

Bio-Sensing and Bio-Feedback Instruments

DoubleMyo, MuseOSC and MRTI2015

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Bio-Sensing and Bio-Feedback Instruments

The resolution of my paper PDF is very low !

ICMC_proceedings.pdf = 37.5MB (all papers total)

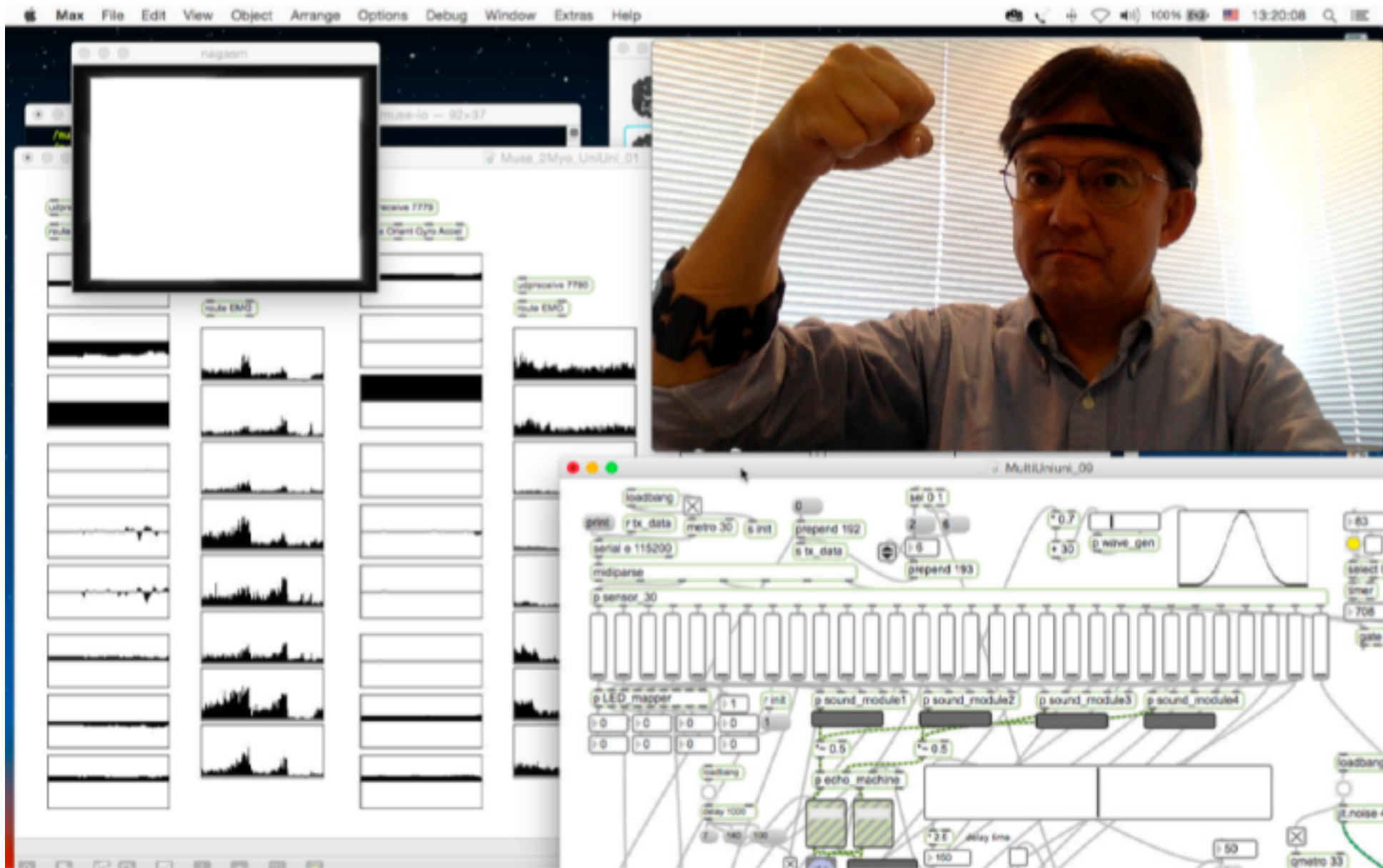


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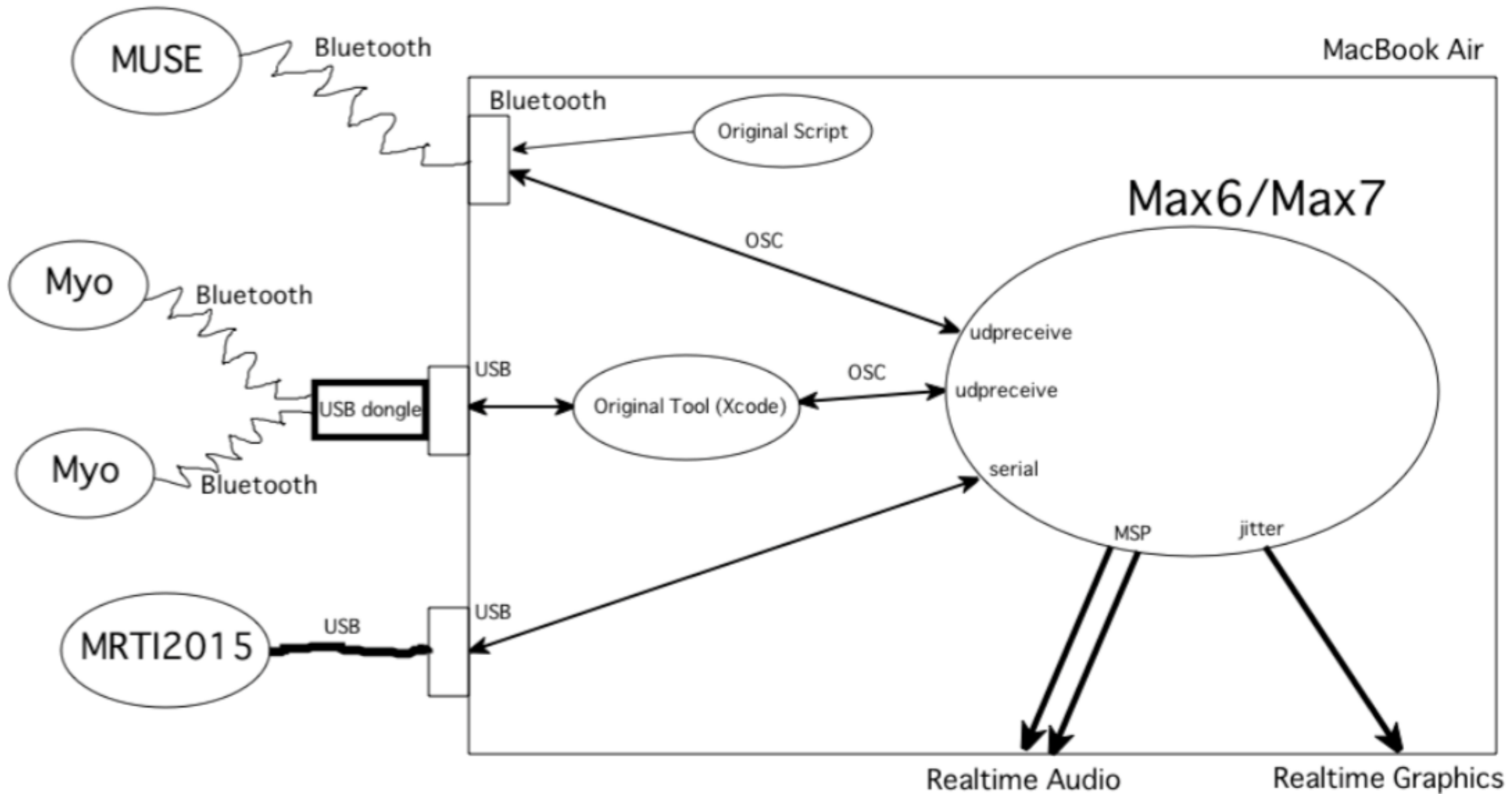
Please download high resolution PDF from my Web:

http://nagasm.org/ASL/paper/ICMC2016_nagasm.pdf

ICMC2016_nagasm.pdf = 17.5MB



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DoubleMyo

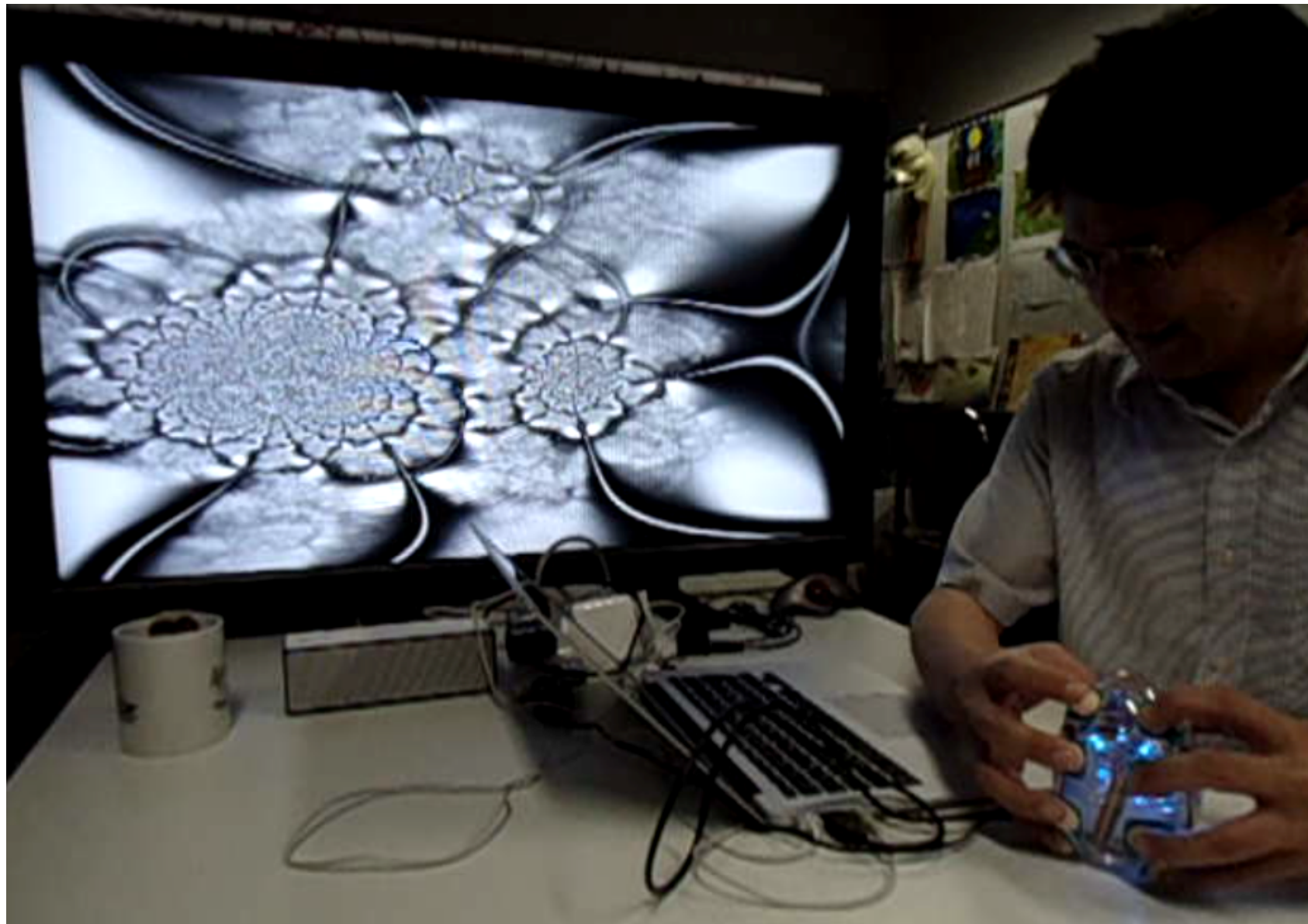


