

Philippe Manoury
B-Partita (in memoriam Pierre Boulez)
2016
Brioude 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, 2016, <p>Paris, Centre Pompidou, Grande Salle, Festival ManiFeste-2016</p>

Publisher : Durand

Detailed staff

- soloist: violin
- flute, oboe, clarinet, horn, trumpet, 2 percussions, 2 violins, viola, double bass

Realisation

- Serge Lemouton

Useful links on Brahms

- [B-Partita \(in memoriam Pierre Boulez\)](#) for solo violin and ensemble (2016), 23mn
- [Philippe Manoury](#)

Version related information

Documentation date: Aug. 26, 2021

Version state: valid, validation date : Dec. 20, 2021, update : May 2, 2022, 10 a.m.

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

- Serge Lemouton (Computer Music Designer)
- Franck Berthoux (Sound engineer)
- Jacques Warnier (Computer Music Designer)

Version length: 20 mn

Default work length: 23 mn

Upgrade Motivation

All the applications have been updated to MAX 8 - 64 bit.

An alternative, simplified but operational version of the software setup (all in one patch) is also provided.

Comment

Patch performed (light version) by Ensemble Orchestra Contemporain conducted by Bruno Mantovani in Brioude - (Festival de la Chaise Dieu, August 2021).

Partita 2 performed by Jacques Warnier and Hae Sun Kang (festival OFFBEAT Juhl-Sørensen).

Some corrections has to be made for the next version/performance : cf. Instructions below.

The electronic part, as well as the violin part are very similar to Partita 2.

A few discrepancies can be found in the antescofo score, but the max patches are identical.

Other version(s)

- [Philippe Manoury - B-Partita \(in memoriam Pierre Boulez\) - LaMeije2021 \(Aug. 4, 2021\)](#)
- [Philippe Manoury - B-Partita \(in memoriam Pierre Boulez\) - BiennaleDeVenise2018 \(Oct. 23, 2018\)](#)
- [Philippe Manoury - B-Partita \(in memoriam Pierre Boulez\) - EOC-2017 \(Jan. 9, 2018\)](#)
- [Philippe Manoury - B-Partita \(in memoriam Pierre Boulez\) - CollegeDeFrance2017 \(June 26, 2017\)](#)
- [Philippe Manoury - B-Partita \(in memoriam Pierre Boulez\) - Premiere \(June 28, 2016\)](#)

Electronic equipment list

Computer Music Equipment

- 1 Retina - *Apple Laptops* (Apple)
- 1 iPad - *Tablets* (Apple)
- 1 Max 8 - *Max* (Cycling74)
version 8.1.11
- 1 antescofo~ - *External objects* (Ircam)
version 0.91-53 (27 janvier 2016)
- 1 BowedString~ - *External objects* (Ircam)
- 1 samplor~ - *External objects* (Cycling74)
samplor~ HD: version 3.92 (voice_stealing) (Aug 5 2021 - 12:00:34)
- 1 Ircam Spat - *Library* (Ircam)
- 1 Mira - *Library* (Cycling74)
- 1 synful orchestra - *Virtual Instruments* (Synful)
- 1 Fireface UC - *Sound Board* (RME)

Audio Equipment

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

Files

File	Type	Author(s)	Comment
B-Partita patch light version	Patch	Serge Lemouton	
B-Partita patches full version	Patch	Serge Lemouton	

