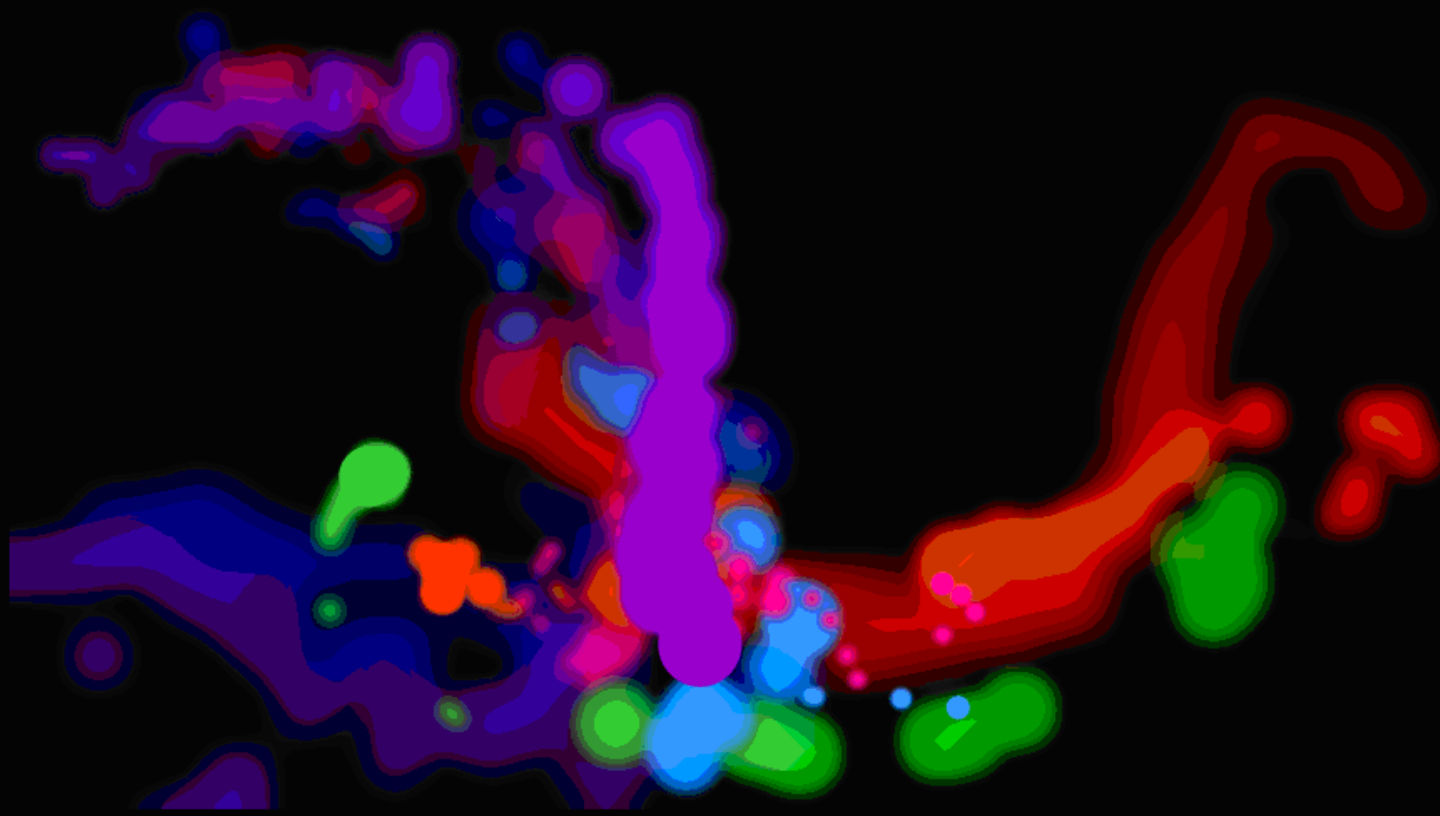
Interactive Art using Ubisense Motion Tracking Technology



Outline

- Project vision
- Planning and design decisions
- Implementation
- Final product

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Creative vision for the project

- What is this project about?

