

How it Works: Instant Notification of Design Changes to the Shop Floor

by Michael Glessner, Thomas Guedea and Nick Ward

In [The Factory of the Future: A Day in the Life of a Plant Manager in 2020](#) readers explored several tangible, factory floor benefits that William and the team at Stuart Sprockets were able to achieve by embracing Smart Operations concepts and the Digital Twin. As part of an ongoing series, we will now provide details into how the technology works to make these benefits a reality today.

In the previous piece, a last-minute part geometry change in William's factory is managed seamlessly as a digital twin of the new part version flows instantly to the floor.

How Does it Work?

An update to an existing manufacturing part is released by engineering in the core product data system (typically a Product Lifecycle Management system such as PTC Windchill). In accordance with Model Based Enterprise principles, the change includes a new part revision along with a digital twin of the part—a 3D model that fully defines the part's new geometry. Through integration with the shop floor management system, when the technician selects the part, a notification alerts him of a new revision, and the old version is flagged as obsolete. The shop floor user is able to view the details of the change, and access the newly released part geometry file. The model is then used as an input to generate a new CNC (Computer Numerical Control) program, which is used to control the manufacturing equipment and generate a quality and up to date part.

Stay tuned to discover how the various digital technologies behind William's smart, connected factory floor work to help the Stuart Sprocket team Succeed.

1. Hands Free Visualization of Shop

2. Instant Notification of Design



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