

Reeti Ros Node

Node's Description

The Reeti Ros Node allows you to use ROS as an alternative to the URBI Sdk.

The Node makes it easier to interact with the REETI and get information back from it.

Before using the node you need to source the reetiros directory : `/reetiPrograms/ros/setup.bash`

Services and Data

Description of the differents data types, topics and services provided by the Reeti Ros Node.

Messages and Services Types:

- Messages types:

Msg Name	Data	Data Type	Value Range	Description
ledColor.msg	<i>color</i>	std_msgs::String	red, green, light green, blue, dark blue, turquoise, yellow, violet, white, stop	Handles the color of the led
reetiPose.msg	<i>neckRotation</i> <i>neckPan</i> <i>neckTilt</i> <i>rightLC</i> <i>leftLC</i> <i>topLip</i> <i>bottomLip</i> <i>rightEyePan</i> <i>rightEyeTilt</i> <i>leftEyePan</i> <i>leftEyeTilt</i> <i>rightEyeLid</i> <i>leftEyeLid</i> <i>rightEar</i> <i>leftEar</i>	std_msgs::Float32	from 0 to 100	Handles the 15 positions of the motors. Note : rightLC and leftLC means right lips corner and left lips corner.

- Service types :

Name	Data	Msg Type	Value Range	Description
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Camera.srv	<i>camera</i> <i>filename</i>	std_msgs::Int32 std_msgs::String	0 left camera , 1 right camera filename without extension	Handles the camera to use and the destination files names
Pose.srv	<i>pose</i> <i>speed</i>	reetiPose std_msgs::Float32	See reetiPose.msg from 10 to 300	Handles the positions and the speed sent to the Reeti to make him move. Speed unit is percent of total course per second. (300 means that the total course will be travelled in 1/3 of one second).
Say.srv	<i>speech</i>	std_msgs::String	some text	Handles the text sent to Reeti to make him speak. See Loquendo TTS controls.pdf and 13-Loquendo TTS Controls.pdf to get more informations about speech synthesis with Reeti.
Sequence.srv	<i>sequence</i>	std_msgs::String	a sequence or pose file name	Handles the name of the sequence or pose file that the Reeti will play

You can find more information about the message or service types here : [Data Types Files](#), or by typing `rosmmsg show reetiros/<message_name>` and `rossrv show reetiros/<service_name>`.

Topics:

- Published Topics :

Name	Msg Type	Frequency	Description
Position	<i>reetiros::reetiPose</i>	on change saturated at 10Hz	Publish the Position of the 15 motors
ledColor	<i>reetiros::ledColor</i>	on change	Publish the color of the leds
isSpeaking	<i>std_msgs::Bool</i>	on change	Publish if the Reeti is Speaking or not
BookMark	<i>std_msgs::String</i>	on bookmark found	Publish when a bookmark is found in a text sent to the Reeti
isPlaying	<i>std_msgs::Bool</i>	on change	Publish if the Reeti is playing a sequence or not

- Subscribed Topics :

Name	Msg Type	Description
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neckRotat	<i>std_msgs::Float32</i>	Change the position of the choosen motor
neckPan		
neckTilt		
rightLC		
leftLC		
topLip		
bottomLip		
rightEyePan		
rightEyeTilt		
leftEyePan		
leftEyeTilt		
rightEyeLid		
leftEyeLid		
rightEar		
leftEar		
leftLed, rightLed	<i>reetiros::ledColor</i>	Set the color of the chosen led
leftLedRGB, rightLedRGB	<i>std_msgs::ColorRGBA</i>	Set the color of the chosen led to the RGB value sent

Services :

Name	Srv Type	Description
SetPose	<i>reetiros::Pose</i>	Sets the 15 motors position at once
TakePicture	<i>reetiros::Camera</i>	Take a picture with the Reeti's camera and save it to the "/home/reeti/Pictures" folder
RecordVideo	<i>reetiros::Camera</i>	Record a video with the Reeti's camera and save it to the "/home/reeti/Videos" folder
StopRecord	<i>reetiros::Camera</i>	Stop the recording of a video
Say	<i>reetiros::Speech</i>	Say the text without moving the Reeti's lips
SayWithSynchro	<i>reetiros::Speech</i>	Say the text while moving the Reeti's lips
StopSpeech	<i>std_srvs::Empty</i>	Stop Reeti while he is talking
PlaySequence	<i>reetiros::Sequence</i>	Play a sequence file
PlayPose	<i>reetiros::Sequence</i>	Play a pose file

How to use the Node?

The Reeti Ros node is launched at the start-up of the REETI.

In order to use this Node you need to create your ROS own node, or using the common ROS topic debug tools ([Rqt](#) as an example).

To be able to use the reetiros msg and srv in your ROS node, you need to modify the "*CMakeLists.txt*" and "*package.xml*" files.

- In the *CMakeLists.txt* file add : "*reetiros*" to the "*CATKIN_DEPENDS*" line in the "*catkin_package*" section.
- In the *package.xml* file add the following before the "*export*" tag:

```
<build_depend>reetiros</build_depend>  
<run_depend>reetiros</run_depend>
```

See the [Samples](#) in order to get more information about using the Reeti Ros Node.