

## Appendix 1: *ukhu pacha* Mapping process

1) List of fundamentals of instruments, 16 items, in Hz.

(259.411 290.118 297.204 299.007 301.917 327.495 328.472 332.795 337.22 339.478 342.475 347.847 351.224 357.167 368.823 445.934)

2) List of intervalic values (15 items) (1 decimal) & further 16th item.

(30.7 7.1 1.8 2.9 25.6 1.0 4.3 4.4 2.3 3.0 5.4 3.4 5.9 11.7 77.1)

sum of elements

(+)

(186.6)

3) Triplication of last element, re-scaled values, (1 → 186.6) to (1 → 559.8). Ascending order.

(1.0 7.1 10.4 15.2 15.8 18.6 25.6 26.3 33.3 37.4 45.8 79.4 181.6 219.2)

X3

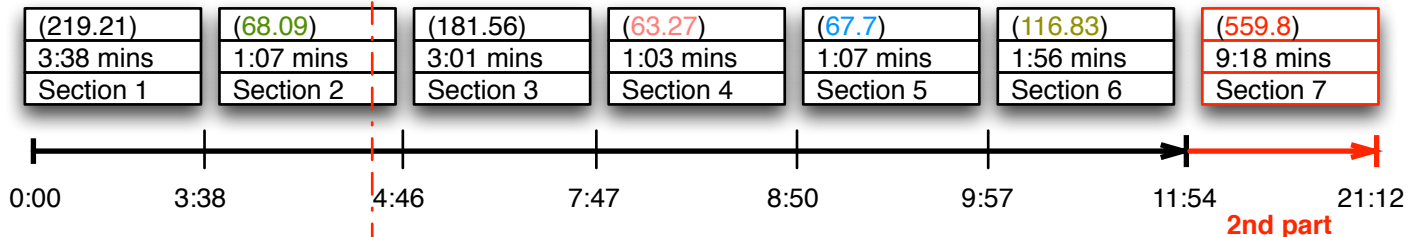
(559.8)

4) Original order and concatenation of elements in list.

(219.2 45.8 7.1 15.2 181.6 1.0 25.6 26.3 10.4 15.8 33.3 18.6 37.4 79.4 559.8)

5) Values < 50 grouped. Duration of sections, in seconds

(219.21 68.09 181.56 63.27 67.7 116.83 559.8)



Macro-form: 1st part

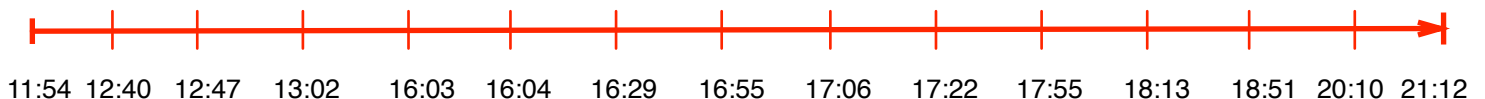
Recycle of used time partition.

(219.2 45.8 7.1 15.2 181.6 1.0 25.6 26.3 10.4 15.8 33.3 18.6 37.4 79.4 559.8)

6) Division of last section recycling material above.

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| (45.8)      | (7.1)       | (15.2)      | (181.6)     | (1.0)       | (25.6)      | (26.3)      | (10.4)      |
| 46 secs     | 7 secs      | 15 secs     | 3 mins      | 1 sec       | 26 secs     | 26 secs     | 10 secs     |
| Section 7.1 | Section 7.2 | Section 7.3 | Section 7.4 | Section 7.5 | Section 7.6 | Section 7.7 | Section 7.8 |

|             |              |              |              |              |              |
|-------------|--------------|--------------|--------------|--------------|--------------|
| (15.8)      | (33.3)       | (18.6)       | (37.4)       | (79.4)       | (62.1)       |
| 16 secs     | 33 secs      | 19 secs      | 37 secs      | 1:19 mins    | 1:02 mins    |
| Section 7.9 | Section 7.10 | Section 7.11 | Section 7.12 | Section 7.13 | Section 7.14 |





# Appendix 2 Form definition of the piece.

1) (301.917 368.823 332.795 339.478 337.220 357.167 342.475 351.224 259.411 297.204 299.007 290.118 347.847 328.472 327.495 445.934)

## Definition of the form in section durations:

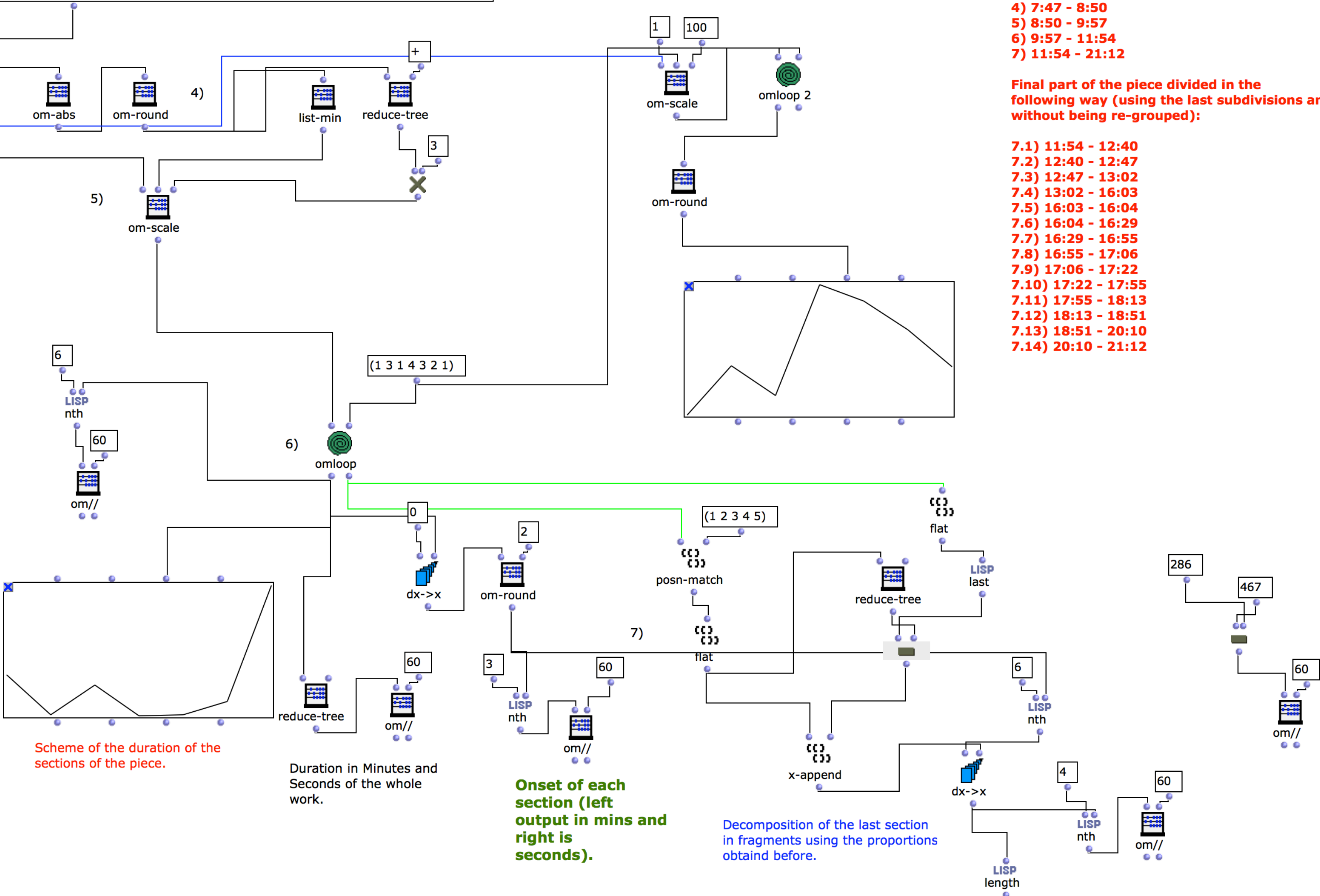
- 1) 0:00 - 3:38
- 2) 3:38 - 4:46
- 3) 4:46 - 7:47
- 4) 7:47 - 8:50
- 5) 8:50 - 9:57
- 6) 9:57 - 11:54
- 7) 11:54 - 21:12

