

Composition:

$\Sigma(35-59)$

Segment	Circuits	Duration
1	57,48a,44a	03m51s
2	40b,47i-k	01m44s
3	58d-f, 43a-e	02m50s
4	36f,46b-h	06m41s
5	35,50c-g	01m28s
6	36a, 36d-e	01m08s
7	48b,39c,41e-h	07m08s
8	33,39a, 39c-d	01m46s
9	42,45g	06m55s
10	47b, 41	01m26s
11	59c-f, 55a	01m37s
12	46a	01m26s
13	53,36b,	03m07s
14	54i,44,40a-c	01m38s
15	55c,42e	02m18s
16	56,47a,46b	02m08s
17	38c-g,37b-d	08m46s

Composer:

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Composed:

[2024 - 2025]

Duration:

55 min 57 sec

Computer environments
from (73 modular circuits)

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'Self' and 'creation' reflect on the ability of a system to reproduce itself, or to produce and maintain itself by creating its parts, this phenomenon is applied to organic systems. In electronic modular circuitry, the life of a system is located neither inside an object nor inside a process, but inside the oscillation between processes, objects depend on a manner of time that cannot be computed within a singular universal time. A cascade of signals and signal modulations are generated. The kinetic objective of modulation is discovering the various natures, tensions, sound collisions, deformations and formations of electronic processes, components with different speeds and latencies forming an electronic ecology. 24 elementary positions (faces) of a rotating cube with plugins and effects attached, constantly attempting to apply the selections to modular circuitry, the selections are determined by methods of probability.

*The soundscape differs from the sound environment because it emphasizes the interaction between humans and sound sources in the background and the sound environment's perception, understanding and feedback reconstruction. Different sound sources in this context have varying impacts on subjective human experiences. Natural sounds can help reduce stress, restore cognitive states and enhance feelings of well-being. Mechanical sounds, conversely affect hearing and are detrimental to stress recovery, leading to negative emotions and stimulating antisocial behaviour. Artificial sounds, being more complex, can have both positive and negative effects on soundscape perception, depending on the environment and the specific sound source. **Reflection on biological processes:** Enzymes are biological catalysts, proteins in organic matter that help speed up metabolism, or the chemical reactions in our bodies. They build some substances and break others down. The molecules upon which enzymes may act are called substrates, and the enzyme converts the substrates into different molecules known as products. Anabolic enzymes catalyze biochemical reactions that synthesize larger complex molecules from smaller units using energy in ATP. Catabolic enzymes catalyze biochemical reactions that break down larger complex molecules into smaller units. Both reactions release energy and generate ATP.*

Building modular circuits and creating an autonomous sustainable esoteric computer environment partially free from human intervention independent of human universal control, mismatching components (voltage or impedance) resulting in one component influencing the next, so that signals are created at many points within the circuits once activated, the instability of partial connections within the network incited oscillations of diverse character, triggering a cascade of signals and signal modulations composing itself from within. Sonic expressions of these multiple components interacting, create an interactive relationship between the listener, and space, within the circuitry. $\Sigma(35-59)$ comprised of 17 segments have six inputs centred around the rules imposed on a rotating cube, cross-channel communication between plugins and effects occur. The nature of each segment is measured by an external observer through the point of failure or success.

The nature of a rotating cube

Each cellular block of the cube is programmed to influence the positioning of other cells within its layer and other layers. Plugins and effects applied to each face of the cube are triggered and depend on time, an event is generated through modulation.

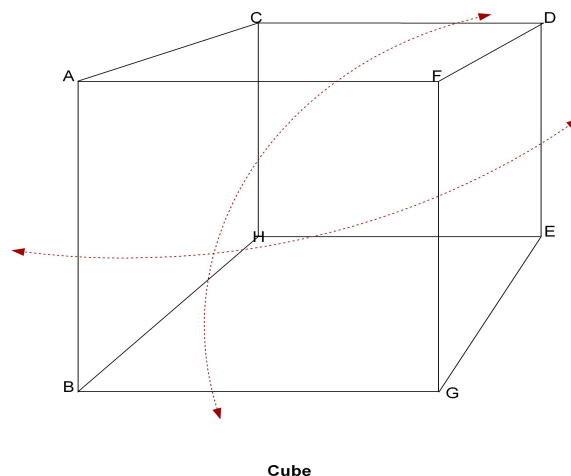


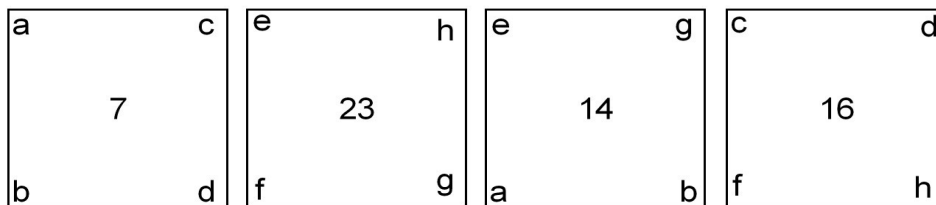
fig1: 4 diagonals, 8 vertices, and 6 faces. G symmetries of the cube, proposition: $|G| = 24$ elements or positions. 24 is $4!$ (factorial) therefore $4! = |S_4|$ (symmetric group over 4 elements)

	1	2	3	4
A				
B				
C				
D				
E				
F				

fig2: Cell representing the 24 elementary cubic positions

Rules for elementary positions:

- A sample randomly chosen from prior organized groups is applied to each cellular module with a maximum of 1-4 plugins and effects and a minimum of 0 each with value adjustments.



A rotating cube with 4 out of 24 faces (positions) a,b,c,d,e,f,g,h could have 1,2,3 or 4 effects per square the values assigned to each is determined by probability.

fig3:

Plugins and effects assigned to the sound modules:

Plugins:

- **Filters** – **1 Pole** – low and highpass, bandpass. **2 Pole** – low and highpass, bandpass, notch. **4 Pole** – low and highpass, **6 Pole** – lowpass
- **Envelope** – Dbd, Flexible, ADHSR.
- **LFOs** – Sine, triangle, rectangle, sawtooth, random, multi.
- **Velocity.**

Effects:

- Natural reverb, distortion, compression, saturation.
Single or combined sampled grains of specific pitch range and duration from a group or various groups may be applied to the specified synth in each cell e.g, Sample 36F – 24,13 or Sample 2C - 1, 9.

