VHTK Installation Guide

This is an installation guide for VHTK, the volume haptics toolkit for H3D API. It is assumed that you have a working installation of H3D API, H3D source code or headers, and the third party libraries that are required by H3D API. It is also assumed that you have basic experience of using command line tools and the compiler of your system of choice.

Installation

1. This version of VHTK works with H3D API 1.5 .

2. Unpack the VHTK source code package at a suitable location, for example parallel to the H3D installation folder. The resulting file tree should contain, among other things, the folders src, python and x3d containing the toolkit source code, Python scripts and setup files, respectively.

3. To compile VHTK extra libraries are needed: H3D API and some of the libraries needed by H3D API.

4. Update the paths in the setup file to match your system before compiling, so that the compiler can find the required libraries and header files. For Linux you have to update the paths in the Makefile and for Windows you specify the following environment variables

   VHTK_ROOT The root of your VHTK installation

   H3D_ROOT The root of your H3D installation

   H3D_EXTERNAL_ROOT The folder containing the external libraries needed by H3D

   3DTOUCH_BASE The path to the 3DTouch installation

5. Compile the VHTK library files using either the Makefile for Linux, located in the VHTK root folder, or the VC7 setup file, located in

   VHTK/build/win32/vc7/

   This should produce one or more library files in the VHTK/lib folder.

6. To run VHTK, use an executable produced by the H3D API, for example H3DLoad. In the setup files for the VHTK examples the VHTK library is loaded prior to using any VHTK specific scene-graph nodes.

Testing with H3DLoad

1. Change folder to the VHTK root

2. Execute the loader with the file as argument, e.g.

   H3DLoad x3d/setup_dichloroethane2.x3d

3. Since the setup file is written for both Windows and Linux, an error message will say that the system is unable to load the libraries for the other operating system. This error message is safe to ignore and can be avoided by modifying the sample setup file to work only on the current operating system.

4. VHTK produces per default a lot of output, mostly for debugging. The messages are divided into debug information (II), ordinary warnings (WW), and fatal errors (EE). Messages marked with (II) can be safely ignored. Messages with (WW) can mean that something is missing and that things might not work as anticipated.

5. During run-time the haptic instrument is guided by the electro-potential field and stream ribbons can be released by pressing the button on the haptic instrument.

   The following key bindings apply to the dichloroethane demo:

   z undo the last stream tube

   Z undo all stream tubes

   1–9 the number of stream tubes to apply at once.

   [space] switch haptic mode

   Follow mode → Follow mode with snapdrag → Front shape mode → Front shape mode with snapdrag → Follow mode (...)