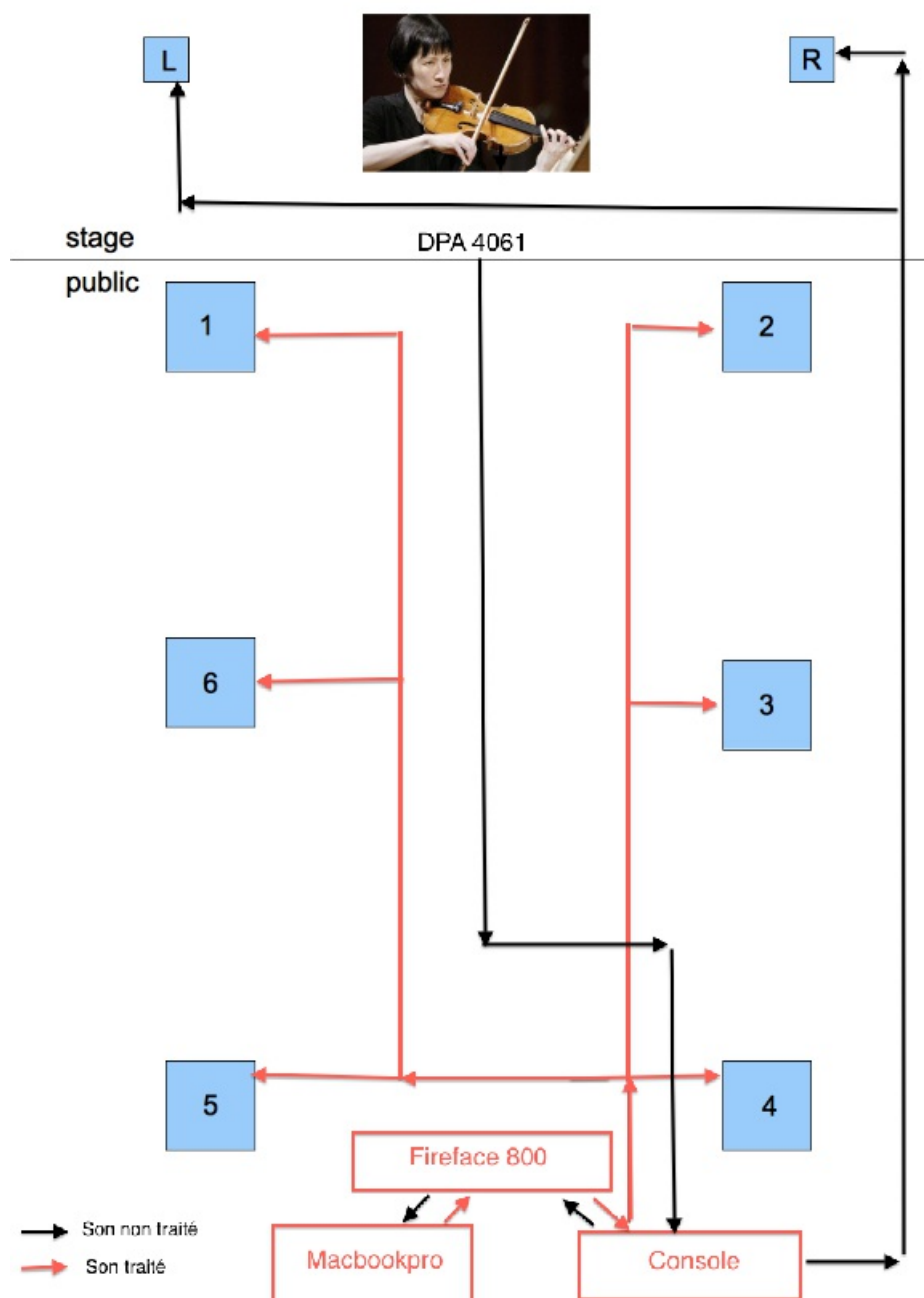
Instructions

Partita 2 or B-Partita ?

The electronic part, as well as the violin part of *Partita2* and *B-Partita* are very close.
The only difference on the Max patch side is :

- To play *B-Partita* start with *B-Partita1.asco*
- To play *Partita2* start with *Partita2.1.asco*

Audio and Loudspeaker setup



Software installation

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

1. *Partita-Deux-+3FC-10-2021.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. *T_synful_03* : Synful synthesis used to play musical sequences.
3. *T_spat_17* : hexaphonic spatialisation
4. *T_String_06* : Two virtual physical model strings

T_synful_03, *T_spat_17* and *T_String_06* are applications (built with max8).

All the required applications and patches can be launch at once by executing the *_P2-2021-run.sh* script in a terminal.