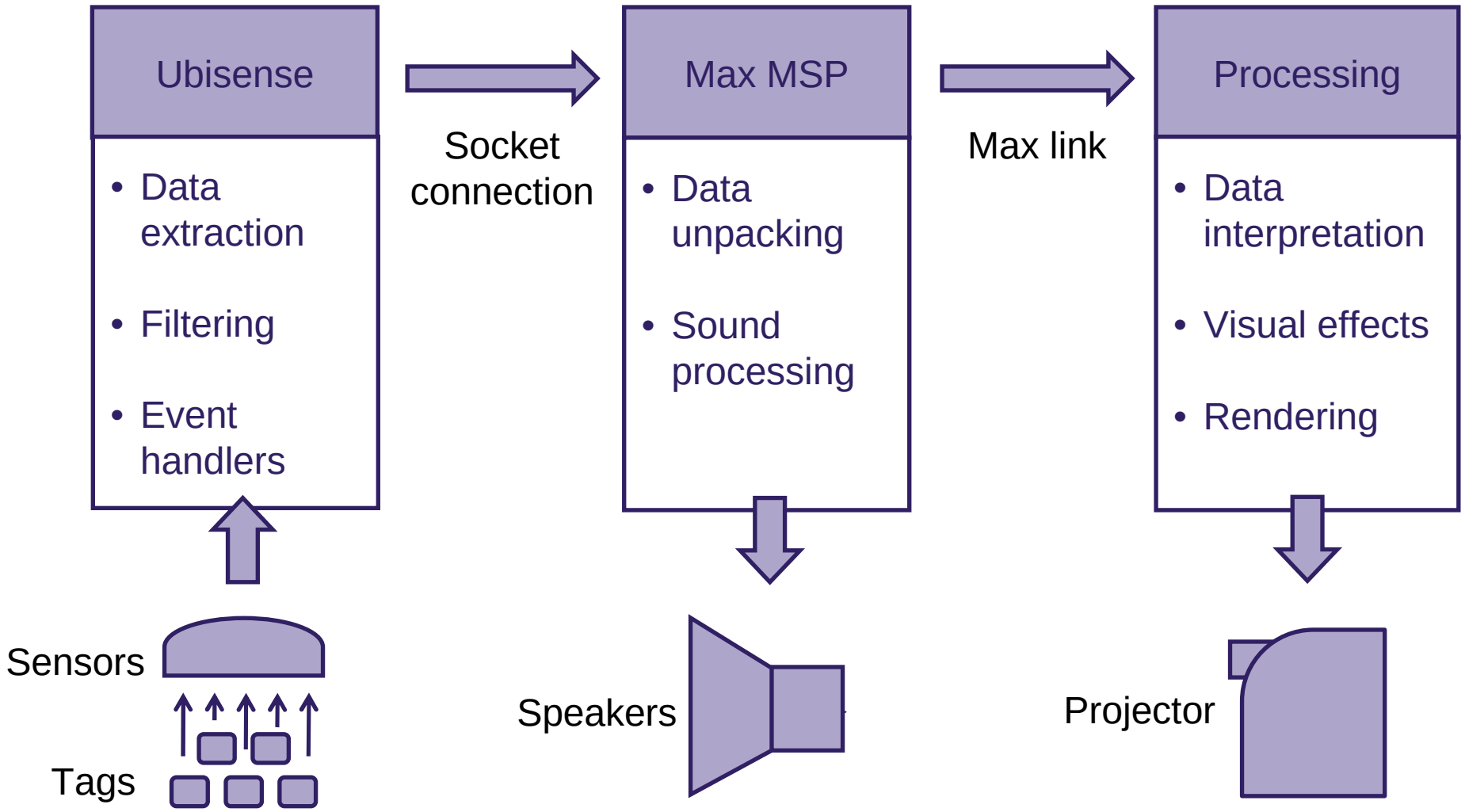
"To use a high-precision 3D location tracking system provided by Ubisense to create an exciting new interactive art installation."

Creative vision for the project

“The installation will be visceral: connecting body, technology and sound. Our process should support these values, deliberately stepping outside the process of designing and programming to ensure these values are met.”