## Final part of the piece divided in the following way (using the last subdivisions an without being re-grouped):

- 7.1) 11:54 - 12:40
- 7.2) 12:40 - 12:47
- 7.3) 12:47 - 13:02
- 7.4) 13:02 - 16:03
- 7.5) 16:03 - 16:04
- 7.6) 16:04 - 16:29
- 7.7) 16:29 - 16:55
- 7.8) 16:55 - 17:06
- 7.9) 17:06 - 17:22
- 7.10) 17:22 - 17:55
- 7.11) 17:55 - 18:13
- 7.12) 18:13 - 18:51
- 7.13) 18:51 - 20:10
- 7.14) 20:10 - 21:12

## Proceedings:

- 1) The average results of the fundamental analysis performed one each of the recorded fututus are gathered, selecting only those fundamentals of the base sounds (this means that it has not been included the performed 8ves, timbal variations made by mouthpiece inclusion, etc). Given the case there are several samples of the same specimen (with eventual subtle differences), the fundamental with lower values will be petered (see numbers file named 'fundamentals').
- 2) Once this filter is applied, the resultant list is sorted out (lowest to highest in frequencies).
- 3) Furthermore, an intervalic analysis is performed through the frequency list.
- 4) Then, a reduction of the data is into integers is performed.
- 5) The resultant list is re-scaled taking as max-value the total (sum) of the constituent members of the list -> Note: Given that the number acquired was somehow small for th necessity (186), it got multiplied by 3 (558 as the top number of the scale).
- 6) Given the uneven nature of the resulting data, the very small numbers are grouped in sublists and then reduced (addition of its compoents) -> See OMLoop. The followed criteria was to select the numbers smaller than 50. The list on the 2nd input of the OMLoop represents those numbers mentioned before.
- 7) Given the significant extension of the last section (compared with the others), the decision of maintaining this magnitude was kept but by further appliance of an inner division of the number by using the same formal partition obtained before.



Scheme of the duration of the sections of the piece.

Duration in Minutes and Seconds of the whole work.

Onset of each section (left output in mins and right is seconds).

Decomposition of the last section in fragments using the proportions obtained before.



### Appendix 3: ukhu pacha sketch form.

First part, the calling, Outside, Natural Soundscape.

Second part, transfiguration, back to "mother sea", Inside the galleries.

Seventh section

9:18

3:01

Golden Mean Section of the Work  
(Total length of time of the work: 1272 secs;  
Divided by 1,618 (Golden Mean) = 786.139  
Equals 13 mins, 06 secs.

0:07 0:15 0:46 0:01 0:25 0:11 0:18 0:26 0:33 0:38 2:19 1:02

0:30 1:30 2:30 3:30 4:30 5:30 6:30 7:30 8:30 9:30 10:30 11:30 12:30 13:30 14:30 15:30 16:30 17:30 18:30 19:30 20:30 21:30

Y Axis : Length proportions

X Axis : TIME

Definition of the form in section durations:  
1) 0:00 - 3:38  
2) 3:38 - 4:46  
3) 4:46 - 7:47  
4) 7:47 - 8:50  
5) 8:50 - 9:57  
6) 9:57 - 11:54  
7) 11:54 - 21:12

Final part of the piece divided in the following way (using the last subdivisions and without being re-grouped):  
7.1) 11:54 - 12:40  
7.2) 12:40 - 12:47  
7.3) 12:47 - 13:02  
7.4) 13:02 - 16:03  
7.5) 16:03 - 16:04  
7.6) 16:04 - 16:29  
7.7) 16:29 - 16:55  
7.8) 16:55 - 17:06  
7.9) 17:06 - 17:22  
7.10) 17:22 - 17:55  
7.11) 17:55 - 18:13  
7.12) 18:13 - 18:51  
7.13) 18:51 - 20:10  
7.14) 20:10 - 21:12

First section  
3:38  
Textural based, presentation of external soundscape. Development of first gestures and presentation of the horns in the distance representing "the calling". Wind, footsteps, nature and other sounds draw an acoustic image of the scape.

Second section  
1:07  
Water: rain (developed). Horns: further calling. Prevalence of textural over pitched material.

Third section  
3:00  
Rain: goes to the background and further development. Horns: developed texturally (grain). Footstep sounds re-stated and further developed.

Fourth section  
1:03  
Arriving: Horns closer. Water: River (close) & interacted with the sound of horns and drums. Ceremonial drums strikes confirming arrival to temple.

Fifth section  
1:07  
The river's water flow is harmonised by the call of the horns - Answer of the water.

Sixth section  
1:56  
Arrival: the gathering of the pilgrims. Recapitulation and further development of material of first section, generating internal arch structure (end of first part).

