

Yann Robin  
*Art of Metal II*  
2007  
AOM2 Moscou  
2021



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

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## Table of Contents

<b>Table of Contents</b>	<b>2</b>
<b>Work related information</b>	<b>3</b>
Performance details	3
Detailed staff	3
Realisation	3
Useful links on Brahms	3
<b>Version related information</b>	<b>4</b>
Documentalist	4
Realisation	4
Upgrade Motivation	4
Comment	4
Other version(s)	4
Electronic equipment list	5
Computer Music Equipment	5
Audio Equipment	5
Files	6
<b>Instructions</b>	<b>7</b>
<b>IMPORTANT INFO</b>	<b>7</b>
Audio setup	7
MAIN DSP PATCH IO	7
SPAT PATCH	7
Mic Setup	8
Loudspeaker setup	8
Midi setup	8
Software	8
System calibration and tests	9
Initialization routine	9
Patch presentation	10
The DSP main patch interface:	10
The SPAT (spatialization) main patch interface:	11
Performance notes	12
Program note	13

## Work related information

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### Performance details

- Oct. 2, 2007, Paris, Ircam, Espace de projection, concert Cursus

Publisher : Jobert

### Detailed staff

- contrabass clarinet

### Realisation

- Jean Lochard
- Yann Robin

### Useful links on Brahms

- [Art of Metal II](#) for metal double bass clarinet and electronic device (2007), 11mn
- [Yann Robin](#)

## Version related information

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Performance date: Sept. 2, 2021

Documentation date: Sept. 10, 2021

Version state: valid, validation date : Oct. 12, 2021, update : Oct. 13, 2021, 3:32 p.m.

### Documentalist

Augustin Muller (Augustin.Muller@ircam.fr)

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

### Realisation

- Charles Bascou (Computer Music Designer)
- Augustin Muller (Computer Music Designer)

Version length: 11 mn

Default work length: 11 mn

### Upgrade Motivation

corrected audio files content. played in concert

### Comment

played in concert in 8 channels output

### Other version(s)

- [Yann Robin - Art of Metal II - Max8\\_64b\\_Port \(March 3, 2020\)](#)
- [Yann Robin - Art of Metal II - Vuitton \(Jan. 24, 2019\)](#)
- [Yann Robin - Art of Metal II - 40ans EIC \(no cut\) \(Jan. 12, 2018\)](#)
- [Yann Robin - Art of Metal II - 40ans EIC \(April 14, 2017\)](#)
- [Yann Robin - Art of Metal II - AOM2 Lille-2016 \(Jan. 26, 2016\)](#)
- [Yann Robin - Art of Metal II - venise 2013 \(Oct. 24, 2013\)](#)
- [Yann Robin - Art of Metal II - Venise-2011 \(Jan. 24, 2013\)](#)
- [Yann Robin - Art of Metal II - strassburg \(Oct. 5, 2010\)](#)
- [Yann Robin - Art of Metal II - transfert\\_mustica\\_ftp \(April 14, 2010\)](#)

## Electronic equipment list

### Computer Music Equipment

- 2 MacBook Pro - *Apple Laptops* (Apple)  
1 main, 1 spare (if main fails)
- 1 Max 8 - *Max* (Cycling74)
- 2 Fireface 800 - *Sound Board* (RME)  
1 for the main computer , 1 for the spare computer
- 1 footswitch control - *MIDI Controllers* (MIDI Solution)  
to convert the pedal to MIDI
- 1 Footswitch / Sustain Pedal - *Footswitch / Sustain Pedal*  
for the clarinetist to trigger the cues
- 1 MIDI booster - *Booster*  
to send the MIDI pedal to the back of the room (and split)

### Audio Equipment

- 1 Microphone - *Microphone*  
"overhead" above the clarinet
- 2 DPA 4021 - *Condenser Microphones* (DPA)  
on both sides of the instrument
- 13 Loudspeaker - *Loudspeakers*
- 1 subwoofer - *Subwoofers*

