

**RETHINKING PRODUCTION TECHNIQUES
AND AESTHETICS IN BRAZILIAN POPULAR
MUSIC USING HOA**

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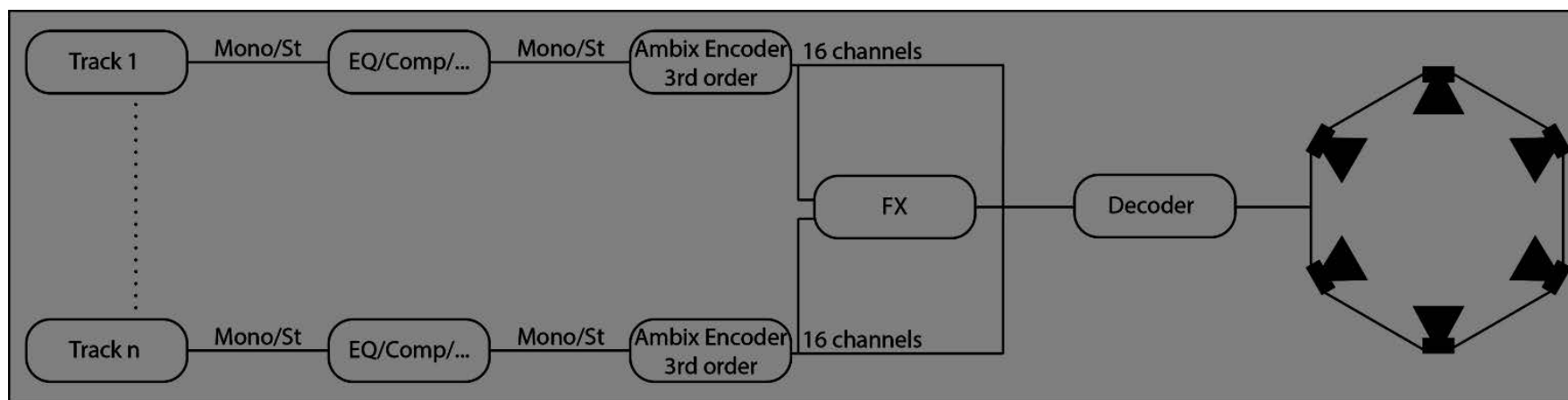
WHAT?

- Remix of three Brazilian songs (MPB) using Ambisonics.
- Unique approach for each song depending on the song cultural, narrative and timbral characteristics.

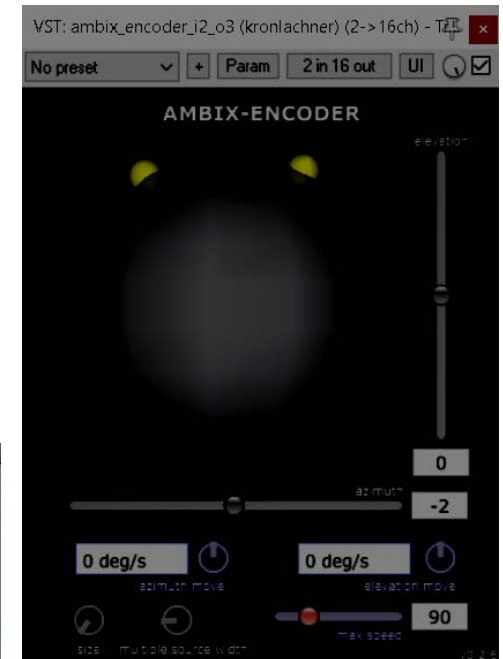
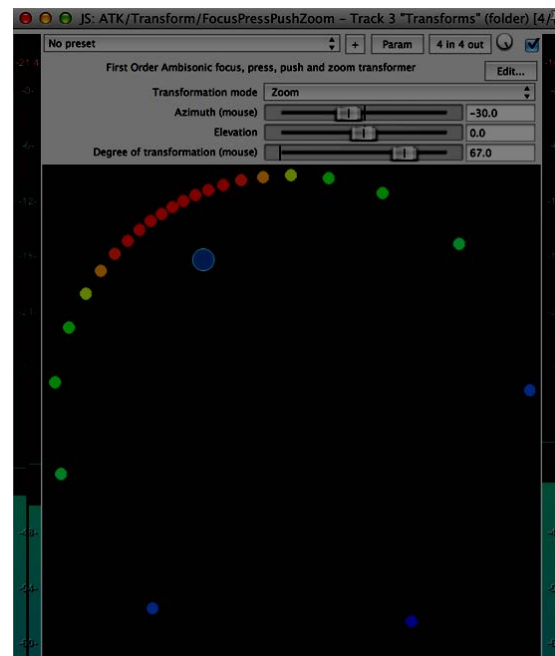
WHY?

