

Model-based Development using AUTOSAR

Objective

Development of model-based development for Infotainment ECU for OEMs



Result

Formulated intricate Control Algorithms through MATLAB/Simulink, demonstrating a keen commitment to Model-Based Development for an Infotainment ECU. This ECU operates on both floating and fixed-point algorithms. Devised programs to validate Simulink designs, conducting Model-In-the-Loop (MIL) Validation. Ensured the generation of Autoscore, which produces optimized AutoSAR-compliant source code by leveraging Embedded Coder.

Challenges

Increasing complexity of models in MBD further challenges the system behavior during the verification and validation cycle, and in addition time consuming and resource intensive.

Solution Highlights

Engineered an Artificial Neural Network for a Convolutional Neural Network (CNN) Algorithm through a Python Script-based test automation framework. This framework not only facilitates test case and scenario visualization but also provides insights into the intricate Deep Learning Architecture.

Conducted comprehensive requirement gathering and analysis leveraging IBM DOORS. Ensured the development of architecture using Simulink/Stateflow for firmware development. Integrated and systematically implemented System-in-the-Loop (SIL) and integrated Talaria Blocks employing the Signal Processing Toolbox.