**Files**

<b>File</b>	<b>Type</b>	<b>Author(s)</b>	<b>Comment</b>
<a href="#">patch and sounds</a>	All-in-one		
<a href="#">Test files</a>	Simulation files	A. Billard	audio files for testing
<a href="#">Score</a>	Score	Y. Robin	Ed. Jobert

## Instructions

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# IMPORTANT INFO

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**This version includes the performance AUDIO FILES with 8 CHANNELS ONLY & 13 channels only. The original version includes some simulation sound files (mono or stereo). If you need those, download a previous version of the piece!**

## Audio setup

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- 1 Live Audio input (mixdown of the clarinet mics) goes to main DSP patch.
- Up to 13 audio outputs for speakers (original version) + 1 sfiler monitor + 1 optionnal click track Output mixdown is possible in the main patch for configurations with less speakers.
- In this version we played with only 8 channels, but other setups are possible in p MixDown : reconfigure the pan and dac outputs, and modify the loudspeakers message to fit your setup.

## MAIN DSP PATCH IO

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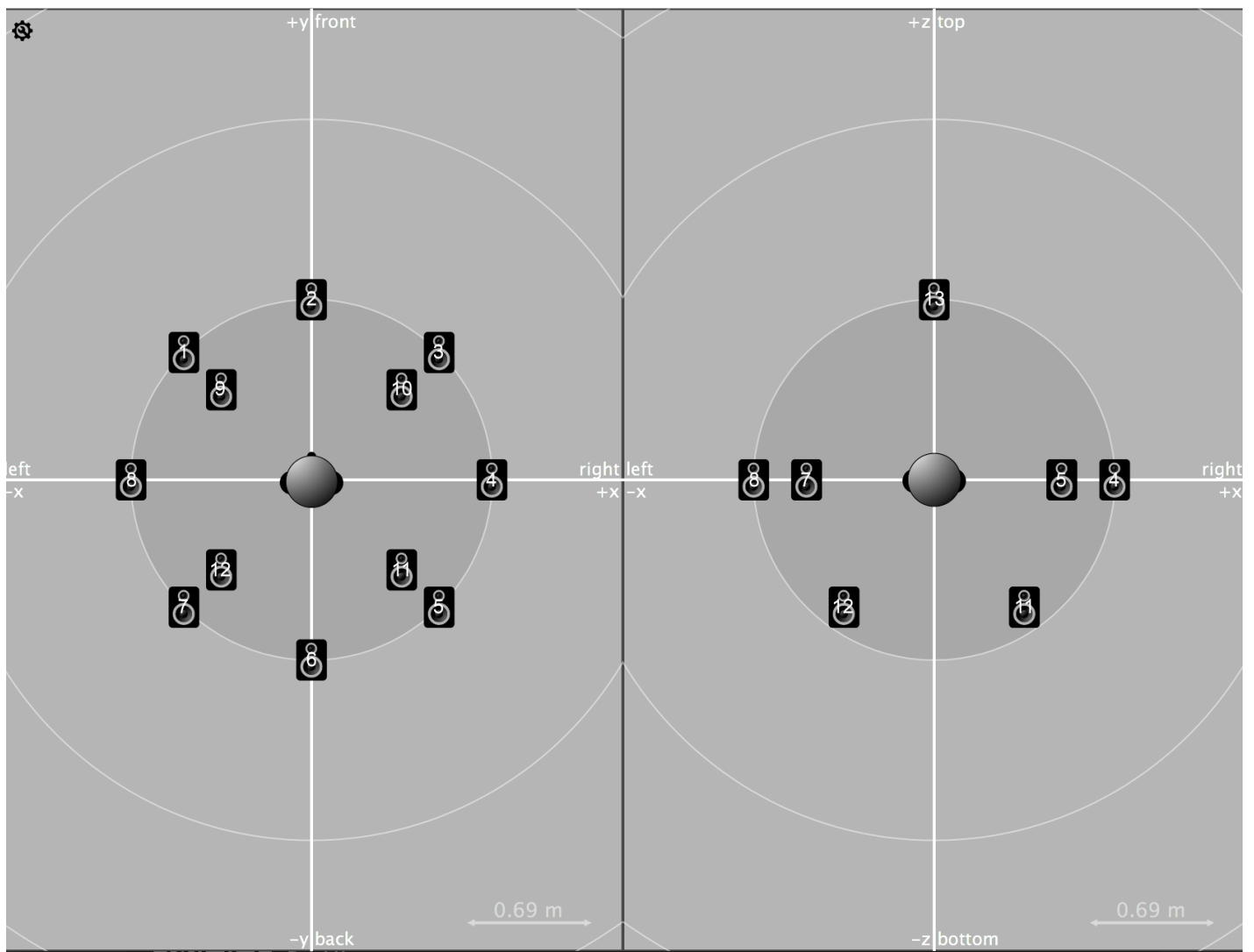
- 1 Mic Input
- 15 outputs + Sends
  - 1-13 => speakers 1 to 13 / Scalable
  - L-C-R SideR-SurR-SurC-SurL-SideL-DownL-DownR-DownSurR-DownSurL-Top / Scalable
  - 14 => Sf Monitor (unused)
- 15 => optionnal click track