- Possibility of qualifying the reconstruction of sound spaces using Ambisonics techniques.
- Lack of technical and didactic material aimed at musical production using Ambisonics.
- The challenge/possibilities generated by changing the production process.

SIGNAL FLOW



SPATIALIZATION / ENCODING



EFFECTS

FX: Track 20 "Reverb Tail"

FX Edit Options

- JS: Channel Router w/Polarity
- JS: Channel Mixer
- JS: Channel Mixer
- JS: Channel Mixer
- JS: Mid/Side Decoder
- JS: Mid/Side Decoder
- JS: Mid/Side Decoder
- VST: Altiverb 7 (x86) (Audio Ease) (6ch)
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- JS: Mid/Side Encoder
- JS: Mid/Side Encoder
- JS: Mid/Side Encoder
- JS: Channel Mixer
- JS: Channel Mixer
- JS: Channel Mixer
- JS: Channel Router w/Polarity
- JS: Channel Router w/Polarity
- JS: ATK FDA Encode AmbXtoB
- JS: ATK FDA Transform Dominate
- JS: ATK FDA Decode BtoAmbX

No preset

Param 6 in 6 out UI

0.3%/1.9% CPU 0/0 spl

ENTRE TANTAS CANÇÕES

Lyrics/Music: Tatto Ferraz and Bira Trumpet

Lead vocal: Alana Moraes

Classical guitar: Gabriel Selvage

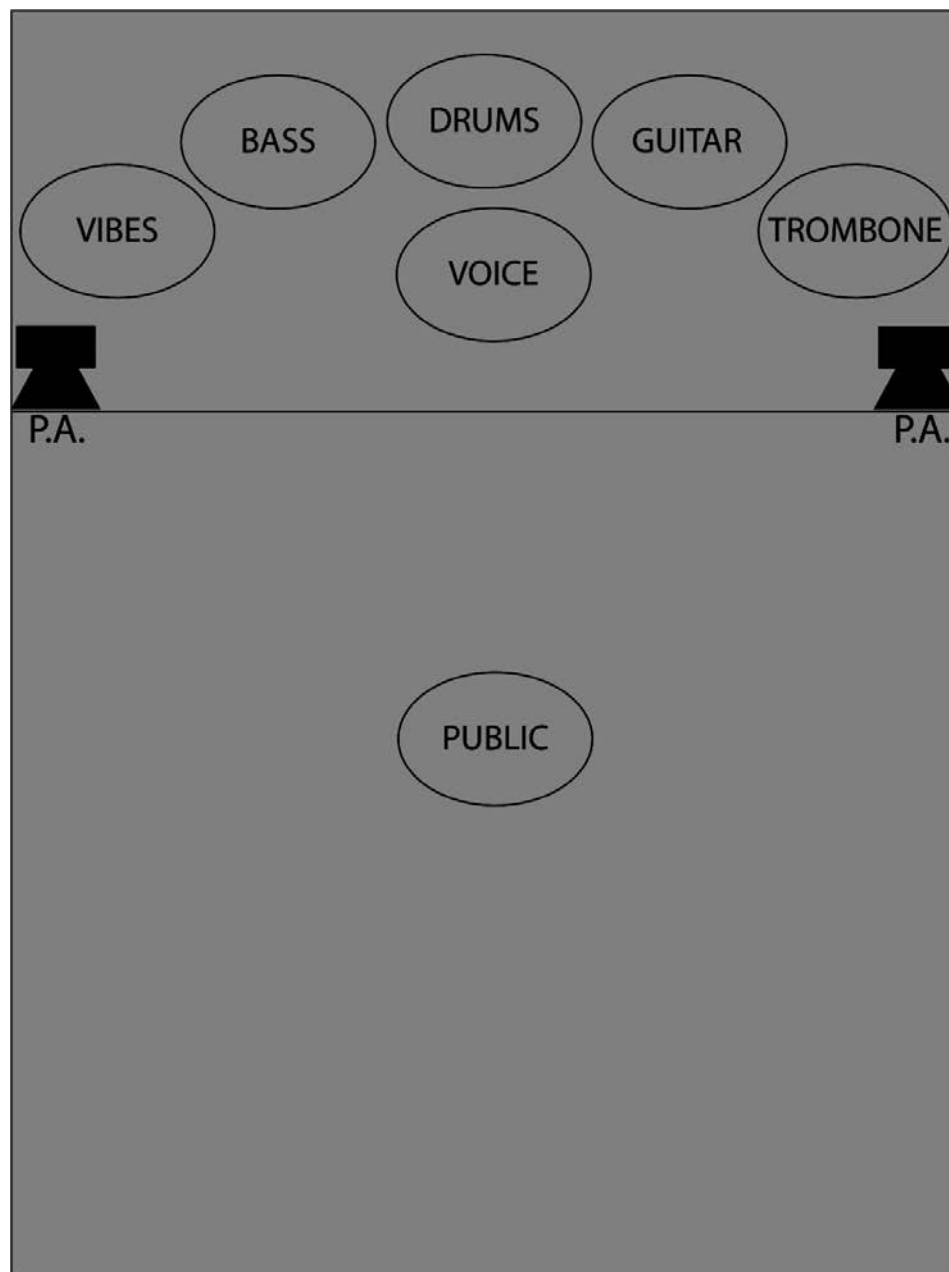
Drums: Sandro Cartier

Vibraphone: Zé Ricardo

Trombone: Charão

Bass guitar: Everton Rosa

Arrangement: Gabriel Selvage and Zé Ricardo



Musical instruments spatial arrangement

ENTRE TANTAS CANÇÕES

- Sound environment recreation

 - Lateral early reflections

 - Back early reflections

 - Tail

ENTRE TANTAS CANÇÕES

Sound examples

- Sound environment recreation

ENTRE TANTAS CANÇÕES

Sound examples

- Musical instruments arrangement related to their physical aspects

ENTRE TANTAS CANÇÕES

Difficulties

- There wasn't a common ratio between the reverb controls of each instrument and the sensation of distance.

