The **S-Interface** [http://cpl.uh.edu/software/s-interface/], **M-Interface** [http://apps.cpl.times.uh.edu/minterface/], and **Subject Book** [http://subjectbook.times.uh.edu] communicate via a designated Google Drive. The **S-Interface** can acquire in real-time multiple sensor channels during an experimental session, uploading the collected data to a designated Google Drive. Prominently among these sensor channels is a thermal imaging feed by the FLIR Tau 2 camera. Once in the Google Drive, the sensor data are curated and managed by **Subject Book**. The **M-Interface** captures the subject's responses to questionnaires, uploading the collected data to a designated Google Drive. Once in the Google Drive, much like the sensor data, the questionnaire data are curated and managed by **Subject Book**.
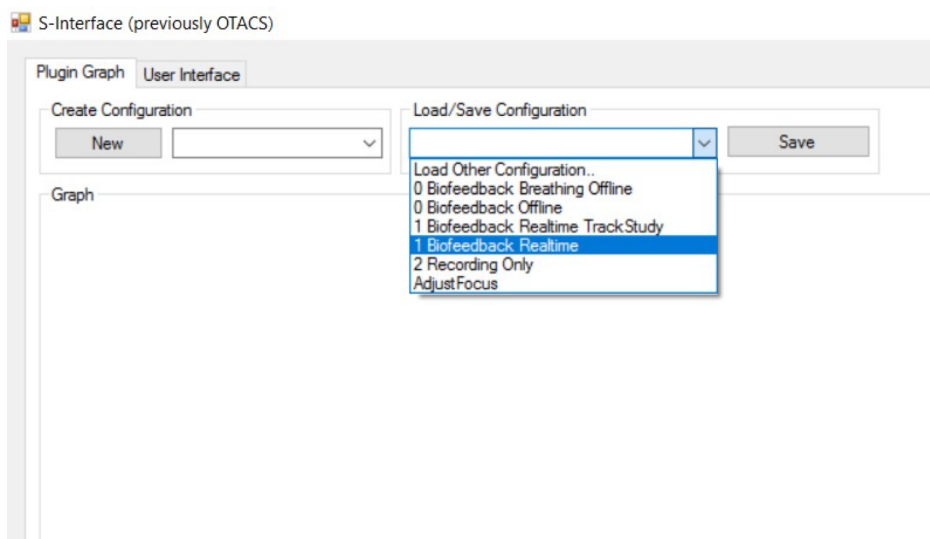
Installing the S-Interface

The **S-Interface** has the following dependencies:

1. Windows 7 and higher
2. Microsoft Office
3. R
4. eBus SDK [32bit, 64bit]
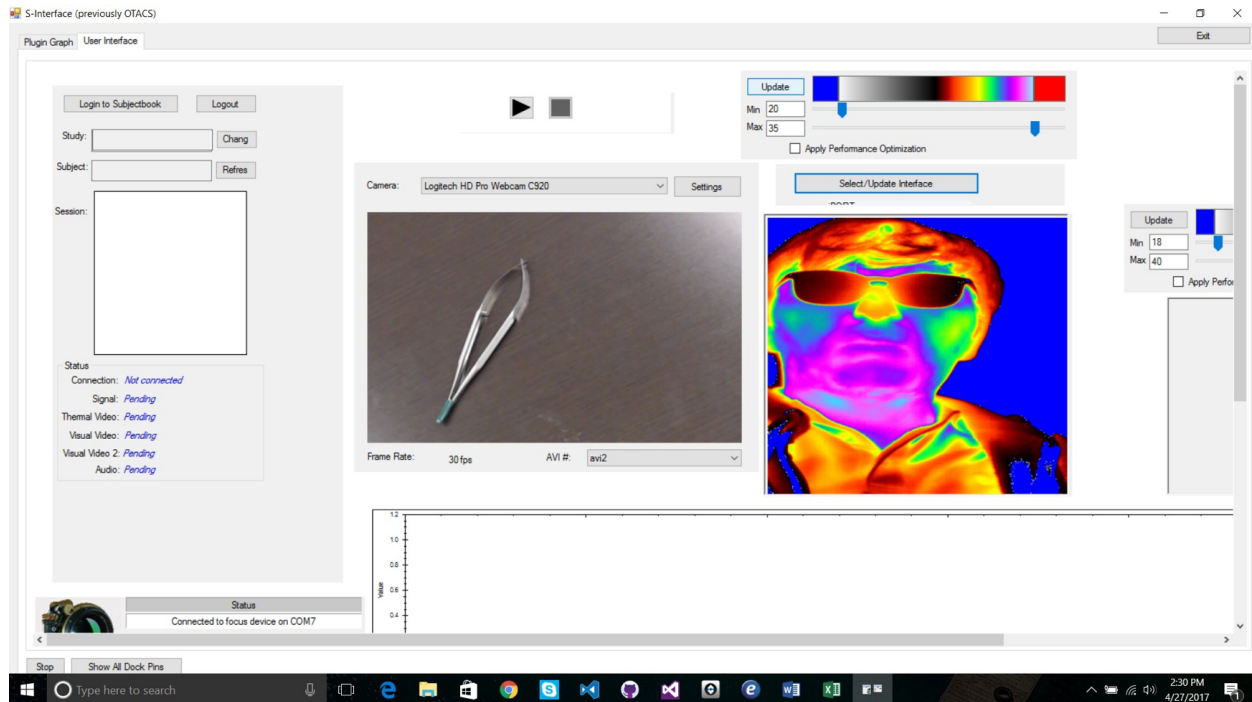5. AForge
6. FLIR Camera Controller

Once the dependencies are installed, proceed with the installation of the **S-Interface** (download link).

Recording Sensor Channels with the S-Interface

1. Open the **S-Interface**
2. Once the **S-Interface** is open, select **Realtime Configuration** as seen in the screenshot below.

3. After selecting the configuration, click on the **User Interface** tab on the top right. From there, you can perform the recording. By default, the **S-Interface** will record all the data locally on the computer. To upload the data to a designated Google Drive for Subject Book management, hit the **Login to Subjectbook** button and select the study name and subject number; then, record the session.

The **S-Interface** (Previously OTACS) has been built as modular system in C#. It is a communal software development project, where anybody can contribute modules with specific functionality. These modules are called plug-ins and need to conform to certain programming guidelines that are spelled out in the **S-Interface** tutorial.

Functionally speaking, the plug-ins are of two major varieties: (a) sensor channels, and (b) algorithm implementations.

In its current plug-in library, the **S-Interface** features three sensor acquisition channels and four algorithms. Specifically:

       C1 - Thermal Facial Channel

       C2 - Visual Facial Channel

       C3 - Operational Theater Channel

A1 - Tissue Tracking Algorithm

A2 - Perspiration Signal Extraction Algorithm

A3 - Breathing Signal Extraction Algorithm

A4 - Low-Pass Signal Filtering Algorithm