## SPAT PATCH

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- 8 receive Input from DSP patch:
- 13 outputs sends to Main DSP :
  - 1-13 => speakers 1 to 13
  - L-C-R SideR-SurR-SurC-SurL-SideL-DownL-DownR-DownSurR-DownSurL-Top

The original speaker layout still used for the trajectories & premix before mixdown is as follows :



## Mic Setup

Several microphones are requested to capture the sound of the clarinet.

For the top microphone, pavillion, we used an extra dynamic microphone (beyers M88) processed in a way to get a kick-like effect on the low C (Bb) slaps, using gate, resonant lowpass (40Hz) and compressor. The sensation of these slaps must be physical, almost like a kick bass drum.

## Loudspeaker setup

Up to 13 speakers : L-C-R SideR-SurR-SurC-SurL-SideL-DownL-DownR-DownSurR-DownSurL-Top

18 inches subs are required.

## Midi setup

The clarinetist triggers the cues of the score/patch with a foot pedal sent in MIDI to the computer. When an analog footswitch or sustain pedal is used (as it was the case in this version) it needs to be converted to MIDI with a MIDI Solutions Footswitch Controller. If the console and computers are far away from the stage, a MIDI Booster is used to reinforce the MIDI transmission. It is used to duplicate the MIDI info for main and spare computers. You may control the levels of the Input, the Main DSP output, the Spatialization Output and the Master by a fader controller.

## Software

You need one instance of Max 8. You may enable 'Enable Mixer in Parallel Processing'

This version is composed of two Max Projects:



- AoMII\_DSPMain\_Max8.maxproj
- AoMII\_SPAT\_Max8.maxproj

Except for the routing, no special Max setup is required for this piece. We use this standard setup :