CAMINHO

Lyrics / Music: Claudio Olliver and Daniel Mã

Lead vocal: Alana Moraes

Speech: Mario Augusto Gomes

Classical guitar: Gabriel Selvage

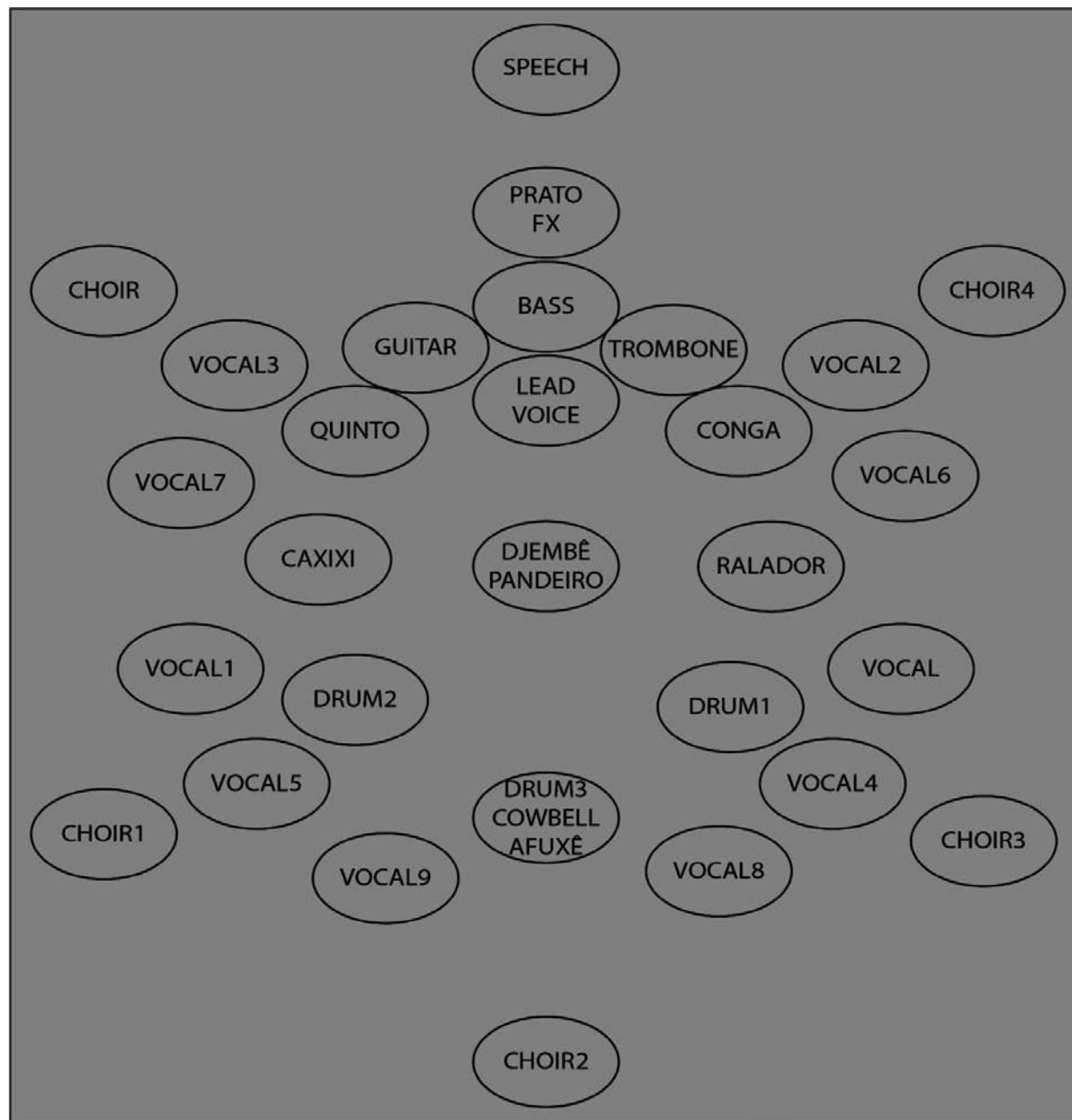
Percussion: Marcelo Pimentel and Sandro Cartier

Vocals: Alana Moraes, Gabriel Selvage, Marcelo
Pimentel, Sandro Cartier and Zé Ricardo

Trombone: Charão

Bass guitar: Everton Rosa

Arrangement: Gabriel Selvage, Sandro Cartier
and Alana Moraes



Musical instruments spatial arrangement

CAMINHO

Sound examples

- Balanced distribution of the instruments in the sound space, avoiding to place in the same space instruments with similar timbre and trying to evidence the musical call and response.

CAMINHO

Sound examples

- Generate the feeling that the listener is part of the musical ensemble and the instruments are very close.

CAMINHO

Sound examples

- Spatialization of a big amount of audio elements in order to create sensation of chaos / disorder