Time, use of a random process to select points on a time scale

Simple random (systematic, stratified, cluster, multi-phase) sampling is used. This random process expresses an uncertainty in the modelling process.

The duration of the composition is 55 minutes, through probability 2 points every 5 minutes are selected per six channels. The probability result value (min or sec) per channel must be completely different and unique from other channels. Values across 1-5 channels with similar outcomes and probability must be reapplied until unique values are obtained.

When one value across 6 channels is similar then that time selection is eliminated.

When two values across 6 channels are similar e.g. 3.5 and 4.3. 3.5, 4.3 can be selected on one of the six channels and probability is applied until unique values are obtained through the process on the remaining channels.

Towards a microenvironmental order

The model of computation has some profound advantages over the turning model because calculations can be done in a massively parallel fashion, All the 24 positions in each cell can compute their state all at once because they do not rely on or change shared global information (biological systems function).

Layer 1

A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
							4					1			
		7	8						6			5			
9		11			10					11					12
		15					16					13	14		
			20	17		19		17	18						
							24	21		21		21			
						3							2		
			8	5		7	8						6		
9								9		11		9			
		15							14				14		16
17						19			18					19	
	22	23		21				21			24				

fig4: Layer 1: 24 grid cells of 8 partitions of a rotating cube with selected samples assigned to each partition

Rules: colours and functions

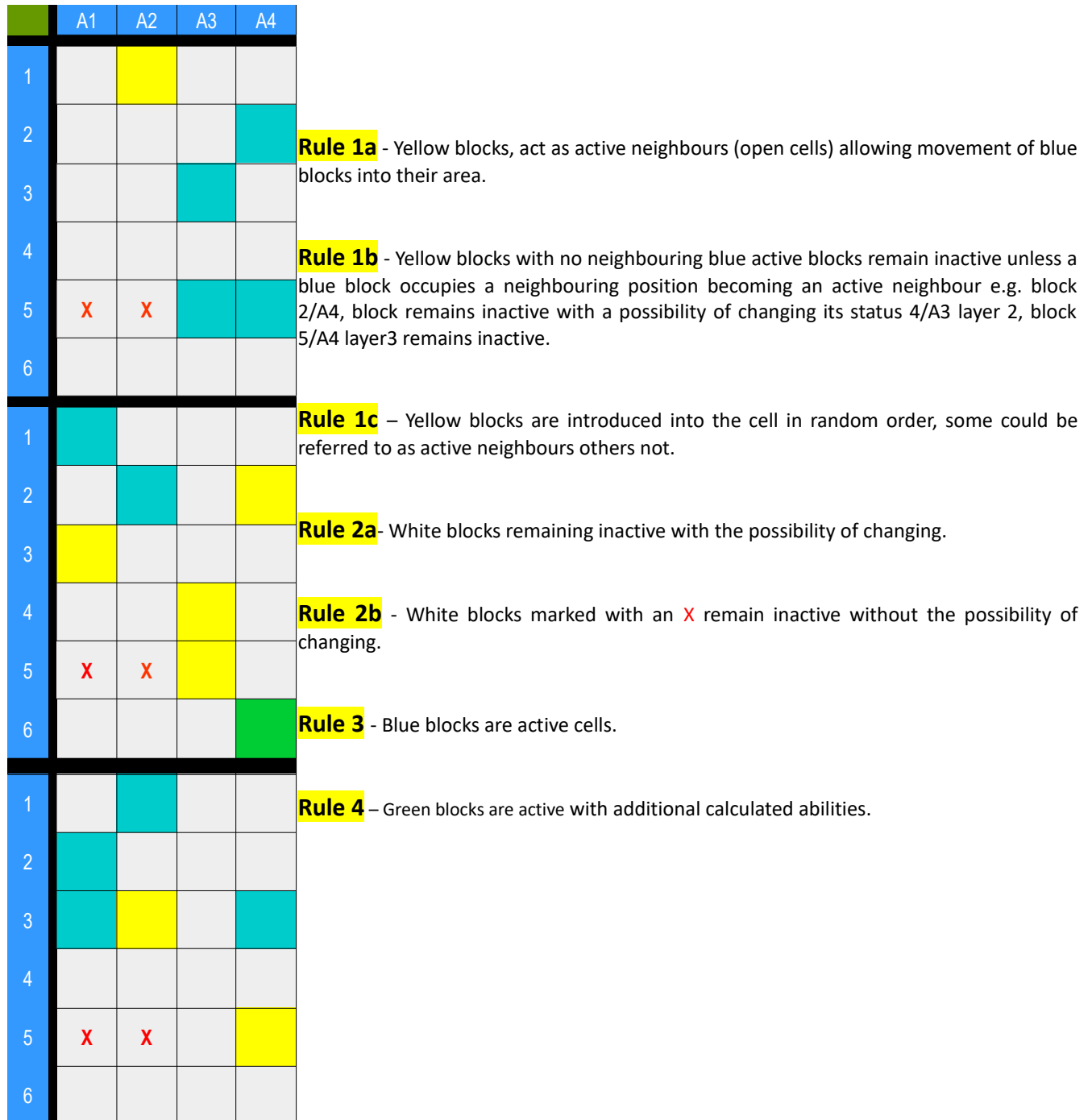


fig5: 3 layers 3D activity

Rule 5

Blocks in Vertical and Horizontal positions

One or more (blue) active cellular blocks with similar numeric values found in series in either vertical or horizontal position in the grid (active original layer) however information will not be passed on to the other layers. Blocks in parallel or other positions in the grid remain active and are not affected (*to be discussed further in Rule 7b*).