MUSE-OSC

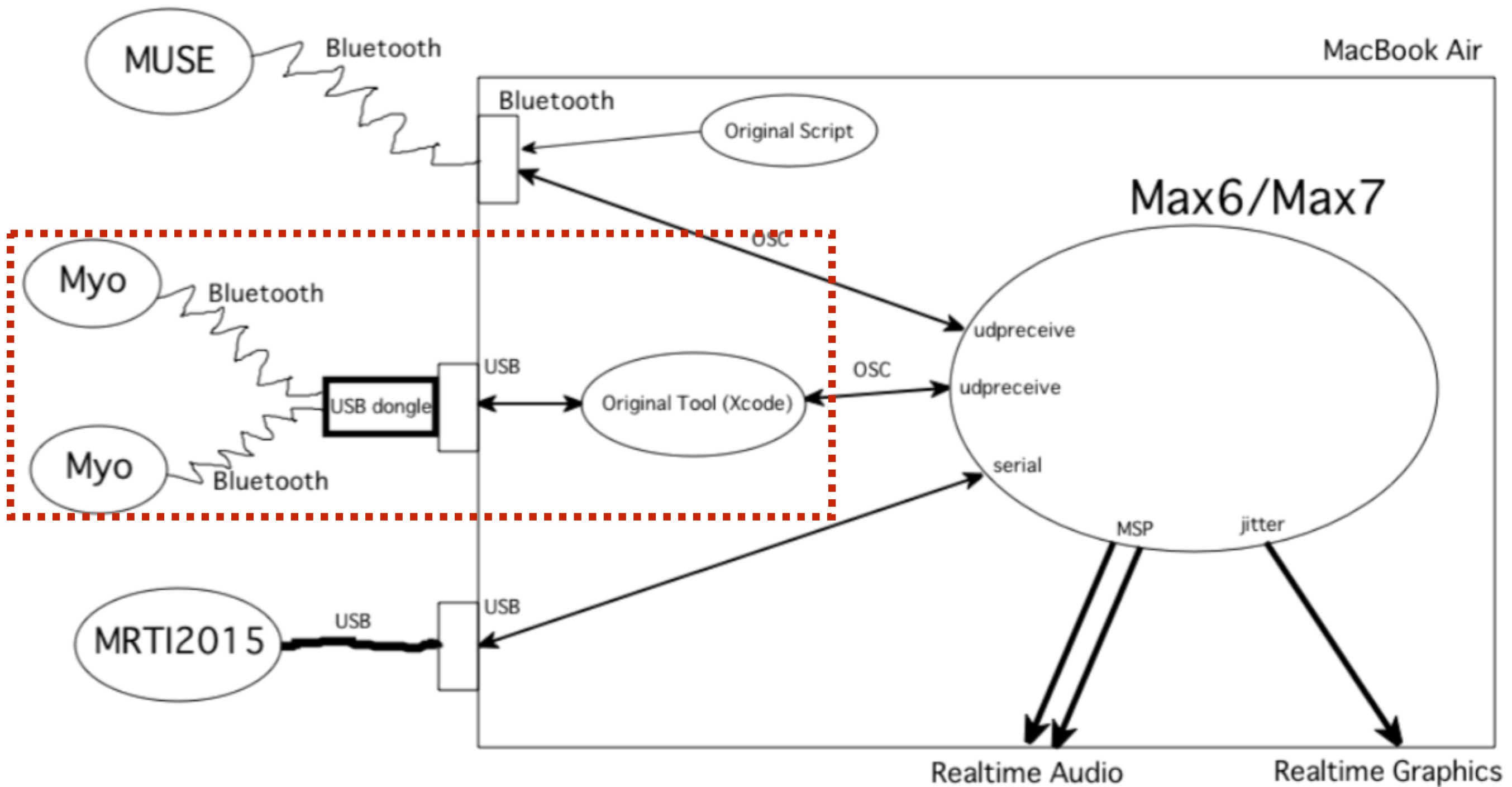


MRTI2015

Multi Rubbing Tactile Instrument



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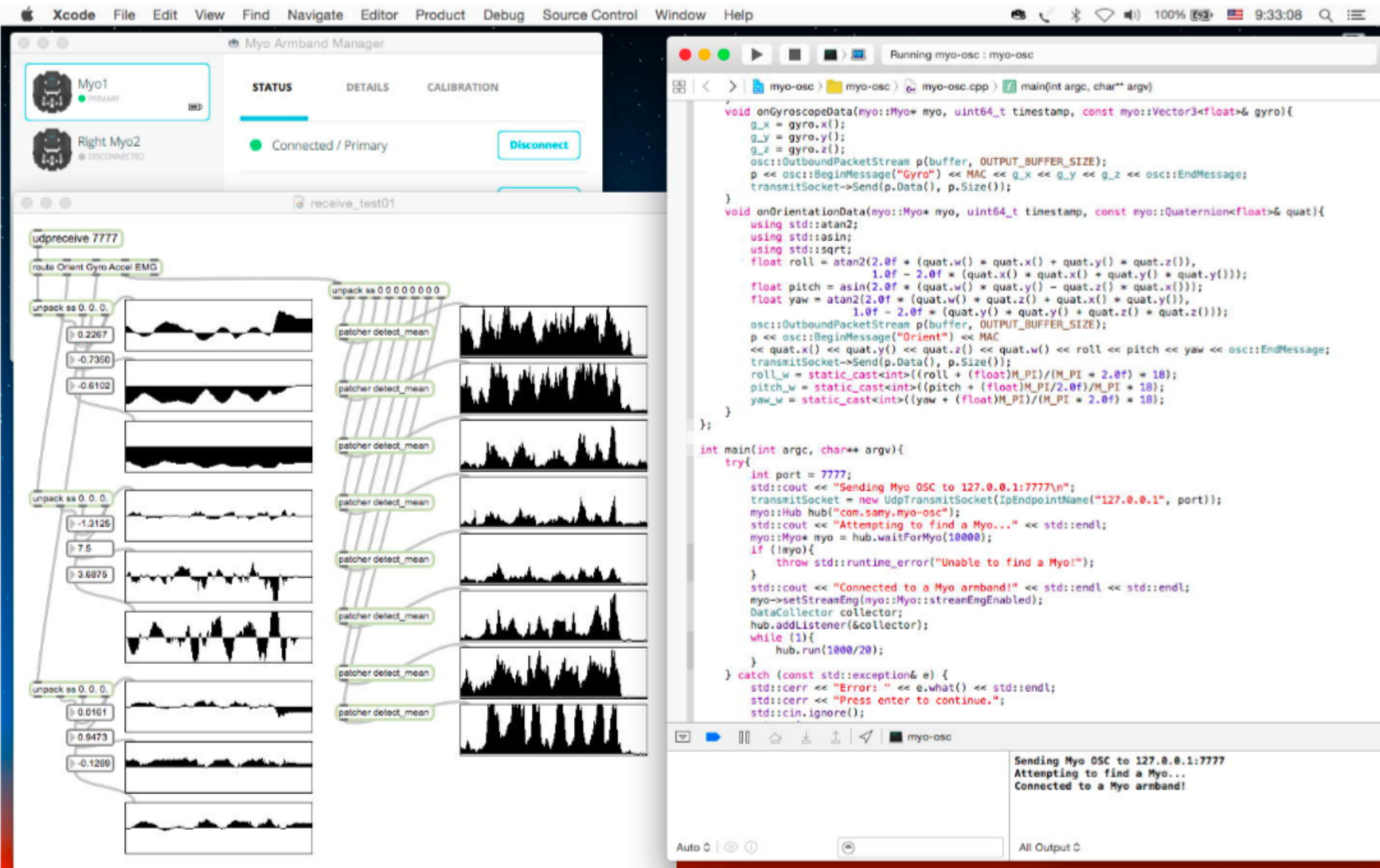


