

Emmanuel Nunes

Einspielung I

2011

Max 8 - 2021

2021



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

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Work related information

Performance details

- June 16, 2011, France, Paris, Centre Pompidou, festival Agora

Publisher : Jobert

Detailed staff

- violin

Realisation

- José-Miguel Fernandez

Useful links on Brahms

- [Einspielung I](#) second version, for violin and live electronics (2011), 17mn
- [Emmanuel Nunes](#)

Version related information

Performance date: March 6, 2019

Documentation date: June 9, 2021

Version state: valid, validation date : Oct. 13, 2021, update : Sept. 7, 2022, 2:41 p.m.

Documentalist

Joao Svidzinski (Joao.Svidzinski@ircam.fr)

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

Realisation

- José Miguel Fernandez (Computer Music Designer)
- David Poissonnier (Computer Music Designer)

Version length: 17 mn 46 s

Default work length: 17 mn

Upgrade Motivation

2021 port (Max8 64bit with 48Khz SR) of the original version .

Other version(s)

- [Emmanuel Nunes - Einspielung I - 2023-ESPRO \(April 18, 2023\)](#)
- [Emmanuel Nunes - Einspielung I - Manifeste 2021 - 8 speakers \(Sept. 7, 2022\)](#)
- [Emmanuel Nunes - Einspielung I - 2019 Eastman \(Nov. 28, 2020\)](#)
- [Emmanuel Nunes - Einspielung I - Geneve2014 \(Feb. 8, 2018\)](#)
- [Emmanuel Nunes - Einspielung I - Documentation Einspielung I \(Oct. 23, 2012\)](#)
- [Emmanuel Nunes - Einspielung I - creation-agora-2011 \(Sept. 6, 2011\)](#)

Electronic equipment list

Computer Music Equipment

- 1 Max 8 - *Max* (Cycling74)
- 1 antescofo~ - *External objects* (Ircam)
version 1.0-1
- 1 Sound Board - *Sound Board*
(RME Fireface 800)
- 1 BCF 2000 - *MIDI Mixer* (Behringer)

Audio Equipment

- 1 DPA 4061 - *Condenser Microphones* (DPA)
- 11 Loudspeaker - *Loudspeakers*
- 1 subwoofer - *Subwoofers*
- 1 Mixing Console - *Mixing Console*
with 13 Out and 1 Input, with 1 slot ADAT for connect to Audio Interface