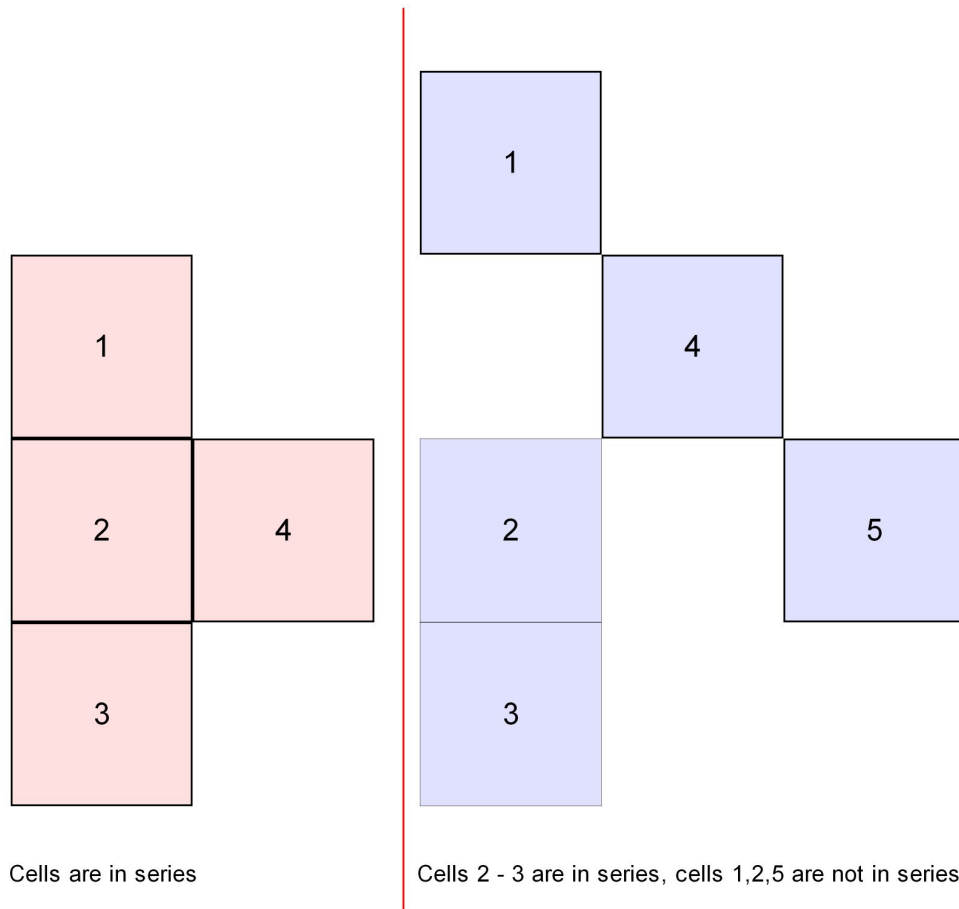


fig6: Active and Inactive Cells

Rule 6

Selectivity of cellular information, transferring between layers

Cells in layer **1** - when parting with information, layer 3 will be the receiver.

Cells in layer **3** - when parting with information, layer 1 will be the receiver.

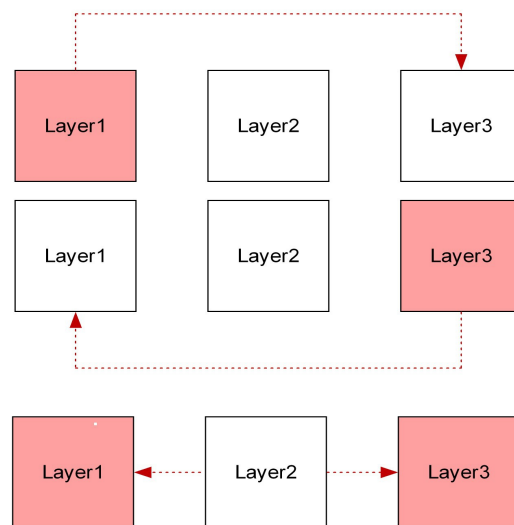
Cells in layer **2** - when parting with information, layers 1 and 3 are the receivers

The colour of cellular blocks changes with the transfer

a] The original colour of the cellular block transfer remains the same in the receiver destination.

b] The departed cellular block from the original layer will change to white (inactive) after the transfer is successful.

c] The colour blue (active) cellular block in layer 2 is transferred to an exact position and the existing block in that layer is also blue, the cellular block in the transferred layer will change to green (additional calculated abilities).



