

Yann Robin  
*Art of Metal II*  
2007  
40ans EIC  
2017



---

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
Other version(s)	4
Electronic equipment list	5
Computer Music Equipment	5
Audio Equipment	5
Files	6
Instructions	7
IMPORTANT INFO	7
Loudspeaker setup	8
Midi setup	8
Software	8
System calibration and tests	9
Initialization routine	9
Patch presentation	10
Performance notes	11
Program note	12

## Work related information

---

### 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

---

Performance date: March 17, 2017

Documentation date: April 14, 2017

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

- Benjamin Lévy (Computer Music Designer)
- Alain Billard (Performer)
- Emmanuelle Corbeau (Sound engineer)
- Nicolas Berteloot (Sound engineer)

Version length: 6 mn 30 s

Default work length: 11 mn

## Upgrade Motivation

Concert of the 40th anniversary of Ensemble InterContemporain.

Reduced version of the piece to last 6min maximum.

Convert the all-in-one folder to two Max projects (1 for Max 7 (effects), 1 for Max 6.1 (spatialization)).

## Other version(s)

- [Yann Robin - Art of Metal II - AOM2 Moscou \(Sept. 10, 2021\)](#)
- [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 - 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 7 - *Max* (Cycling74)  
version 7.3.3 32bits
- 1 Max 6 - *Max* (Cycling74)  
version 6.1 32bits
- 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 C414 - *Condenser Microphones* (AKG)  
"overhead" above the clarinet
- 2 DPA 4021 - *Condenser Microphones* (DPA)  
on both sides of the instrument

Files

File	Type	Author(s)	Comment
Test files	Simulation files	A. Billard	audio files for testing
Max 6 project	Patch	R. Meier - B. Levy	spatialization
Max 7 project	Patch	R. Meier - B. Levy	transformations
Score	Score	Y. Robin	Ed. Jobert
ejies 3.2	All-in-one	E. Jourdan	ejies 3.2 needed for Max 7 (compatible with Max 6)

## Instructions

---

## IMPORTANT INFO

---

**This version includes the AUDIO FILES with 8 CHANNELS ONLY. The original version includes sound files with 13 channels as well. If you need those, download a previous version of the piece!**