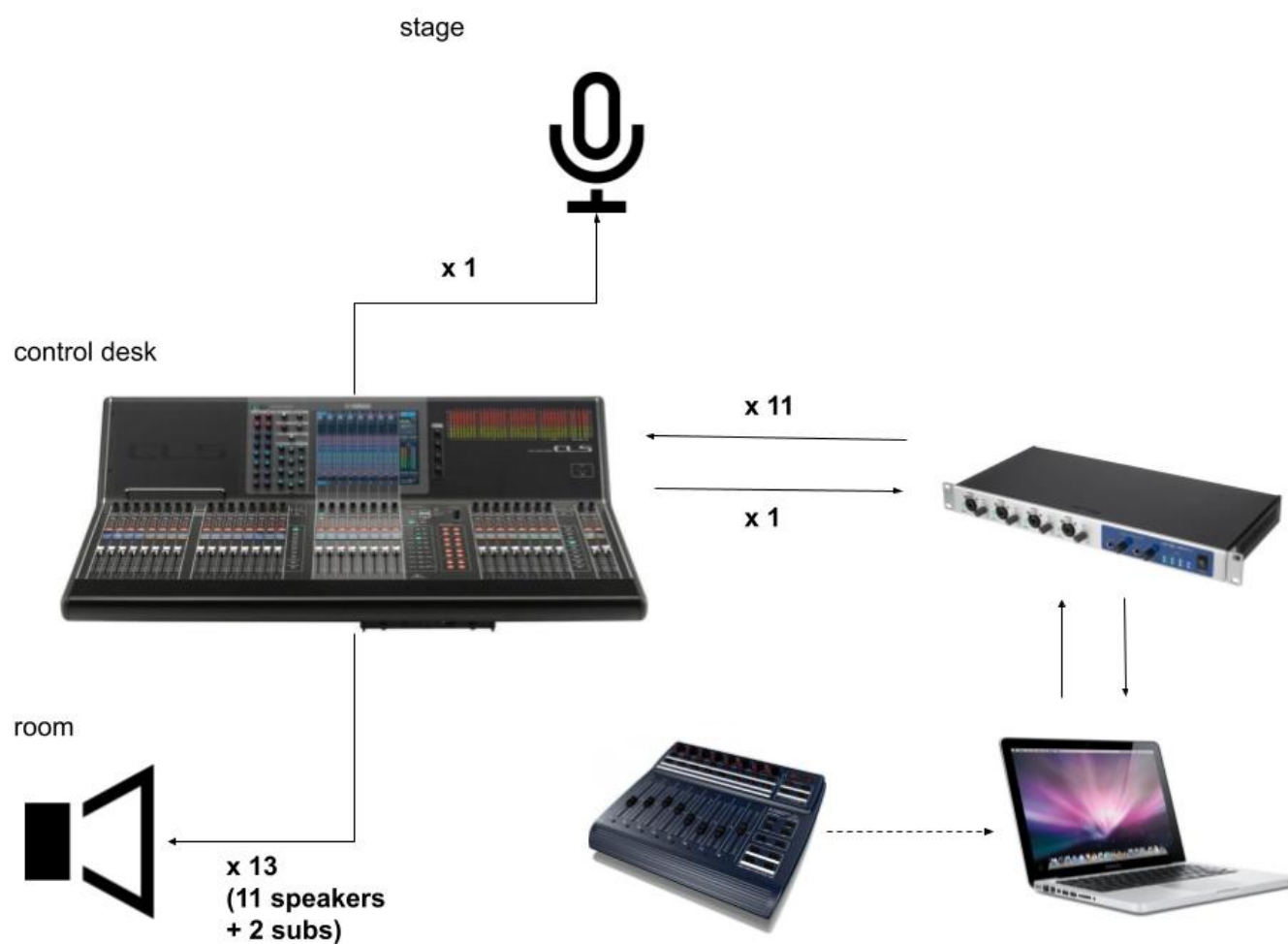
Files

File	Type	Author(s)	Comment
EINSPIELUNG- 2021	Patch		
Score-RIM.pdf	Score	José Miguel Fernandez	Score for computer music designer

Instructions

Audio setup

- 11 points of diffusion (Speakers), see the diagram
- 1 Mixer with 13 Out and 1 Input, with 1 slot ADAT for connect to Audio Interface
- 1 microphone DPA 4061
- 1 or 2 Subwoofer
- 1 Macintosh computer with Max software.
- 1 Audio Interfaces (RME Fireface 800)
- 1 Midi controller (bcf2000)