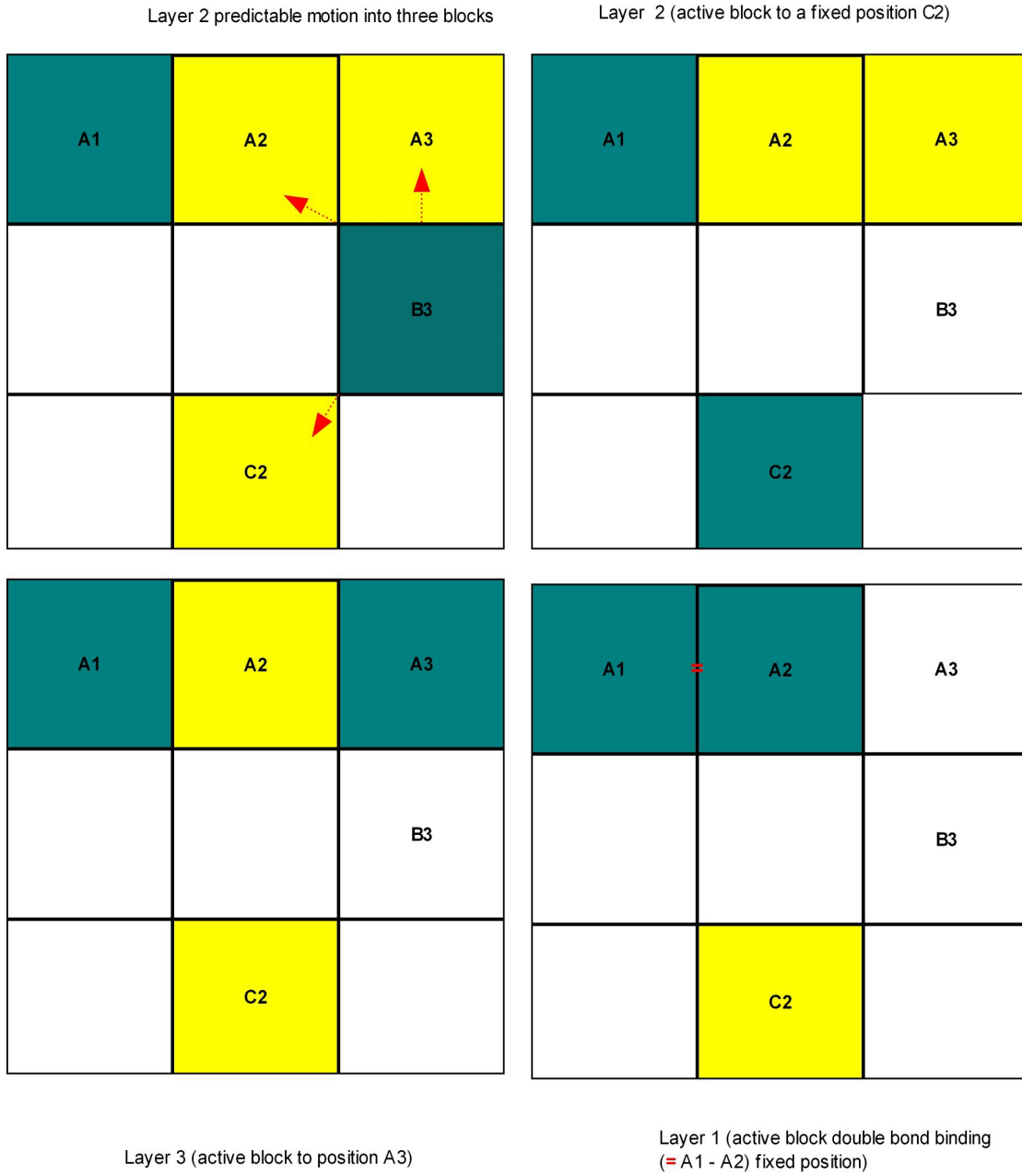
Information transfer between layers

fig7

d] The cellular block in layer 2 selected to transfer information, is allowed access to specific positions in layers 1 and 3 all other blocks receive **X** (a temporary inactive status) as the transfer is in progress.

Rule 7a

Splitting and binding within the cell



Splitting- binding motion of layer 3, 2,1

fig8:-

Active block B3 can move into 3 active neighbourhood blocks A2,A3,C2
(fixed position C2, active position A3, or binding position A2)

Cellular blocks in layer2 transferring information from (fig12) A1-A2 ,A3,C2

- a] Due to the double bond A1 - A2 (fixed position) will be transferred as one.
- b] Through probability 3 blocks' destination positions are chosen all at once , if A3 or any other block are chosen to move in both positions in level 1,3 the process is nullified.
- c] Levels of destination chosen could be all 3 or only levels 1,2.
- d] Resulting in probability outcomes e.g. layers 1-3.

Rule 7b

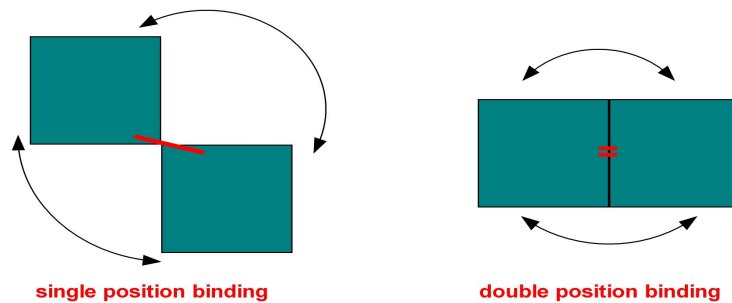


fig9

Two active blocks bind in an angular position this would allow for single-position binding because of 2 single positions involved in attachment, the block detaches and repositions itself.
Two active cells bind with each other they form a single or multiple double position, this is due to the four positions of two cells involved in attachment. Detachment is prohibited.

