# Quick Guide to the Sound and Gesture Lab Scenarios

This document describes the steps to follow in order to perform the scenarios described in DE 5.4.1.

## *Installs and Configuration*

Using Max/MSP (complete version):
- Download SG_Lab
- Install the FTM library: install files located at SG_Lab/installations-files
- Launch and configure Max/MSP
    - Open Max/MSP, Options, File Preference: choose and add current SG_Lab directory and remove any other (older) SG_Lab directory.
    - Open Max/MSP, Options, DSP Status: select your input audio device (coreaudio, external cards,…)
    - Quit Max/MSP, to save this configuration for future uses.
- Launch SG_Lab: _sg-lab.pat

On Windows platform, do not forget to install java and quicktime also; please make sure to uninstall any previous FTM distribution.

Using standalone executables (MaxMSP Runtime):
If you are using the standalone version of Max/MSP, you just need to unzip the two packages (_sg-lab and lg.sensors) and run the applications:
- win: 'lg.sensors/lg.sensors.exe' AND '_sg-lab/_sg-lab.exe'
- mac: 'lg.sensors' AND '_sg-lab'

To configure audio setup:
- click the button "Audio Setup" in the "Tools" section (opens DSP Status window),
- select your input audio device
- QUIT and RELAUNCH SG_Lab so that the configuration becomes effective (this will also save the configuration for future uses).

Receiving sensors data:
If you experience troubles receiving data from IRCAM module sensors:
- check IP address in your win/mac network configuration:
  IP should be 192.168.1.100 and submask 255.255.255.0.
- check module ID in lg.sensors/Xbee-Violin:
  if you need to change module ID, edit directly in lg.sensors patch and
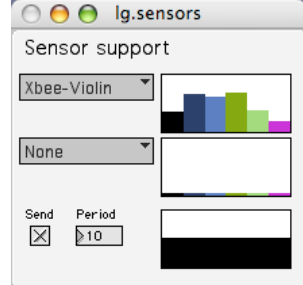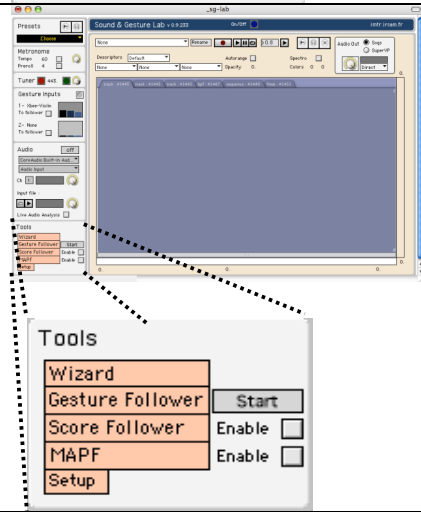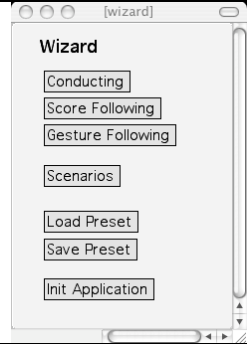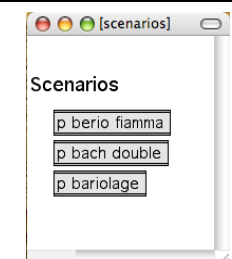  click on 'Send Config'.

## *Setup needed*

- A microphone, to record the violin sound
- Loudspeakers
- An external audio device (optional)
- IRCAM sensing module, to record violin player's movements

## *Quitting SG_Lab*

- Close the SG_Lab main patch
  When ask "save, don't save, cancel", always choose "don't save". (n.b.: this message concerns the SG_Lab application, and NOT your sessions or presets)
- Close the sensor patch "lg.sensor"

