

Philippe Manoury  
*Partita II*  
2012

CollegeDeFrance2017  
2017



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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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## Work related information

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### Performance details

- July 21, 2012, France, Briançon, Église des Cordeliers, Festival Messiaen au Pays de la Meije

Publisher : Durand

### Detailed staff

- violin

### Realisation

- Serge Lemouton

### Useful links on Brahms

- [Partita II](#) for violin and electronics (2012), 17mn
- [Philippe Manoury](#)

## Version related information

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Performance date: June 16, 2017

Documentation date: June 17, 2017

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## Documentalist

Serge Lemouton (Serge.Lemouton@ircam.fr)

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

## Realisation

- Philippe Manoury (Composer)
- Serge Lemouton (Computer Music Designer)
- Julien Aléonard (Sound engineer)

Version length: 21 mn

Default work length: 17 mn

## Upgrade Motivation

Antescofo score merged with B\_partita ( june 2016 version)

## Other version(s)

- [Philippe Manoury - Partita II - Max8 2021 \(Aug. 5, 2021\)](#)
- [Philippe Manoury - Partita II - La Meije 2019 \(Sept. 13, 2019\)](#)
- [Philippe Manoury - Partita II - Musica-2014 \(Oct. 13, 2014\)](#)
- [Philippe Manoury - Partita II - Renater \(Feb. 8, 2013\)](#)
- [Philippe Manoury - Partita II - premiere \(Oct. 7, 2012\)](#)

## Electronic equipment list

### Computer Music Equipment

- 1 MacBook Pro - *Apple Laptops* (Apple)  
OSX 10.11
- 1 iPad - *Tablets* (Apple)
- 1 Max 7 - *Max* (Cycling74)  
7.3.3 32 bit
- 1 antescofo~ - *External objects* (Ircam)  
antescofo 0.91-53 (2016)
- 1 Ircam Spat - *Library* (Ircam)
- 1 Mira - *Library* (Cycling74)
- 1 synful orchestra - *Virtual Instruments* (Synful)
- 1 Fireface 800 - *Sound Board* (RME)
- 1 BCF 2000 - *MIDI Mixer* (Behringer)  
can be replaced by an ipad running Mira

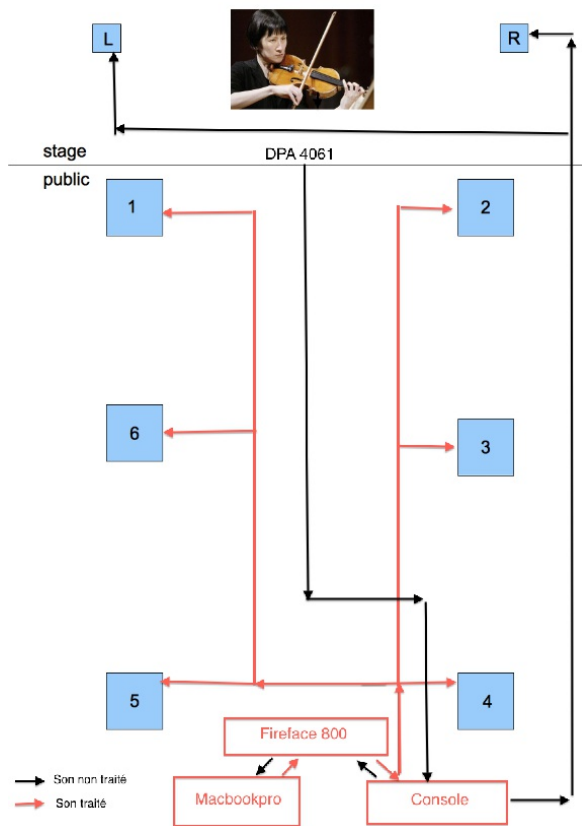
### Audio Equipment

- 1 DPA 4061 - *Condenser Microphones* (DPA)
- 6 Loudspeaker - *Loudspeakers*
- 1 subwoofer - *Subwoofers*

**Files**

File	Type	Author(s)	Comment
<a href="#">Manoury_PartitaII_HSK_CordelierMeije_21072012.aiff</a>	Recording(s)	Hae Sun Kang	Radio-France recording of the premiere
<a href="#">manuscript first part</a>	Score	Philippe Manoury	with electronics
<a href="#">manuscript second part</a>	Score	Philippe Manoury	with electronics
<a href="#">Partita2-CDF-2017.dmg</a>	Other	Serge Lemouton	Contains all the max patches and applications to perform the piece (original archive)
<a href="#">Partita2-CDF-2017.dmg</a>	Patch	Serge Lemouton	Contains all the max patches and applications to perform the piece
<a href="#">PARTITA2-multitrackProject.zip</a>	Recording(s)	Serge Lemouton	Multitrack recording of the DAC, for reference or future portings
<a href="#">Partita II_partition.pdf</a>	Score	Serge Lemouton	