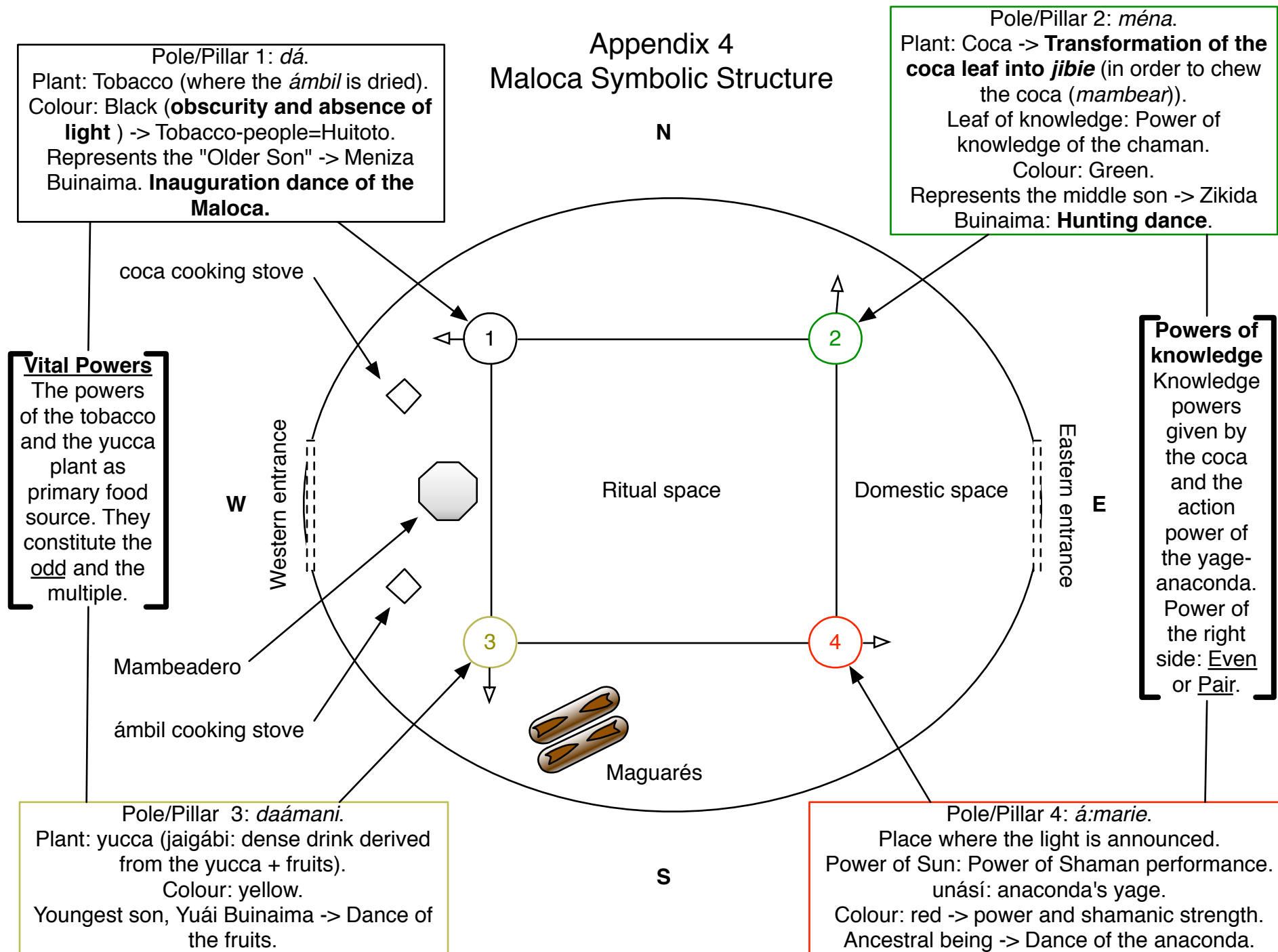
Seventh section  
9:18  
Entering the galleries; Intro of reverber space. Change of timbre of horn. A 2nd divine presence (feline). Fututo slap.  
Horn "hand slaps" (distant). + Falling debris.  
Falling debris + horn slaps + water drippings + God's voice (bass). Intro of water + River's waves sounds.  
Developed horns (use of "Tartini" difference tones (See B. Truax)) + underground water. Shaman's transfiguration and further demonstration of power. Presentation of rhythmic material (fututo's hand slap developed). Main Climax.  
Development of Rhythmic fututo-slap and partial recapitulation of first gestures (developed as well).  
Responsorial segment of fututos (in blocks) + God's voice (feline). Further development of rhythmic sections (fututo's slaps) transforming into a textural based sound gesture. Stream water sounds and wind.  
Final arrival to MOTHER SEA. Final 'chorale' of horns.  
Exit, end of journey

Main arch form of the piece (eketernal).

Recapitulation & development of first material to achieve internal arch form.

Second main recapitulation and closure in external arch form.

## Appendix 4 Maloca Symbolic Structure



#### Notes to APPENDIX 4:

The centre stands for the sacred, ritual space framed by the square delimited by the four pillars. The paired complementarity opposition principle discussed is marked at the opposite sides of the scheme: The vital powers of primary food (yucca and tobacco), standing for the odd numbers, pillars 1 and 3, are opposed to those related to the knowledge (given by the coca and yagé), symbolizing the even numbers, pillars 2 and 4.

Both entrances are aligned with the course of the sun from East to West; the West entrance marks the location where the preparation of the entheogenic plants take place: The *ámbil* or tobacco paste, essential for the first dance, prepared on the stove of the left, while that on the right is used for toasting the coca leaf. At the centre, the *mambeadero* marks 'the most sacred place of the maloca, locus of coca preparation and consumption during the nightly sessions'. (URBINA, 2010:56). For those few with the special privilege to own a pair of maguarés, a special place within the maloca is dedicated to harbour it.

#### Sources:

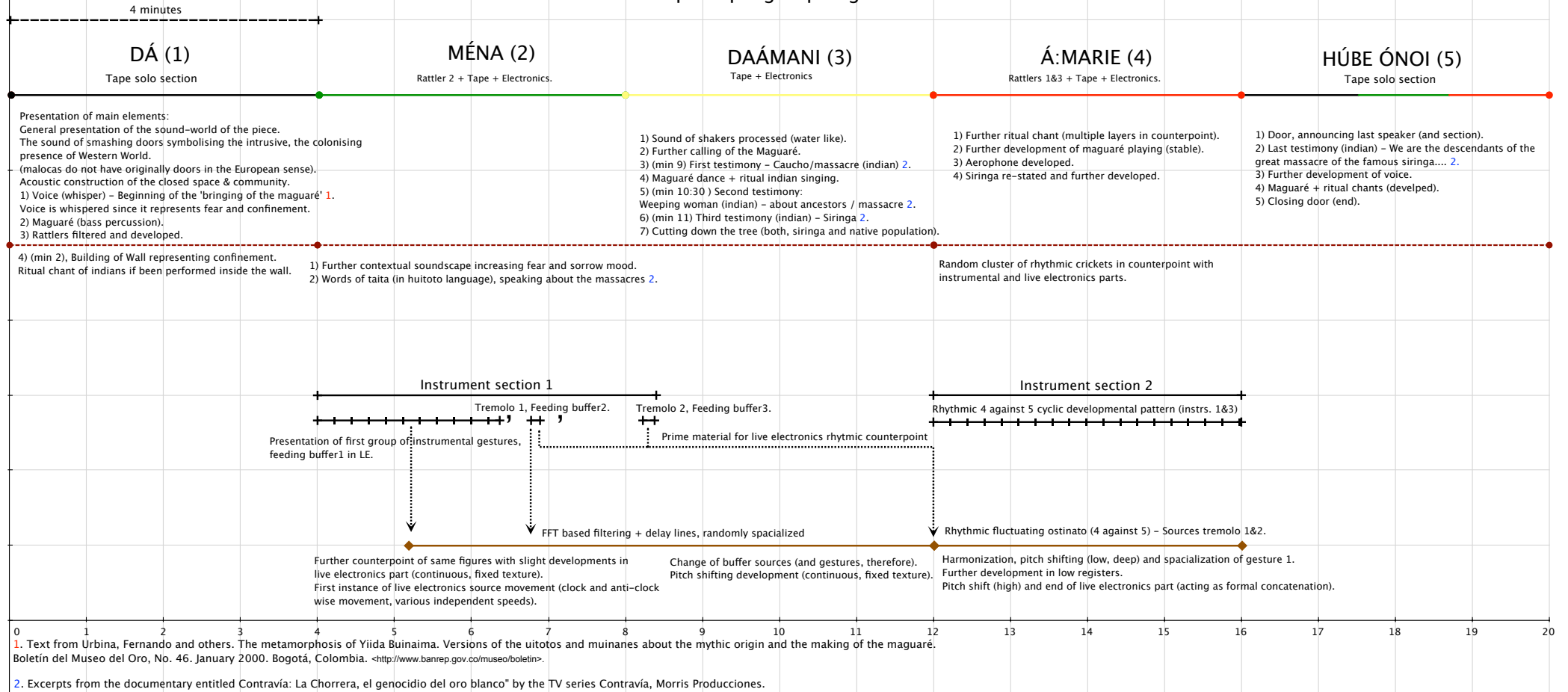
- TAGLIANI (1992)
- TORRES (1998)
- URBINA (2010).
- YÉPEZ (1981), (1982).