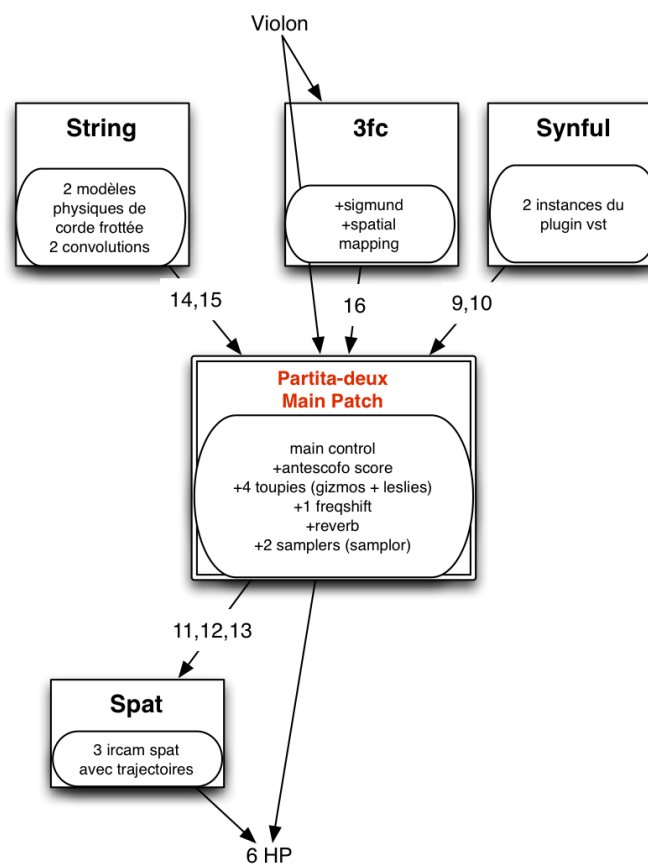
Files preferences

Max file preferences should point to :

- *Partita2-Max8-2021/*
- *Partita2-Max8-2021/data/antescofo_scores2017*

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 :



	Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8	Out 9	Out 10	Out 11	Out 12	Out 13	Out 14	Out 15	Out 16	Out 17	Out 18	FX L	FX R	
Mic 1																					In 1
Mic 2																					In 2
AN 3																					In 3
AN 4																					In 4
AN 5/6																					In 5
																					In 6
AN 7/8																					In 7
																					In 8
SPDIF																					In 9
																					In 10
AS 1/2																					In 11
																					In 12
ADAT 3/4																					In 13
																					In 14
ADAT 5/6																					In 15
																					In 16
ADAT 7/8																					In 17
																					In 18
AN 1/2	0.0																				Pb 1
		0.0																			Pb 2
AN 3/4			0.0																		Pb 3
				0.0																	Pb 4
AN 5/6					0.0																Pb 5
						0.0															Pb 6
PH 7/8							-26.8														Pb 7
								-26.8													Pb 8
SPDIF									0.0												Pb 9
										0.0											Pb 10
AS 1/2											0.0										Pb 11
												0.0									Pb 12
ADAT 3/4													0.0								Pb 13
														0.0							Pb 14
ADAT 5/6															0.0						Pb 15
																0.0					Pb 16
ADAT 7/8																	0.0				Pb 17
																		0.0			Pb 18
FX Return																					FX L
																					FX R
Outputs	0.0	0.0	0.0	0.0	0.0	0.0	-4.1	-4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			Out
	AN 1/2		AN 3/4		AN 5/6		PH 7/8		SPDIF		AS 1/2		ADAT 3/4		ADAT 5/6		Main		FX Send		

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

Audio Status

CPU

14 %

Driver

Core Audio

Input Device

Fireface UC Mac (237...

Output Device

Fireface UC Mac (237...

Performance and Scheduler

Sampling Rate

44100

I/O Vector Size

512

Signal Vector Size

64

Scheduler in Overdrive

✕

Audio Interrupt

✕

CPU % Limit

▶ 0

Input

Ch 1

11 Input 11

Ch 2

Off

Output

Ch 1

11 Output...

Ch 2

12 Output...

Audio Driver Setup

Open I/O Mappings

I/O Mappings

Input Mapping

Ch Group

1-16

1

11 Input 11

2

Off

3

Off

4

Off

5

Off

6

Off

7

Off

8

Off

9

1 Input 1

10

2 Input 2

11

Off

12

Off

13

Off

14

6 Input 6

15

9 Input 9

16

10 Input 10

Output Mapping

Ch Group

1-16

1

11 Output 11

2

12 Output 12

3

13 Output 13

4

14 Output 14

5

15 Output 15

6

16 Output 16

7

17 Output 17

8

Off

9

Off

10

Off

11

3 Output 3

12

4 Output 4

13

5 Output 5

14

Off

15

Off

16

10 Output 10

String

Audio Status

CPU 7 %

Driver

Core Audio

Input Device

Fireface UC Mac (237...

Output Device

Fireface UC Mac (237...