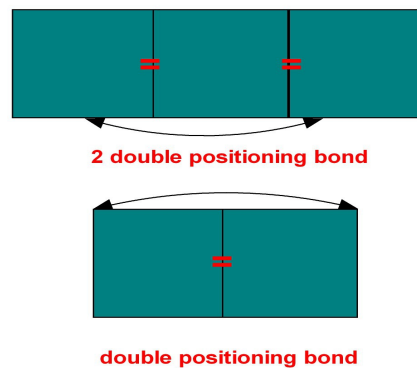


fig10

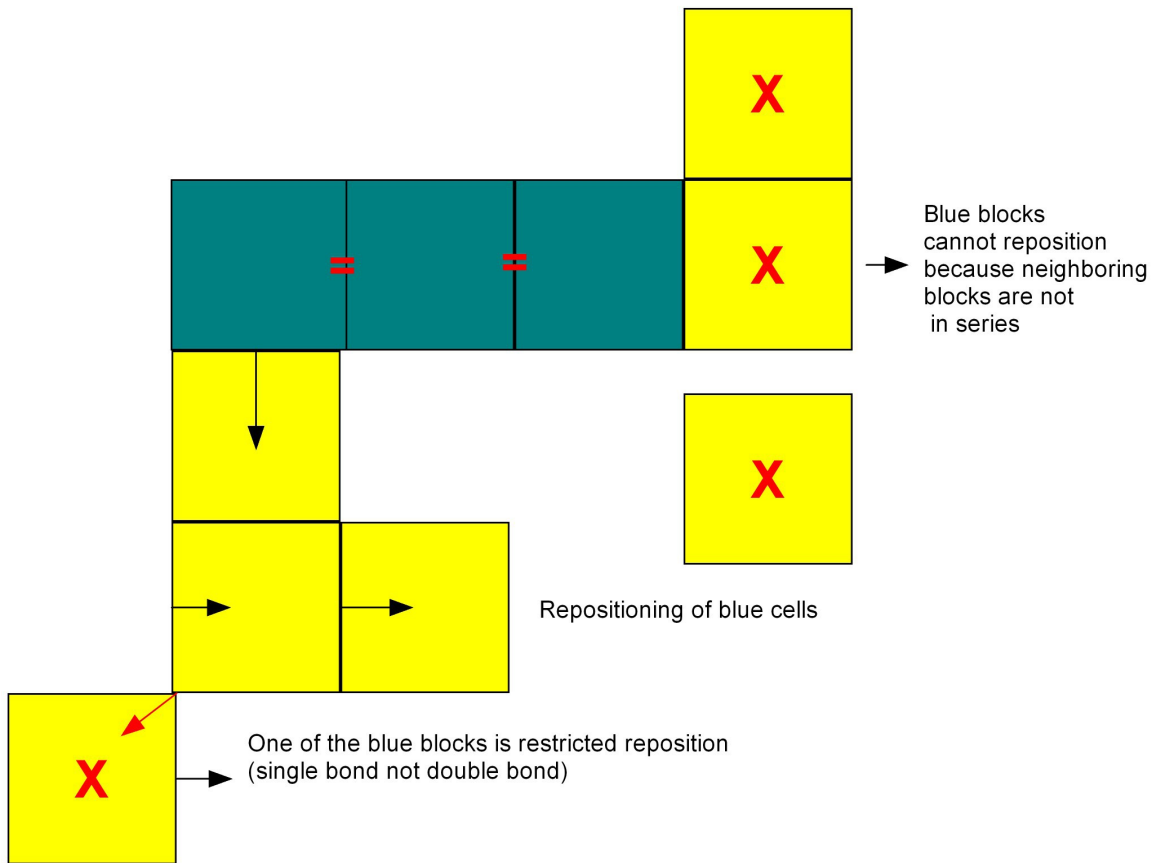
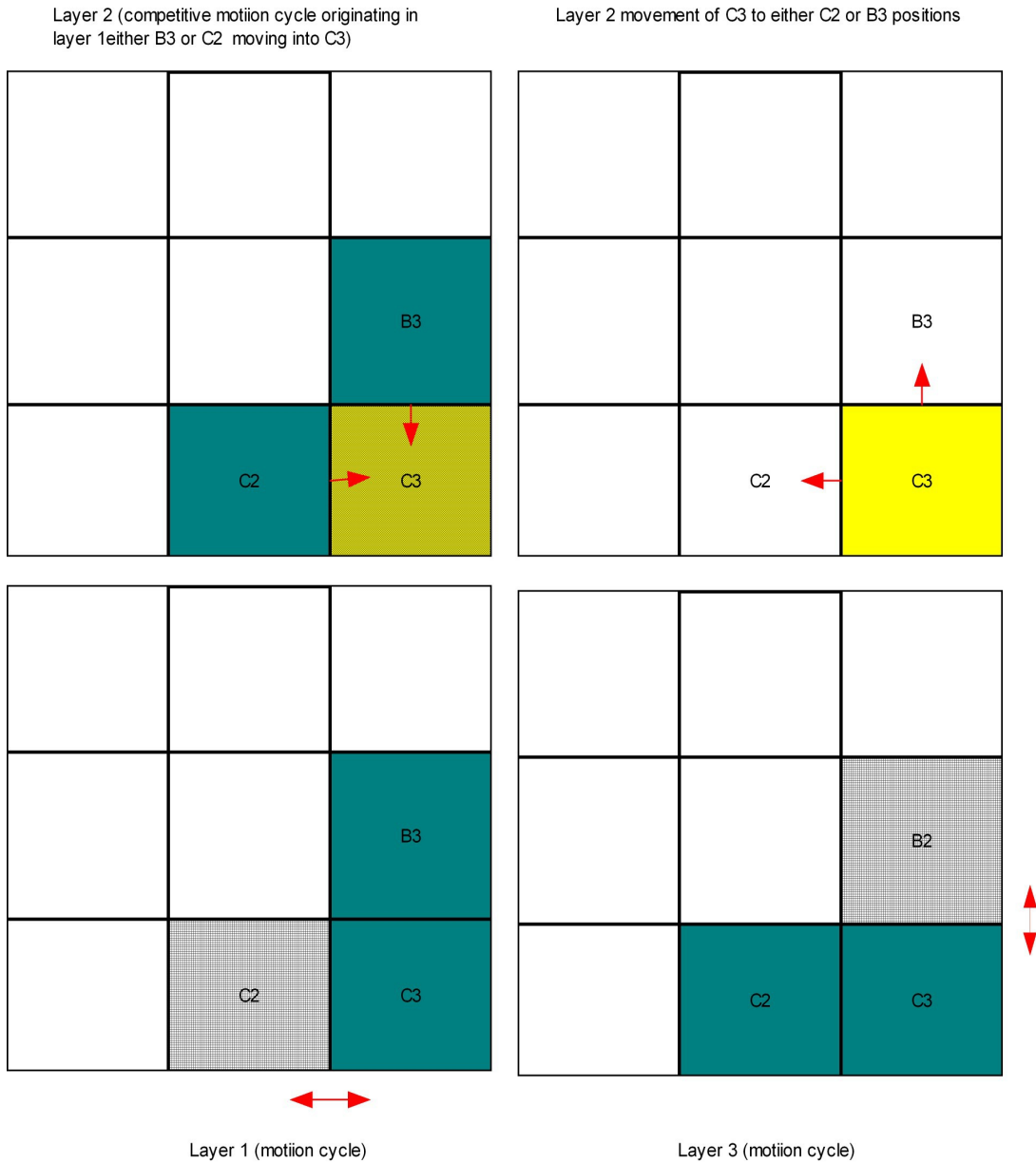


fig11

Three cellular blocks double position binding, in order to detach and re-position them, three yellow neighbour blocks in series are needed (without affecting the original bonds), if neighbours are not present then re-positioning will be blocked.

Rule 8

Competitive repositioning



Competitive motion in layer 2 transcending to layer 1 & 3

fig12

Blocks B3 and C2 in Layer 2 are involved in competitive repositioning because of equal competitiveness C2 will occupy position C3 and B3 will occupy position C3 these positions will be reflected in Layers 1 and 3 layer 2 will show activity indicated in the diagram above.

Rule 9

The green active blocks and additional benefits

- a] Two blue active blocks connected to the green block with single or double positioning bond connections change the colour of the green block to yellow.
- b] Two blue active blocks connected to the green block with two double positioning bond connections change the colour of the green block to X inactive.
- c] Two blue active blocks connected to the green block with two single positioning bond connections change the colour of the green block to active blue.
- d] Two blue active blocks when superimposed on each other turn green.