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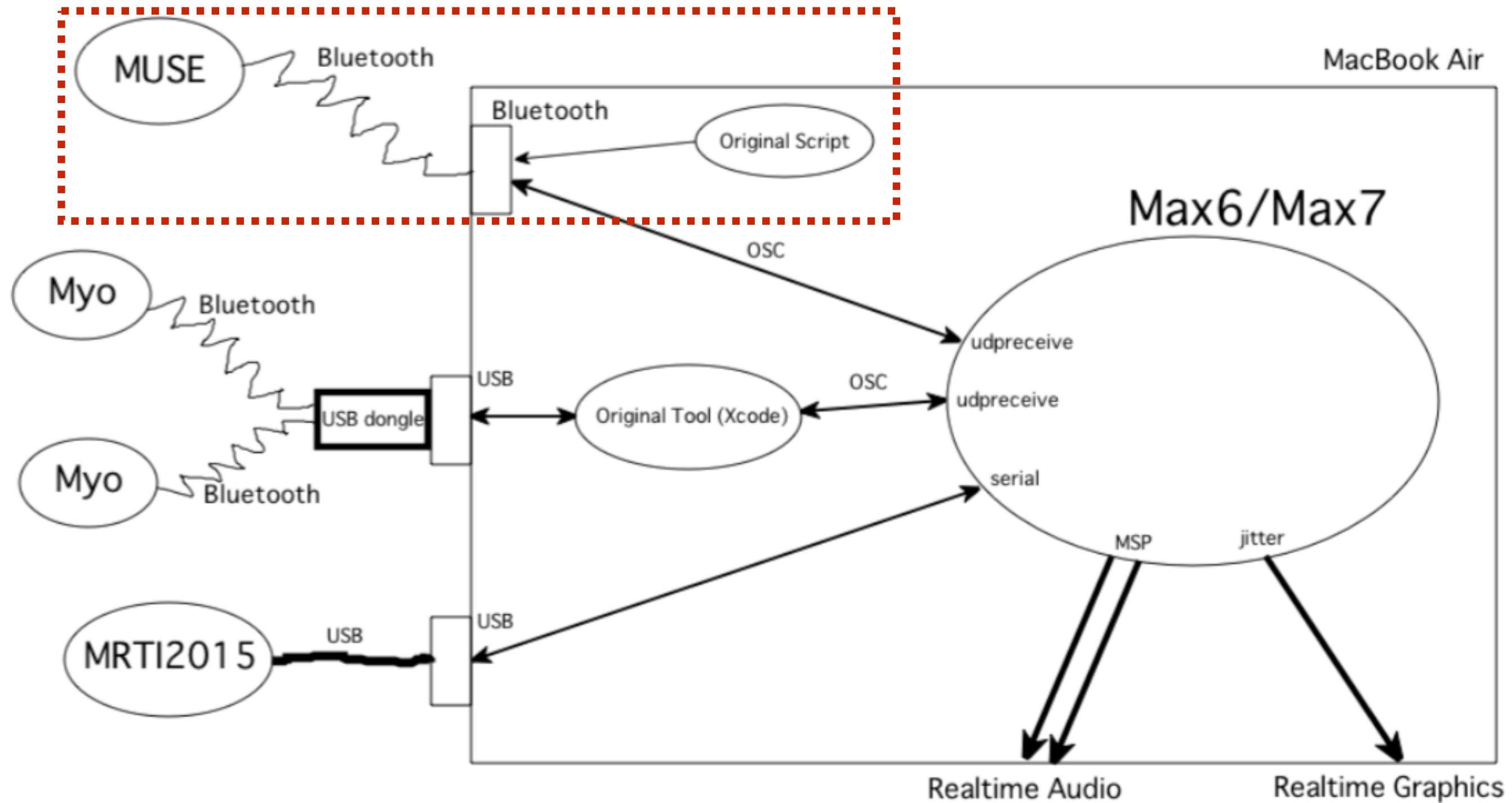
Myo



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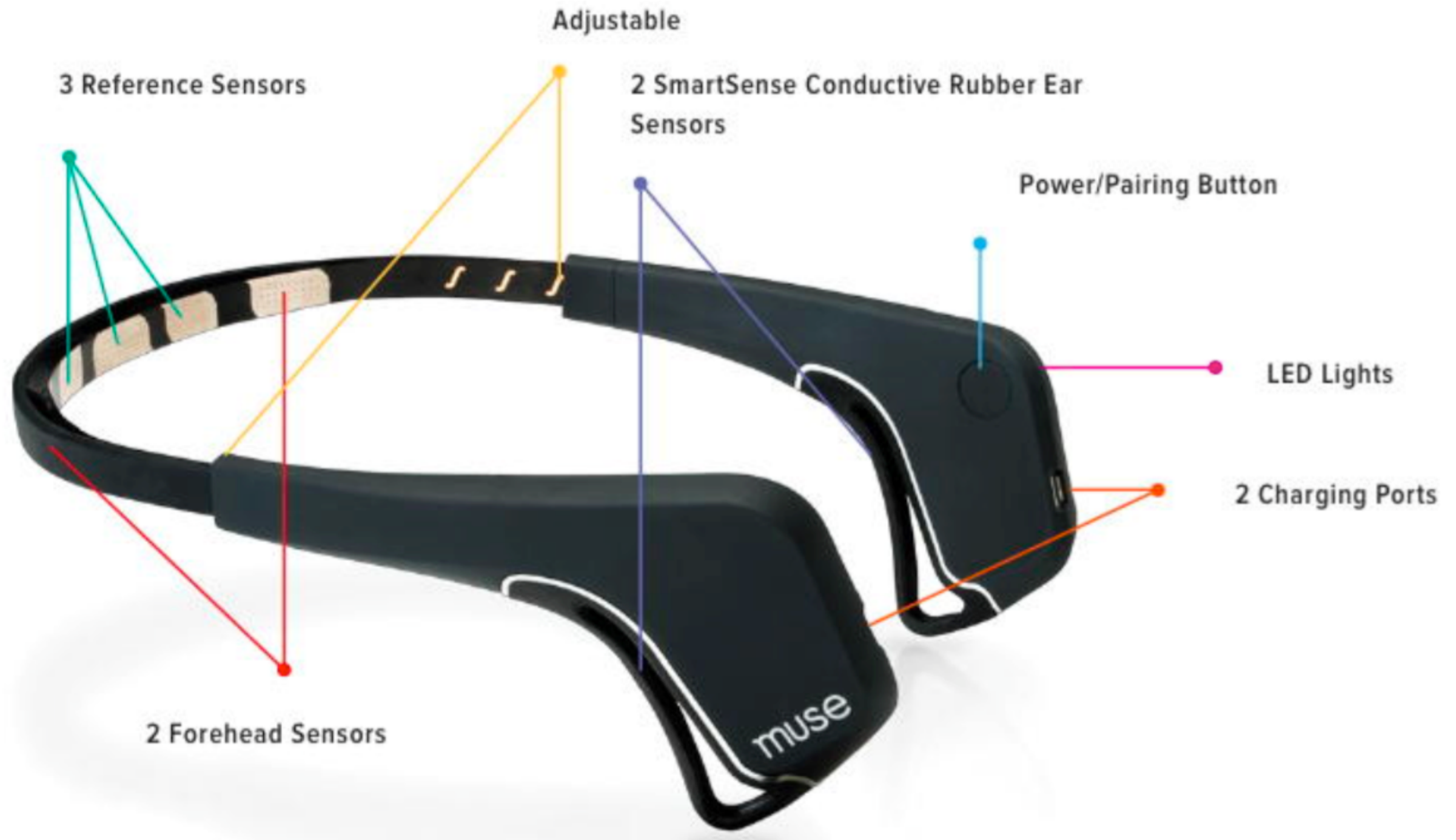


