

Tomás Bordalejo  
*Hauteurs*  
2016

Reprise at Jussieu [octobre 2016] & Sorbonne [march 2017]  
2016



---

The setup and the execution of the electroacoustic part  
of this work requires a Computer Music Designer (Max expert).

---

Table of Contents

|                             |   |
|-----------------------------|---|
| Table of Contents           | 2 |
| Work related information    | 3 |
| Performance details         | 3 |
| Detailed staff              | 3 |
| Realisation                 | 3 |
| Useful links on Brahms      | 3 |
| Version related information | 4 |
| Documentalist               | 4 |
| Realisation                 | 4 |
| Upgrade Motivation          | 4 |
| No other version available  | 4 |
| Electronic equipment list   | 5 |
| Computer Music Equipment    | 5 |
| Musical Instruments         | 5 |
| Files                       | 6 |
| Instructions                | 7 |
| Setup                       | 7 |
| Coala Connectors            | 7 |
| Software                    | 7 |
| Initilization routine       | 7 |
| Patch presentation          | 8 |
| Performance notes           | 8 |

## Work related information

---

### Performance details

- June 24, 2016, Paris, Cité de la musique, Amphithéâtre, dans le cadre du festival ManiFeste

### Detailed staff

- guitar [SmartInstrument]

### Realisation

- José-Miguel Fernandez

### Useful links on Brahms

- [Hauteurs](#) for SmartInstrument guitar (2016)
- [Tomás Bordalejo](#)

## Version related information

---

Performance date: Oct. 16, 2016

Documentation date: Oct. 21, 2016

Version state: valid, validation date : Nov. 30, 2017, update : May 6, 2021, 3:09 p.m.

## Documentalist

Benjamin Levy (Benjamin.Levy@ircam.fr)

You noticed a mistake in this documentation or you were really happy to use it? Send us feedback!

## Realisation

- Tomas Bordalejo (Composer)
- Tomas Bordalejo (Performer)
- Benjamin Lévy (Computer Music Designer)
- Adrien Mamou Mani (Researcher)

Version length: 11 mn

## Upgrade Motivation

Reprise of the piece for "Fête de la science" at Jussieu. Produced by Collegium Musicæ. Second reprise at Sorbonne University. No clean-up of the patch was done after the premiere. This version was made mainly to get a readable patch with only useful dependencies.

## No other version available

## Electronic equipment list

### Computer Music Equipment

- 1 MacBook Pro - *Apple Laptops* (Apple)
- 1 Coala - *Embedded Audio Platform* (Ircam)
- 1 Max 6 - *Max* (Cycling74)  
version 6.1 - 32 bits
- 1 Fireface 400 - *Sound Board* (RME)  
it could be another audio interface

### Musical Instruments

- 1 smart guitar - *Musical Instruments* (Ircam)  
with the Coala processor version 2 (blue metal box with screen)
- 1 Distortion Pedal - *Effect pedals*

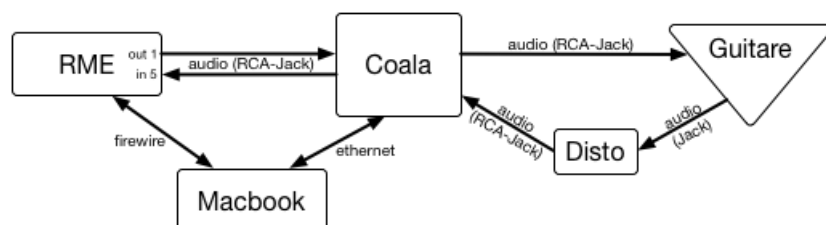
Files

| File  | Type         | Author(s)    | Comment |
|---|--------------|--------------|---------|
| <a href="#">Hauteurs-Bordalejo-filage130616.mp3</a> | Recording(s) | B. Lévy      |         |
| <a href="#">Hauteurs-Bordalejo.Max_proj.zip</a>     | Patch        | B. Lévy      |         |
| <a href="#">Guitar Part</a>                         | Score        | T. Bordalejo |         |
| <a href="#">Score</a>                               | Score        | T. Bordalejo |         |

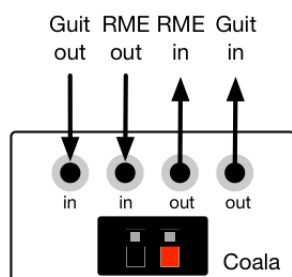
## Instructions

## Setup

No speaker or mixing console is required for this piece. The SmartGuitar is used to output all the electronic part including pre-recorded samples.



## Coala Connectors



## Software

This version is a Max Project running with Max 6.1 32bits. You only need Max 6.1 32bits and a terminal with 'ssh' command to run it. Except for Sampling rate (44.1kHz which correspond to the sample rate of the sound files used), no special Max setup is required for this piece. We use this standard setup :