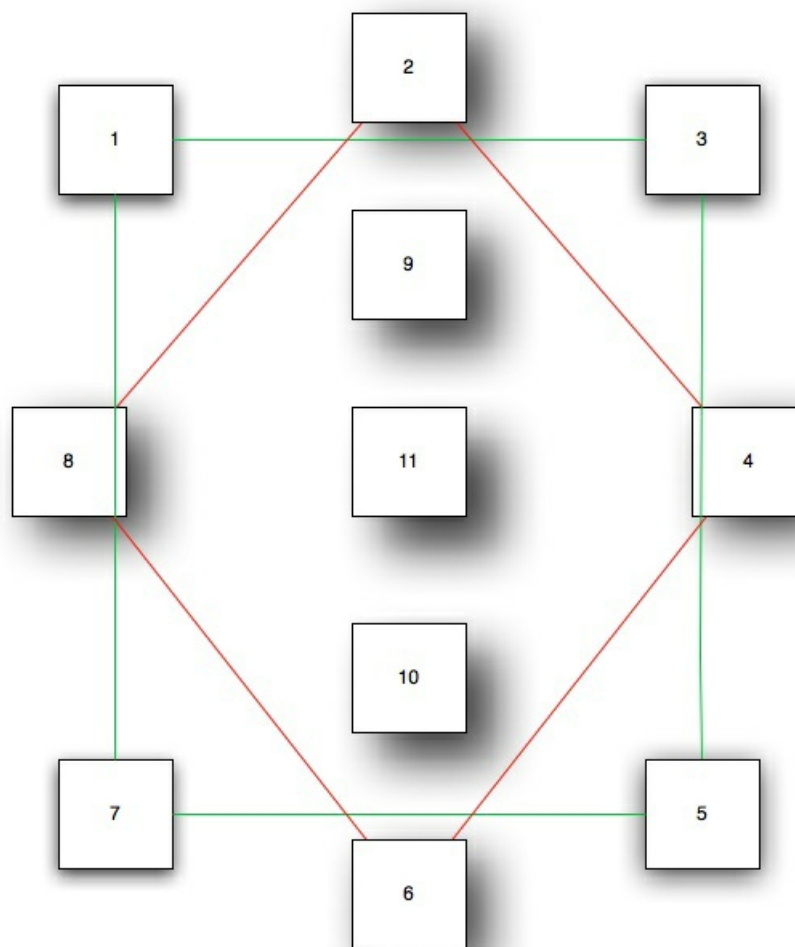


Loudspeaker setup

Einspielung I

Composer: **Emmanuel Nunes**

Computer Music designer: **José Miguel Fernández**



Speakers 1, 3, 5, 7 first level, to the height of public

Speakers 2, 4, 6, 8 second level, above the public

Speakers 9, 10, 11 third level, on the ceiling, over the public

Midi setup

Use a BCF-2000 to control the treatments levels, the factorization of delay time and envelopes length.

Sliders:

- Control 1 [ctlin 7 1] = Direct sound level in dB
- Control 2 [ctlin 7 2] = Harmonizer level in dB
- Control 3 [ctlin 7 3] = Frequency Shifting level in dB
- Control 4 [ctlin 7 4] = Filters level in dB
- Control 5 [ctlin 7 5] = Resonators level in dB
- Control 6 [ctlin 7 6] = Reverberation level in dB
- Control 7 [ctlin 7 7] = Factorization envelopes length (1 normal length, 2 two times longer, 0.5 two times shorter)
- Control 8 [ctlin 7 8] = Violin input level in dB

Knob:

- Control 9 [ctlin 7 9] = Factorization delays length

Software installation

1. Download *Einspielung-2021.dmg*.

2. Mount the disk image and copy its contents in a folder named *Einspielung-2021*
3. In *Max 8*, choose .../*Einspielung-2021* in *option > File preferences*.
4. Check the *Audio status* in *option > Audio Status* (see below).
5. Close *max* and open *_Einspielung-I-2021.maxpat* (red label), in the *Einspielung-I-Max* folder, and *Einspielung-Antescofo concert 2021.maxpat* (red label), in the *Einspielung-I-Antescofo* folder.

[illegible][illegible]

DSP status

Performance and Scheduler

Sampling Rate	48000	▼
I/O Vector Size	256	▼
Signal Vector Size	256	▼
Scheduler in Overdrive	✕	Audio Interrupt ✕
CPU % Limit	▶0	

Initialization routine

Einspielung requires 2 Max patch to work : *Einspielung-Antescofo_concert_2021.maxpat* and *Einspielung-Antescofo_concert_2021.maxpat*

- Follow the Antescofo and concert patch routine (see below).
- Send the audio signal coming from the console (without any treatment or compression in direct out pre-fader) to both Max patches.
- Test the 11 outputs channels with the Audiotester patch (in the “Extra” Max menu).
- You need to try different parts of the score to adjust the input level of the violin to the “Einspielung-Antescofo” Max patch. Try for example the first page from measure 1 to 24, from measure 100 to 108, from measure 176 to 193.

Concert patch presentation and calibration

The screenshot shows the 'Einspielung I' (2011) interface by NUNES Emmanuel, designed by José-Miguel Fernandez and João Svidzinski. The interface is divided into several sections:

- IN LEVEL:** A vertical fader for 'VIn' set to 0.0 dB.
- OUT LEVELS:** A row of 11 vertical faders numbered 1 to 11.
- Configuration and Initialization:**
 - 1. configure audio status: dsp status
 - 2. choose MIDI inputs: midi device (AU DLS Synth 1 selected, select BCF2000)
 - 3. initialize (reset and Init buttons)
 - 4. CHECK Audio and MIDI (speaker icon)
 - 6. SET Fac and Del-Fac
 - 7. Initialize Antescofo Patch routine
- 5 TURN ON faders:** A note indicating the patch starts automatically with -6db, or can be set manually (e.g., fake-midlevel).
- Processing Faders:** A row of six faders for Direct, Harmo, Fshift, Filter, Reson, and Rev, all set to -6.0 dB.
- MASTER:** A master fader set to 0.0 dB, with sub-faders for Fac and Del-Fac.
- Measurement and Control:**
 - A 'Mesure30' button.
 - A grid of buttons for REV, Resonateurs, Filtre FFT, Harmo, and Fshift.
 - A row of six ADC faders (ADC1 to ADC6).