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MUSE



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The image shows a Mac OS X desktop environment. The top menu bar includes 'Terminal', 'Shell', 'Edit', 'View', 'Window', and 'Help'. The system status bar on the right shows '100%' battery, a signal strength icon, and the time '10:29:03'.

The main window is a Pure Data patch titled 'MuseIO_UDP_01'. It contains several objects: 'udpreceive 7777', 'route /muse/eeg', 'route /muse/acc', 'unpack ffff', 'unpack fff', and 'scale' objects. Two oscilloscope-like displays show real-time data. The left display shows a signal with a sharp peak, with a value of '814.265259' and a scale of 'scale -100, 2000, -1, 1.'. The right display shows a signal with a value of '-23.437536' and a scale of 'scale -900, 800, -1, 1.'. A third display at the bottom left shows a signal with a value of '825.780151' and a scale of 'scale -100, 1800, -1, 1.'. Two red arrows point to the bottom-left display.

Overlaid on the Pure Data window is a red-bordered box containing the following text:

```
#!/bin/sh
/Applications/Muse/muse-io --osc osc.udp://localhost:7788 --60hz
```

At the bottom of the screen, a terminal window shows the following commands and output:

```
MacBookAir:~$ cat Muse_set_50Hz.command
#!/bin/sh
/Applications/Muse/muse-io --osc osc.udp://localhost:7777 --60hz
MacBookAir:~$ cat Muse_set_50Hz.command
#!/bin/sh
/Applications/Muse/muse-io --osc osc.udp://localhost:7777 --50hz
MacBookAir:~$
```

On the right side of the terminal window, there is a list of Muse hardware and software information:

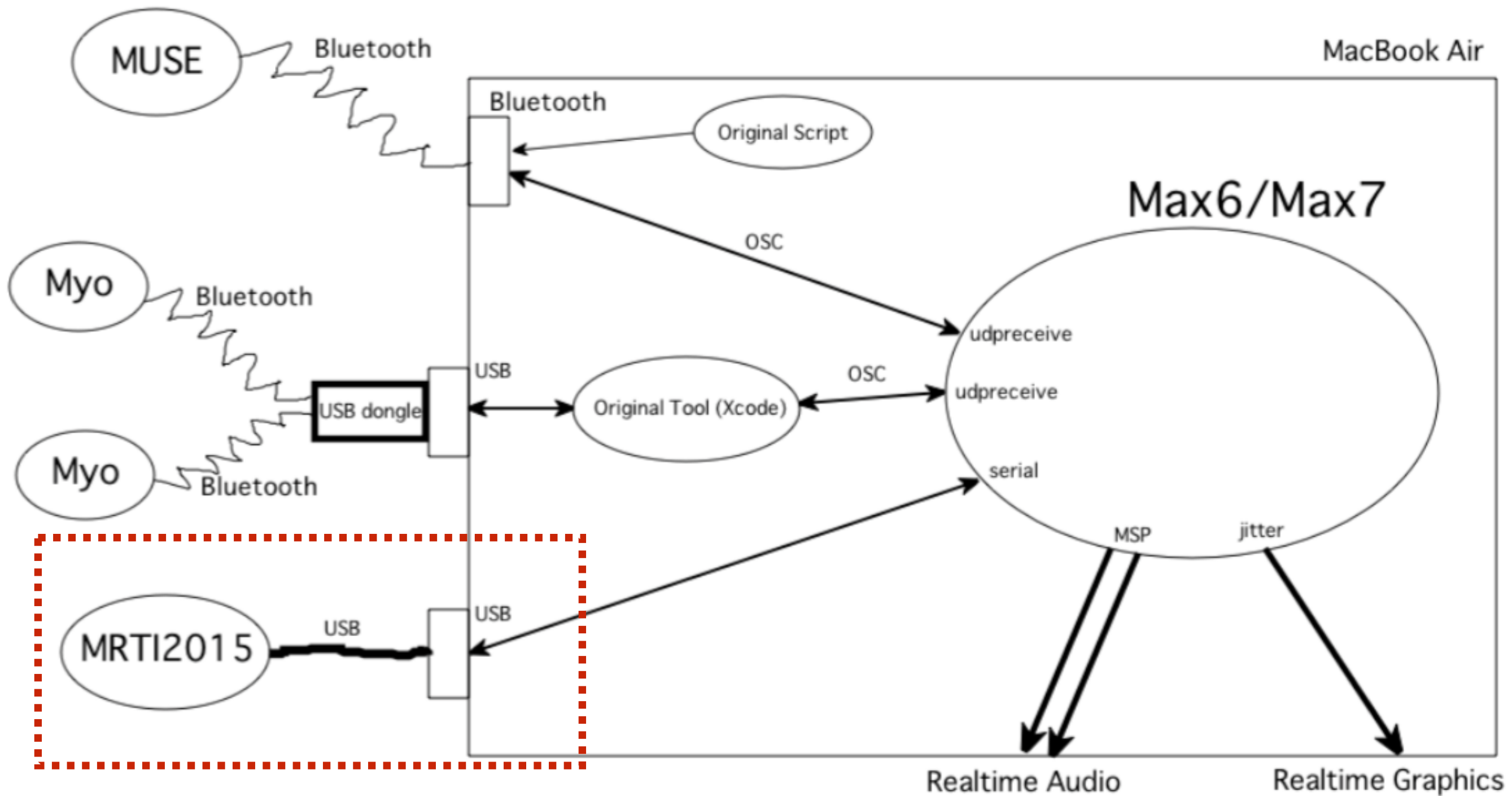
```
Muse Hardware: 7.8.8
Muse Firmware: 7.8.8
Muse Firmware type: Consumer
Muse Bootloader: 7.2.5
Build No: 56
BT Mac Address: 0005567830C3
BT Firmware: Ver 5.45 IAP 10
Serial: 1180-729M-30C3
Preset: 14
Filters Enabled: true
- Notch Frequency: 50Hz
Accelerometer Enabled: true
EEG Sample Frequency: 3520Hz
EEG Output Frequency: 220Hz
EEG Samples Bitwidth: 10
EEG Channel Count: 4
EEG Channel Layout: TP9 FP1 FP2 TP10
Downsampling: 16
Output Mode: SEROUT_COMPRESS
```