- Tine Bech, collaborating artist

Architectural overview



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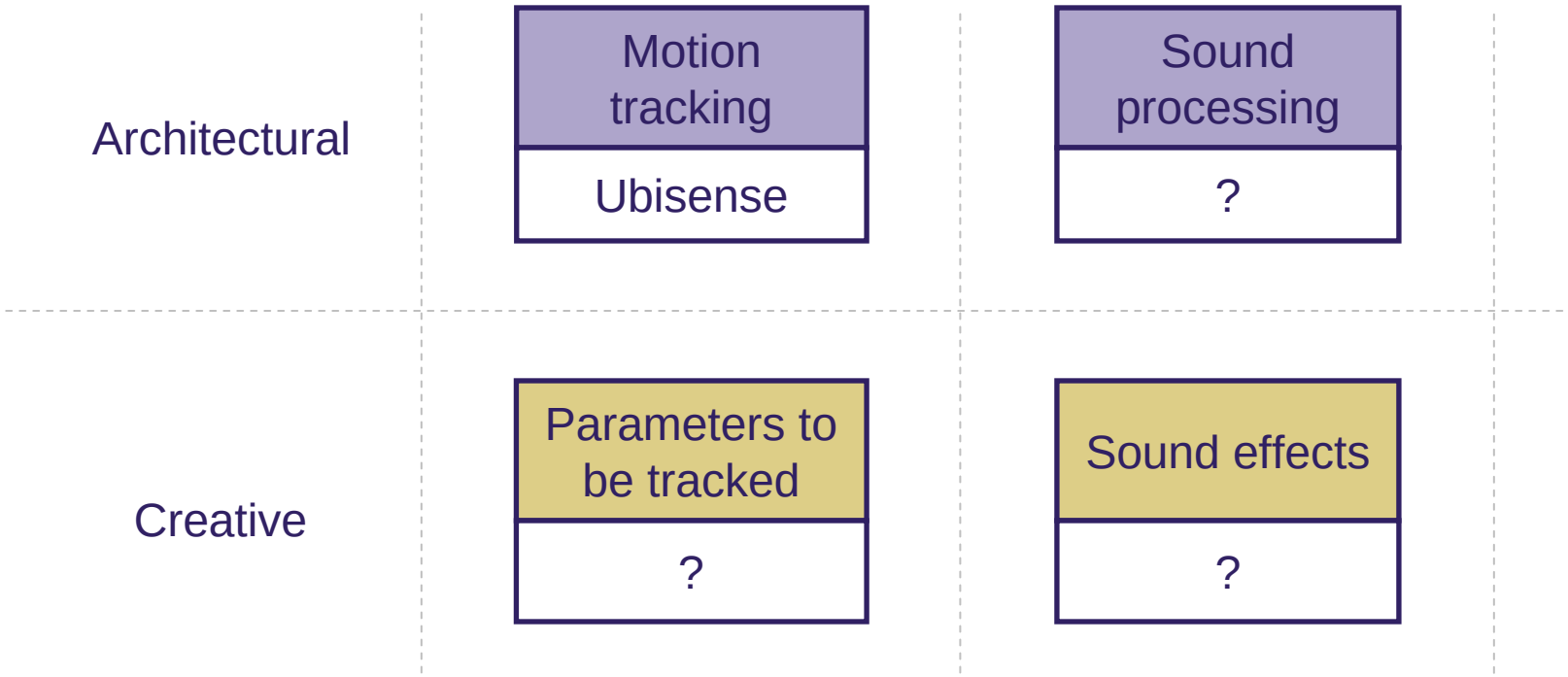
Key decisions