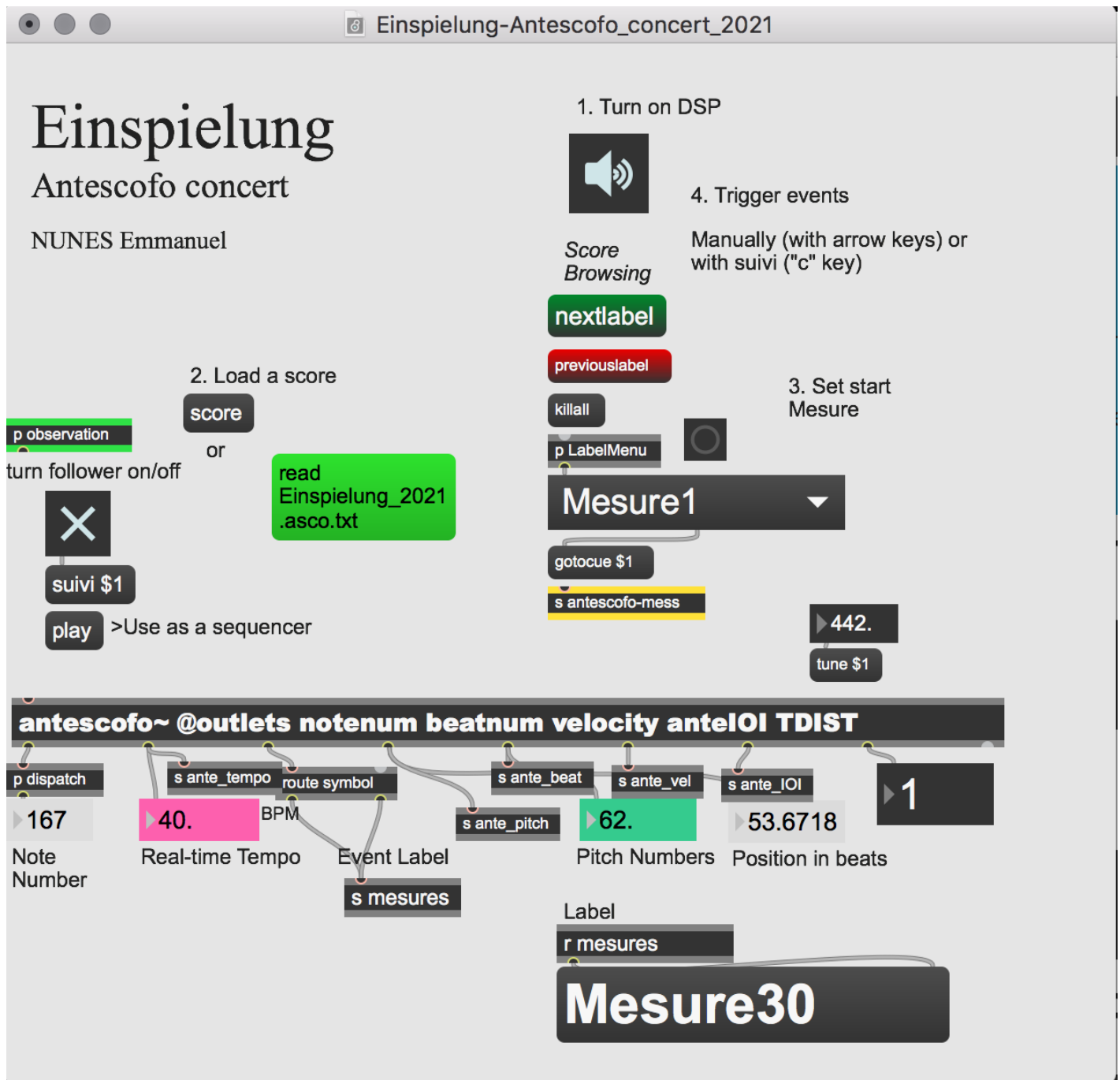
Follow the Initialization routine.

1. Check the DSP status.
2. Check the Midi controller input (Select the bcf2000 midi device in the menu).
3. Initialize (*reset* and *init* buttons).