At the bottom right of the terminal window, there is a status bar showing:

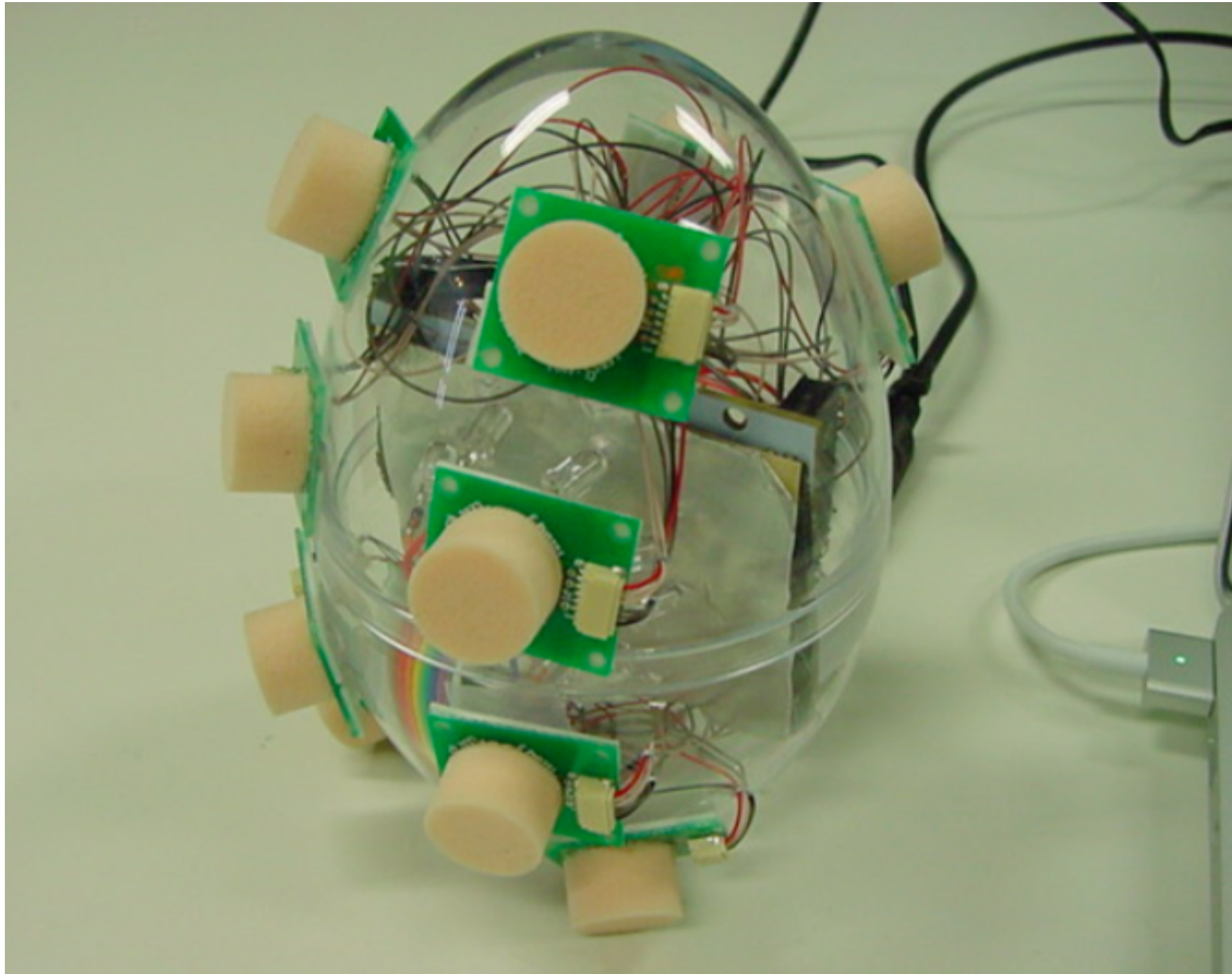
```
bits/second: 8542 receiving at: 220.00Hz dropped samples: 0
Battery: [|||||] 85% voltage: 4.81V
Noise: [ 0.0% 0.0% 0.0% 11.0% ]
```

DEMO

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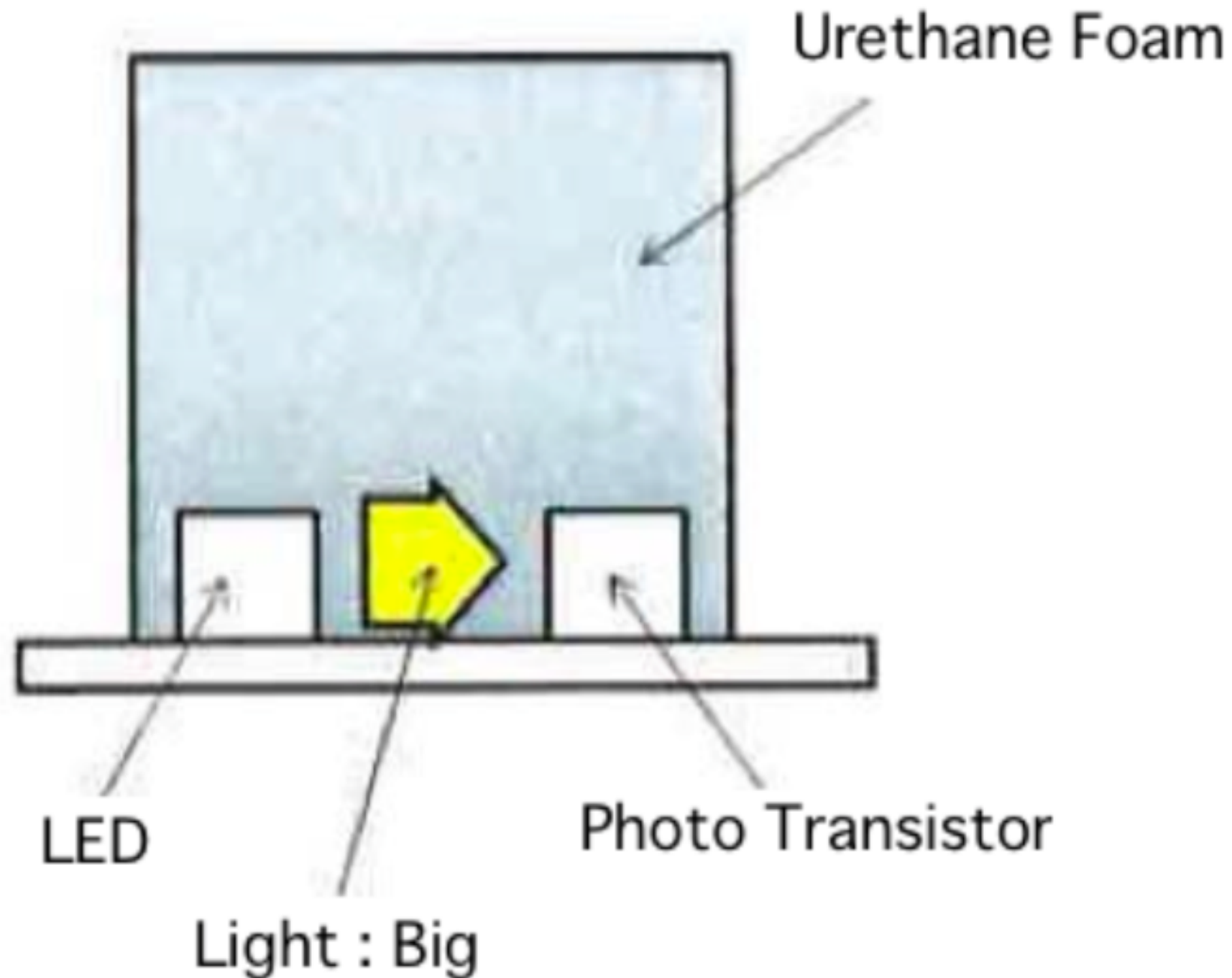
MRTI2015