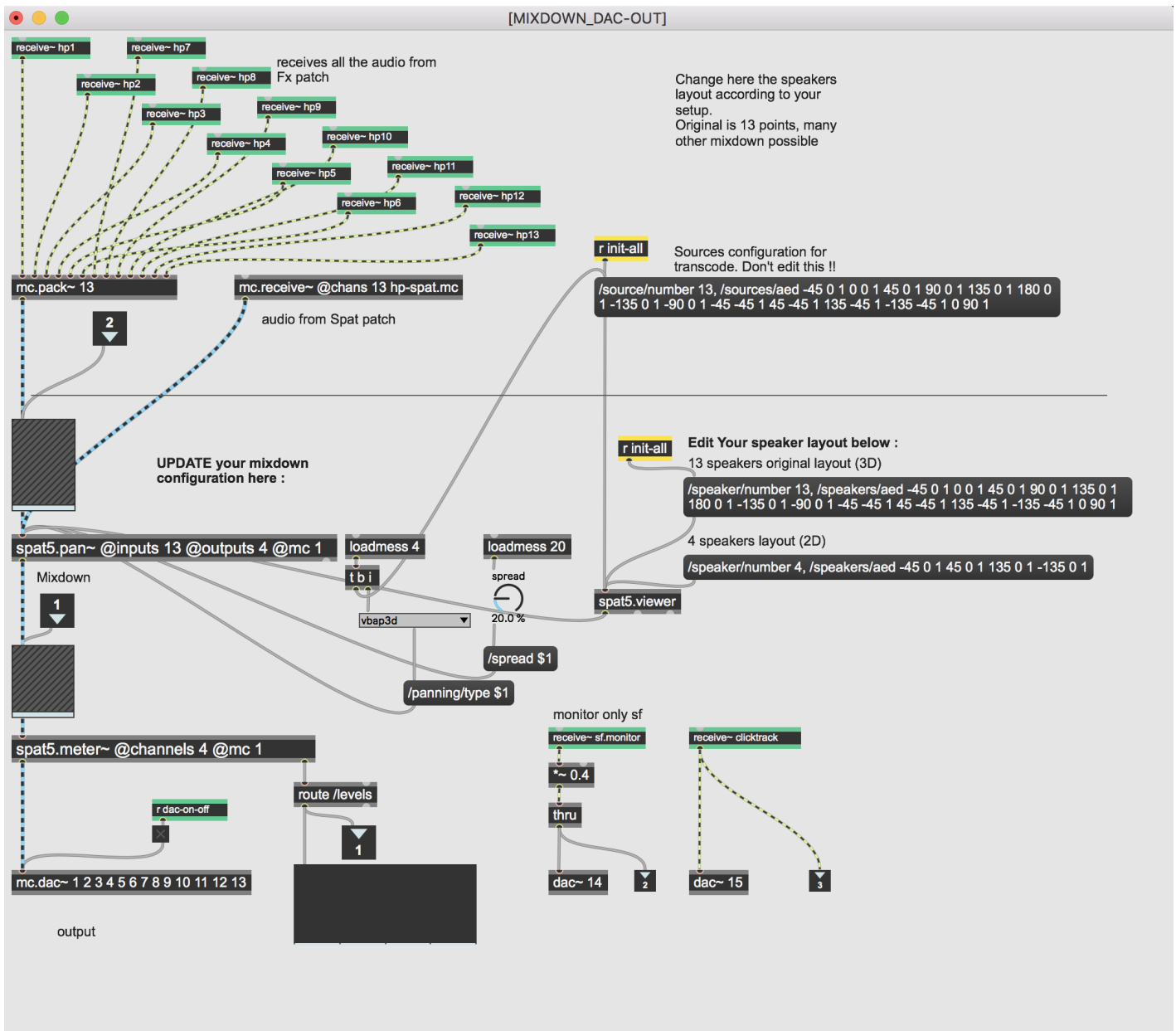
- I/O Vector Size: 512
- Signal Vector Size: 256
- Sampling Rate: 48000Hz
- Scheduler in Overdrive: yes
- in Audio Interrupt: no

## System calibration and tests

The input level should be set rather high for the effects to work properly.

Two soundfiles can be used as a simulation to quickly test the patch without the clarinetist. *CLCB-sectA\_05-diff.aif* is a recording of the first 28 bars of the piece. *CLCB-sectB-37\_49-diff.aif* is a recording of the bars 37 to 49.

You may need to adapt the mixdown for a particular setup different from the original 13 points layout. For this, have a look at the mixdown subpatch in the dsp\_main. Adapt the spat5.pan, spat5.meter to your number of outputs and configure correctly the viewer and the panning law. No other adjustment should be necessary for the spatialization.

