



IBPSA Project 1

Modelica Buildings library

Michael Wetter

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Lawrence Berkeley National Laboratory

Current activities



Spawn of EnergyPlus

- First release expected in fall 2020 (as part of Modelica Buildings Library)
- Full installation package expected for fall 2021



District heating and cooling

- Template models for URBANopt (Modelica edition)



OpenBuildingControl

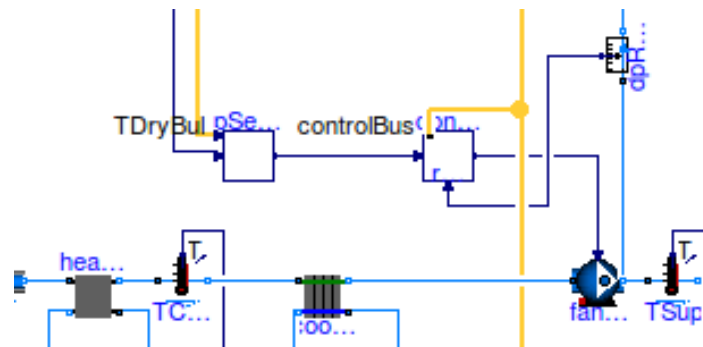
- Control description language CDL
- Started ASHRAE Standard 231P (CDL)
- Update ASHRAE Guideline 36 to official guideline
- Implement chiller plant sequences from ASHRAE RP 1711



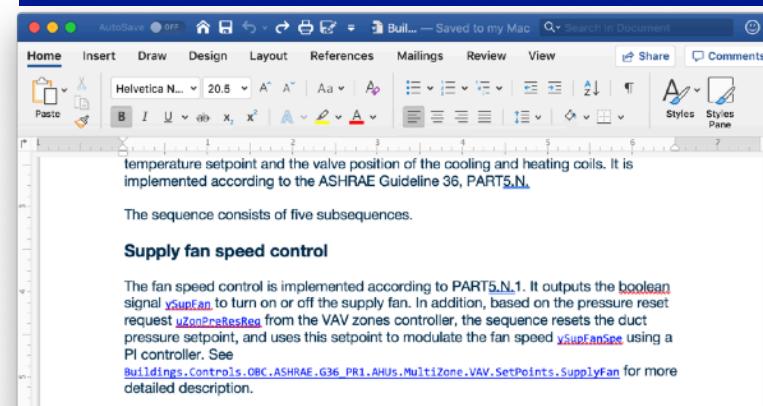
Export to BRICK

CDL control sequence

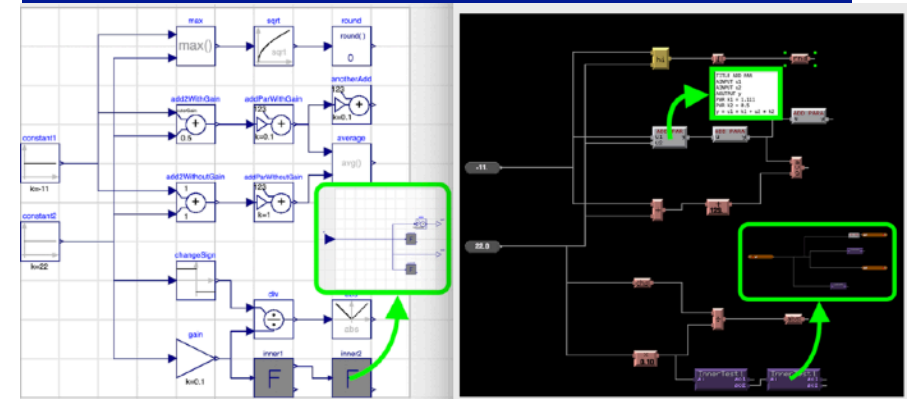
Energy simulation



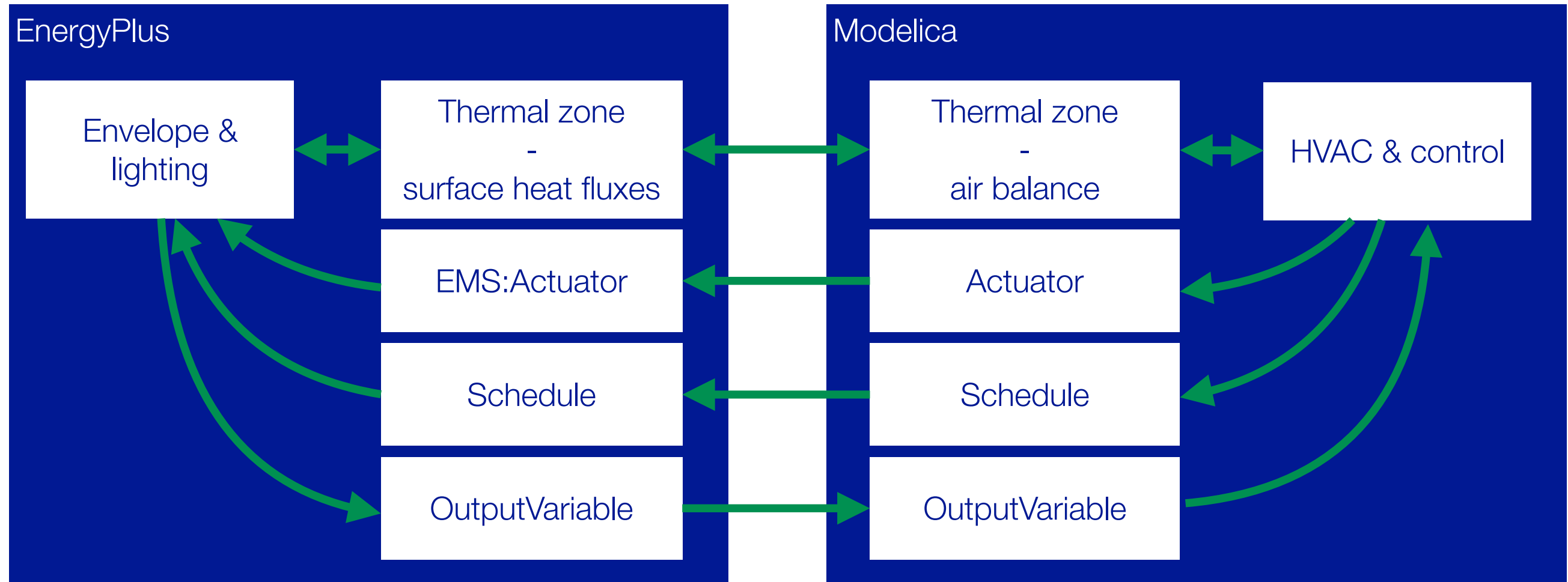
Documentation



Physical execution



EnergyPlus — Modelica run-time coupling



- EnergyPlus based HVAC and control system calculations are avoided.
- EnergyPlus and Modelica communicate on time-step basis.
- No need for user to setup co-simulation.

Current activities

Modeling

- Cooling coil (not using finite differences)
- Heat pump model similar to EnergyPlus (in development)
- Templates for HVAC systems (buildings and districts, including controls)

Solver

- QSS

Tools

- Linkage - control sequence selection and configuration tool
- Work on coverage with OpenModelica

<https://github.com/lbl-srg/funnel>

<https://github.com/lbl-srg/modelica-json>