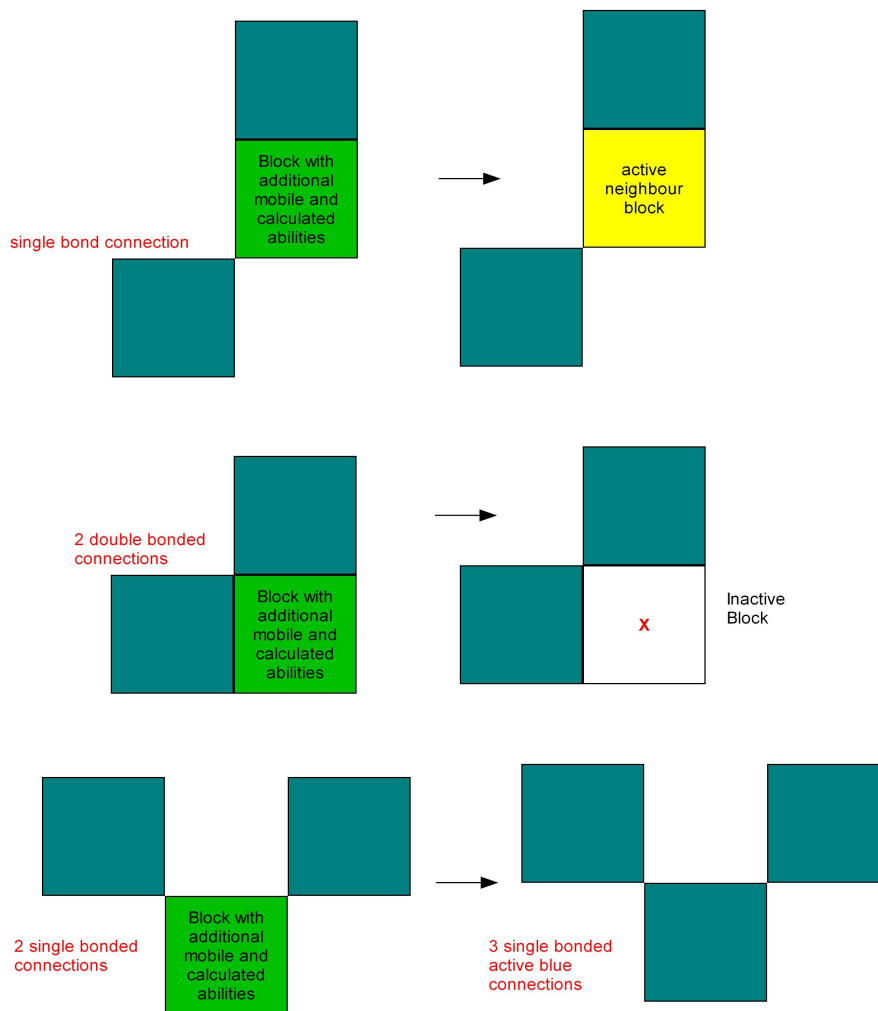


fig:13

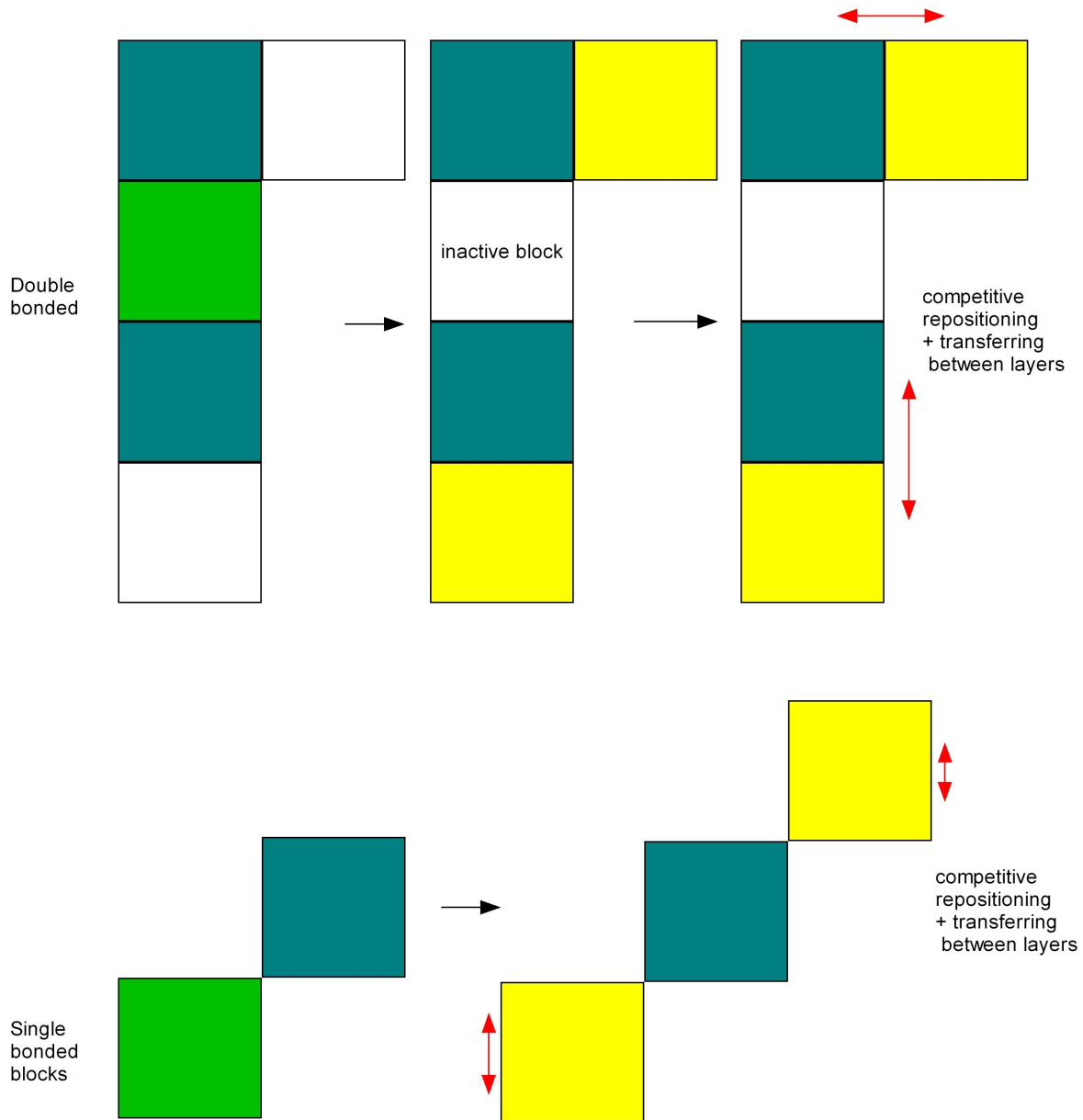


fig:14

- a] Two blue active blocks connected to the green block with 2 double position bonds change the colour of the green block to inactive, with two yellow active neighbour blocks resulting in competitive repositioning and transfer between layers.
- b] A single blue active block connected to a green block with a single position bond, changes the colour of the green block to yellow with an additional single position bond to yellow neighbour block resulting in competitive repositioning and transfer between layers.

