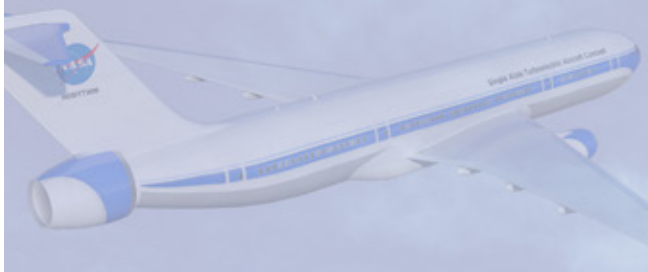


National Aeronautics and Space Administration

NASA

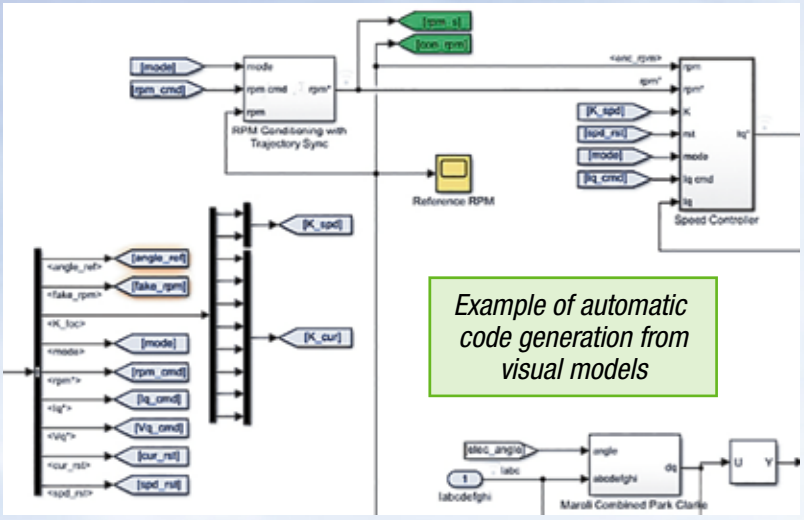
ELECTRIFIED AIRCRAFT PROPULSION (EAP)

Motor Control Software: Simulating the Future

Simulating motor control software plays a key role in improving the design and testing of electrified aircraft concepts by creating a quicker and easier development process.

The Power of Simulation

Motor controllers send signals telling a motor to operate and spin, and the traditional process to build the software is long and tedious. By using a simulation environment to generate real-life hardware code, the development process can be significantly simplified and expedited.



Example of automatic code generation from visual models

BENEFITS OF CODE GENERATION:

- ✓ Shorter development time
- ✓ Easier to find and debug problems
- ✓ Increased accuracy and performance
- ✓ Easier to follow visual models

Taking Flight

Real-world application of motor control software and code generation has already proven successful in the High Lift Motor Controller (HLMC) being developed with NASA's X–57 aircraft. This demonstration of control software created in simulation will help streamline the process and can lead to more efficient implementation of software in future electrified aircraft projects.

X–57 Maxwell aircraft concept.

To learn more, visit https://www1.grc.nasa.gov/aeronautics/eap/technology/motor-controllers/.