## APPENDIX 5

### LA HISTORIA DE NOSOTROS, I: MENIZA BUINAIMA, for percussionist, live electronics and fixed audio media (8.0 multichannel system).

#### General form outline.

#### First quintuple group: digits 1 to 5.

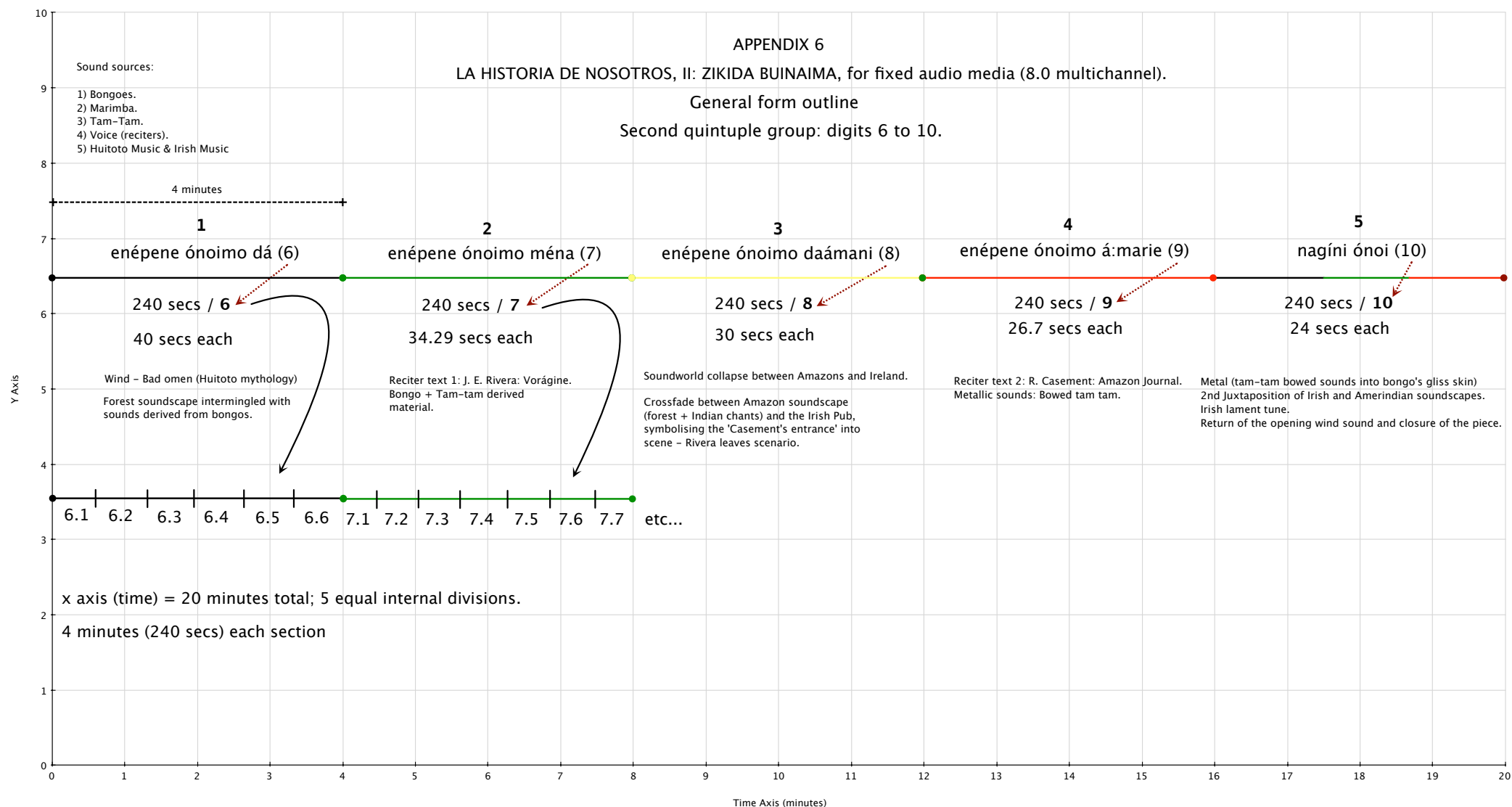


APPENDIX 6

LA HISTORIA DE NOSOTROS, II: ZIKIDA BUINAIMA, for fixed audio media (8.0 multichannel).