## Audio and Loudspeaker setup



For CPU performance reasons, the electronic software is split in four patches running in parallel on the same computer :

1. *Partita-Deux-+3FC-08-2017.maxpat*: The main patch

- score following (using antescofo)
  - control of all the synthesis and transformation processes.
  - The "three frequencies chord" ("3FC") is an additive synthesis patch controlled by a continuous sound analysis of the violin.
2. `_P2_synful_01`: Synful synthesis used to play musical sequences.
  3. `_P2_spat01b`: hexaphonic spatialisation
  4. `P2_string04`: Two virtual physical model strings

`_P2_synful01`, `_P2_spat01b` and `_P2_string04` are applications (built in max).

All the required applications and patches can be laung at once by executing the Partita2-max-2017/\_P2-2017-run.sh script in a terminal.

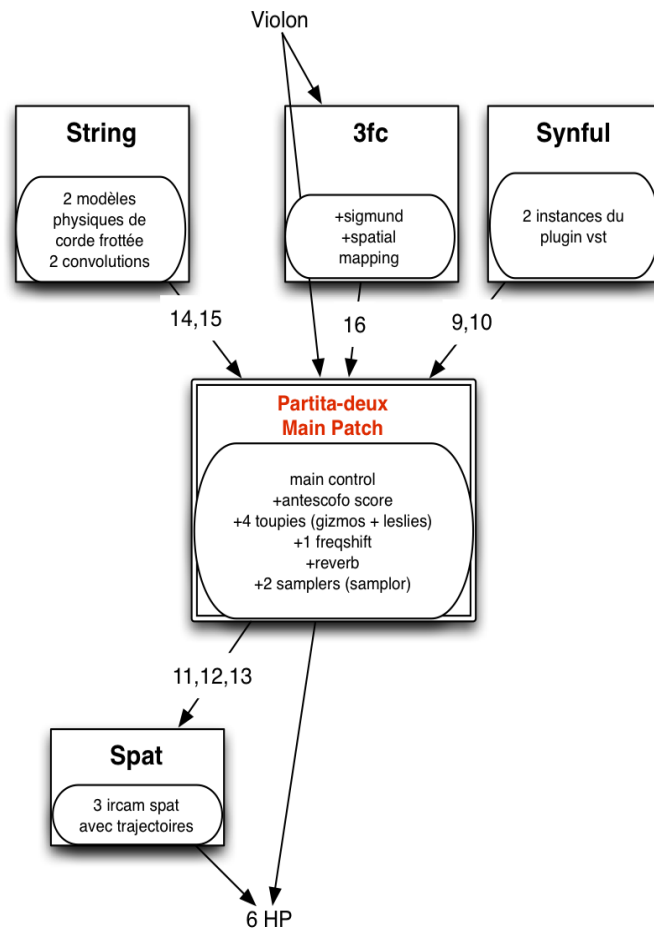
**files preferences:**

Max file preferences should point to :

- /Partita2-max-2017/\*

## DSP Overview:

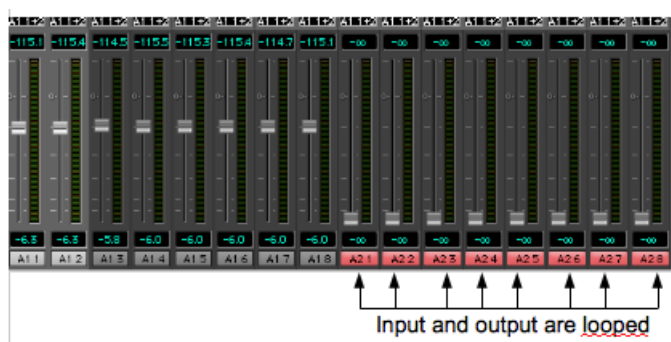
This diagram shows the audio routing between the applications:



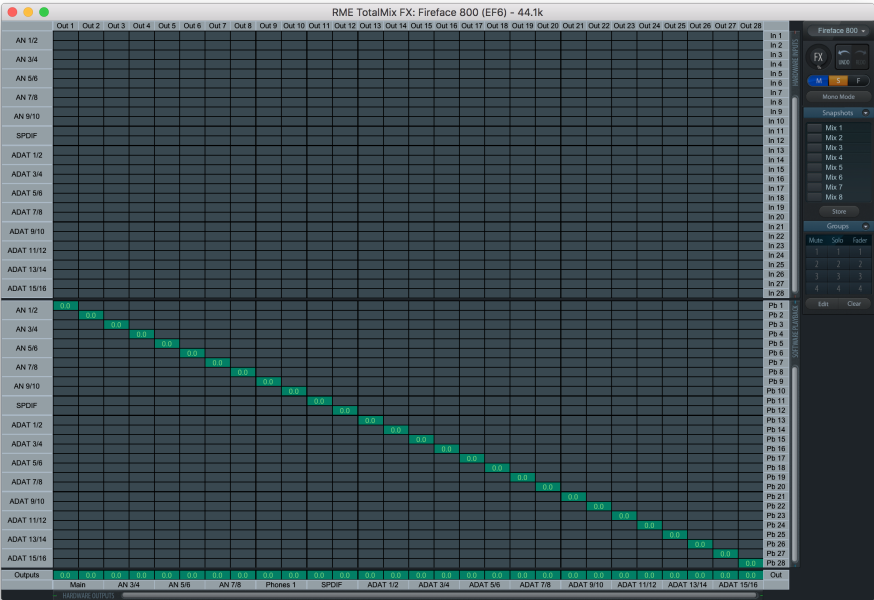
The audio lines from 9 to 16 are used to communicate between the different applications. The inputs should be connected to the outputs of the audio soundboard.

You can do it :

- with an optical fiber loop.
- or as loopbacks in the TotalMix fireface software :







The patches (or applications) communicate via Open Sound Control commands through network (UDP) messages and with audio via loopback or optic fiber link on the audio card.

DSP status and IOSetup:

The IO mappings for each application should be set as shown below

Max:

- IO VS : 1024
- VS : 128
- SR : 44100
- overdrive : on
- Scheduler in audio interrupt : off

I/O Mappings			
Input Mapping		Output Mapping	
Ch Group		Ch Group	
1-16		1-16	
1	1 Input 1	1	1 Output 1
2	Off	2	2 Output 2
3	Off	3	3 Output 3
4	Off	4	4 Output 4
5	Off	5	5 Output 5
6	Off	6	6 Output 6
7	7 Input 7	7	7 Output 7
8	Off	8	8 Output 8
9	9 Input 9	9	Off
10	10 Input 10	10	10 Output 10
11	11 Input 11	11	11 Output 11
12	12 Input 12	12	12 Output 12
13	13 Input 13	13	13 Output 13
14	26 Input 26	14	14 Output 14
15	27 Input 27	15	15 Output 15
16	16 Input 16	16	16 Output 16

String:

[DSP Status]

Audio

On

DSP

Driver

CoreAudio Fireface 800 (..

Input Device

Fireface 800 (48C)

Input Source

Output Destination

Playthrough Input

Unsupported

I/O Vector Size

512

Sampling Rate

44100

 Hz

Signal Vector Size

64

Scheduler In Overdrive

☒ In Audio Interrupt

CPU Utilization (%)

1.

CPU Limit (%)

0

 Overload

☐

Signals Used

9

 Function Calls

45

Vector Optimization

☒

Input Channels

28

 Output Channels

28

Channel 1

Off

Channel 2

Off

[I/O Mappings]

Input Map.

Chan. Group

1-16

1

Off

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

Off

10

Off

11

Off

12

Off

13

Off

14

Off

15

Off

16

Off

Output Map.

Chan. Group

1-16

1

Off

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

Off

10

Off

11

Off

12

Off

13

Off

14

14 output

15

15 output

16

Off

Synful:

[DSP Status]

Audio

On

DSP

Driver

CoreAudio Fireface 800 (..

Input Device

Fireface 800 (48C)

Input Source

Output Destination

Playthrough Input

Unsupported

I/O Vector Size

512

Sampling Rate

44100

 Hz

Signal Vector Size

64

Scheduler In Overdrive

☒ In Audio Interrupt

CPU Utilization (%)

2.

CPU Limit (%)

0

 Overload

☐

Signals Used

9

 Function Calls

57

Vector Optimization

☒

Input Channels

28

 Output Channels

28

Channel 1

Off

Channel 2

Off

[I/O Mappings]

Input Map.

Chan. Group

1-16

1

Off

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

Off

10

Off

11

Off

12

Off

13

Off

14

Off

15

Off

16

Off

Output Map.

Chan. Group

1-16

1

Off

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

9 output

10

10 output

11

Off

12

Off

13

Off

14

Off

15

Off

16

Off

Spat:

[I/O Mappings]

Input Map.