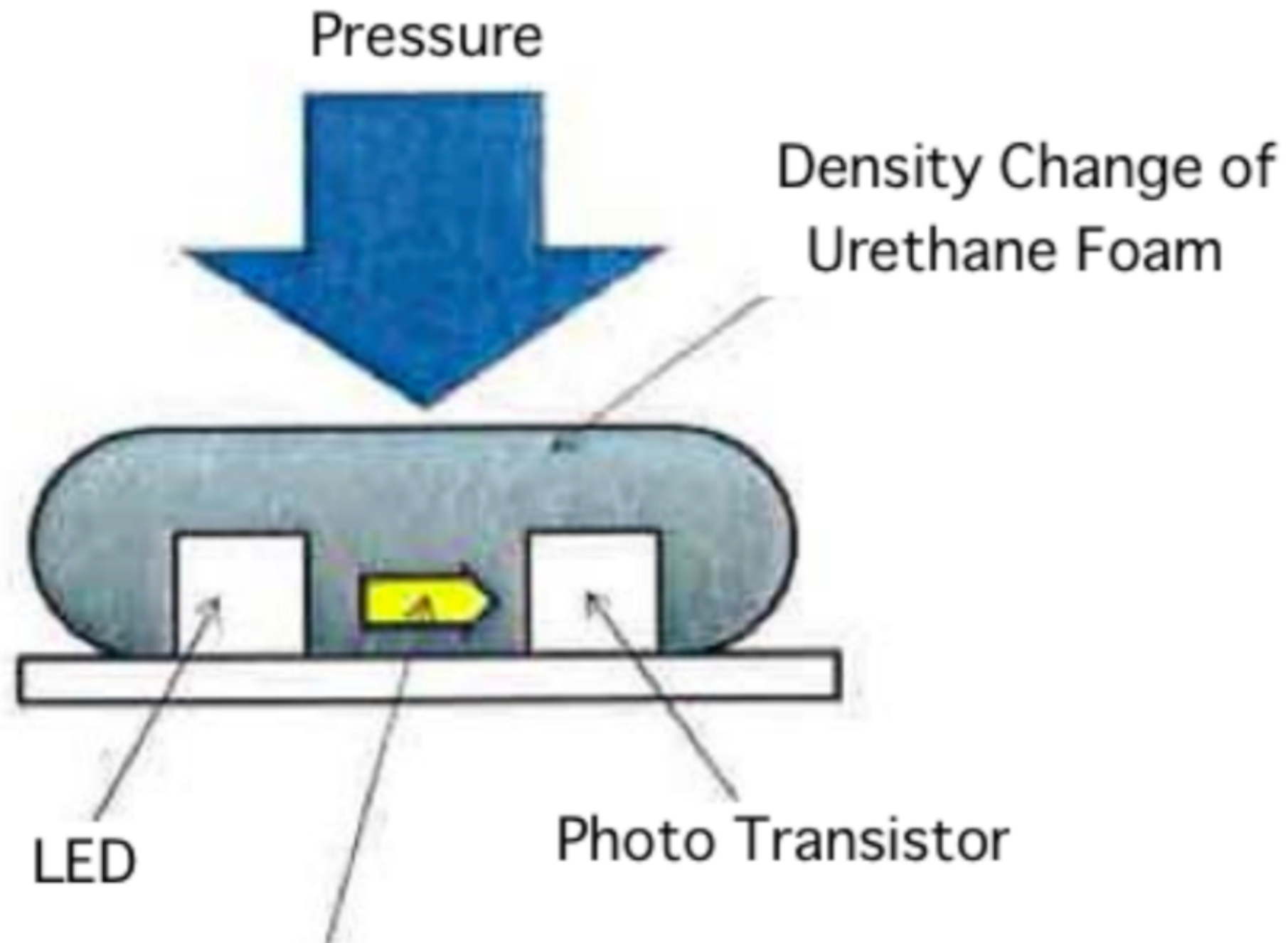
PAW sensor



PAW sensor

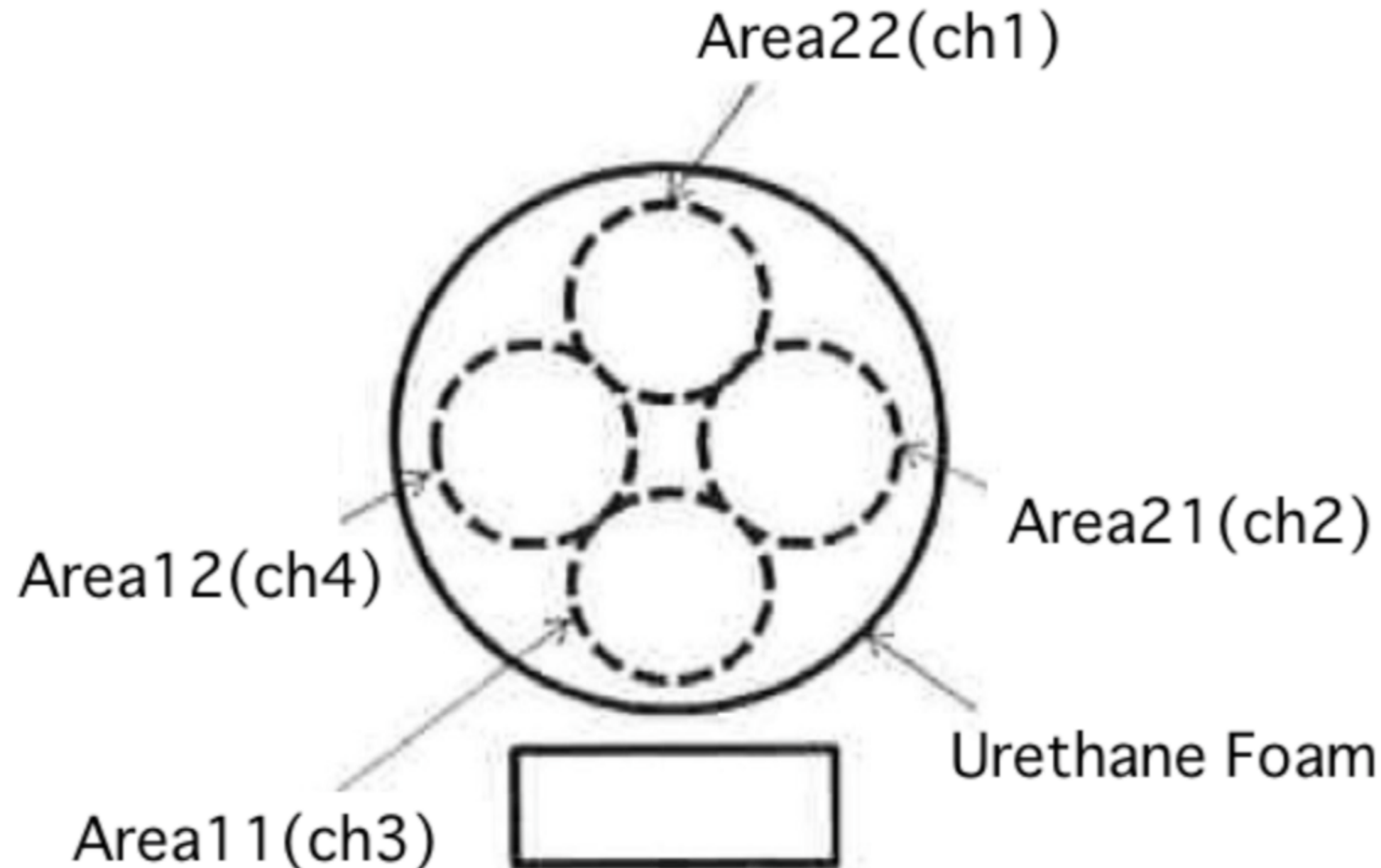


PAW sensor



Light : Decrease by the bigger Density of Urethane Foam