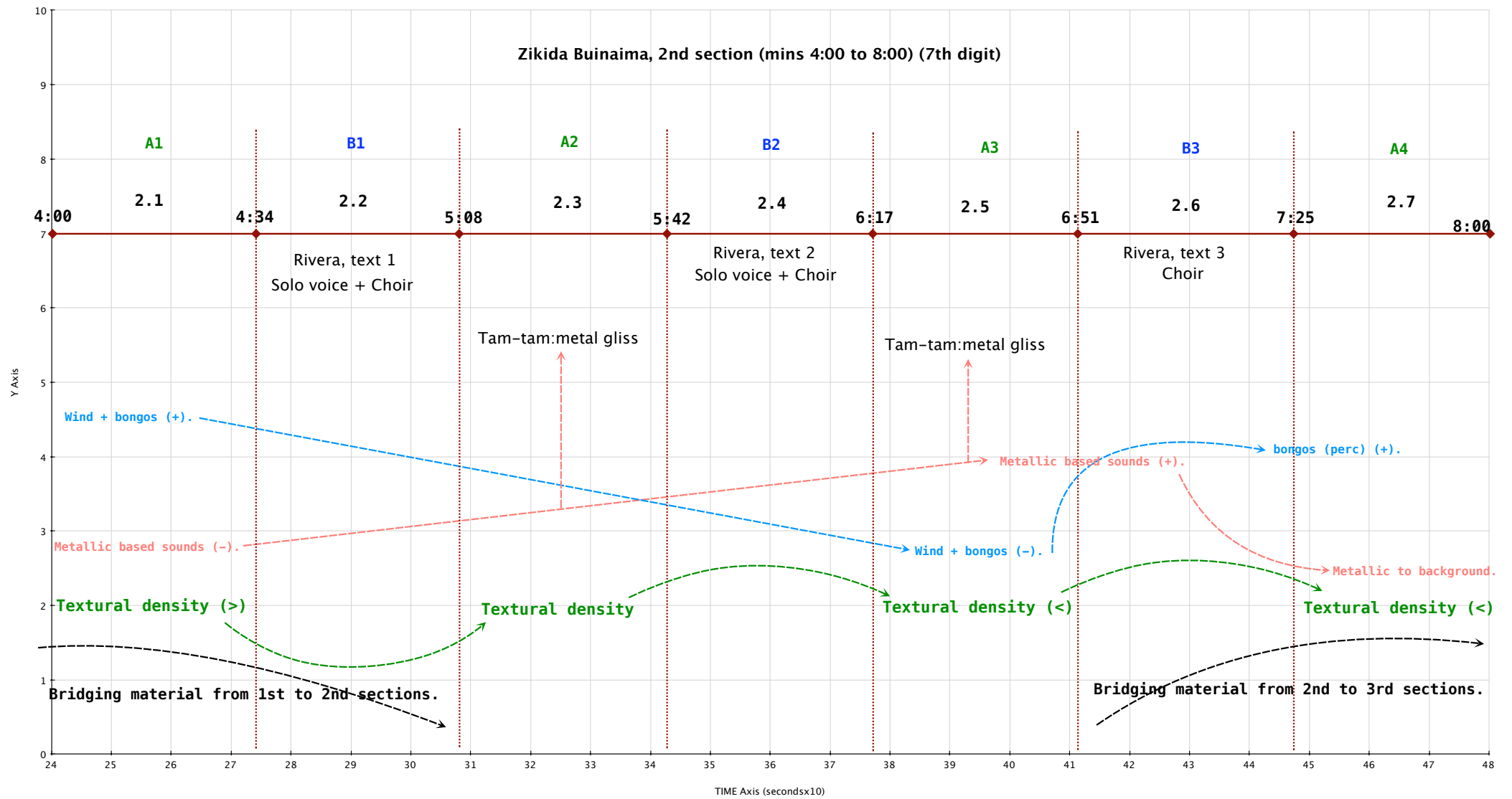
General form outline

Second quintuple group: digits 6 to 10.





# Appendix 7





## APPENDIX 8

LA HISTORIA DE NOSOTROS, III: YUÁI BUINAIMA, for percussion and fixed audio media (8.0 multichannel system).

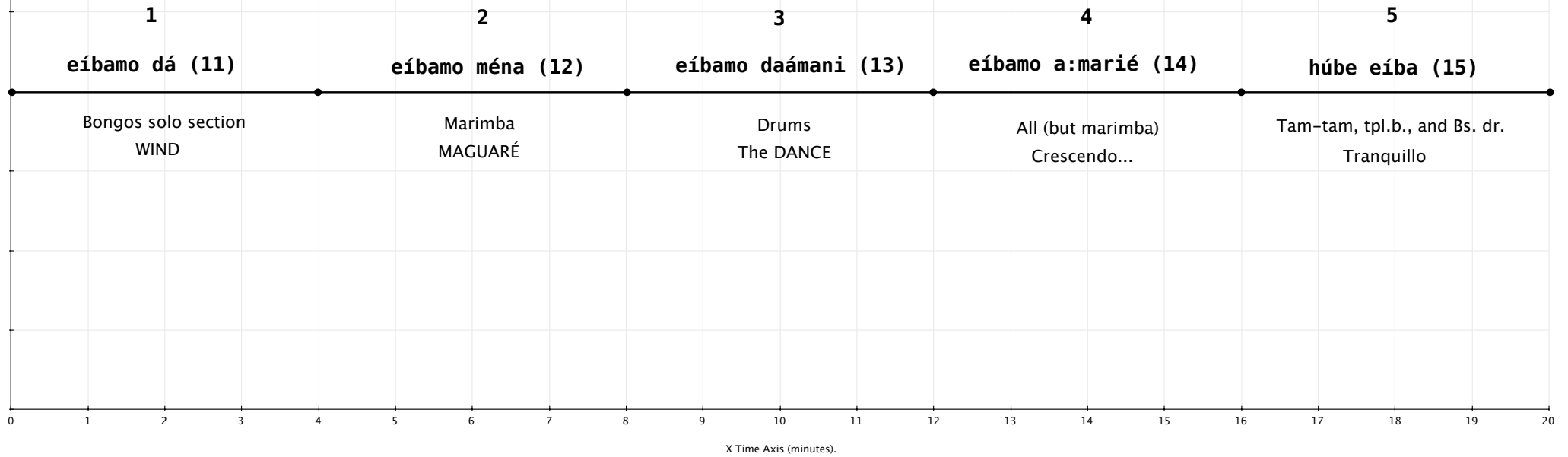
### General form outline

Third quintuple group: digits 11 to 15.

Percussion set:

- 1) Marimba
- 2) 3 temple blocks
- 3) 2 bongos (small diameter)
- 4) 2 toms (one of them a floor tom if possible)
- 5) 1 Bass drum
- 6) 1 large tam tam