Chan. Group

1-16

1

Off

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

Off

10

Off

11

11 input

12

12 input

13

13 input

14

Off

15

Off

16

Off

Output Map.

Chan. Group

1-16

1

1 output

2

2 output

3

3 output

4

4 output

5

5 output

6

6 output

7

Off

8

Off

9

Off

10

Off

11

Off

12

Off

13

Off

14

Off

15

Off

16

Off

After setting the DSP status, quit every application in order to save the settings.

System calibration and tests

10/15

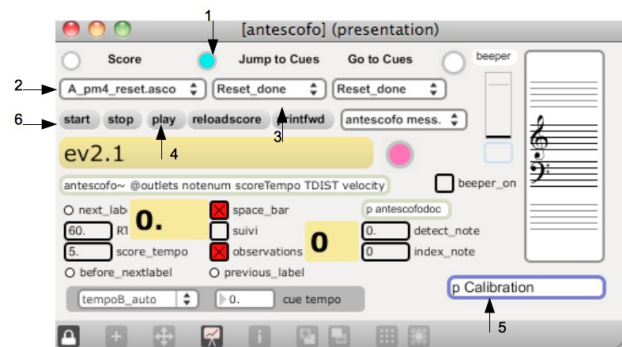
**test "antescofo" with the "testrecording" in "p antescofo":**

On the main patch "Partita-Deux-+3FC-09-2017", select "antescofo" in the menu "go to".

(This menu contains shortcuts for easy access to important subpatches)



a window appears:



- 1) Click on the bang (Number 1). It resets everything in antescofo.
- 2) Choose a score (for example "Partita2.1.asco").
- 3) Choose the event you want to go to.
- 4) Click on play and check that it commands all other patches.
- 5) Calibrate antescofo by clicking in the "p calibration" in "p antescofo".

Check the toggle "Calibrate \$1", the waveform must be close to 1:

Energy Calibration >>>

<<<Reference Pitch Calib.  
(69 (A4) by default)>>>

You can also adjust the reference pitch being used as a second argument in MIDI or MIDIcents:

in "*Partita-Deux-+3FC-08-2017*", choose "*simulation*" in the "go to" menu.

The screenshot shows the [simulation] window with the Antescofo control interface. The interface is divided into two main sections: a score editor on the left and a control panel on the right. The score editor displays a 'metro 138000' block with a 'play' button and a 'loop' checkbox. The control panel includes various buttons and sliders for controlling the simulation, such as 'antescofo-mess gotocue ev2.50', 'antescofo-mess actions off', 'antescofo-mess actions on', 'play\_simul "e23"', 'p play\_simul\_fromQlist', 'play from ev2.29', 'play from ev4-8', and 'antescofo-mess'. The simulation is running at 1.1705518396 seconds.

- Start the follower in the antescofo window as it is explained in the **"initialization routine"**,
- Choose *"filage160712"* for example (arrow number1),
- It will automatically check *"play"* in the simulation window(number 3), and you will see sound on the meter (number 4).

To begin for example at part 2, number 50 in the score, you can choose it in the window below the file name (number 2).

Run all the patches (2) and applications (3). (see **"Software installation"**)

