CADIQ verifies and validates CAD models for Long-Term Archival & Retention (LOTAR)

CADIQ

If the model is the master, then downstream modifications must be reconciled with the product design model. When you integrate all phases of the product lifecycle, then the design model must be re-usable. CADIQ, a vendor-neutral application, identifies model-based design (MBD) data quality issues that impact downstream re-use for tooling, simulation, and data exchange.

CADIQ compares geometry, assembly structure, design features, and product manufacturing information among related models to identify significant differences. These are summarized in statistical reports and visualized with interactive 3D graphics. When design problems are diagnosed on the manufacturing floor, CADIQ can effectively communicate them to engineering using 3D PDF.

Engineers responsible for long-term data archival and retention (LOTAR) use CADIQ to validate neutral file conversions of 3D CAD models. If needed, additional data can be added to the archive, enabling comprehensive validation of the retrieved model in a future CAD system.

Challenge

MTU Aero Engines, a German aircraft engine manufacturer, develops, manufactures, and provides service support for military and civil aircraft engines.
In the aerospace and defense industry, products have lifecycles exceeding 50 years. CAD model data archival and retrieval (LOTAR) solutions are essential for a company whose products have a long life cycle.

Solution

ITI supported a twelve-month evaluation and testing phase in support of MTU's LOTAR initiative. CADIQ was selected as the preferred solution for the validation of MTU's NX and STEP data since it was easy to integrate and supported:
• LOTAR verification/validation checks
• Clouds of points (from NX to STEP)
• Use of different CAD kernels
• Validation of JT files

Result

The fully automatic CADIQ solution was integrated into MTU's Siemens Teamcenter installation. CADIQ allows for easy viewing and reporting via 3D PDFs, and provides statistics of validation that are stored in MTU's QA database.

CADIQ achieved top results in MTU's tool evaluation and was easy to integrate into their Teamcenter environment.

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