Connecting IGT Device with OpenIGTLink

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This course requires the following installation:

- 3DSlicer version 3.6.3 Software (Slicer3.6.3-2011-06-07), which can be installed from:
  

**Disclaimer**
It is the responsibility of the user of 3DSlicer to comply with both the terms of the license and with the applicable laws, regulations and rules.
Following this tutorial, you’ll be able to import tracking data from external devices (e.g. tracking system) through the network.
Overview

- Configuring OpenIGTLink IF module
- Setting up Test Server
- Visualizing Tracking Data
Part 1: Configuring OpenIGTLinkIF module
The Graphical User Interface (GUI) of Slicer3 integrates five components:

- the Menu Toolbar
- the Module GUI Panel
- the 3D Viewer
- the Slice Viewer
- the Slice and 3D View Controller
Starting OpenIGTLinkIF

Select IGT -> OpenIGTLinkIF
To connect 3D Slicer to external device/software using OpenIGTLink IF, a “connector” has to be created for each connection.

Connectors can be configured in “Connectors” Tab in OpenIGTLink IF module.
Adding Connector

Click “Add” button

“vtkMRMLIGTLConnectorNode1” shows up on the list
Changing Connector Name

You may change the name of the connector by type in a new name and hit Return key.

This is an optional step. It is a good idea to name connectors, especially if you have multiple connections.
Setting Connector Type

Check "Client"

Type and destination appears on the list
Part 2: Setting up Test Server
Open Test Server

Open “Test” Tab
Click “Open Test Server”

OpenIGTLink Test Server window pops up on the screen
Start Test Server

Click “Start” button

Server Message window shows “Waiting for a client…”
Connect to Test Server

1. Click “Active” to connect

2. Status becomes “ON”

Server Message indicates that the client is connected.
Checking Transform

Open “Transforms”

Choose “Tracker”

Transform is being updated while Tracker Simulator is sending data.
Part 3: Visualizing Tracking Data
Loading Sample MRI Data

File -> Download Sample Data -> MRI Head

Data I/O Manager Window pops up and download starts

Sample MRI shows up
Choosing Locator Source

1. Open “Visualization / Slice Control” Tab

2. Make sure “TrackerTest” is selected.

3. Click “Show Locator”
Visualizing Locator

Locator model appears in 3D Viewer
Showing Resliced Images

Click \( \text{Link button} \) and then \( \text{Eye button} \)

Resliced images are shown in 3D Viewer
1. Open “Visualization / Slice Control” Tab

Sample MRI data is resliced in axial, sagittal and coronal planes at the tip of the locator.
Setting Slice Orientation

Sample MRI data is resliced in parallel and perpendicular to the locator.

Check “Orient”
References

• 3D Slicer OpenIGTLinkIF Documentation Page
  
  http://www.slicer.org/slicerWiki/index.php/Modules:OpenIGTLinkIF-Documentation-3.6

• OpenIGTLink Protocol Web Page:
  
  http://www.na-mic.org/Wiki/index.php/OpenIGTLink

• Paper
  
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