynamic models

### **Consolidation**

Consolidation of proven methods - KBE, in process, CATIA meshing and templates - creates intelligent reusable solutions for Powertrain development.

### **Phased Deployment**

Phased deployment is critical for user acceptance and understanding. This deployment includes:

- Establishing a sound process using associativity with the intent of moving towards process automation
- Introducing templates at the feature level and building more complexity as skill level and confidence increases
- Integrating meshing and analysis tools
- Extending the process to the systems level for full integration.

### **For more information**

Call 1-800-395-3339 or  
e-mail [cadcam@us.ibm.com](mailto:cadcam@us.ibm.com)

### **IBM Corporation**

Software Group  
Route 100  
Somers  
NY 10589  
USA

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