Rule 10

Plugins

- **Filters – 1 Pole** – low and highpass, bandpass. **2 Pole** – low and highpass, bandpass, notch. **4 Pole** – low and high-pass. **6 Pole** - lowpass
 - **Envelope** – Dbd, Flexible, ADHSR.
- **LFOs** – Sine, triangle, rectangle, sawtooth, random, multi.

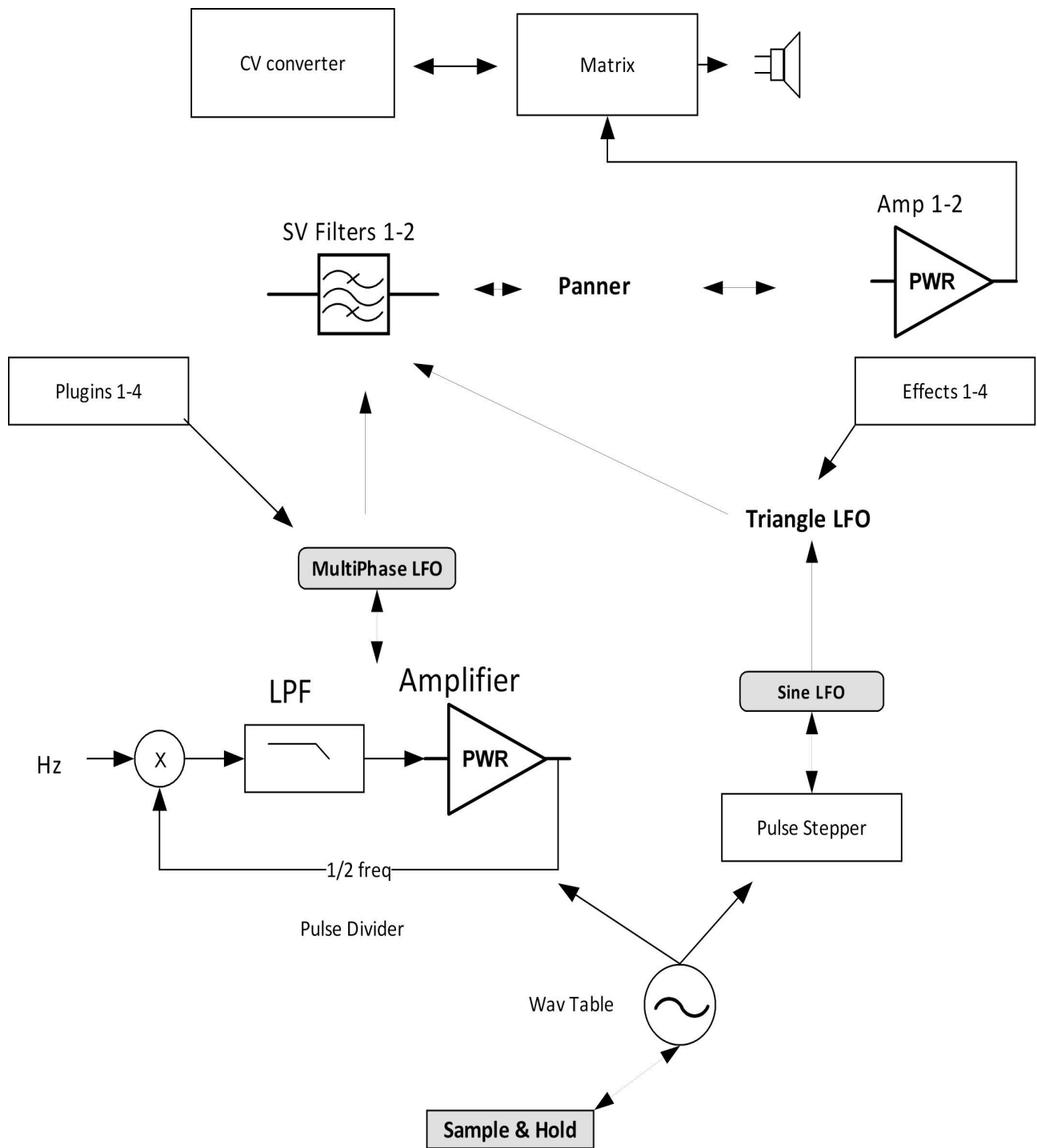
Plugins between 4,3,2,1,0 can be selected per active block each with various value settings depending on what each area in the composition needs. Filters, envelopes and LFOs', are arranged into different files and are chosen via simple random probability.