Y Axis

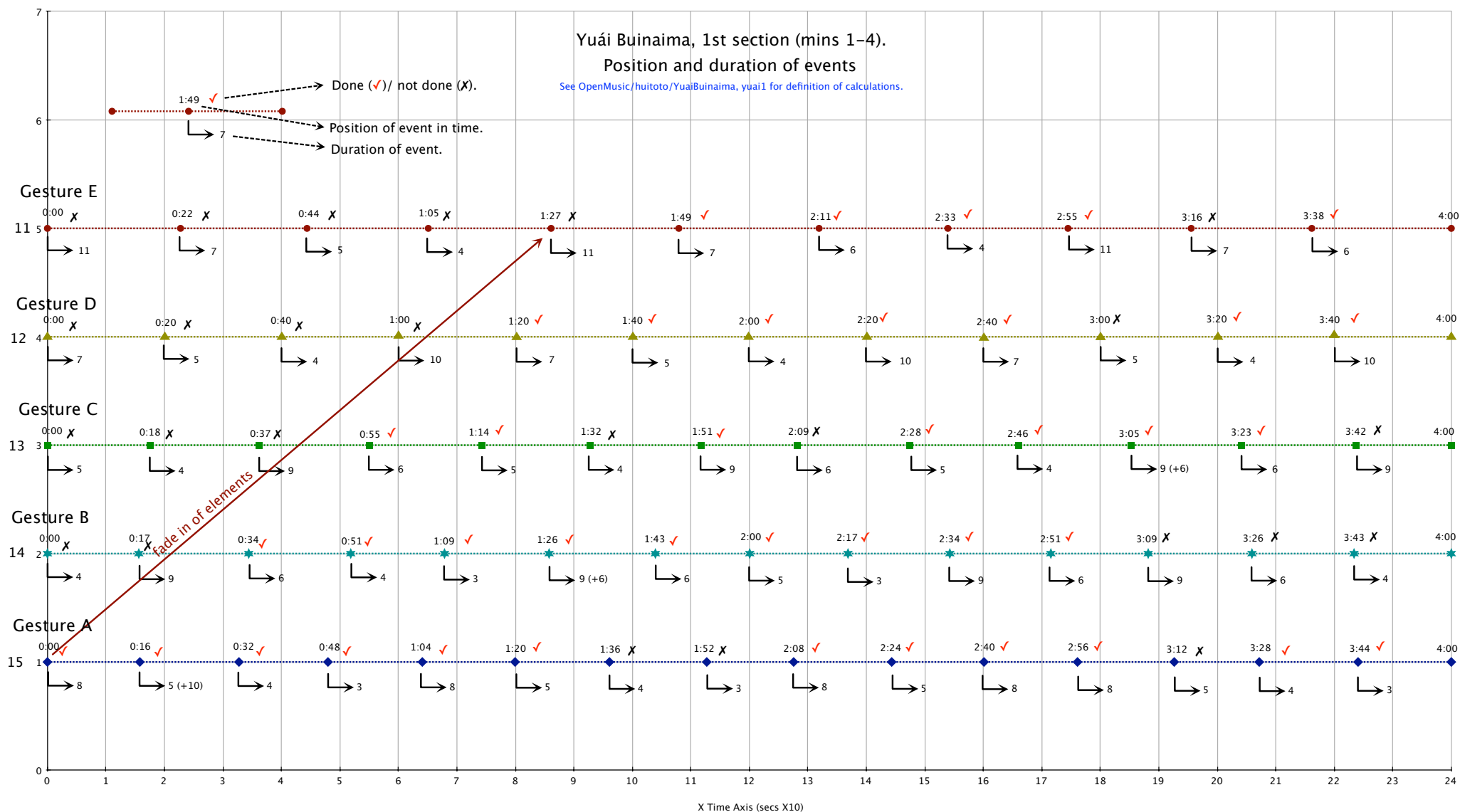


# Appendix 9

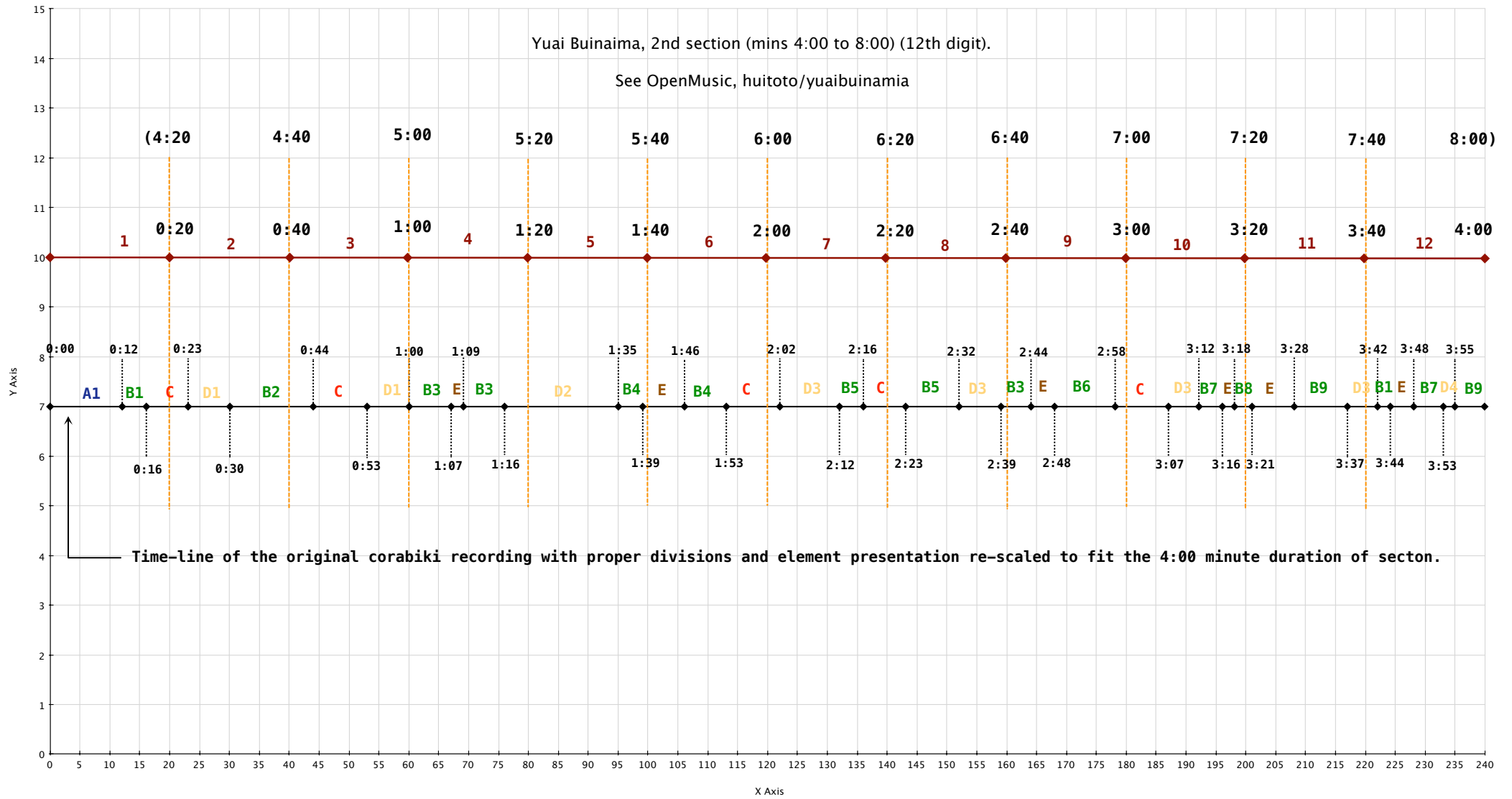
Yuái Buinaima, 1st section (mins 1-4).

Position and duration of events

[See OpenMusic/huitoto/YuaiBuinaima\\_yuai1](https://openmusic.huitoto.org/YuaiBuinaima_yuai1) for definition of calculations.