Ubisense

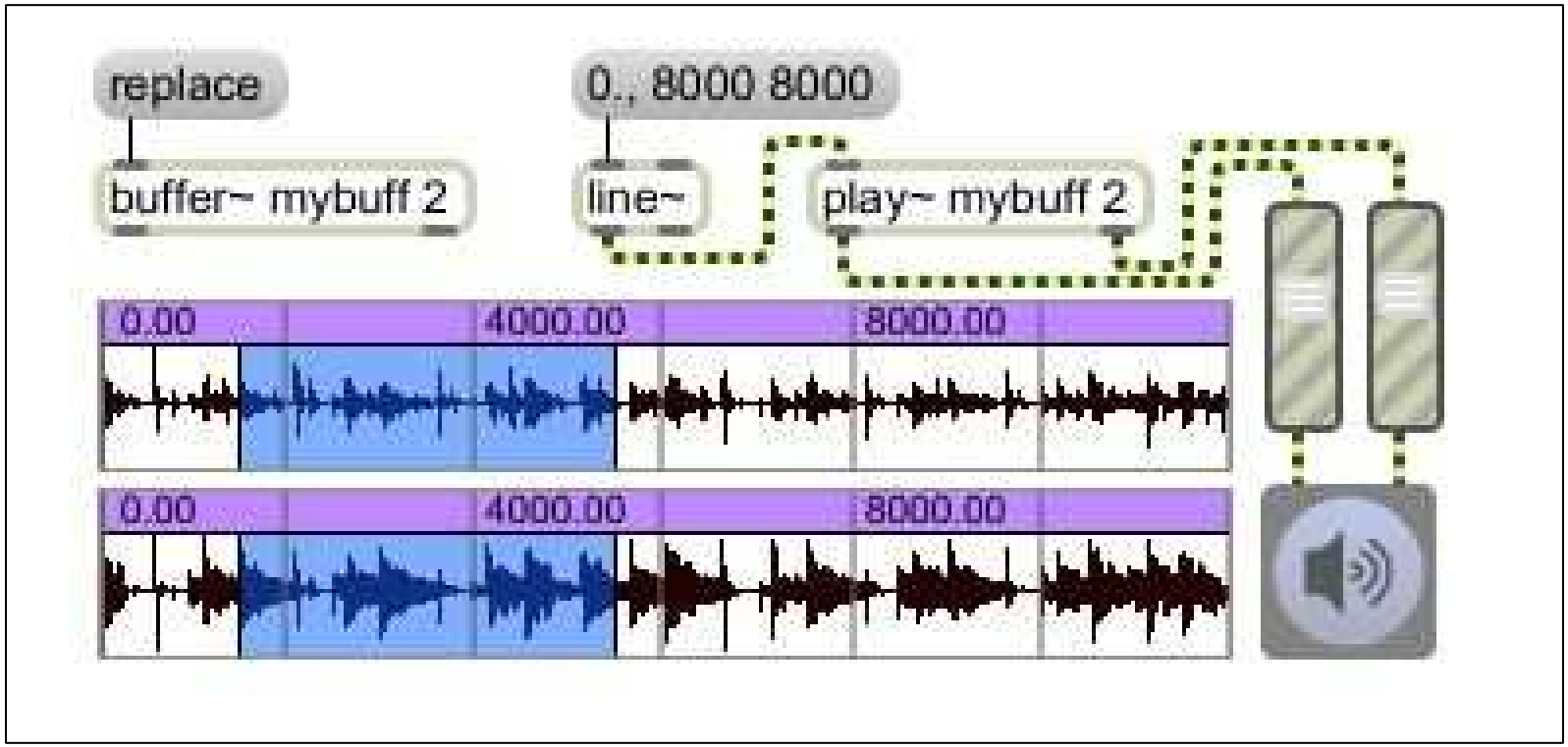
- What is Ubisense?
  - Ubisense is a world leader in precise real-time location tracking
- Why Ubisense?
  - Precision
  - Real-time location tracking
  - Ubisense API

Max MSP

- What is Max?
  - An interactive visual programming environment for interactive component-based audio and visual processing
- Why Max?
  - Sound processing capabilities
  - Easy to use and flexible
  - Extensive Java API

