

RT_Biofeedback_Overview

RT Biofeedback is available only in Visual3D Professional.

This tutorial describes using the built in real time plugins.

Introduction

QTM streams out the data it receives as it processes them. Visual3D can save the streamed frames out to a C3D file, or directly capture a static trial from the data streaming in. In other words, QTM must be running and streaming out identified target information. Visual3D can then connect to the active QTM stream to access that data.

QTM is needed in order to stream data to Visual3D so Visual3D cannot replace QTM. Since QTM gives priority to processing the data from the cameras, under higher frame rates they will sacrifice streaming in favor of processing the camera data, thus frames can be lost when streaming at higher data rates.

QTM needs to be running first and activate "Track each frame in 3D" and "Apply the current AIM models" on the RT processing on the Processing page.

To test the RT output you need to be in preview and have an identified subject in the volume or play a file with the "Run Real-Time Processing on File" option.

It is very important that AIM is working properly in Visual3D and identifying markers. If the markers aren't identified in QTM, Visual3D can not process any realtime data.

Preparing for the Tutorial

1. Download the file [model.zip](#)
1. Save the file where you would normally save motion capture files.

These sample Qualysis files were downloaded from [C3D.org](#)

Step 1 - Open CMO File

- | | |
|--|---|
| 1. From the File menu, select Open/Add... , Choose <i>model.cmo</i> |  |
| 2. From the workspace status screen, verify the model file named Standing_Hybrid_2.c3d appears in the column labeled Models/Calibration Files. | |

3. Switch to the **Models** tab to verify bones in picture 

Step 2 - Connect to RT stream/Load Emulation

1. Open the *Real-Time* tab

2. **A.** To connect to the Qualysis real time stream:

* Ensure QTM is running and set the RT Output 

To test Open a QTM file, capture and play the file in QTM via post processing keep it running

* Click **Qualisys_RT** under **Real-Time Hardware(plugins)** to connect to a Real Time stream (from mocap system) 

* Enter the correct IP address for the computer streaming real time. If they are on the same computer, enter 127.0.0.1 to indicate local host.

**2. STOP NOW. This tutorial is just a wiki and cannot connect to your QTM system. So, we will now simulate the RT stream by using a C3D file as input instead. So, disconnect from the QTM system, and use the C3D_Streaming plugin instead. To connect to the C3D stream:

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Click **C3DStream_RT** (used to emulate a camera system) 

Browse to the dynamic C3D file (Walking_Hybrid_2.c3d)

NOTE: Before using the real time stream users should test using C3D files collected in their lab

3. The data is automatically applied to the model

Note: Streaming status in lower left

Step 3 - Compute model based item: RT pipeline

The RT Pipeline is available only in Visual3D Professional

Open up *Model Based Data Computation* under the **Real-Time Pipeline**

Double click *Compute_Model_Based_Data*

Click **Edit**



Change the corresponding:

Data Name: Ankle **Folder:** ORIGINAL **Model Based Item Properties:** JOINT_ANGLE
Segment: Right Foot **Reference Segment:** Right Shank



Click **Done**

Step 4 - Create Graph

Click **Add** in the **Real-Time Graphs** section, and enter the following:

Data to: LINK_MODEL_BASED::ORIGINAL::Ankle



Click **OK**

Complete

Your result should show a Real-Time stream that looks like the picture below



Remember to save the Graph and RT Pipeline

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