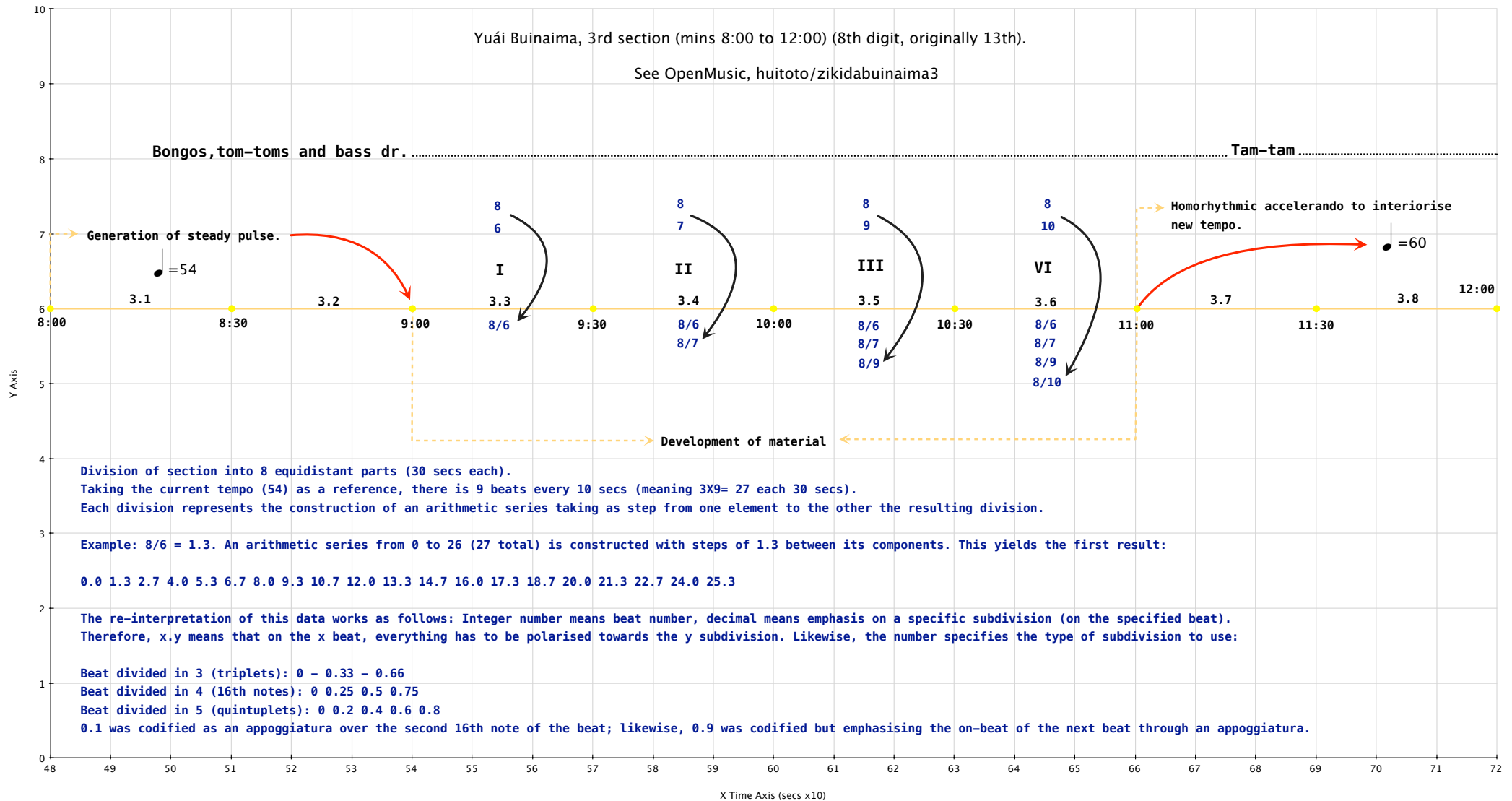
# Appendix 10



# Appendix 11

Yuái Buinaima, 3rd section (mins 8:00 to 12:00) (8th digit, originally 13th).

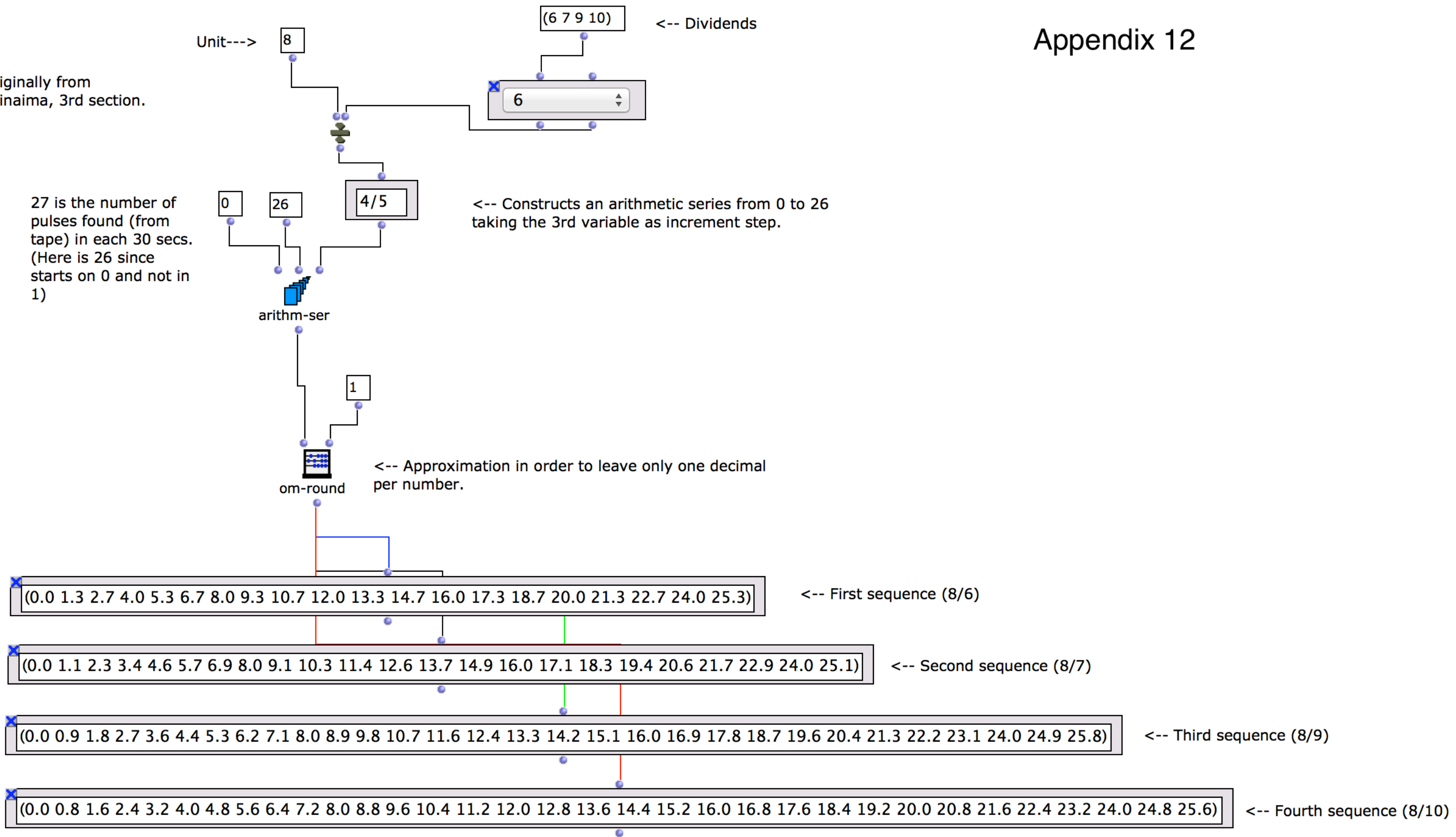
See OpenMusic, huitoto/zikidabuinaima3



## Appendix 12

Note: Originally from  
ZikidaBuinaima, 3rd section.

27 is the number of  
pulses found (from  
tape) in each 30 secs.  
(Here is 26 since  
starts on 0 and not in  
1)