Max MSP

- An example Max MSP patch

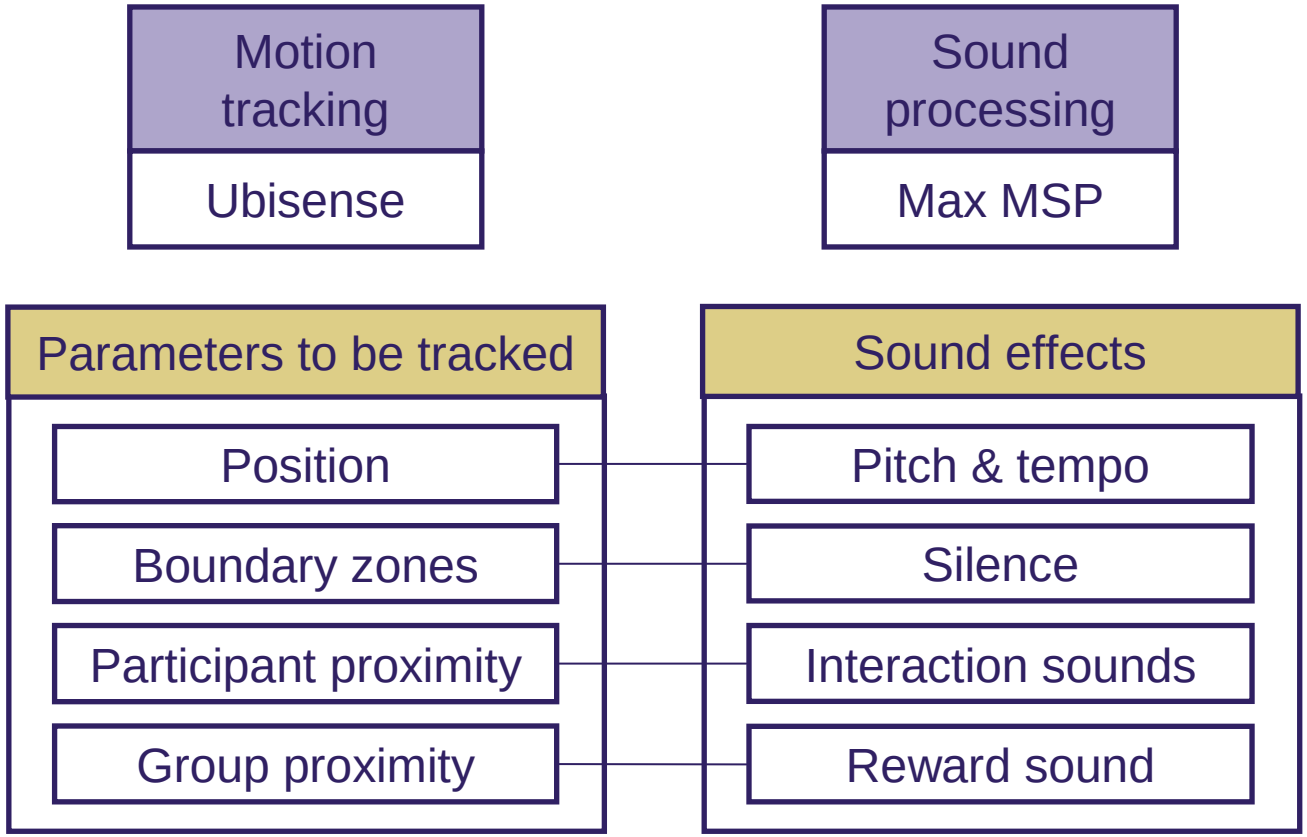


Creative decisions

- What sort of sounds and sound effects would we use?
  - Volume
  - Pitch
  - Tempo
  - Sound scheme would be atmospheric rather than musical
- What sort of movement parameters would influence these sounds?
  - Position
  - Speed
  - Direction of travel
  - Entry and exit from specified zones
  - Density of participants

