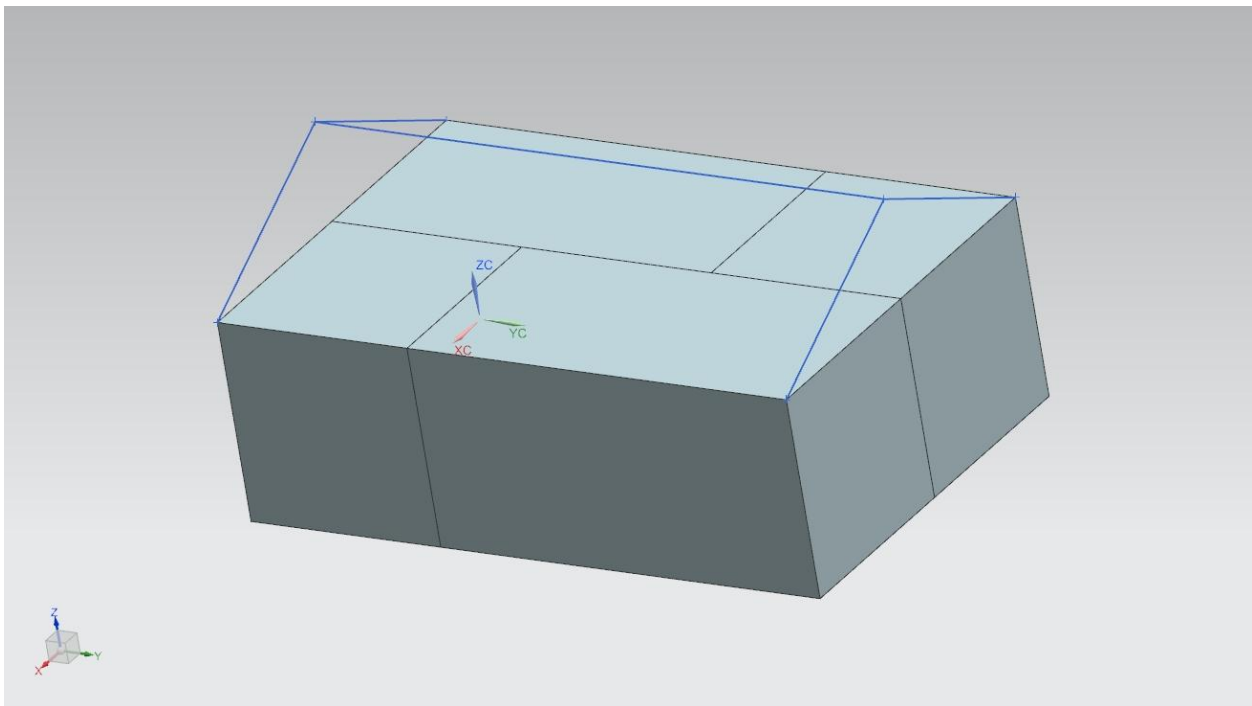


IoT SmartHome Part 5 Design, Simulation and System Architecture

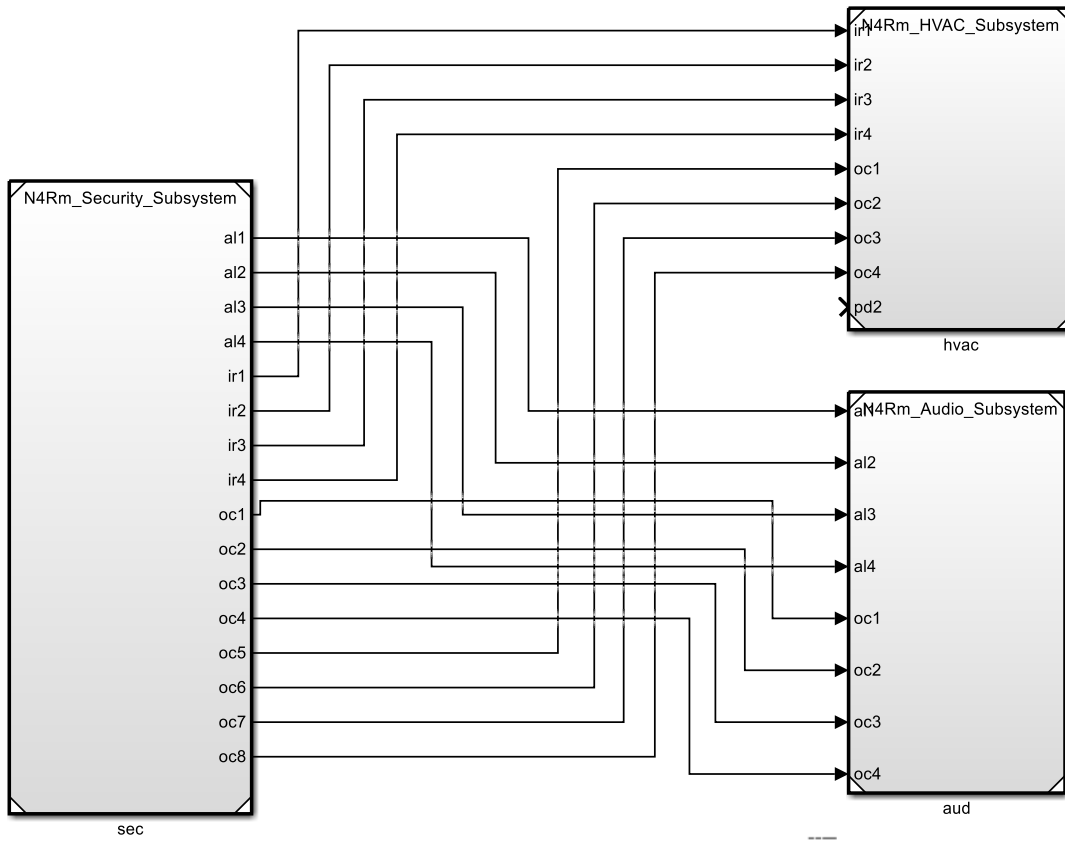
In this part, we look at two examples from the important domains of CAD and simulation. In the first, a CAD model was linked to structural blocks in the SysML model so that changes in the design can be transmitted to the SysML model and evaluated using existing SysML parametric analysis. In the second, the SysML model was used to generate a Simulink block structure, with a network of persistent connections that allow differencing and reconciliation as the models evolve.

In this series, we have attempted to show how SysML is an effective vehicle for IoT modeling and simulation, bringing the diverse perspectives of requirements, structure, behavior and parametrics into a common regime. We have also shown how new approaches to Model-Based Engineering, an “Internet-of-Tools”, allow those SysML models to be linked to databases, PLM, CAD and simulation tools to carry out important parts of the IoT engineering process.

The models shown in this description are now available for download in MagicDraw 18.0 SP5 ([download link](#)) and Enterprise Architect 12 ([download link](#)). InterCAX products ParaMagic, Solvea and Syndeia are not required to view the models, but would be needed for the model connection and solving operations described in the series.



CAD model of the SmartHome is connected to the SysML model for parametric analysis



Top-level Simulink SmartHome model generated from SysML model using Syndeia