4. Turn on DSP.
5. Adjust the midi faders : Typically start settings for treatments are: 0dB for “Vln” 0dB for “Direct”, -3dB for “Harmo”, -7dB for “Fshift”, -11dB for “Filter”, -24dB for “Reson”, -15dB for “Rev”, 1.12 for “Del-fac” and 1.81 for “Fac”. Of course this parameters can be adjusted during the performance to have a “good mix” between the direct sound of violin and real time treatments.
6. Set Fac and Del-Fac. Listen to the spatialisation. If the sound which goes from one to another HP is too long, decrease the Fac. However, if you have holes of sound when the sound goes from an HP to another, increase the factor.
7. Initialize Antescofo Patch routine (see below).

The adc input is number 1 [adc~ 1], but you can easily change it by editing the patch.

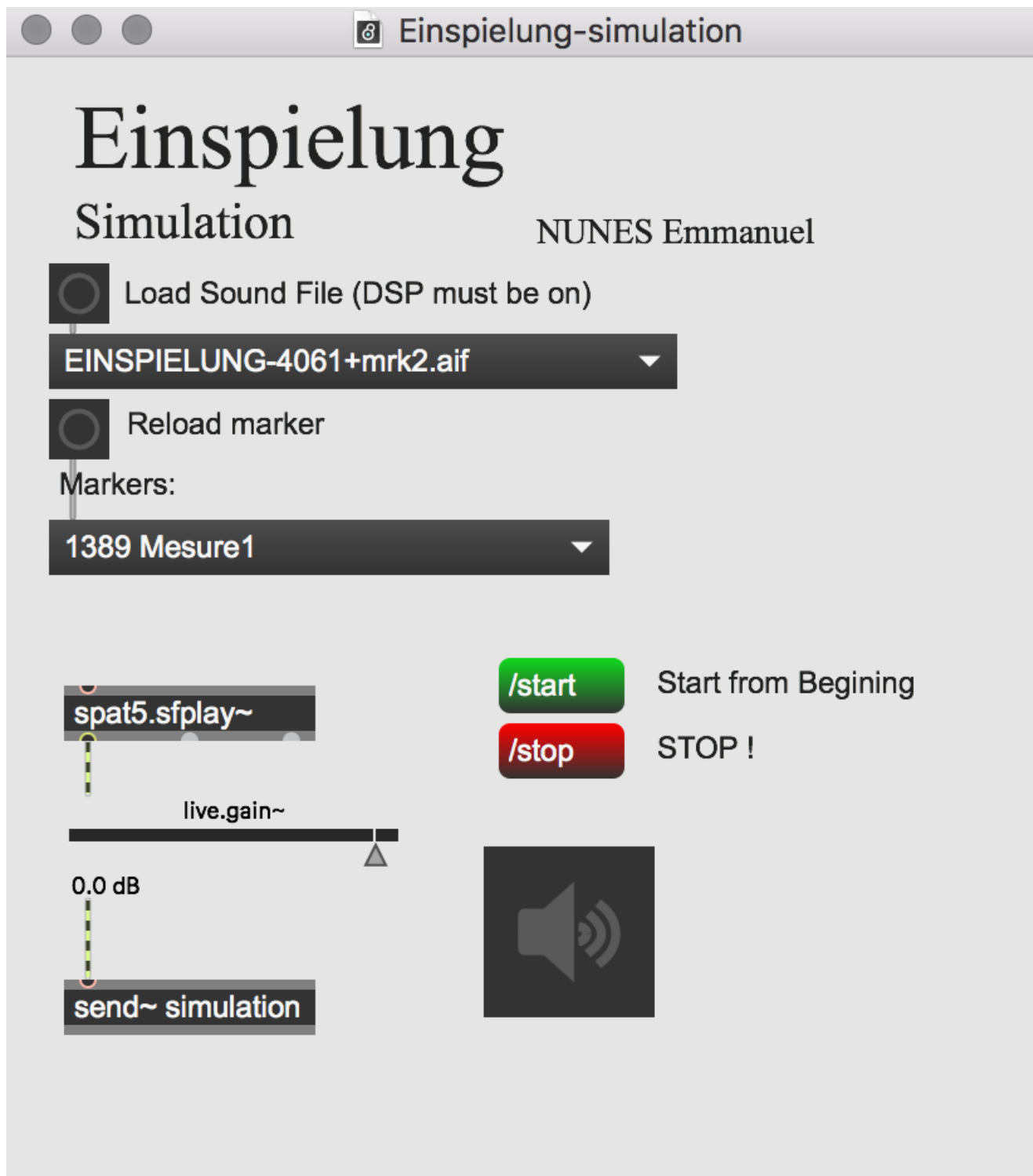
Antescofo calibration



- First check the tuning of the instrument, usually 442 Hz.
- Check all the points as specified in the main patch:
 - Press the green comment “read Einspielung_2021.aesco.txt” to load the antescofo score.
 - Then select a “Measure” in the umenu (Markers).
 - With the key “c” you can activate or deactivate the score follower reflected by the toggle Max object.
 - Use right arrow key to trigger the cues manually.

Simulation system

The simulation files could be used to test the setup before the rehearsal.



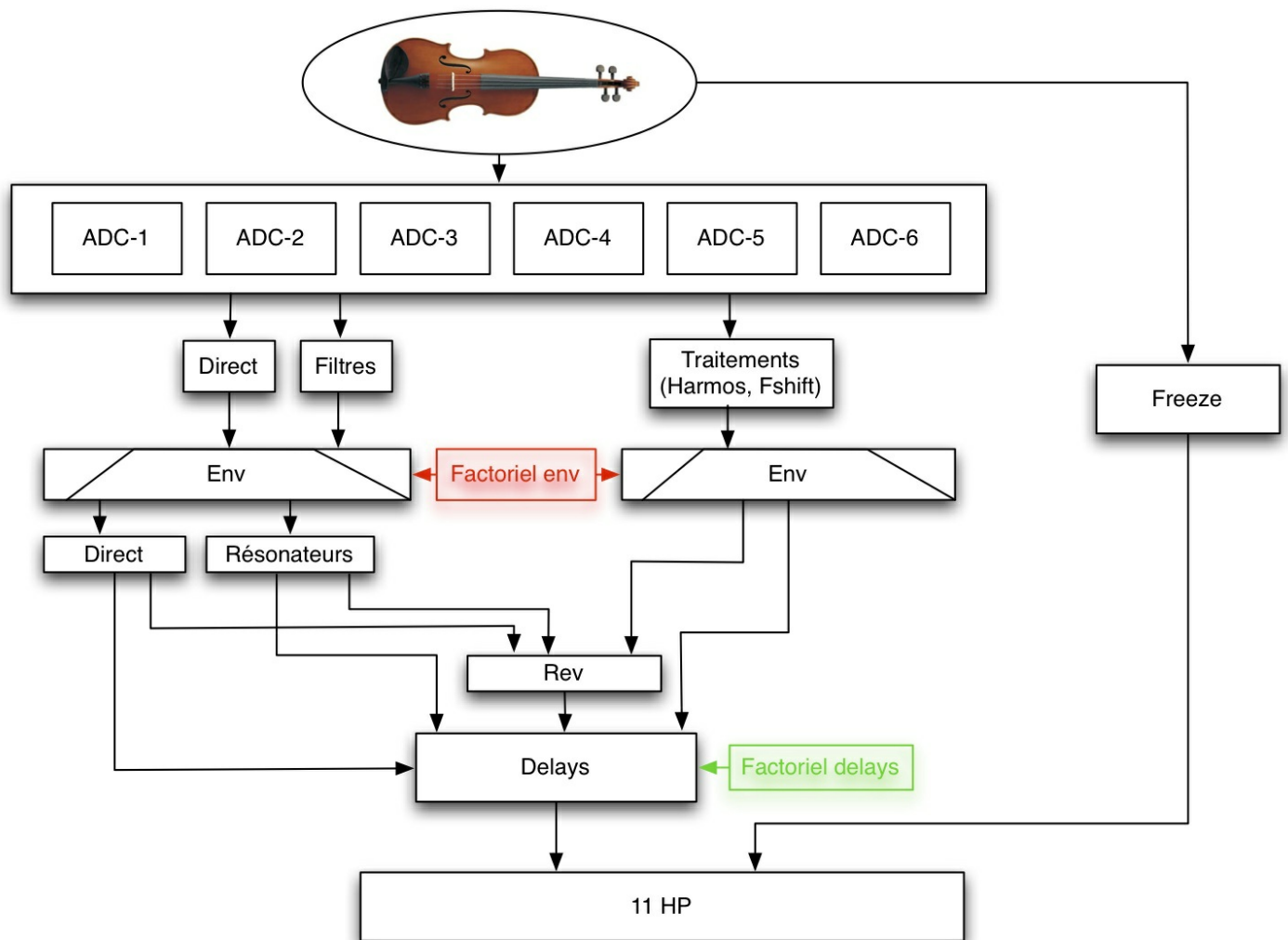
Open the *Einspielung-simulation.maxpat*, in the *Einspielung-Simulation* folder.