Final specification

An interactive, playful sci-fi soundscape, atmospheric and ethereal



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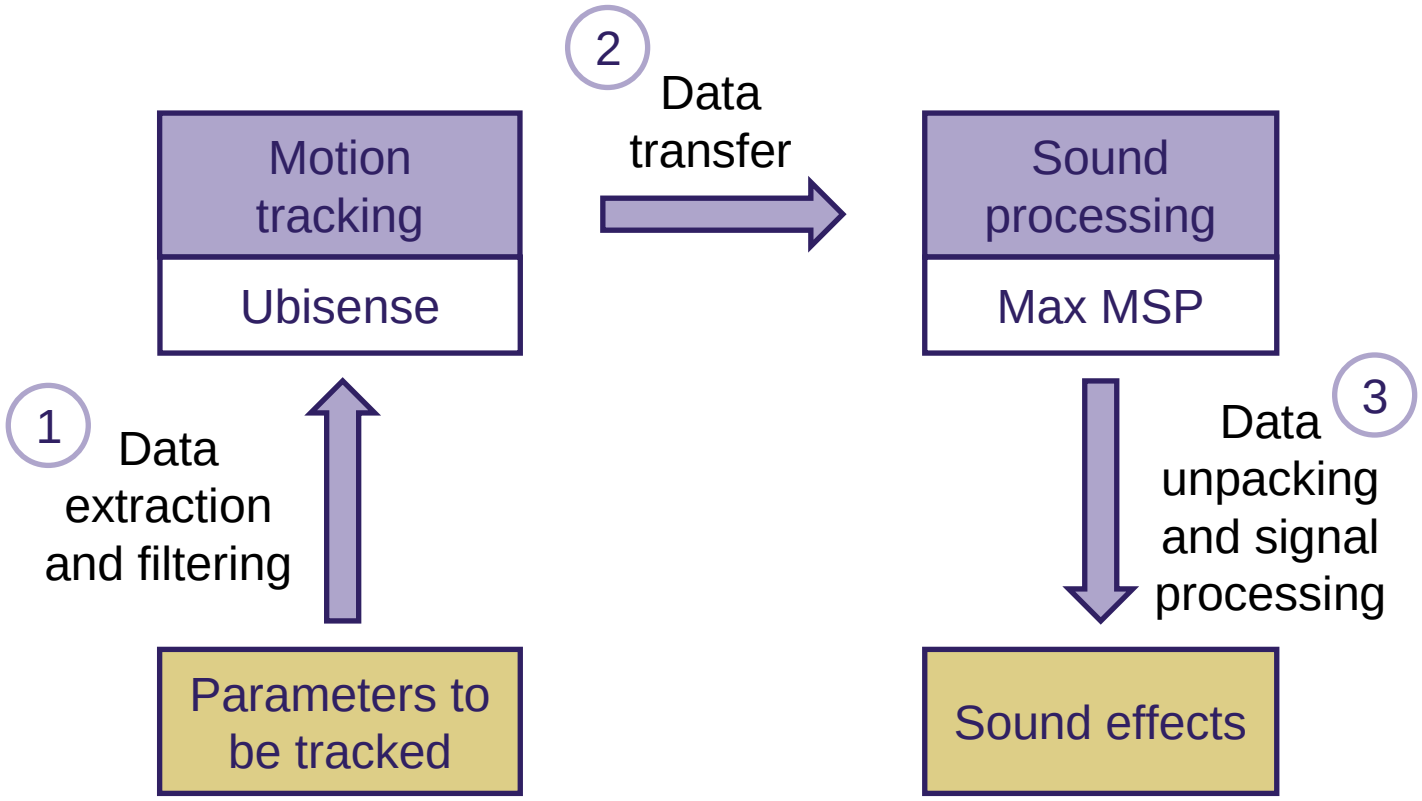
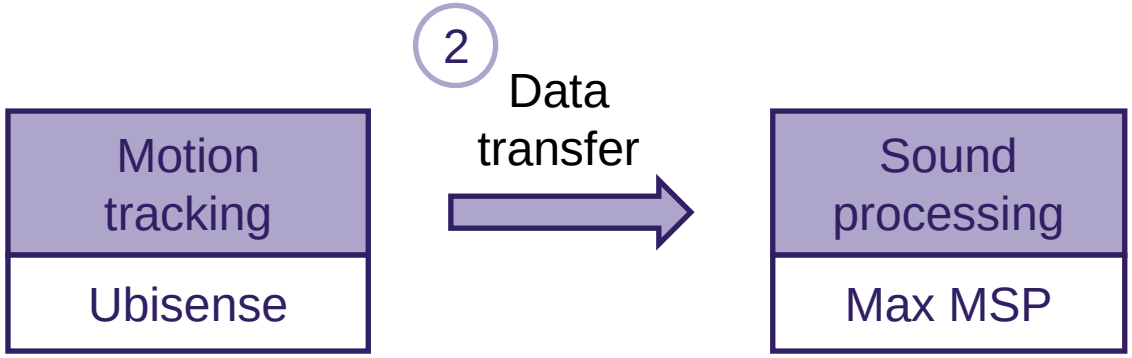
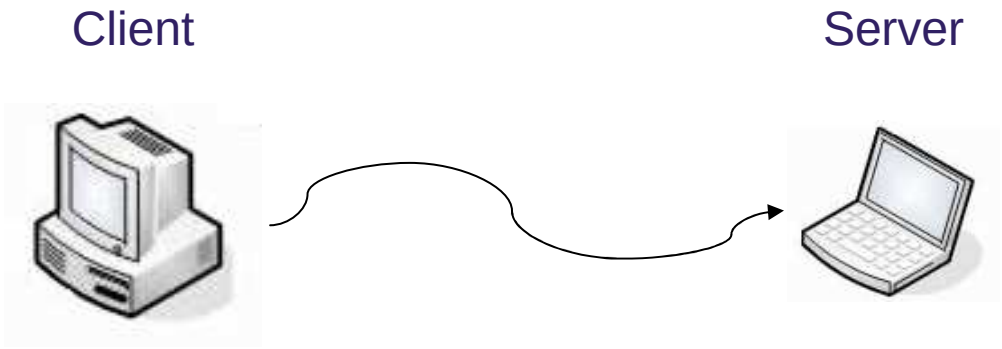
Three key steps

