

# URBI Lab

## User's Manual

### 1 Description

URBI Lab is an application that allows you to communicate with a host (usually a robot) that is running URBI Server. The communication includes sending and receiving messages conforming to URBI Language, displaying server's debug output and graphing server's variables, including video and sound.

**Note:** *Graphing of SOUND and DOUBLE variables will be supported in future versions, as well as better startup of graphing processes.*

### 2 Messaging

Message client allows you to exchange messages with the robot. One tab in URBI Lab's messaging panel represents one client connected to one robot. There can be multiple clients at a time connected to the one or multiple robot. Each client consists of two text fields and a command line. The text field at the top shows messages received from the host. String, double, system and error messages are displayed in their textual form while messages containing binary image or sound data(1) are converted to an image, resp. sound that is displayed, resp. played (2). When message with unknown binary data is received only a header is displayed. The text field at the bottom displays messages sent to the host, and finally the history equipped command line lets you compose messages and send them to the robot.

Messages you wish to send to the host have to be composed according to URBI Language.

(1) Supported image formats are YCrCb and JPEG. The only supported sound format is WAV. The sound obtained at once is a very short piece of sound, usually hardly noticable. For hearing continous sound see section 4 Graphing.

(2) Playing a sound under Linux is available only when you have installed The Network Audio System [<http://radscan.com/nas.html>] and running. Moreover AUDIOSERVER system variable has to be set to hostname:port (usually localhost:0).

**Note:** *Saving unknown binary data and images in other formats then JPEG will be supported in future versions. Connecting to non-existing host causes to freeze the application for app.10s*

### 3 Debugging

Debugging client allows you to displays host server's debugging messages. One tab represents one client connected to server's debug port. There can be multiple clients at a time connected to different robot. Multiple connections to one robot are not allowed. Each client contains one text field, where the debug messages are displayed. Panel containing debug tabs can be hidden.

## 4 Graphing

URBI Lab's graphing system lets you plot double variables, play video and sound (1).

(1) Video is achieved by displaying consecutive images obtained from the host's camera, therefore supported formats are the same as mentioned in section 2 Messaging. The same applies for sound format settings.

**Note:** *Unfortunately the only supported thing is playing video in JPEG format. More extensive support will be provided in future version of URBI Lab.*

*The graphing is not yet integrated into GUI. In order to start graphing write #graph variable in command line and hit Enter. You stop the graphing simply by closing the window.*

## 5 Shortcuts

**Ctrl + N**

*opens new message client*

**Ctrl + Q**

*closes current message client*

**Ctrl + Shift+ N**

*opens new debug client*

**Ctrl + Shift+ Q**

*closes current debug client*

**Ctrl + Shift+ D**

*toggles visibility of debugging panel*