CAMINHO

Difficulties

- Spill between the instruments recorded together

SERESTA DAS QUATRO ESTAÇÕES

Lyrics: Davi Teixeira

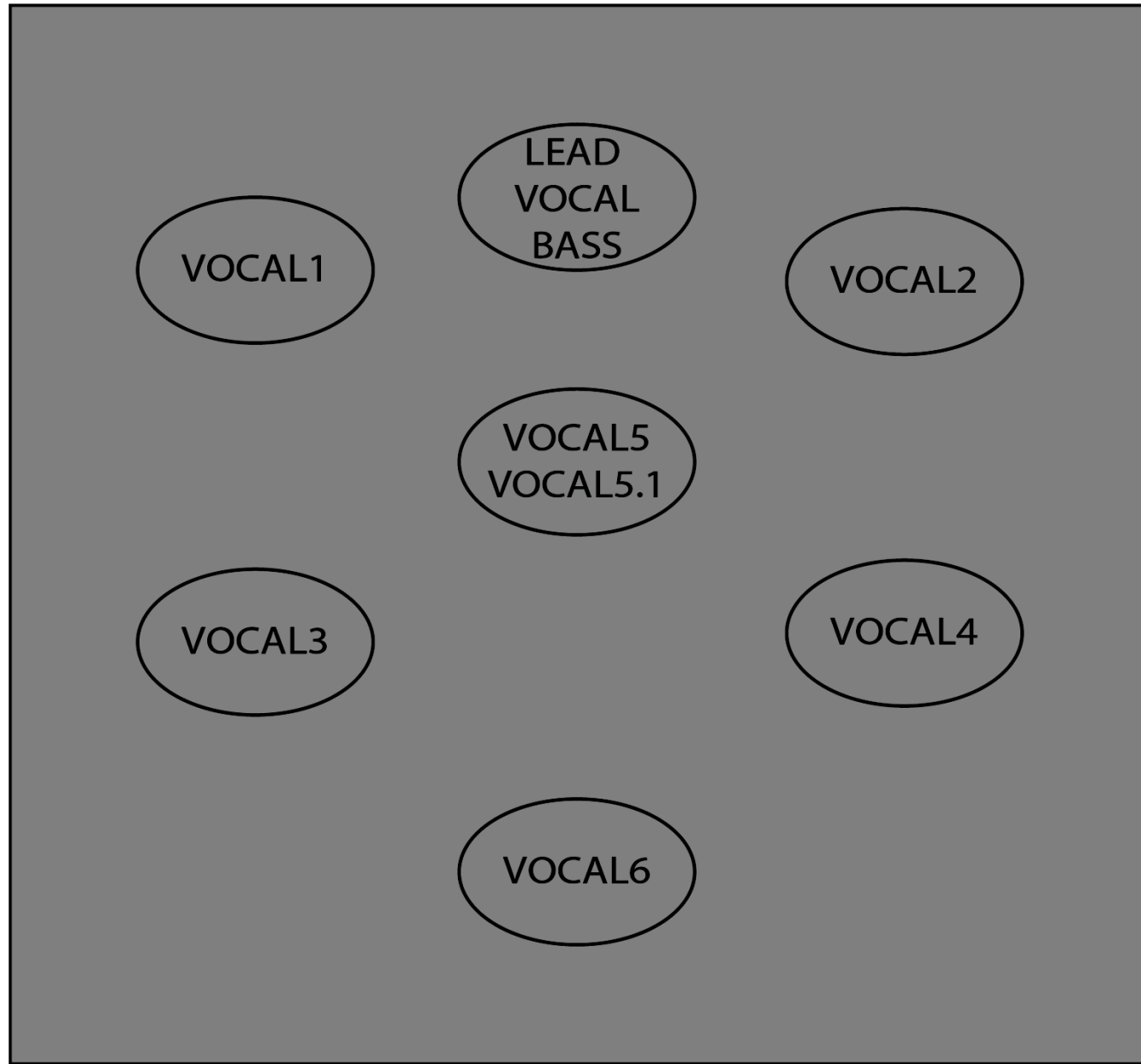
Music: Matheus Alves

Lead voice: Alana Moraes

Vocals: Alana Moraes

Bass Guitar: Everton Rosa

Arrangement: Gabriel Selvage



Musical instruments spatial arrangement

SERESTA DAS QUATRO ESTAÇÕES

Sound examples

- Movement of the instruments that perform melodies, they seek to reach the position in which the main voice is, reinforcing the musical gesture.

SERESTA DAS QUATRO ESTAÇÕES

Sound examples

- The movement in the voices creates immediate imbalance in the sound field in specific parts of the music by positioning all the instruments in the same place, then it returns to the original positions restoring the balance.

SERESTA DAS QUATRO ESTAÇÕES

Sound examples

- The movement creates gradual imbalance in the sound field in specific parts of the music by moving all instruments to the same position in the sound field , the balance is immediately restored with a fast movement to their original position.

SERESTA DAS QUATRO ESTAÇÕES

Sound examples

- Introduction of a new audio element through its movement in the sound space.

SERESTA DAS QUATRO ESTAÇÕES

Sound examples

- Movement of elements to create a relationship with the lyrics of the song.

SERESTA DAS QUATRO ESTAÇÕES

Difficulties

To much time used in experimentation.

CONCLUSIONS

- The system provides an augmentation for the listening experience.
- Ambisonics techniques can be used successfully as artistic tools to create movement and dynamism.
- The music production process using Ambisonics is enhanced when concepts are defined during pre production.
- Lack of tools for the processing of the Ambisonics signal with sonority and ease of use comparable to the stereophonic processing tools.

QUESTIONS?