



Get Early Visibility into Manufacturability & Product Cost



Today organizations spend millions of dollars over engineering change orders (ECO). A single ECO can cost upto \$30,000.

DFMPro, an easy to use CAD integrated Design for Manufacturing (DFM) software, identifies & provides recommendations to resolve potential downstream manufacturing issues.

Helps reduce expensive and time-consuming design iterations resulting into faster development of high-quality products.



Typical Business Challenges

Overwhelming engineering change orders (ECO / ECN)

Product cost escalations and depleting margins

Product launch delays

Dispersed organization knowledge



DFMPro

Capture design issues early and reduce engineering rework

Understand opportunities for cost reduction right at design stage and save cost

Avoid late stage engineering changes and time-consuming rework

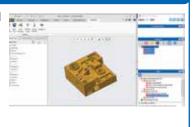
Capture best practices and bring in standardization in design review process



Easy and Powerful DFM Software to Drive Measurable Results Fast

Automates the DFM/DFX Review Process

- DFMPro automates and formalizes the design review process
- Seamlessly integrated inside PTC CREO Parametric™, Siemens NX™ and SOLIDWORKS®



Rule Manager

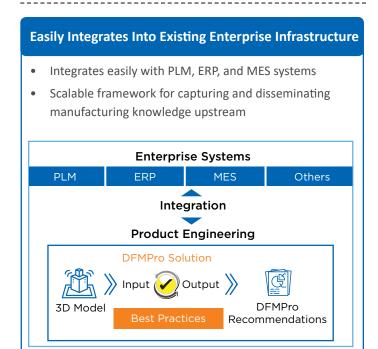
- Select and configure organization specific guidelines as design rules
- Bring in standardization in **Design Review Process**



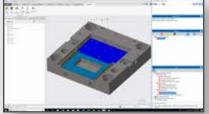
Enables Best Practice Knowledge Capture and Dissemination

- Customizable framework to capture in-house best practices, tribal knowledge and industry standards
- Facilitates continuous design improvements and knowledge retention of retiring workforce





> DFMPro modules support common manufacturing processes



Machining



Sheet Metal



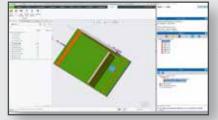
Injection Molding



Assembly



Die casting



And More...

Welding

> DFX Platform

A scalable, extensible and flexible DFX framework that has collection of application, processes and technologies that are coupled with customization and support services based on customer needs.





DFX Enterprise Platform

DFX Enterprise platform to drive design quality, reduce product cost, bring in traceability and improve time to market



Evaluate design choices based on material, features, geometry & manufacturing regions

Identify expensive design features impacting cost due to manufacturability and get recommendations for cost reduction

Track the cost as designs are getting created

DFMPro cost add-on provides early cost visibility to design engineers right from when designs are getting created.



Enabling organizations to develop more collaborative and data driven culture



Capture the data generated by designers



Visualize the data with predefined plots



Analyze and take action



Plan effectively with supporting data



Monitor the process with live data



Identify and reduce waste

DFX Analytics Provides Value Across the Enterprise

Ensuring DFX Best Practices



Improves Effectiveness of DFX Reviews



Track DFX Issues for Program Success



Ensure Success of DFX Initiatives





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Celestica expertise is in design and engineering, electronics manufacturing and supply chain management services. Our suite of solutions spans the entire product lifecycle- from design, through to delivery and after market support. Geometric DFX (rights reserved logo) solution helped us to improve productivity by almost 12% and helped us to identify quality issues earlier right during design phase.

Frank Huang

ME Director, Celestica

DFMPro helps our designers quickly identify the issues which are otherwise dicult to capture at the design stage. These issues include things like mold wall thickness and undercuts in plastic parts, incorrect bends in sheet metal parts which cause problems downstream. This tool helps our design teams understand the processes involved in manufacturing. In other words, helps them understand how to Design for Manufacturing. This leads to a signicant reduction in design iterations due to issues with manufacturability and a reduction in design checking time. Our aim is to get designs right the rst time and this tool helps us achieve this goal.

SK Pradeep Kumar

Director, E&T Capabilities

George Angelov

Director, Global Prototyping & Planning, Whirpool

Now 3D design data of our products are checked by the DFMPro in the design process. Our conventional checking process by designers was highly time-consuming. In contrast, the DFMPro checking is truly fast and reliable in searching the parts to be redesigned or corrected, and the checking criteria ca be customized for the appropriate checking of our own products. As a result, we successfully reduced 75% of the checking time of the wall thickness to enhance the eciency and eectiveness of our design improvement before the release of drawings."

Kaoru Mizoroki

Group Manager, Toshiba Corporation

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Hello, I'm from HCL's Engineering and R&D Services. We enable technology led organizations to go to market with innovative products and solutions. We partner with our customers in building world class products and creating associated solution delivery ecosystems to help bring market leadership. We develop engineering products, solutions and platforms across Aerospace and Defense, Automotive, Consumer Electronics, Software, Online, Industrial Manufacturing, Medical Devices, Networking & Telecom, Office Automation, Semiconductor and Servers & Storage for our customers.

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