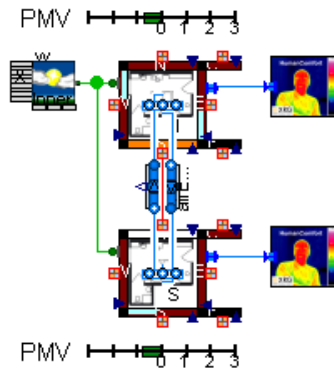
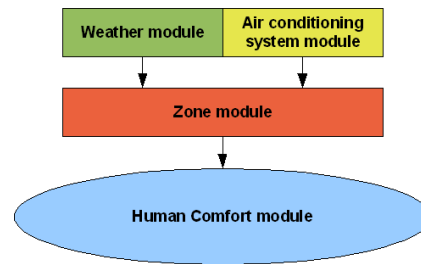


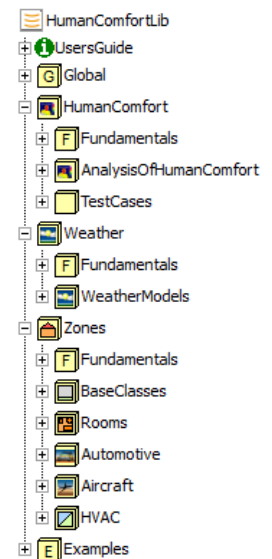
Energy systems are often optimized with regard to economical rules. On the other hand, humans feel comfortable within certain limits defined by thermal and personal factors. Studies have shown that the change of thermal sensations can be defined by characteristic numbers and standardized mathematical methods.



Two rooms with air exchange



Library modules



The HumanComfort Library was developed within the european research project EUROSYSLIB. The Library contains basic models to estimate the human comfort of occupants or a group of occupants within an air-conditioned zone. The comfort results are provided in form of mathematical criteria and graphical visualizations.

The HumanComfort Library has a modular approach. The use of standardized interfaces via Modelica.Fluid connectors enables an easy implementation in existing Modelica libraries. The user may combine an existing building simulation model with the HumanComfort module and additionally use the HumanComfort weather and comfort modules.

The library consists of three packages:

- HumanComfort package for thermal comfort analysis
- Weather package provides a weather model for annual simulation
- Zone package (buildings, aircrafts and automotive models)

New features in version 1.1:

- Models to analyze the effect of shading windows or external surfaces
- A new medium allows to analyze the CO2 concentration
- 3D conduction models allow the design of thermal bridges
- Atmospheric longwave radiation

### Development

XRG Simulation GmbH, Hamburg, Germany ([www.xrg-simulation.de](http://www.xrg-simulation.de))



### Availability

HumanComfort Library 1.1 is available for Dymola 7.4 (Modelica 3.1), Dymola 7.4 FD01 and Dymola 2012 (Modelica 3.2).