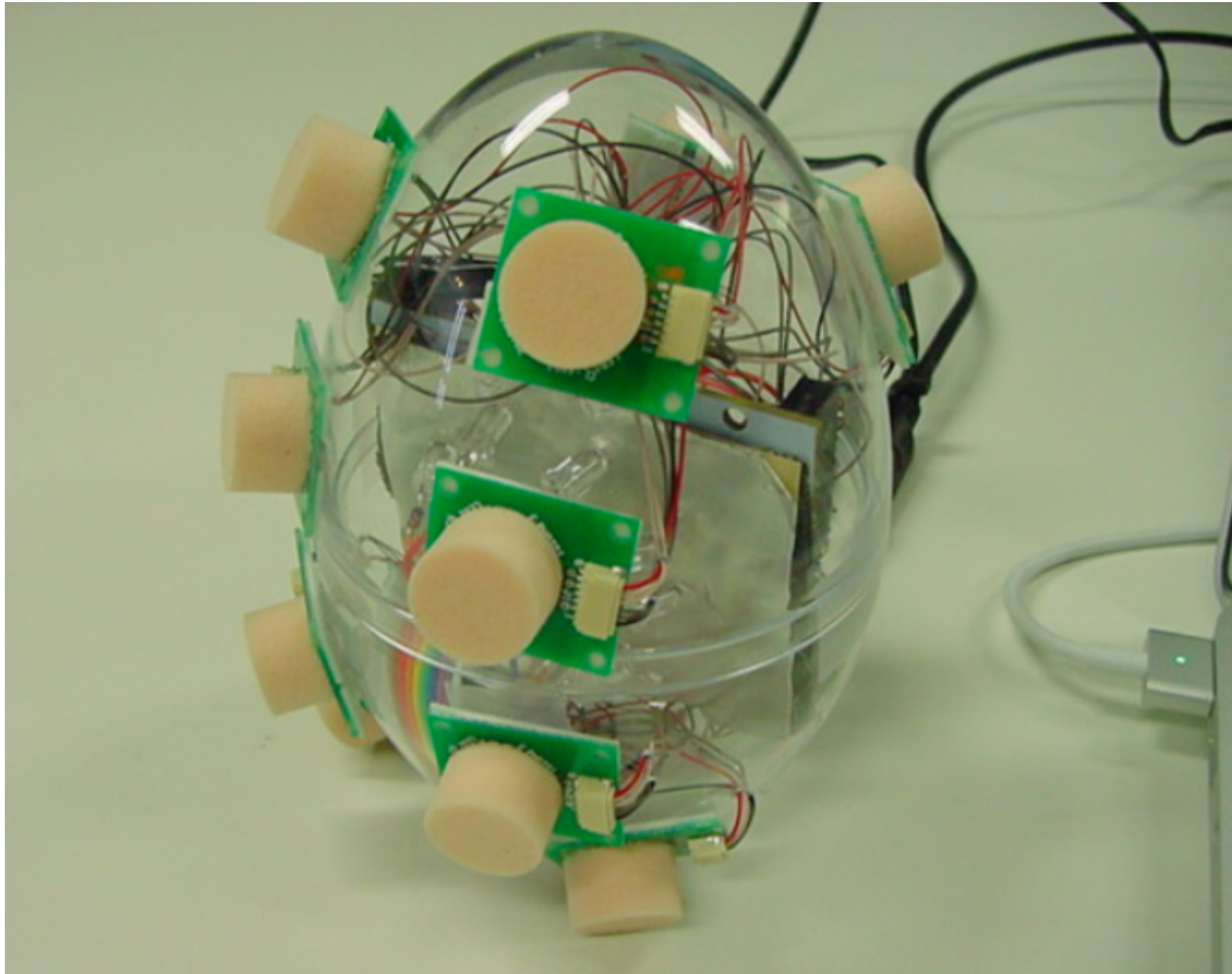
PAW sensor



Making of MRTI2015

[http://nagasm.org/
1106/news5/docs/
MRTI2015_making.html](http://nagasm.org/1106/news5/docs/MRTI2015_making.html)

MRTI2015



DEMO

Thank You.