With the *Einspielung-Antescofo_concert_2021.maxpat* and *_Einspielung_antescofo-I-2021.maxpat* opened, start the simulation file. It is also possible to choose a different start point. In this case only modify the Markers selection and also modify it in the antescofo patch.

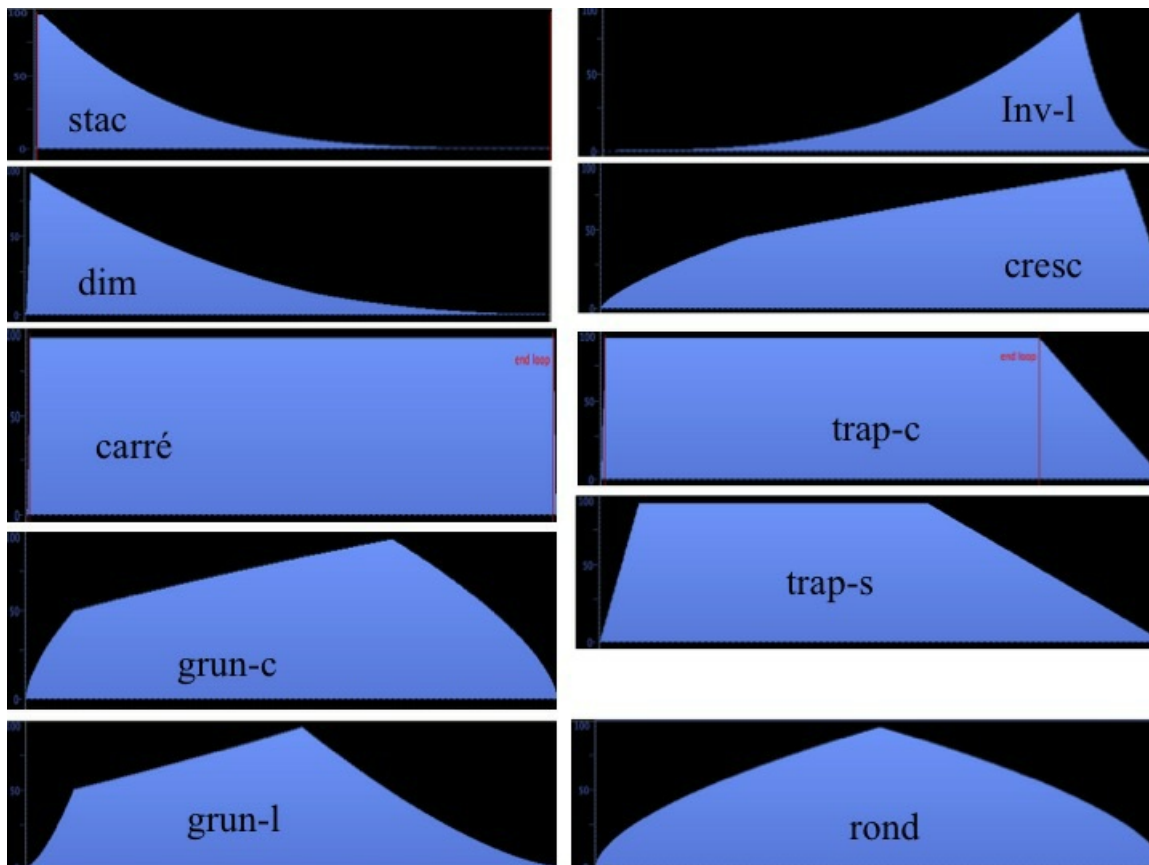
DSP engine and Spatialization

Diagram of internal system of treatments in the “Einspielung-I-“ Max patch.

There are 6 circuits of treatments (ADC-1 to 6), each one with treatments such as filters, harmonizers, Frequency Shifting, resonators, reverberations, delays and freezes that go directly to loudspeakers usually through an envelope.



