Nubomedia-VTT-AR Documentation

Release 1.0

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Readme

This project is part of NUBOMEDIA www.nubomedia.eu

MultisensoryDataFilter (MsData)

The repository contains documentation for installing and utilising the MsData. The repository contains description of the architecture of the MsData and also the source code of the MsData implementation.

MsData implements multi-domain AR filter providing 2D graphics visualisation service to other modules through data pads. Data channels are utilized thus MsData Interface enables sending of different kinds of content based on the identification and variable arguments thus the format of the data is quite flexible. Developers can create new visualisations not yet known thus extending MsData. Example for drawing a graph is available. Because the filter needs to support data-pads, the filter is based on Kurento GStreamer module. Refer the Kurento documentation for a more complete view of the Kurento architecture.

The following image show the current visualisations provided ie heart rate, temperature and graph. In addition, speed meter visualisation is considered.
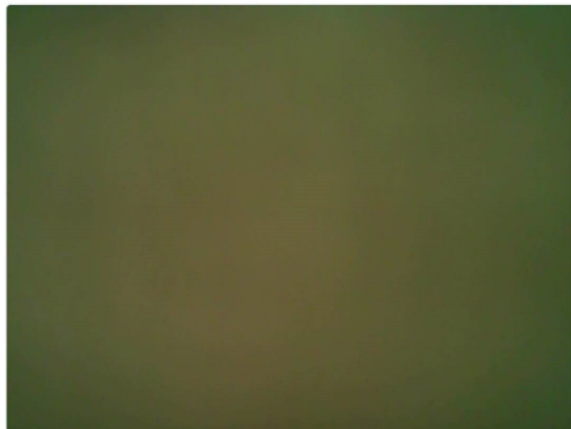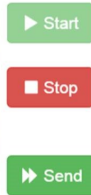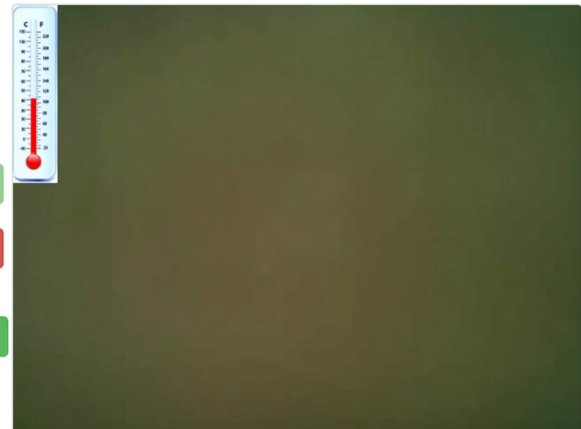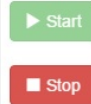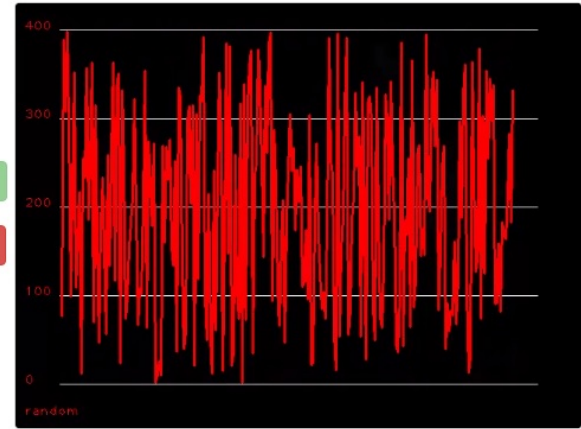
Local stream

Remote stream

Local stream

Remote stream

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[NUBOMEDIA]: http://www.nubomedia.eu [Nubomedia Public Mailing List]: https://groups.google.com/forum/#!forum/nubomedia-dev

Developers Guide

This documents provides information how to develope the MultisensoryDataModule (MsData).

