

The Visualization Library provides an advanced, model-integrated and vendor-unspecific visualization tool for Modelica models. It is especially useful in the mechanical, fluid and electrical area. Many components are available for off-line, online and real-time animation. Most components are attached to a Modelica model with a Frame connector of the Modelica.Mechanics.MultiBody library.

The library contains visualizers for basic shapes, CAD files (.3ds, .obj, .dxf, .stl, .vrmf and more), flexible bodies and surfaces, text, light, energy-/mass-flow visualizers, analogue instruments and weather effects. A camera system can be used to define the point of view manually or controlled by simulation.

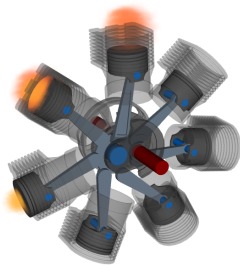
Components like Buttons, Checkboxes and Sliders are available for the creation of graphical user interfaces for the visualization software. These elements can be used to control the simulation interactively during the simulation run.

The components are visualized in an integrated system providing support for multi-camera scenes, a fullscreen mode, several monitors, replays and stereo/wireframe modes. It is based on the OpenGL framework.

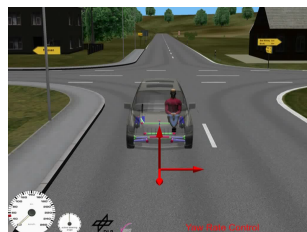
The integrated video-export function allows the export of the animation replays as MPEG4, Windows Media Video, Flash Video and Lossless HUFF video.

The standard Modelica visualization for multi-body models can be replaced by this Visualization tool, if the Shape component in the ModelicaServices Library is replaced by the user.

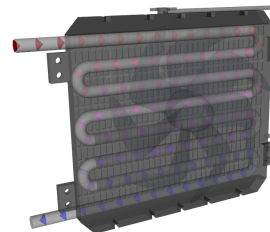
## Examples



Radial Engine with visualization of combustion



Vehicle dynamics visualization with a landscape from Vires



Flow visualization of a cooling system

## Highlights of version 1.3:

- Support for Oculus Rift (head-mounted display)
- Vehicle example connecting the collision detector to the contact model of a tire.

## Development

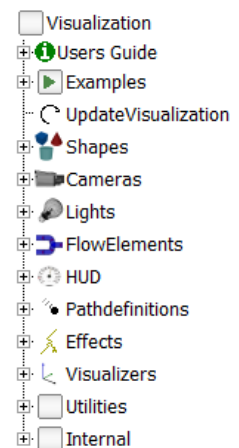
DLR, German Aerospace Center, Institute for System Dynamics and Control, Oberpfaffenhofen, Germany ([www.dlr.de/rm/en](http://www.dlr.de/rm/en))

## Availability

Visualization Library 1.3 is available for Dymola on Windows and Linux.

Tested on Dymola 2014 FD01 and Modelica Standard Library 3.2.1

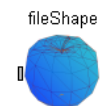
We plan to make it available for SimulationX soon.



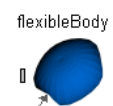
### elementaryShape



box



fileShape



flexibleBody



flexibleSurface



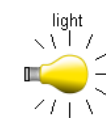
text

abc

Text



attachedCamera



light



analogueInstru...

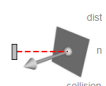
HUD



weatherEffect

Weather type...

collisionDetector



dist

n

collision