Performance and Scheduler

Sampling Rate

44100

I/O Vector Size

512

Signal Vector Size

64

Scheduler in Overdrive

X

Audio Interrupt

X

CPU % Limit

0

Input

Ch 1

1 Input 1

Ch 2

2 Input 2

Output

Ch 1

Off

Ch 2

Off

Audio Driver Setup


Open I/O Mappings

I/O Mappings

Input Mapping		Output Mapping	
Ch Group		Ch Group	
1-16		1-16	
1	1 Input 1	1	Off
2	2 Input 2	2	Off
3	3 Input 3	3	Off
4	4 Input 4	4	Off
5	5 Input 5	5	Off
6	6 Input 6	6	Off
7	7 Input 7	7	Off
8	8 Input 8	8	Off
9	9 Input 9	9	Off
10	10 Input 10	10	Off
11	11 Input 11	11	Off
12	12 Input 12	12	Off
13	13 Input 13	13	Off
14	14 Input 14	14	6 Output 6
15	15 Input 15	15	9 Output 9
16	16 Input 16	16	Off

Synful

Audio Status



CPU 3 %

Driver

Core Audio

Input Device

Fireface UC Mac (237...

Output Device

Fireface UC Mac (237...

Performance and Scheduler

Sampling Rate

44100

I/O Vector Size

512

Signal Vector Size

64

Scheduler in Overdrive

✕

Audio Interrupt

✕

CPU % Limit

0

Input

Ch 1

1 Input 1

Ch 2

2 Input 2

Output

Ch 1

Off

Ch 2

Off

Audio Driver Setup

Open I/O Mappings

I/O Mappings

Input Mapping		Output Mapping	
Ch Group		Ch Group	
1-16		1-16	
1	1 Input 1	1	Off
2	2 Input 2	2	Off
3	3 Input 3	3	Off
4	4 Input 4	4	Off
5	5 Input 5	5	Off
6	6 Input 6	6	Off
7	7 Input 7	7	Off
8	8 Input 8	8	Off
9	9 Input 9	9	1 Output 1
10	10 Input 10	10	2 Output 2
11	11 Input 11	11	Off
12	12 Input 12	12	Off
13	13 Input 13	13	Off
14	14 Input 14	14	Off
15	15 Input 15	15	Off
16	16 Input 16	16	Off

Spat

Audio Status

⏻

CPU 12 %

Driver

Core Audio

Input Device

Fireface UC Mac (237...

Output Device

Fireface UC Mac (237...