Clone repository:

```
sudo apt-get install git
git clone https://github.com/nubomedia-vtt/msdata.git
```

Create a folder to build the MsData

```
mkdir build
cd build
```

Kurento Client Interface

Now you have an option to generate either Java or JavaScript interface for the Kurento Client (or naturally both if you need)

Java version

```
cmake .. -DGENERATE_JAVA_CLIENT_PROJECT=TRUE
```

JavaScript version

```
cmake .. -DGENERATE_JS_CLIENT_PROJECT=TRUE
```

Developing Source Code

To use the compiled results in Kurento just set into:

```
/etc/default/kurento-media-server-6.0
```

for example:

```
NAME=$(logname)
export KURENTO_MODULES_PATH=$KURENTO_MODULES_PATH:/home/$NAME/nubomedia/msdata/build
export GST_PLUGIN_PATH=$GST_PLUGIN_PATH:/home/$NAME/nubomedia/msdata/builds
```

MsData Interface ie Data Pads

Both MsData and the filter that utilized MsData through data pads must naturally agree on the data that is delivered but flexible interface between modules is enabled. As a consequence functionality of the MsData can be increased without affecting the MsData interface.
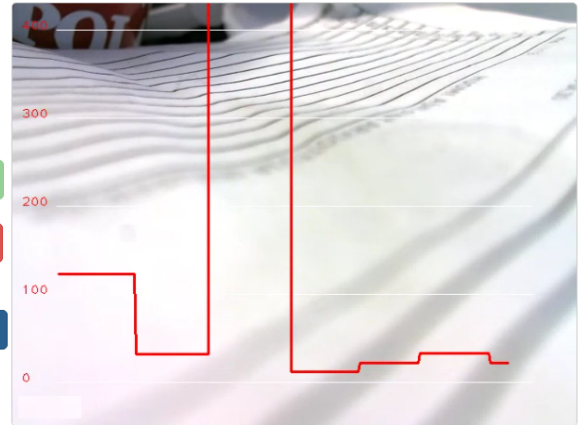
Data Channel Demo

As an example about utilization of MsData with data channel, familiarize with a graph demo , ie 'Hello World App', which sends user defined data for drawing a graph.
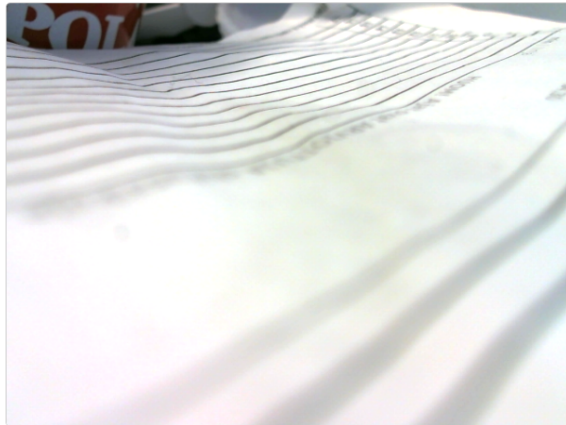
The media pipeline is done with the following structure:

```
KmsMsData kmsMsData = new KmsMsData.Builder(mediaPipeline).build();
webRtcEndpoint.connect(kmsMsData);
kmsMsData.connect(webRtcEndpoint);
```

Currently the functionality is driven through interpretation of the given data. Explicit functionality can be added as necessary. The current implementation interprets the given data as a series of integers that are visualized as a graph. There are plans to develop some new applications which might eg instead of series of integers utilize JSON as data in the future.

Installation Guide

MultisensoryDataModule

Installation instructions

Recommend easy installation

These are the instructions to utilize the multisensorydata filter.

If you wish to have the most convenient installation, you should install the following in this order:

KMS (this refers to the latest KMS version eg KMS6)

Option apt-get

Note that for each of these, installation instructions are given below.

Installing KMS

For installing Kurento Media Server (KMS),

please refer to

```
www.kurento.org/
```

Installing with Option apt-get

Choose this if you wish to install with apt-get the latest release version (not necessarily contains the latest features).

Execute:

```
echo "deb [arch=amd64] http://ssi.vtt.fi/ubuntux trusty main" | sudo tee -a /etc/apt/
↪sources.list
sudo apt-get update
sudo apt-get install msdata
sudo ldconfig
sudo /etc/init.d/kurento-media-server-6.0 restart
```

Installing with Option dpkg

Note that this is alternative to the Option apt-get.

Choose this if you wish to install with dpkg the latest release version (not necessarily contains the latest features).

Fetch and install the latest debian package (eg at the moment 6.6.1 or newer):

msdata_6.6.1_amd64.deb

Check the folder for the latest one if needed

```
sudo dpkg -i msdata_6.6.1_amd64.deb
sudo apt-get -f install
sudo ldconfig
sudo /etc/init.d/kurento-media-server-6.0 restart
```

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Irrlicht Engine, the zlib and libpng. The Irrlicht Engine is based in part on the work of the Independent JPEG Group The module utilizes IJG code when the Irrlicht engine is compiled with support for JPEG images.