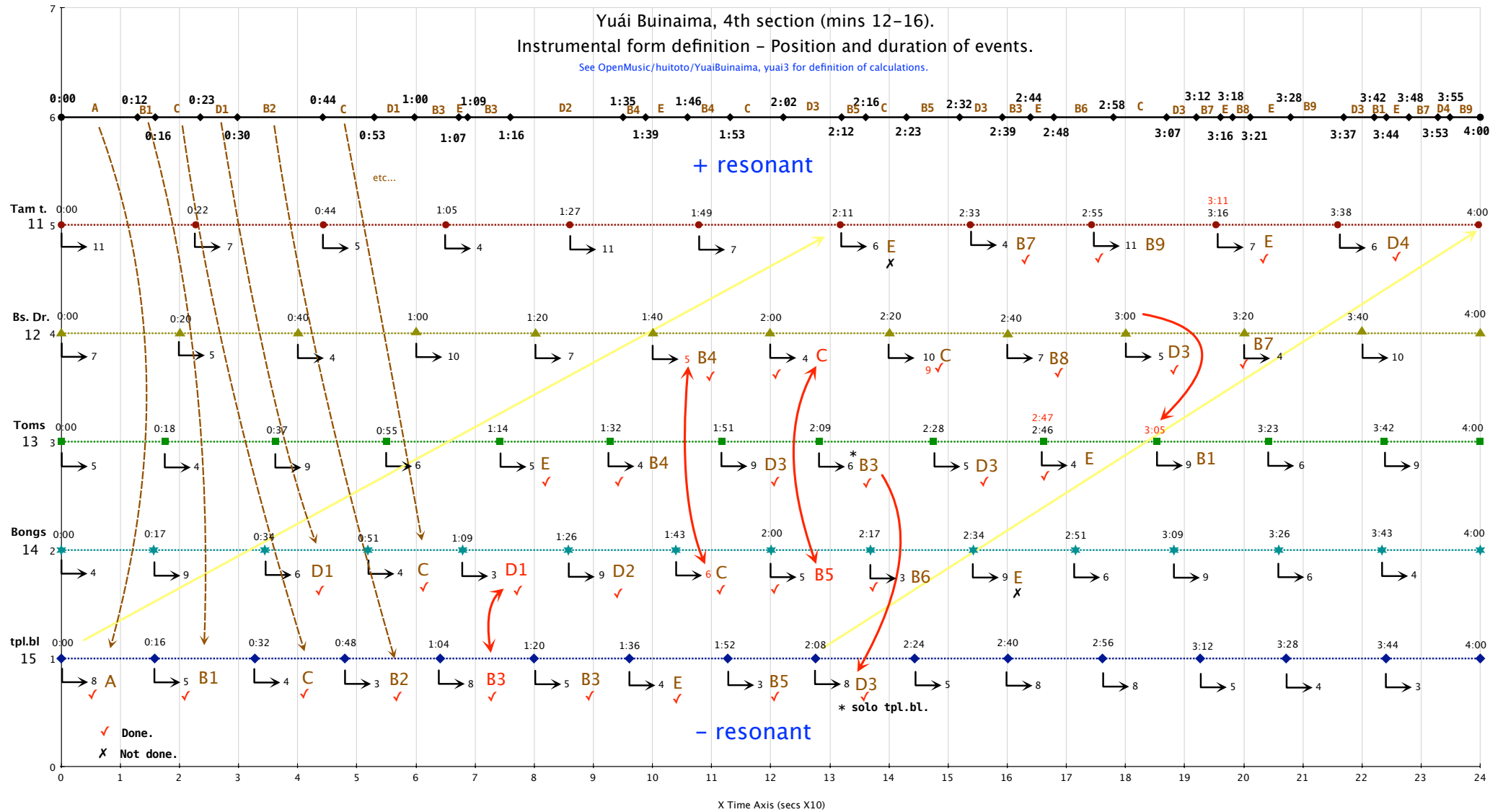


# Appendix 13

Yuái Buinaima, 4th section (mins 12–16).

Instrumental form definition – Position and duration of events.

[See OpenMusic/huitoto/YuaiBuinaima, yuai3 for definition of calculations.](#)



# Appendix 14

(? (((3 4) (1 1 1)))) B1 Original, no repetitions.

(8000 5000 9000 6000 3000 7000 11000)

5000 <-- Stretching factor, in this case 5 seconds.

mypatch

subpatch content

No quantized

Quantized

flat

(5 6 7)

Quantization process, avoiding irregular groups of 5, 6 and 7 in order to avoid unnecessary notation complexity in the result.

VOICE 3

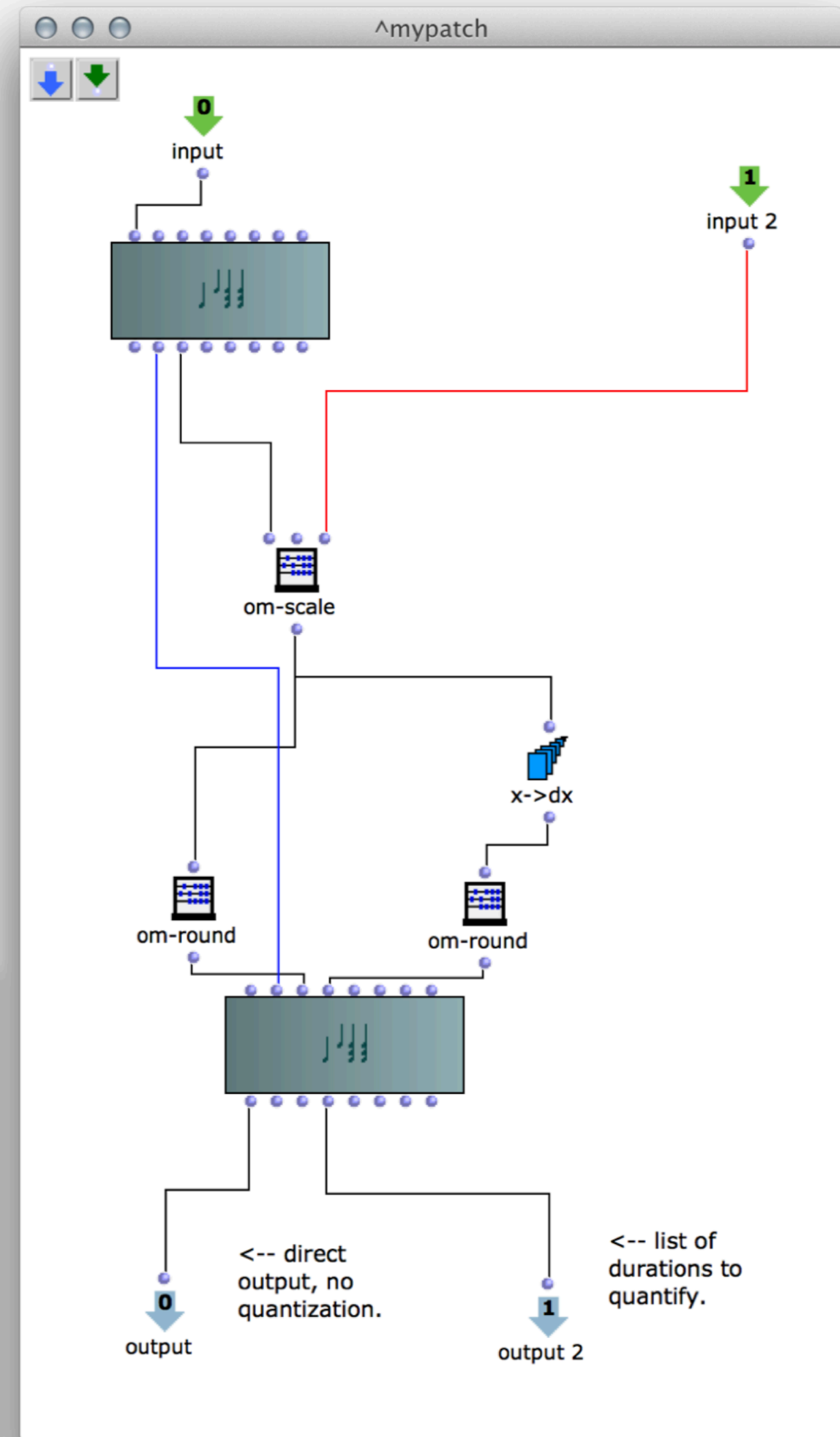
VOICE Selection: CHORD

Duration: 7000 ms

midic  Zoom 100 Staff G

chord  Font size 24 Approx 1/

mypatch 3





# Appendix 15