Performance and Scheduler

Sampling Rate

44100

I/O Vector Size

512

Signal Vector Size

64

Scheduler in Overdrive

✕

Audio Interrupt

✕

CPU % Limit

0

Input

Output

Ch 1

Off

Ch 1

11 Output...

Ch 2

Off

Ch 2

12 Output...

Audio Driver Setup

Open I/O Mappings

I/O Mappings

Input Mapping

Output Mapping

Ch Group

Ch Group

1-16

1-16

1

Off

1

11 Output 11

2

Off

2

12 Output 12

3

Off

3

13 Output 13

4

Off

4

14 Output 14

5

Off

5

15 Output 15

6

Off

6

16 Output 16

7

Off

7

Off

8

Off

8

Off

9

Off

9

Off

10

Off

10

Off

11

3 Input 3

11

Off

12

4 Input 4

12

Off

13

5 Input 5

13

Off

14

Off

14

Off

15

Off

15

Off

16

Off

16

Off

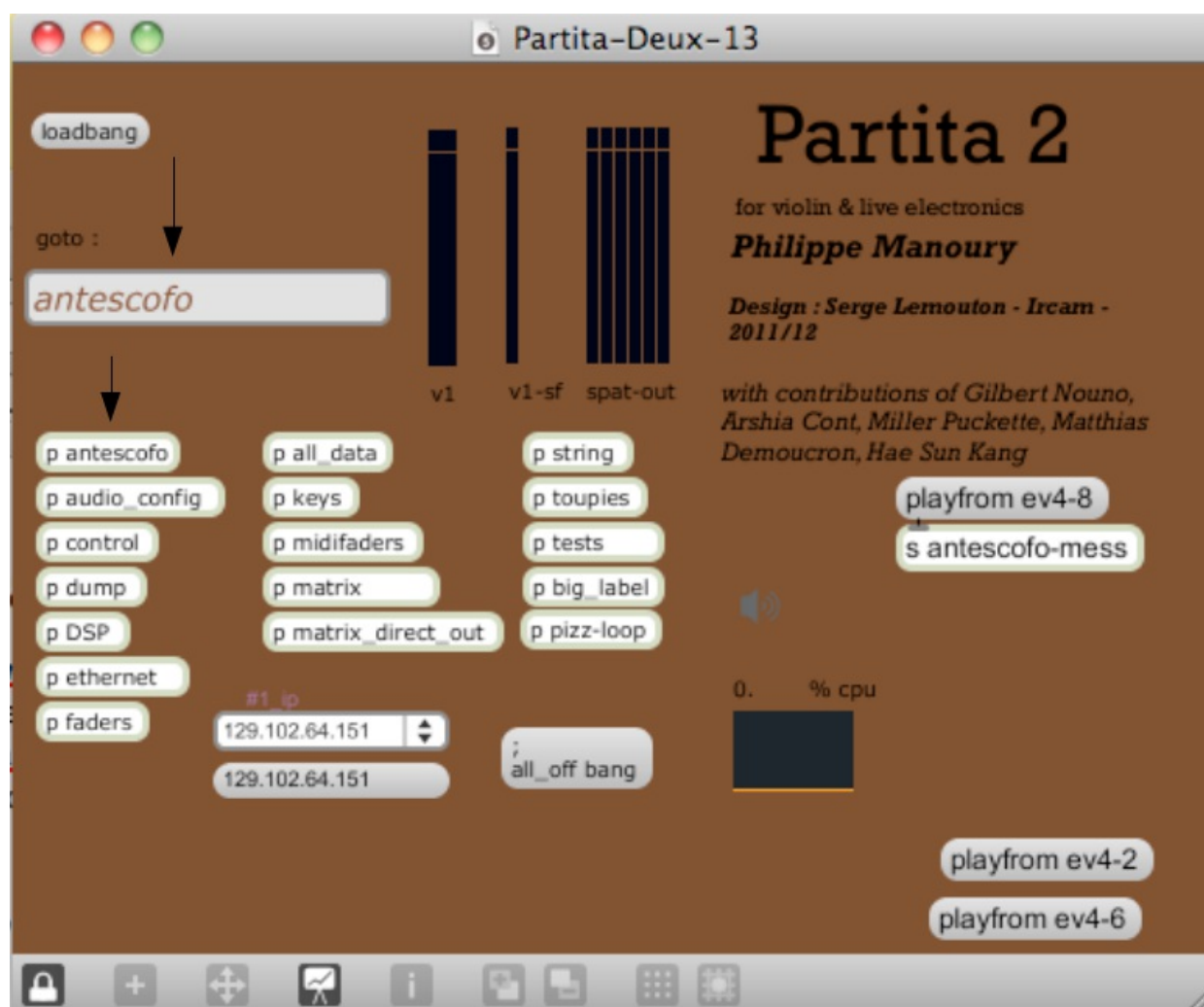
After setting the DSP status, quit every application in order to save the settings.