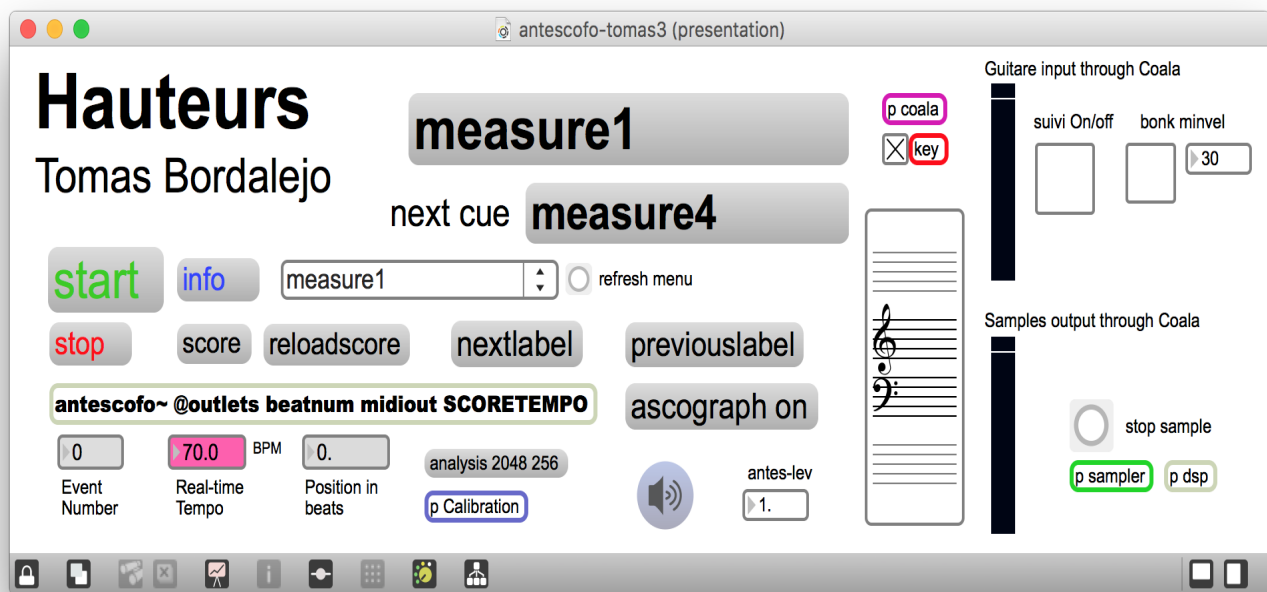
- I/O Vector Size: 512
- Signal Vector Size: 256
- Sampling Rate: 44100Hz
- Scheduler in Overdrive: yes
- in Audio Interrupt: no

## Initilization routine

- Plug the ethernet cable between the Coala and the computer **before turning on the Coala**
- Turn on the Coala with the isolated knob inbetween the two LEDs and wait until the screen reboots a second time
- Configure the Coala with its knobs
  - select with the red bar on the left (by rotating the blue knob) `Preamp > ADC in`
  - turn it on (by pushing the blue knob)
  - it should have a green `on` written on the right
  - do the same with `Preamp > RIM out` and `RIM in > ADC in`
  - set `preamp` to a value between 9 and 13 (with the black knob)
  - set `amp` to 0 (with the other black knob)
- Launch a terminal on the computer
  - login on the Coala with the command `ssh root@192.168.1.50` (you may have to replace the IP address with the correct one indicated either on the Coala or in your Mac network preferences as `Router` ). No password.

- once logged, run the OSC server of the Coala with the command `coala -oscsver`
- Launch Max 6.1 32bits and open the `Hauteurs_Bordalejo.maxproj` of the project folder
  - the main patch `antescofo-tomas3` should open automatically
  - click on the `score` message and choose the file `Hauteurs-2ter-Tomas.ascotxt` which is inside the `data` folder in the project folder
  - Max window should read: `Antescofo~ - Score loaded succesfully with 873 events and 780 actions.`
  - turn Max audio on with the *speaker* button of the patch
  - press the `start` button when you are ready to play
  - the piece should start automatically at the first chord played by the guitarist: the first cue triggers a pre-recorded sample of a guitare string scratch with a plectrum. It should sound inside the augmented guitar!

## Patch presentation



## Performance notes

Along the piece, the score following system for the electronic part is shared between the `Antescofo~` system and the Computer Music Designer (CMD). Space Bar indications are written along the score. They should be executed by the CMD. Some of these cues directly trigger some effects/files, some other switch on/off the score follower system.


The current cue and next cue are shown in the main patch interface so that the CMD can monitor the correct following of the score. Left and right arrows can (and should) be used to jump backward or forward if the score following is not correct. As the guitar sound and the electronic part both sound *in* the physical instrument (the smartguitar), errors in the automatic following happen often. The CMD has to really watch out for that.

Especially:

- bar 12, 15 and 17: cues can be manually triggered during the rest before the note of the guitarist
- bar 28 to 32: the cues are to be triggered right at the beginning of the bar
- bar 41: cue is on the chord of the second beat of the bar
- bar 65 to 74: the automatic score following tend to jump forward faster than expected. The sound file (triggered bar 65) should fade out on bar 73 only and stop definitively on bar 74. Bring the cues backward with the left arrow if needed.
- on bars 85, 86, 87 and also 191 to 200: a sampled chord is triggered on the attack of the *real*chord. If the triggering is missed by the automatic system, it is better if the guitarist attacks again the same chord to trigger the sample. Otherwise, the attacks wont be synchronized.
- at the end of bar 87: the manual cue (space bar) stops the sample "H". Synchronize the guitarist to have him ready to attack bar 88 (especially if he/she has to turn the pages)



- bar 97: two cues are normally automatically triggered. The second one should start on the last beat of the bar and not before. Bring the cues backward by hand if needed.
  - bar 146 to 149: three *manual cues* (space bar) and one automatic trigger (to play sound file) are very close. The automatic score following tend to jump forward faster than expected and triggers the sound file on 149 to soon. This last cue should be synchronized with the guitarist.
  - bar 211: manual cue (space bar) should be triggered on the attack of the guitarist's chord.
  - end of the piece: if the expected larsen does not appear, let the voice sample play alone until the end.
- 

© IRCAM 

This documentation is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Version documentation creation date: Oct. 21, 2016, 12:30 p.m., update date: May 6, 2021, 3:09 p.m.