## *Getting started*

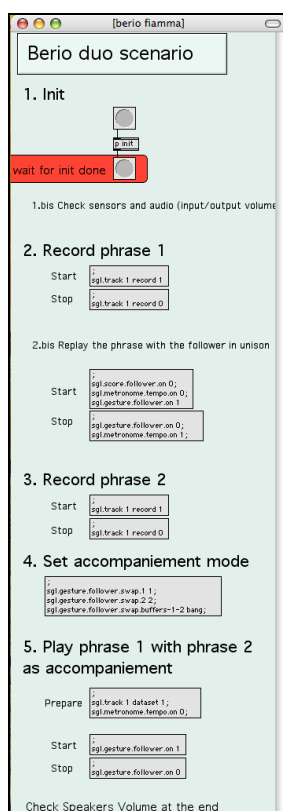| | |
|---|---|
| Launch the Sound and Gesture lab and the sensor management applications | `sglab-mac.command` (Mac OS X)<br>`sglab-win.bat` (Windows) |
| In the lg.sensor window, select the sensor input: for example *Xbee-Violin* |  |
| In the S&G Lab window, click on *Wizard* in the *Tools* section. |  |
| Click on *Scenarios* |  |
| Double-click on any scenario |  |

## *Scenario Instructions*

Here are the steps to follow to reproduce the scenarios, and some indications to extend them toward other pedagogical contexts.

## Automatic Accompaniment: "Berio duo" Scenario

<u>Setup:</u>
- Place the module on the violin bow.
- Place the microphone on the violin / check audio level.
- Click on *p berio fiamma* to open the following window, containing the instructions for the automatic accompaniment scenario.



1. First, you need to init the system:
- Click on the top button in the Init section
- Wait for the yellow bang to blink.

2. You can proceed with the recording of the first voice of the Berio duet:
- Click start
- Wait for the preroll beats (default is 4).

Nb: the system starts recording the movements when you click the start button, so you should remain still during the preroll or be able to reproduce the same movements (e.g. preparation movements).
- Begin to play
- Click stop when done.

2.bis. You can test that the recording went well and that the following system is operational:
- Click start

- Wait at least for the preroll time (preparation movements)
- Replay the same first voice

The system should play at unison, according to your temporal variations.
- Click stop when done

3. You can proceed with the recording of the second voice of the Berio duet
- Click start
- Wait for the preroll beats.

Nb: the number of preroll beats should be the same as for the first voice.
- Begin to play
- Click stop when done.

4. Set the system configuration for automatic accompaniment
- Click on the dedicated button

5. You now can play the first voice, with the second voice as accompaniment.
- Click on start
- Wait at least for the preroll time (preparation movements).
- Play the first voice

The system should play the second voice, according to your temporal variations on the first voice.
- Click on stop when done.

Discussion:
With this scenario, string students can interpret several voices simultaneously, playing a voice and controlling the other with his/her playing. Also, having the accompaniments played while practising helps develop a deeper understanding of a piece.

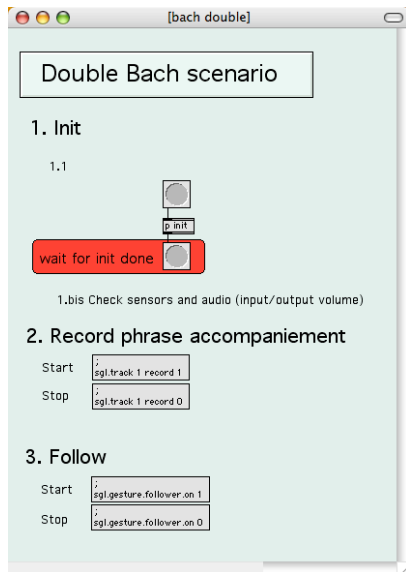You can extend this scenario to other situations:
The teacher can record one of the voices, e.g. the second voice.
Another instrumentalist (flute, piano,…) can be recorded live for the second voice, e.g. to practice at home with an accompaniment.

## Gesture chamber music: "Double Bach" scenario

Setup:
- Take the sensing module in your hand.
- Place the microphone on the violin / check audio level.
- Click on p bach double to open the following window, containing the instructions for the gesture chamber music scenario.

1. First, you need to init the system:
• Click on the top button in the Init section
• Wait for the yellow bang to blink.

2. You can record your movements on a live audio input
• Click on start
• Move to the music (free gesture or conducting gesture).
NB: the system starts recording the movements when you click the start button, so you should remain still before performing the movements you want to record or be able to reproduce the same movements (e.g. preparation movements).
• Click on stop when done.