System calibration and tests

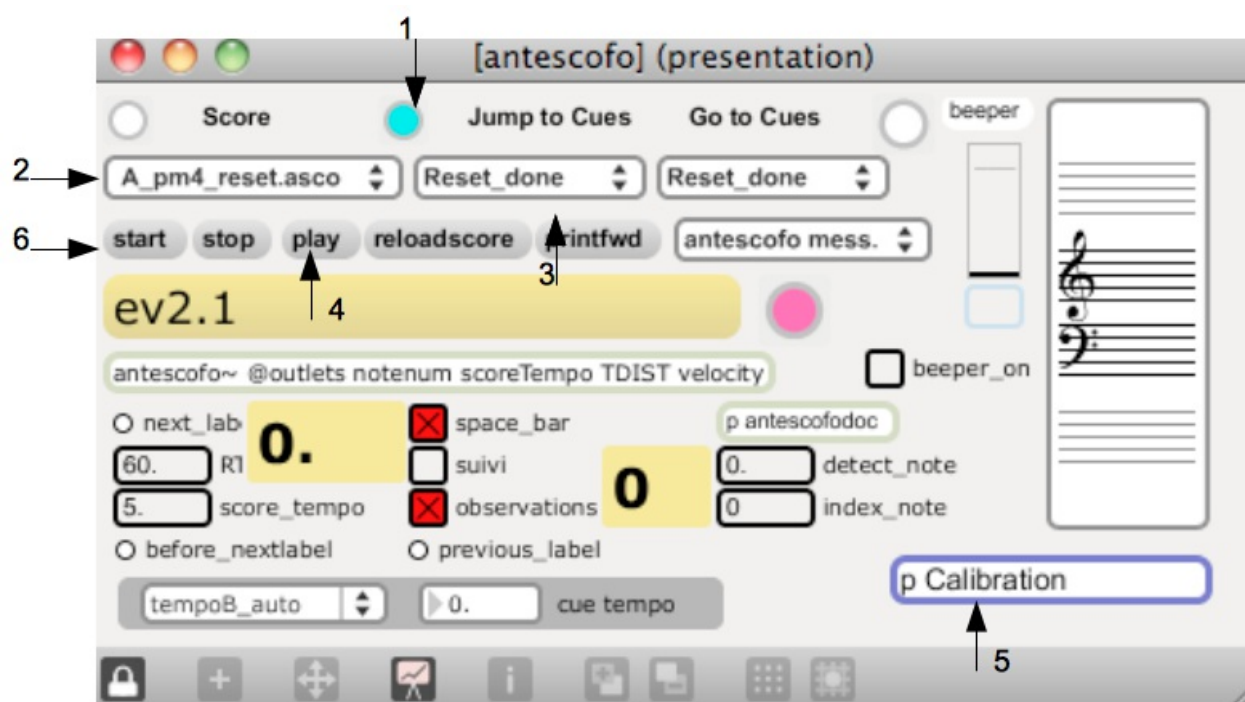
On the main patch *Partita-Deux-+3FC-10-2021*, select *antescofo* in the menu “go to”.

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

14/19



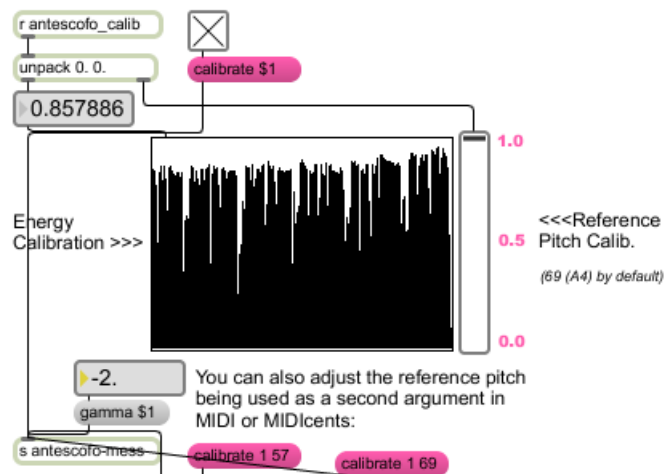
a window appears:



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:

Antescofo - Audio Calibration



Alternative version (max project)

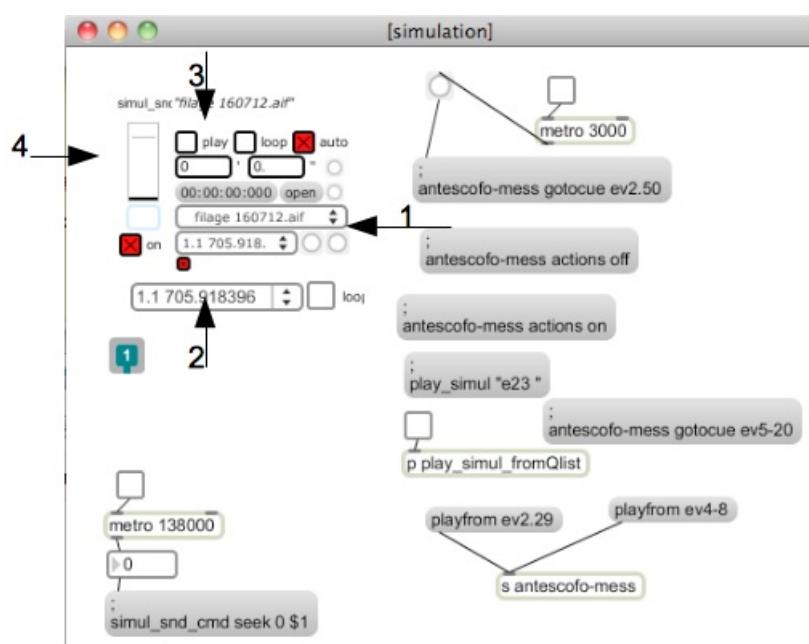
A simpler solution is provided. The synful and string real time synthesis process being replaced by prerecorded samples. Everything run in on patch : no need for loopback in this version.

