Automating Complex Electrical System Analysis and Reports in an Increasingly Regulated Environment

Electrical complexity in aerospace continues to increase. Delivering aircraft that comply with all standards and regulations on time is getting more difficult as electrification grows throughout the modern aircraft. The risk of achieving timely compliance for these electrical designs has increased in line with electrical complexity.

Compliance is now even more costly as manual and disconnected approaches are employed to analyze and evaluate electrical systems. Current methods for verification and analysis rely on fragmented data and are typically conducted manually, using drawings and spreadsheets after major electrical design work has been completed. Uncovering problems late in the program forces costly design iterations. It also places critical milestones, such as Customer Acceptance and Type Certification (TC) at risk, which can significantly impact aircraft revenue.

New Capital Load Analyzer Reduces Electrical Compliance Risk

The new Siemens Capital™ Load Analyzer software eases the pain, frustration, and costs associated with aircraft electrical design compliance and certification. Capital Load Analyzer is one of the industry's first electrical system technologies to leverage automation and digital data continuity to facilitate regulatory compliance for electrical load analysis.

This new tool draws upon Capital’s electrical digital twin to perform accurate and rapid load analysis on the current version of the electrical system. It predicts power demand for the aircraft’s entire electrical system as each user designs it, to ensure sufficient power for each phase of flight, even emergency conditions. It then automatically reports these analysis results in the user’s preferred format, accelerating the creation of the compliance evidence you need.
Capital Load Analyzer:

- Provides a platform electrical systems design and integration environment that models, manages, analyzes, and reports electrical load characteristics for compliance on all platform configurations.

- Supports built-in, constraint-based design guides to enable engineers to design in regulatory compliance from the very beginning: comply-by-construction.

- Includes rule-based checking, and a variety of sophisticated analysis capabilities, to ensure accurate and complete verification by interrogating the electrical digital twin of each platform configuration.

- Automates report generation, sourcing analysis results and variant configurations directly from the electrical digital twin.

Data Management for Comprehensive Analysis and Reporting

Capital Load Analyzer automatically extracts all electrical load analysis data into the user's own reporting template for easy and efficient report generation. This technology pulls data directly from the electrical design so the user can see the impact of design changes at any time and at any stage of the design process. The ability to quickly generate real-time reports enables users to monitor design tasks and identify potential issues early in the design process, thereby mitigating program risk. The Capital Load Analyzer product reports electrical load results for each design configuration and variant, even for emergency conditions.

Applying Modern Methods to Mitigate Electrical Compliance Risk

Capital Load Analyzer allows platform development teams to reduce compliance risk by performing accurate, rapid, and continuous load analysis and reporting, as the electrical system evolves. This helps to ensure all aspects of the electrical design meet regulatory requirements throughout the entire development life cycle and accelerates the demonstration of regulatory compliance.

With the adoption of this new technology from Siemens, users are now able to automate and manage this important compliance data throughout all platform configurations. Users also reduce program risk while meeting certification and customer acceptance milestones. Finally, teams avoid costly design iterations, enabling program leaders and their team members to deliver on their commitments.

For more information on how Capital Load Analyzer and the entire suite of Capital tools serve the Aerospace and Military industries, please visit this [website](http://www.mentor.com/products/electrical-design-software/capital).

For the latest information, visit: [www.mentor.com/products/electrical-design-software/capital](http://www.mentor.com/products/electrical-design-software/capital)

©2019 Mentor Graphics Corporation, all rights reserved. This document contains information that is proprietary to Mentor Graphics Corporation and may be duplicated in whole or in part by the original recipient for internal business purposes only, provided that this entire notice appears in all copies. In accepting this document, the recipient agrees to make every reasonable effort to prevent unauthorized use of this information. All trademarks mentioned in this document are the trademarks of their respective owners.