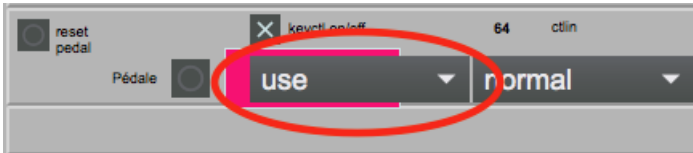


## Initialization routine

When launching the two projects, you can check for errors in the Max window.

Once you have loaded both projects:

- Start the audio with the red LED Dac on/off. You can check that the CPU pourcentage near this LED is changing.
- Then init-all with the button of the Main.
- Check for errors , if you get an error from ambicontrol, try to re-do ‘init-all’
- Pass one or two cues with your right arrow key (->)
- Then re init-all with the button of the Main
- Don’t forget to check the input faders of both Max patches.
- **For the pedal of the performer to actually trigger the cues, the *mode* menu should be set to use instead of test**



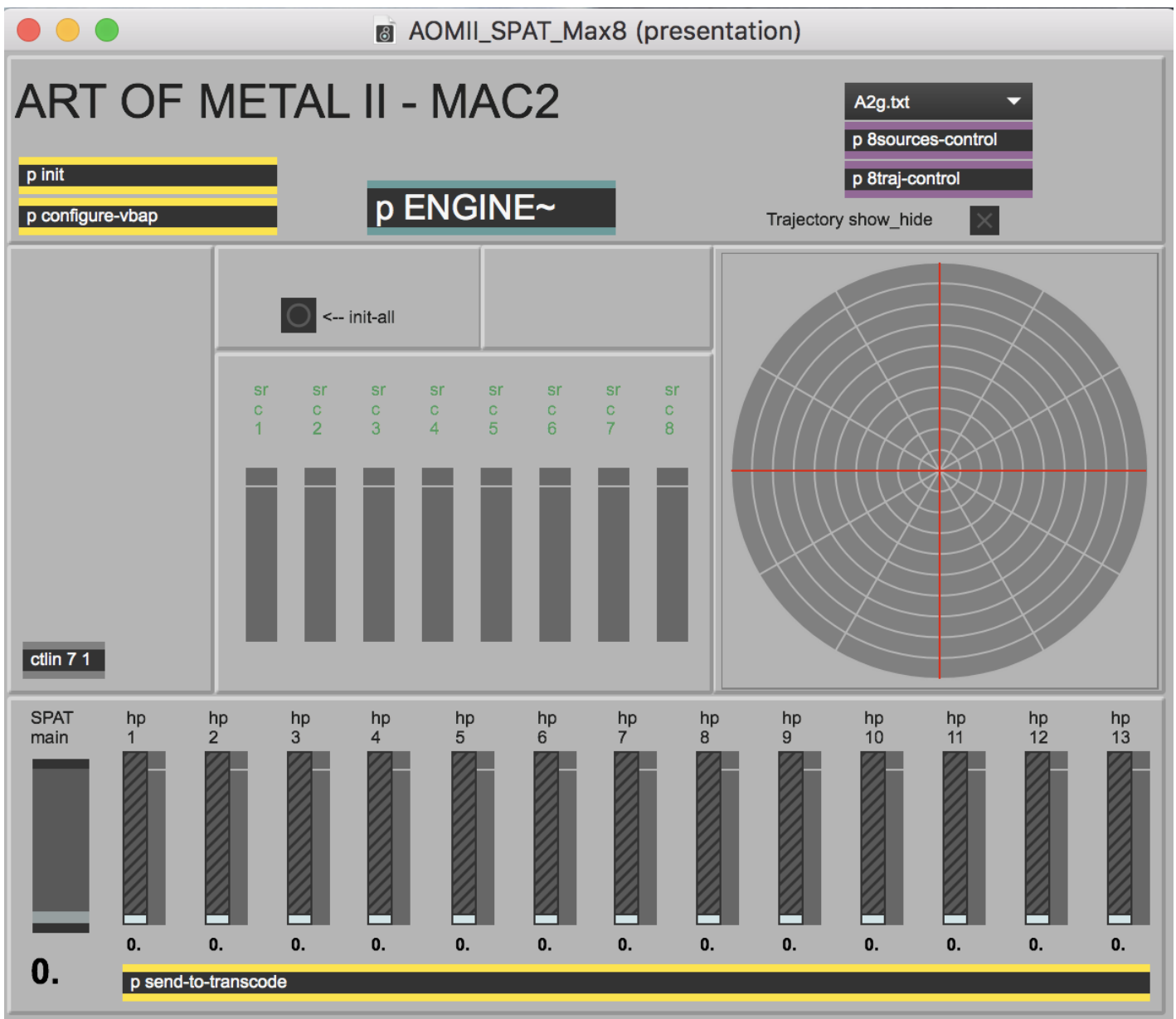
## Patch presentation

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The DSP main patch interface:

This patch handles the sound fx, the soundfiles, the score & transport. The Input levels, Fx levels and master out are followed here (by mics). It is the main audio input/output. It sends and receives audio with the spat patch.

**The SPAT (spatialization) main patch interface:**




This handles all the trajectories. Be sure that they are correctly loaded (sources should visually move with concerned events)

The level of the spat is followed here (by midi CC 7). The audio is sent back to the main patch.

## Performance notes

In general, Yann Robin likes when the sound coming from the computer is loud in the room! Adjust the volume consequently!

- The first sound of the electronics, triggered at the first note of the performer should be really impressive in the room, like a scream. This effect is mostly given by the Spat patches out
- From cue 11, the electronics is much quieter then grow again progressively. Keep this as a rather long *crescendo* in the electronics, don't push the volume directly.
- At the end, the last section of slaps (pedal 44 to 45), the electronics have to be quieter and distant.

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## Program note