To start this version simply open the max project *Partita2-2021.maxproj*.

Simulation test

In the main patch, choose *simulation* in the “go to” menu.

This window opens:



There are several different recordings of the solo violin part, as *snd/filage160712* or *snd/filage170712*.

- Start the follower in the antescofo window as it is explained in the *initialization routine*,
- Choose *filage160712* for example (arrow number 1),
- It will automatically check *play* in the simulation window (number 3), and you will see sound on the meter (number 4).

There are also markers on the recordings called “*filage 170712*” and “*filage 160712*”.

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).

The simulation violin sound is routed to dac7.

Initialization routine

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

Open the antescofo window located in the main patch with the “go to” menu

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

2. Wait 1 second.

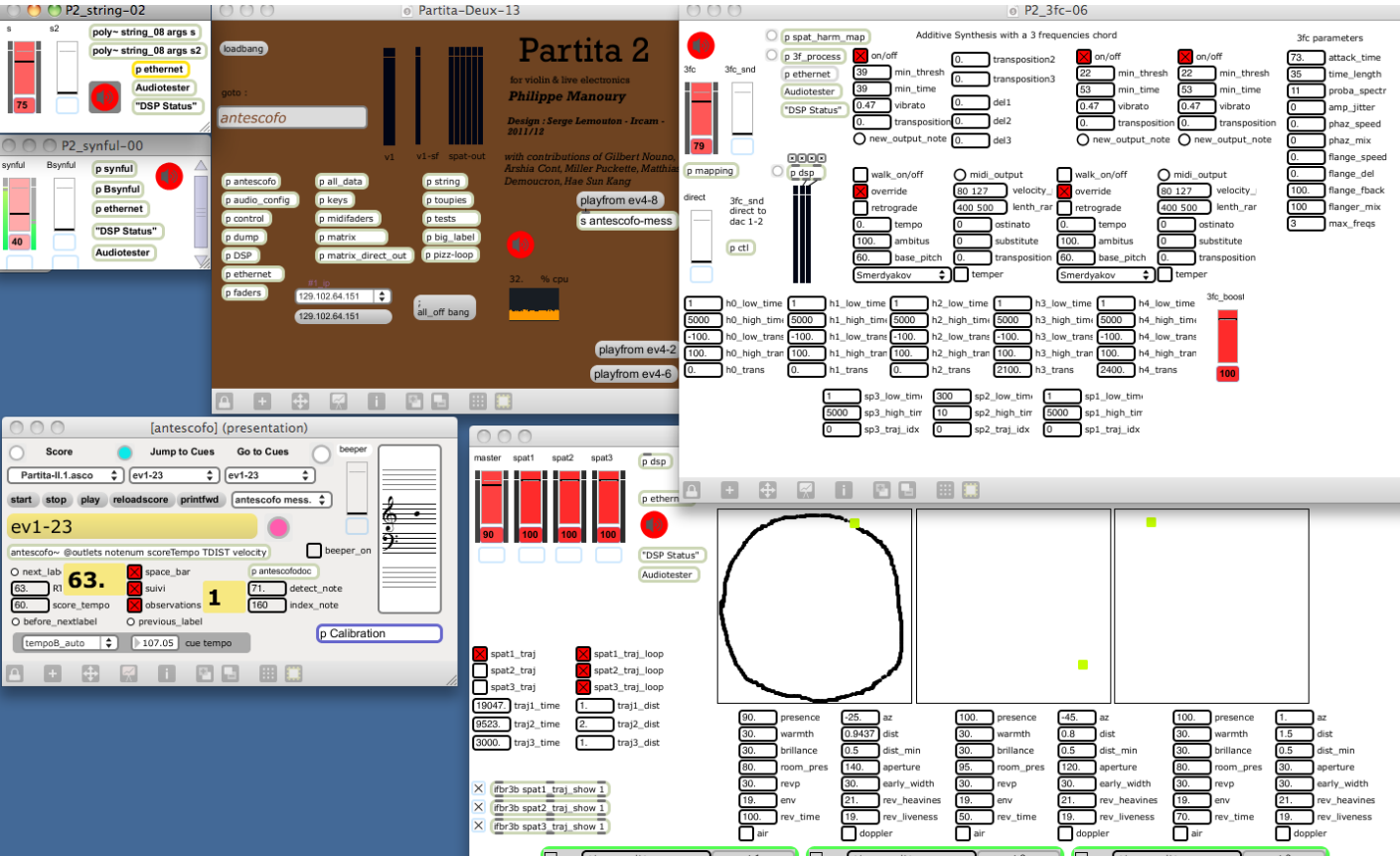
3. Choose the antescofo score *partita2.1.asco*