3. You now can perform the same sequence of movement and control the music tempo:
• Click on start
• Start the sequence of movements
The system should replay the music in time with your movements.
• Click on stop when done.

Discussion:
This scenario develops a novel type of chamber music, mixing a traditional acoustical instrument and a computer. One interpret is playing the violin and the other is "playing" the computer thanks to free gestures. The two interprets therefore have to focus on each other's movements and sound (especially the violin player who is face to free gestures) to decode the other's musical intentions and create a coherent ensemble.


## String crossing: "Bariolage" scenario
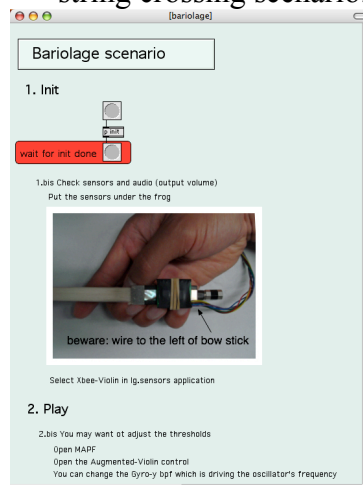This scenario has been videotaped :

http://www.i-maestro.org/documenti/view_documenti.php?doc_id=1647

Setup:
• Place the module on the violin bow: be careful on its placement (see picture)
• No microphone needed

- Click on p berio fiamma to open the following window, containing the instructions for the string crossing scenario.



1. First, you need to init the system:
- Click on the top button in the Init section
- Wait for the yellow bang to blink.

2. Now that the preset is loaded, each string crossing is sonified with a simple bip.

Discussion:
This scenario turns to sound movements that are usually silent, i.e. string crossings.
In a musical excerpt with numerous bariolage, e.g. in Bach 1st cello suite, Prelude, a rhythmical pattern will arise corresponding to the string crossing schema. This pattern contributes to feel the rhythm balance. As such, this scenario helps developing students' music embodiement.

You can adjust the sensibility of string crossings using the MAPF environment.
You can also choose to sonify different gesture inputs, and change the sound outputs within MAPF to build other sonifications.

## Various pedagogical extensions of the above scenarios

### Ear Training

This scenario has been videotaped :

http://www.i-maestro.org/documenti/view_documenti.php?doc_id=1023

Steps to make this scenario :
- Write an ear training exercise
- Prepare the students by playing various sequences of notes taken into the ear training exercise
- Start the second scenario (Gesture Chamber Music)
- Ask a student to record the ear training exercise
- Ask the student to conduct his recording while the remaining students have to write the resulting audio.

Discussion :

The resulting audio is a mix between the written exercise and two different skills of the student : playing skill (essentially precision of playing), and conducting skill. For both skills the student knows that if he makes a mistake, the rest of the class will have false results when writing. Due to this phenomena, it has been observed that the quality of awareness from both sides (student conducting and rest of the class), was very high under those conditions.

**Conducting**

This scenario has been videotaped :

Gesture learning phase :
http://www.i-maestro.org/documenti/view_documenti.php?doc_id=1294

Gesture following phase :
http://www.i-maestro.org/documenti/view_documenti.php?doc_id=1295

Steps to make this scenario :
- Start the Sound and Gesture Lab
- Click on "Wizard".
- Click on "conducting"
- Follow the indicated steps (Open sound file, record gesture, replay).

Discussion
The examples shows clearly that when recording very smoothly a conducting gesture on a serie of regular quarter notes, like in the second part of the rite of spring used in the video, if the student has stiff gesture (which is a common defect), the resulting rhythm will be altered in a manner that allows the student to "smoother" his gesture by concentrating on regularity.

**Gesture duet**

Attention : this scenario needs two computer.
This scenario has not yet been videotaped.

Steps to make this scenario :
- Record part one of a duet following the conducting procedure scenario
- Record second part of the duet following the same procedure
- Two students replay each part un synchronization

Discussion
This scenario allows a temporarily disconnection between technical gesture and musical gesture into the context of chamber music. Students may feel what is due to technical issues, and what is not.