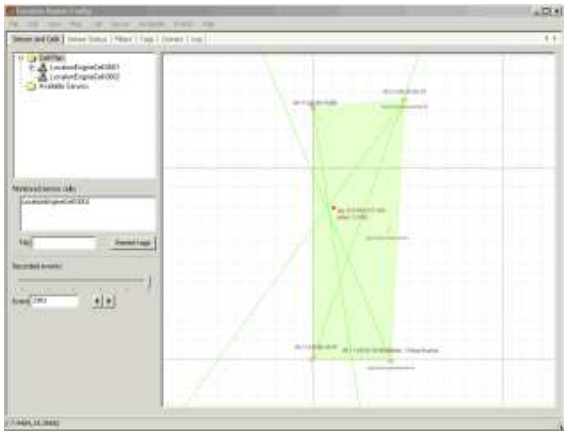


Socket connection

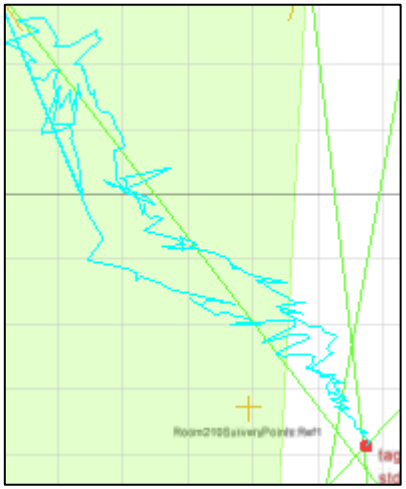




Location information from Ubisense

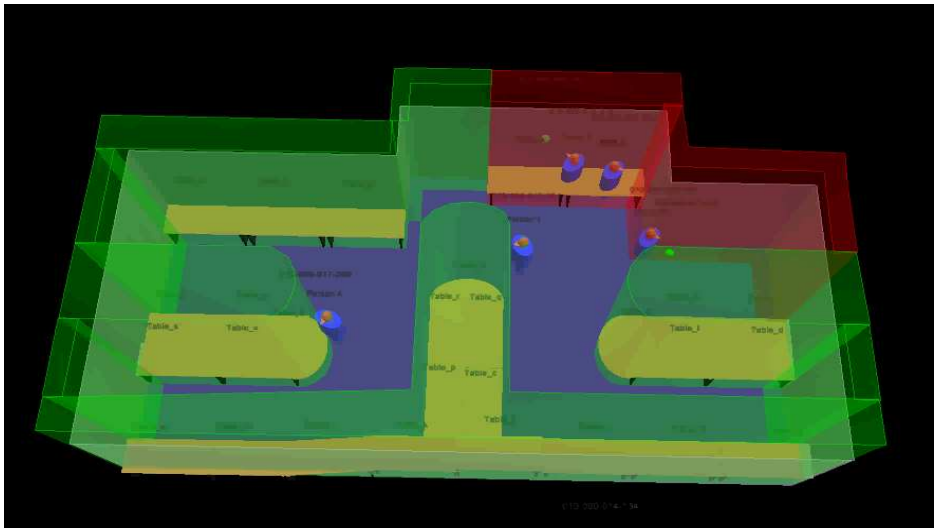


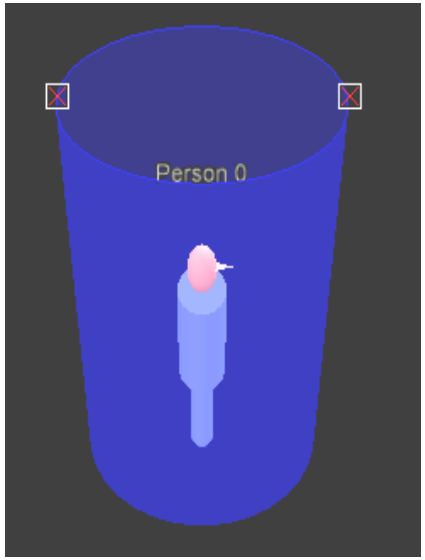
Without filtering