4. 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 possibility 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 1.1
- event 2.1
- event 2.29
- event 4.1
- event 5.1

IMPROVEMENTS (A TESTER)

From: Philippe Manoury philippe.manoury@gmail.com

Subject: Problèmes dans Partita II

Date: 4 November 2021 at 17:12:18 CET

To: Serge Lemouton serge.lemouton@ircam.fr

Cc: WARNIER Jacques JWarnier@cnsmdp.fr

Cher Serge,

Voici les passages qui ne marche pas bien dans Partita II. Je mets Jacques en copie.

Sections II

23 : C’est souvent le cas, lorsqu’il y a des sections très courtes avec les pizz qui doivent piloter la 3F, ça ne marche pas bien. Est-ce qu’on ne peut pas faire qqchose dans ces cas ? Lancer l’évt avant et faire jouer les notes dès que le micro reçoit un signal (quelque soit la note jouée par le violon) ?

39 : Idem

52 : l’évt Synful en triolets (qui deviendra quintolet plus tard) s’arrête avant la fin (peut-être en 64 je ne me rappelle plus) mais il ne va pas à son terme qui doit être 68

Et puis il y a le problème des tempi. Est-ce qu’ils sont fixés en dur maintenant (par exemple en 49, 51, 55, 63) ? Ce n’est pas le but du jeu. Sinon on fera carrément de la musique sur bande.

Sections V : Le premier evt ne marche pratiquement jamais. Il doit y avoir de la 3F or elle ne commence presque toujours que dans la deuxième figure.

Les pizz ne déclenchent pas toujours un changement de spatialisation de la corde virtuelle. Très souvent ils ne font rien. Je pense qu’il faut abandonner la détection de hauteur mais de faire un azimuth variable dès qu’il y a un pizz (quelque soit la note), par exemple celui très important à la fin (en 22)

ph.m.

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Program note

C'est la troisième fois que Philippe Manoury utilise le terme « Partita » pour l'une de ses œuvres. Un terme aux fortes connotations baroques qui, pour le compositeur, fait référence à une œuvre pour instrument seul, non structurée par une forme préétablie. « Les *Partitas* de Bach, dit-il, sont des suites de danses sur lesquelles on ne danse pas et qui se distinguent des *Sonates* par une structure plus libre et plus diverse (7 ou 8 mouvements contre 4 pour les *Sonates*). Mes *Partitas* sont dédiées aux cordes (j'envisage d'en écrire une pour violoncelle et une autre pour contrebasse) et sont en un seul et unique mouvement – à l'instar de la *Sonate pour piano* de Liszt, de certaines *Sonates* de Scriabine ainsi que de celle de Berg. »

Dans *B-Partita*, un ensemble instrumental s'ajoute au noyau initial constitué par l'instrument soliste et l'électronique. L'œuvre est en fait un élargissement ou une extension de la [Partita 2](#), pour violon et électronique, suivant l'exemple des *Sequenze* et *Chemins* de Luciano Berio. La partie de violon ainsi que l'électronique de la [Partita 2](#) sont pratiquement inchangées tandis que l'ensemble instrumental glisse ses commentaires et contrepoints dans les interstices laissés ouverts entre les diverses séquences de la partition d'origine.

La démarche d'écriture de certains de ces commentaires relève du palimpseste. Historiquement, le palimpseste désigne le réemploi d'un par chemin déjà utilisé – dans le cas présent, il s'agit plutôt de réécrire sur un canevas déjà écrit. Le terme de « palimpseste » sert d'ailleurs de sous-titre à la deuxième section de cette *Partita*. Certains traitements instrumentaux sont directement ou indirectement déduits des sonorités de synthèse, en cherchant, lorsque c'est possible, des analogies entre le monde instrumental et le tissu électronique existant.

Jérémie Szpirglas.

Note de programme du concert du 16 juin 2016 au Centre Pompidou.

None

Version documentation creation date: Nov. 17, 2021, 9:17 a.m., update date: May 2, 2022, 10 a.m.