

## User Guide

Interaction from the end user with the system can be performed through the spawned OpenGL window. Feedback to end user will be given graphically in the OpenGL window, and information about the state of the system is given on the command prompt. In the Table below is listed a brief explanation of the different possibilities of supported user interactions that can be carried out, once the system has been successfully initialized. Due to the fact that all keys are case insensitive, they are only listed in lowercase. The last two actions from the Table can be performed whether or not the simulator is running. If a particle is being pulled around while the simulator is running, and visual debug has been activated, notice that the particle is colored red during the pull action. As soon as the pulling ends the particle is yet again released, thus its color is turned back to grey. If the simulator is paused or was never started, particles can still be pulled around. However, upon particle release they will stay fixed, and continues to be fixed, even though the simulation is started. Position constrained particles can be released by the same method. If the simulator is running, simply click on them, with the LMB while holding down CTRL.

To launch the demo application run the executable with an XML scene configuration as the argument, e.g.:

**deformation scene.xml**

The configuration must be a valid XML document to initialize the system successfully. Please note that the application will not perform the actual XML validity check. It will only make sure that the rules of the scene layout are obeyed. There are currently no other way to start the application. The user *must* provide a scene configuration or the system will not start at all.

Action/Key	Description
space	Simulation Start/Pause Default: Stopped
q	Quits/Terminates the demonstration
esc	Same as 'q'
y	Takes a screenshot of the current OpenGL window. The files are named: screen <i>nnnnn</i> , where <i>nnnnn</i> is a 5 digit number in succession, beginning from 00000
d	Visual Debug On/Off Default: Off For more information see [Visual debug.REF]
w	Wireframe On/Off Default: Off Will show all the surface triangles in blue wireframe
r	Resets the simulation, but keeps the current action states
f	Frames Per Second (FPS) On/Off Default: Off
+	Increments the overall strength by 0.05 Default: 1.0
-	Decrements the overall strength by 0.05
LMB	Rotates the viewport about the origin in WCS
ALT+LMB	Zooms the viewport while moving the mouse vertical
SHIFT+LMB	Pans the viewport
CTRL+LMB (running sim)	Pulls the selected particle
CTRL+LMB (paused sim)	Fix the selected particle

**Table** Possible user interactions – LMB := press and hold Left Mouse Button, if not stated otherwise the action will first become effective upon mouse movement