1. Reset antescofo by clicking on the bang between *"score"* and *"jump to cue"* (arrow number 1)

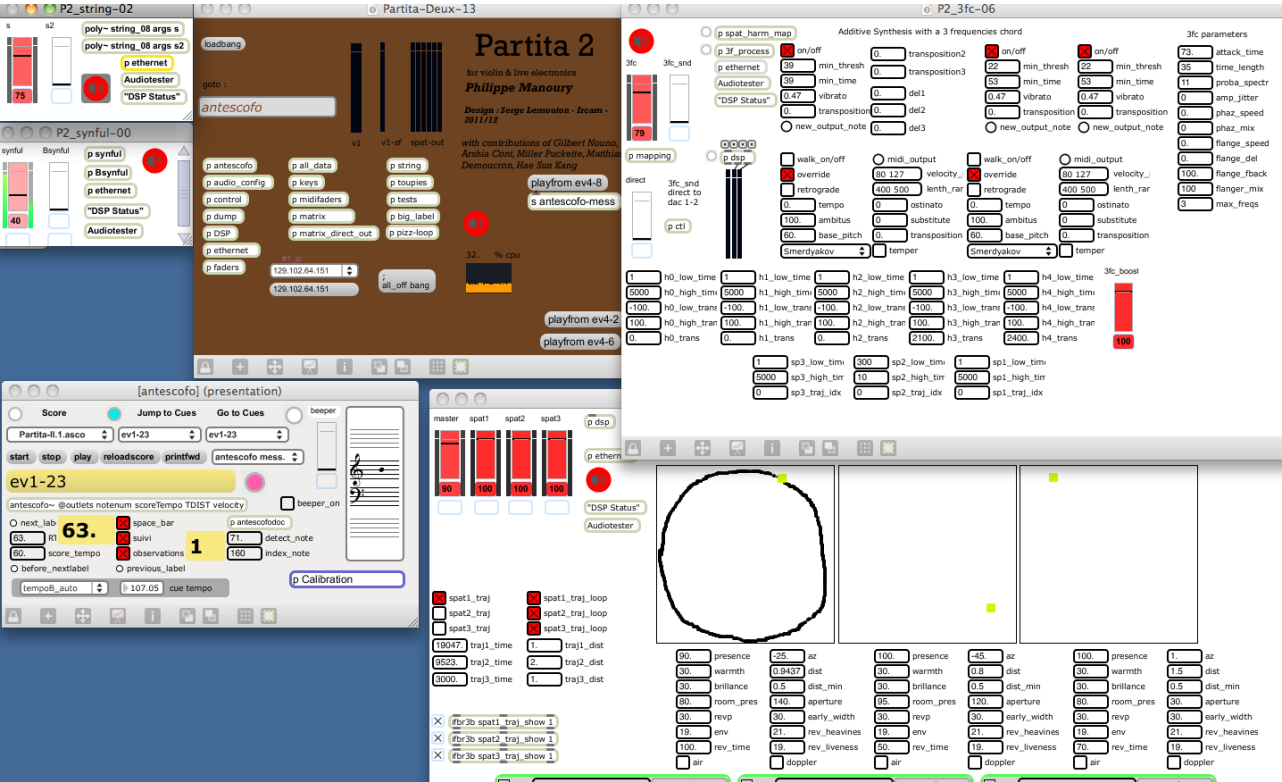
2. Choose the antescofo score "partita2.1.asco".

3. Then you can :

- "start" (arrow number 6 in *System calibration and tests, test "antescofo"*) if you follow the musician or
- "play" (arrow number 4 in *System calibration and tests, test "antescofo"*) if you want to play the electronic part alone without

following anything.

Patch presentation



You can stop the follower by unchecking "suivi" and follow evenements manually with the space bar.

MIDI mixer Setup

Faders of the midi mixer (BCF2000) are programmed to control some parameters during the concert:

fader	initial value	ctl	chan
Master	127	7	1
Direct	100	7	2
string1	64	7	3
string2	64	7	4
3fc	64	7	5
sampler	64	7	6
synful	64	7	7
fx (effects level)	64	7	8

NB : There is also the possiblité to control the internal mix with mira on an ipad instead of the midi mixer.

Performance notes

**For the sound engineer:** The violin must be amplified throughout the whole piece except between event I.5 and event I.18 with a crescendo between I.18 and I.19.


**For the Computer Music Designer:**

The "Direct" fader controls also the level of the infinite reverb, it should be controlled carefully.

The level of the 3f synthesis process should be also carefully controlled with the "direct" fader during the "Perpetuum Mobile" section.

Score following (with antescofo) is automatic in most of this work except :

- event 5.1

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## Program note

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*Partita II*, pour violon et électronique en temps réel, fait suite aux travaux et recherches que j'ai entrepris sur [Tensio](#) pour quatuor à cordes et électronique. J'ai voulu approfondir les relations qui peuvent se créer entre les instruments à cordes et les nouvelles lutherie électronique. Si les outils électroniques utilisés sont semblables à ceux utilisés dans le quatuor, la direction que prend la musique au cours de *Partita II* est très différente. J'ai surtout exploré diverses manières avec lesquelles le violon a le pouvoir d'engendrer plusieurs structures électroniques autonomes qu'il viendra ensuite commenter, contrepointer, puis modifier. Plusieurs couches sonores indépendantes se déroulent simultanément, dans des tempi différents, entre lesquelles le violon navigue. Le soliste est donc l'origine et l'ordonnateur de toute la musique électronique qui l'environne. À la fin de la pièce, le violon reste seul avec une toupie sonore qu'il fait tourner dans l'espace, à la manière d'un prestidigitateur qui jonglerait avec des éléments en suspension dans l'air libre.

*Partita II* est dédiée à sa créatrice, la violoniste Hae-Sun Kang.

*Philippe Manoury*

*Note de programme du concert du 16 juin 2017 au Collège de France dans le cadre du festival ManiFeste.*

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