---

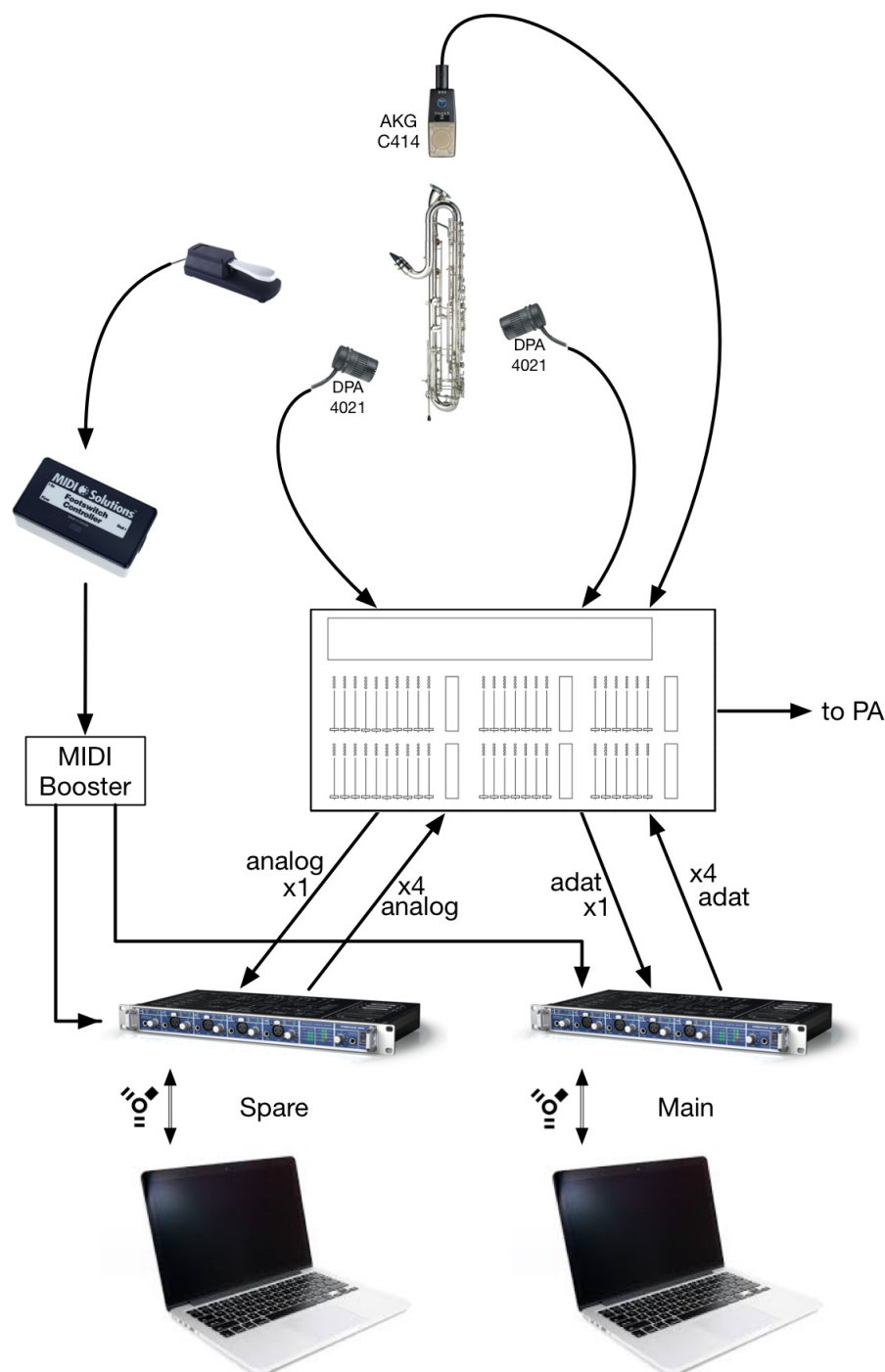
### Audio setup

Each of the computers has:

- 1 input channel: mix of the 3 microphones
- 4 output channel: 1 = Front Left, 2 = Front Right, 3 = Back Left, 4 = Back Right

Click is not used by Alain Billard (clarinet) who knows very well the piece.

Here is diagram of the overall audio and MIDI setup:



## Loudspeaker setup

For this concert, we used 4 sets of speakers placed like a square around the audience : Front Left, Front Right, Back Left, Back Right

## 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.

## Software

This version is composed of two Max Projects:



- one running on Max 7.3 32bits (transformations). File: `AoMII-Max7_proj.maxproj`
- one running on Max 6.1 32bits (spatialization). File: `AoMII-Max6_proj.maxproj`

8 channels are sent from Max 7 to Max 6. To do that, we use the `Loopback` function of the RME Fireface. Below is a capture of this setup in the `TotaLMix` software. Set unused channels of the Fireface to `Loopback` to send those channels from Max 7 to Max 6. You will have to **adapt the routing in both Max Audio Setup** to match the *virtual* input/output and the *real* input/output going to/from the console.



`ejies` objects and functions are required for the Max 7 project. Because of java(script) they could not be integrated directly into the project. You have to install them in your packages before opening the project. We used and provide `ejies 3.2` in this version. You may update the `ejies` to the last version provided that it works with Max 7 32bits.

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 of both patches (Max 7 and Max 6) 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.

## Initialization routine

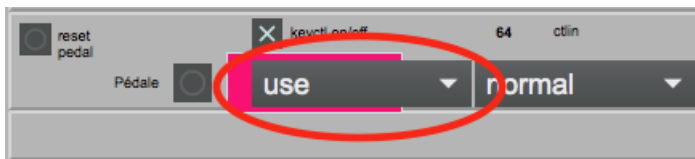
When launching the two projects, you can check for errors in the Max window.

- In Max 7 the following error can be ignored (should appear only once):  
`newobj • reverb-0Per_init: No such object`
- In Max 6 the following errors can be ignored (should appear 8 times):  
`newobj | vbap-room-0Per_init: No such object `` | vbap: Configure loudspeakers first!`

Once you have loaded both Max 6 & 7 projects:

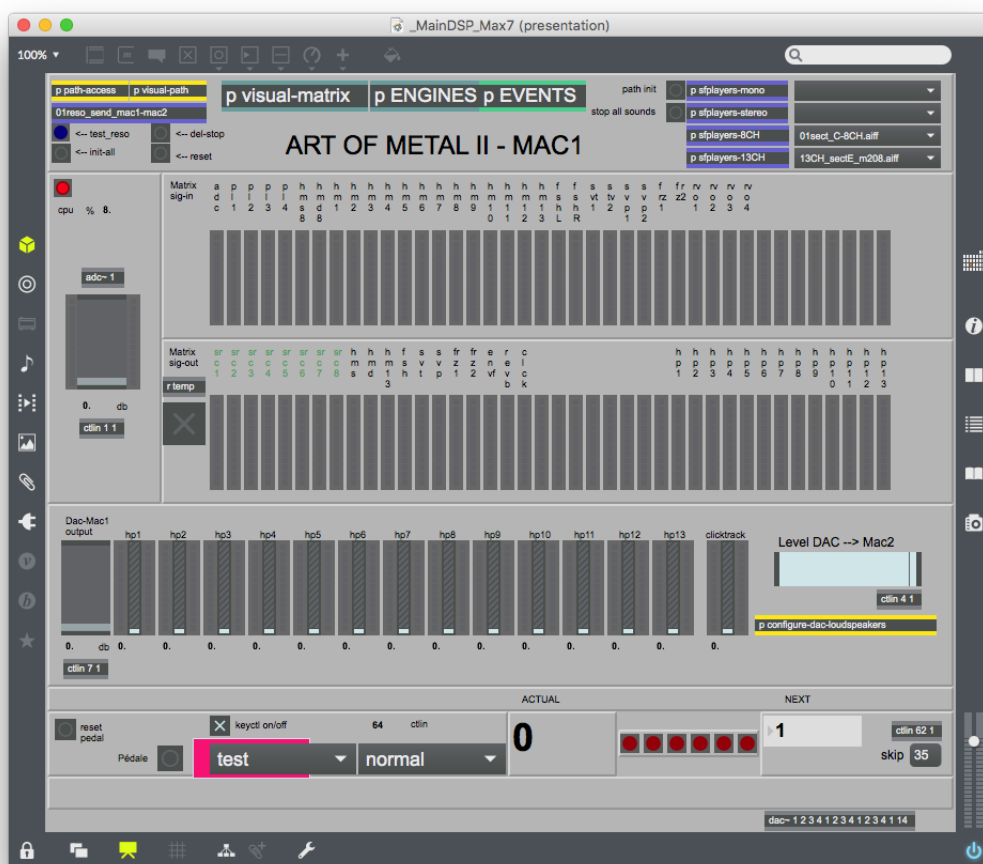
- Check the communication between the two Max with the blue `test_reso` button of Max 7 patch. The blue LED `Receive test_reso` of the Max 6 patch should mirror it.
- Start the audio on both Max with the red LED `Dac on/off`. You can check that the CPU pourcentage near this LED is changing.

- Then `init-all` with the button of the Max 7 patch.
- Pass one or two cues with your right arrow key (->)
- Then re `init-all` with the button of the Max 7 patch.
- Don't forget to check the input faders of both Max patches. The Max 6 spatialization patch also need the clarinet input.
- **For the pedal of the performer to actually trigger the cues, the *mode* menu should be set to `use` instead of `test`**

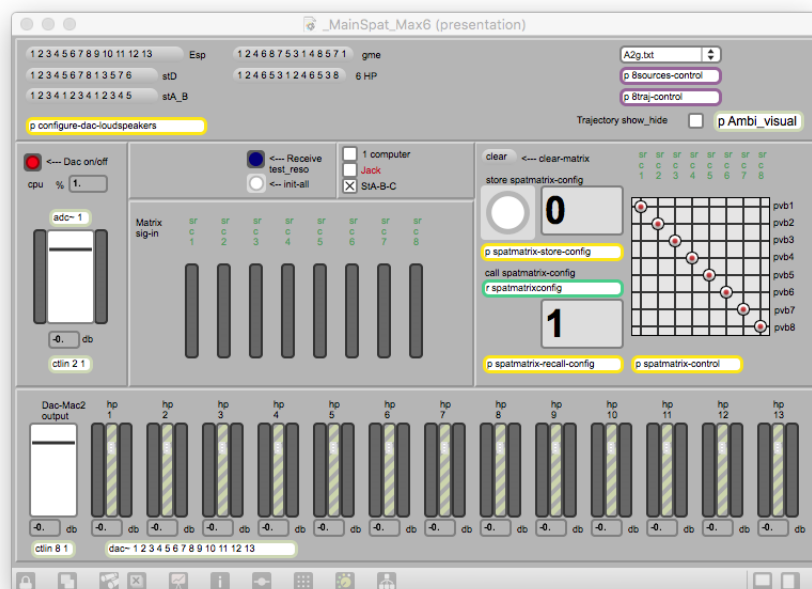


## Patch presentation

The Max 7 (transformations) main patch interface:



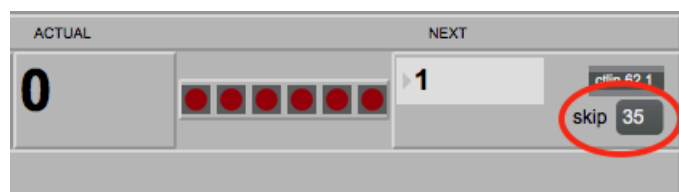
The Max 6 (spatialization) main patch interface:



## Performance notes


For timing purposes, this version was played with a cut between cue 27 (bar 155) and cue 35 (bar 178). A shortcut (shown below) has been added to the main Max 7 patch for the computer music designer.

Once the performer has triggered and played cue 27 (which cuts off all the electronics), click on the **35** button shown below to prepare the cut. When the performer is ready to start again, he/she has to trigger cue 35 with the foot pedal.



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.
- 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.

© 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/).

## Program note

---

*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.

Version documentation creation date: April 14, 2017, 1:50 p.m., update date: May 6, 2021, 3:09 p.m.