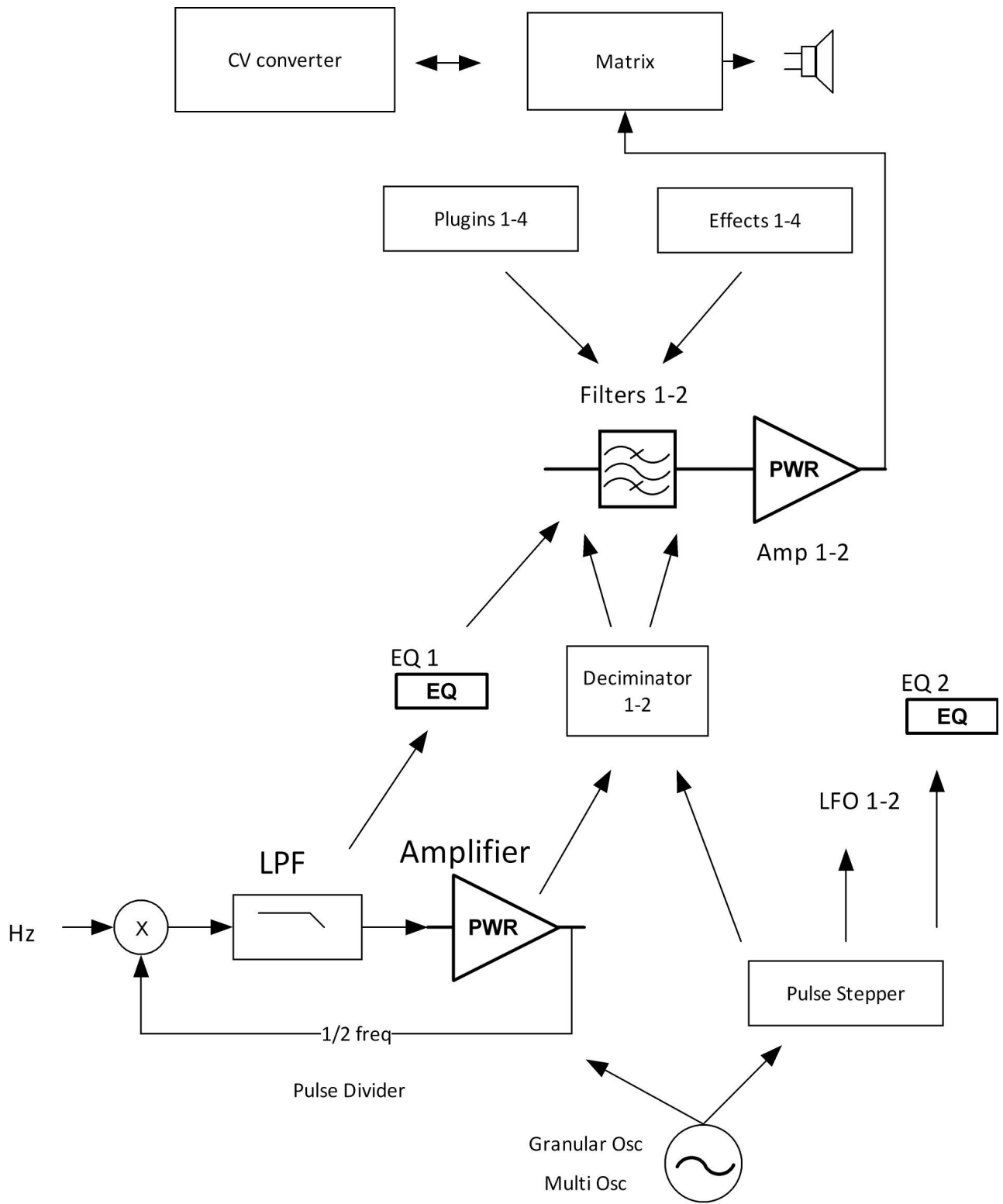
Effects

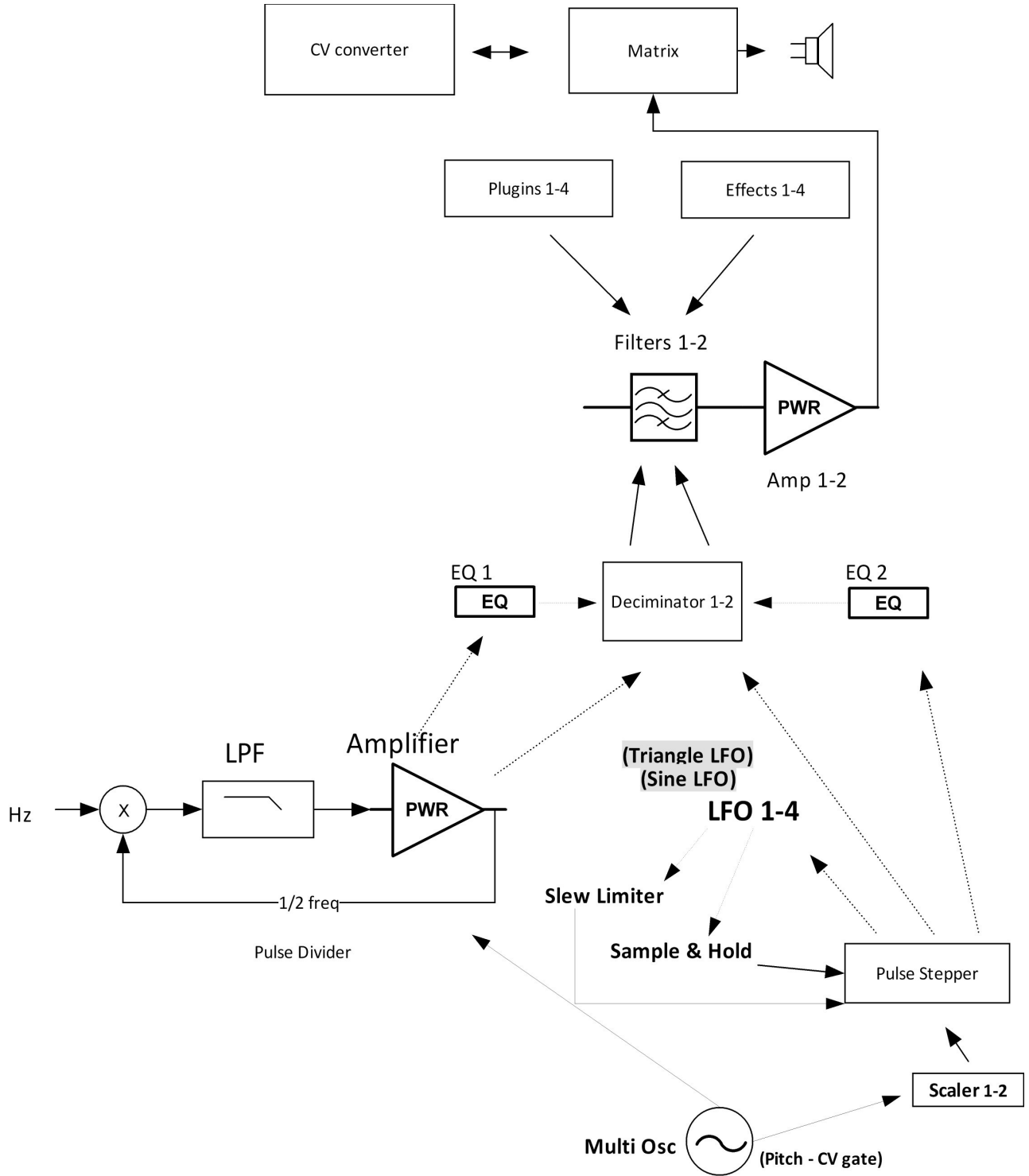
- **Natural reverb**
- **Distortion**
- **Compression**

Effects are also applied to each active block with various value settings depending on the composition needs and are chosen by simple random probability.

The activity between plugins and effects is directly dependent on the state of affairs relating to the communication between blocks and the transition of cell blocks between levels. At any stage the state of plugins/effects can be cancelled, quantity reduced or increased.







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< <http://archive.org/details/cu31924052172271>>