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*Art of métal II*, pour clarinette contrebasse métal et dispositif électronique en temps réel s'inscrit dans le cadre d'un cycle pour cet instrument et est le résultat d'une collaboration avec Alain Billard, clarinettiste et soliste de l'Ensemble intercontemporain.

La *première pièce du cycle*, créée le 28 janvier dernier, confronte l'instrument à un ensemble de dix-sept musiciens, celle-ci à un dispositif électronique et la dernière, *Art of métal III*, en tant que synthèse, ralliera l'instrument à l'ensemble et à l'électronique. Elle sera créée en 2008. Le fil d'Ariane de ce projet, l'idée conductrice, est une approche métaphorique de ce que peut inspirer le métal, cet alliage souvent synonyme de force, puissance, solidité, énergie, brillance, éclat etc. L'instrument lui-même est métallique dans son intégralité ; un bec en métal a spécialement été fabriqué pour l'occasion par Selmer pour remplacer celui qui est habituellement en ébonite. Outre la recherche de puissantes sonorités métalliques, l'autre préoccupation principale est le son que peut produire l'émission de la voix dans la clarinette contrebasse. Ce mixage engendre des perturbations et modifie considérablement le timbre de l'instrument. La voix est utilisée chantée ou bien criée. Ces cris, émis avec des sons fendus, amplifient la distorsion et la saturation du son, les timbres semblent éclater, exploser et produisent une violente énergie. Tout cela est accru par l'électronique, qui immerge l'auditeur à l'intérieur même du son grâce à un système de spatialisation permettant de modifier virtuellement les paramètres acoustiques d'une salle et donc d'en changer psychoacoustiquement la perception. D'autres outils de traitements développés à l'Ircam, donnant la possibilité de resynthétiser le son en temps réel, d'en extraire le « bruit » ou les transitoires d'attaques, ont apporté une précieuse contribution et enrichi considérablement l'univers sonore de ce projet.

Yann Robin.

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