Different shapes of envelopes used in Einspielung-I:



Performance notes

For the sound engineer: The violin must be amplified during the piece with a particularly attention in a good balance between the violin and the electronics. Usually the electronic part need to be compressed to avoid great dynamics differences.

For the Computer Music Designer: Since the beginning of the play, the score follower is automatic, but must be controlled permanently. If there are any errors during the follow you must disable the score follower with “c” key and follow manually pressing the right arrow key. To return to the normal score follower ON you must press the “c” key again and reflected by the toggle in the main *Einspielung-Antescofo_concert* patch.

In the following parts of the piece the score follower is offline. This is done automatically and successively events must be triggered manually until next ON. In the *Score-RIM* you can see all the places where the follower is OFF and ON and events that must be triggered by hand.

Here is a list of measures where the score follower is OFF, ON and triggered by hand.

- Measure 109 OFF
- Measure 110-111 by hand
- Measure 112 ON
- Measure 150 OFF
- Measure 151-152-153-154-155-156 by hand
- Measure 157 ON
- Measure 161 OFF
- Measure 162-163-164-165_1-165_2 by hand
- Measure 166 ON
- Measure 169 OFF
- Measure 170 ON
- Measure 194 OFF
- Measure 195 ON
- Measure 217 OFF
- Measure 218 ON
- Measure 222 OFF
- Measure 223 by hand
- Measure 223_2 ON
- Measure 223_3 OFF
- Measure 224 ON

Example of “Score-RIM” page number 11:

In **OFF** (red), automatic by score follower.

In ****ON** (**bleu), by hand.

Oval + number (black), measures triggered by hand.

JJ 1020

Program note

Einspielung I est dédiée à ma fille Martha. *Einspielung*, mot assez peu usité en allemand, a diverses acceptions. La première indique « une allusion à ... » La seconde est plus spécifique à la musique et surtout à la musique électronique : *Einspielband* est en effet le nom qu'on donne à la bande électronique qui sera jouée en même temps qu'un orchestre, par exemple. Enfin, dans sa forme réflexive, le verbe *sich einspielen* signifie « s'échauffer avant de jouer » : quelqu'un qui va jouer d'un instrument, ou sur une scène de théâtre, doit s'échauffer. Mais cet échauffement n'est pas un exercice purement mécanique et gratuit, séparé de l'intention : il s'agit de s'échauffer dans l'intention de jouer immédiatement après.

C'est la première des trois *Einspielungen*. C'est aussi ma première pièce destinée à un instrument *polyphonique* qui ne soit pas le piano. Celui-ci mis à part, je m'étais auparavant toujours refusé à écrire une pièce solo. J'ai toujours pensé, en effet, qu'il fallait arriver, dans une œuvre pour instrument seul, à une certaine thématization du matériau, et ne pas se limiter à une simple succession de notes, si sophistiquée soit-elle. Dans mon idée, le solo devait présenter de nombreux recouvrements motiviques pour une cohérence musicale qui dépasserait la simple chronologie du déroulement. Si vous comparez les déroulements globaux des trois *Einspielungen*, on constate qu'ils sont très différents les uns des autres. J'avais, au départ, l'intention d'écrire neuf *Einspielungen*, avec trois types de pièces de facture très différente, se déclinant pour chacun des trois instruments considérés : violon, alto et violoncelle. Il devait donc y avoir une deuxième pièce pour violon, à la manière d'*Einspielung II*, et une troisième, à la manière d'*Einspielung III*, et ainsi de suite – mais j'ai changé d'avis et n'ai écrit qu'une pièce de chaque groupe. Celle pour violoncelle (*Einspielung II*) est sans doute la plus labyrinthique et donc, du point de vue de la perception, la plus cryptique – et la moins évidente. La pièce pour alto (*Einspielung III*) est moins articulée dans sa forme que celle pour violon et, du point de vue mélodique, beaucoup plus élancée – la *lancée* mélodique y est plus vaste. La pièce pour violon est plus resserrée, plus encadrée d'une partie à une autre. Son découpage est beaucoup plus net, ce qui lui confère une forte prégnance mélodique et formelle.

Emmanuel Nunes, festival Agora 2011.

Version documentation creation date: June 9, 2021, 9:41 a.m., update date: Sept. 7, 2022, 2:41 p.m.