With filtering

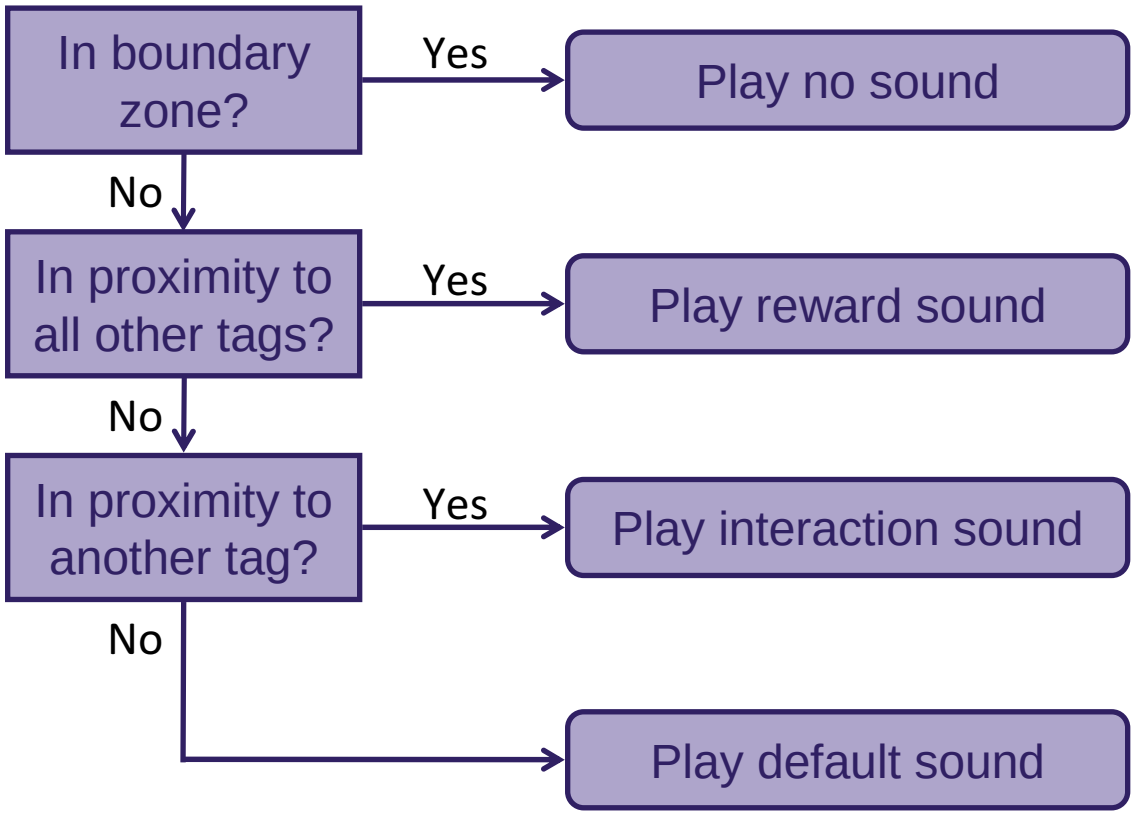
Zone information from Ubisense





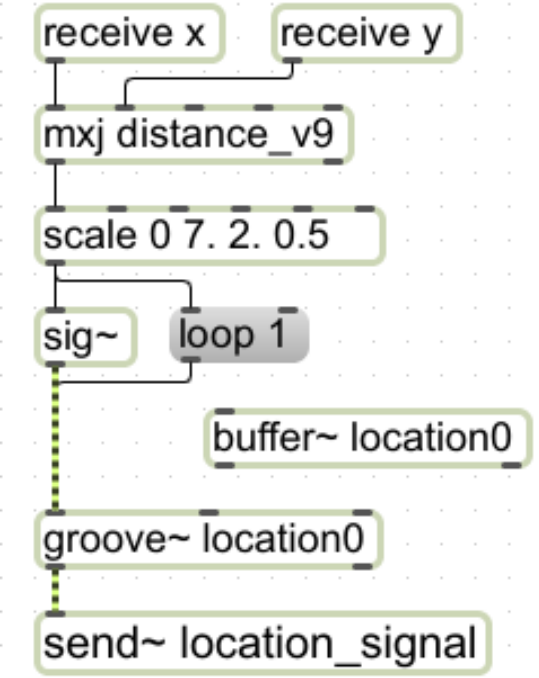
Handling zone events in Max

Signal hierarchy and person centric design



Data manipulation in Max MSP

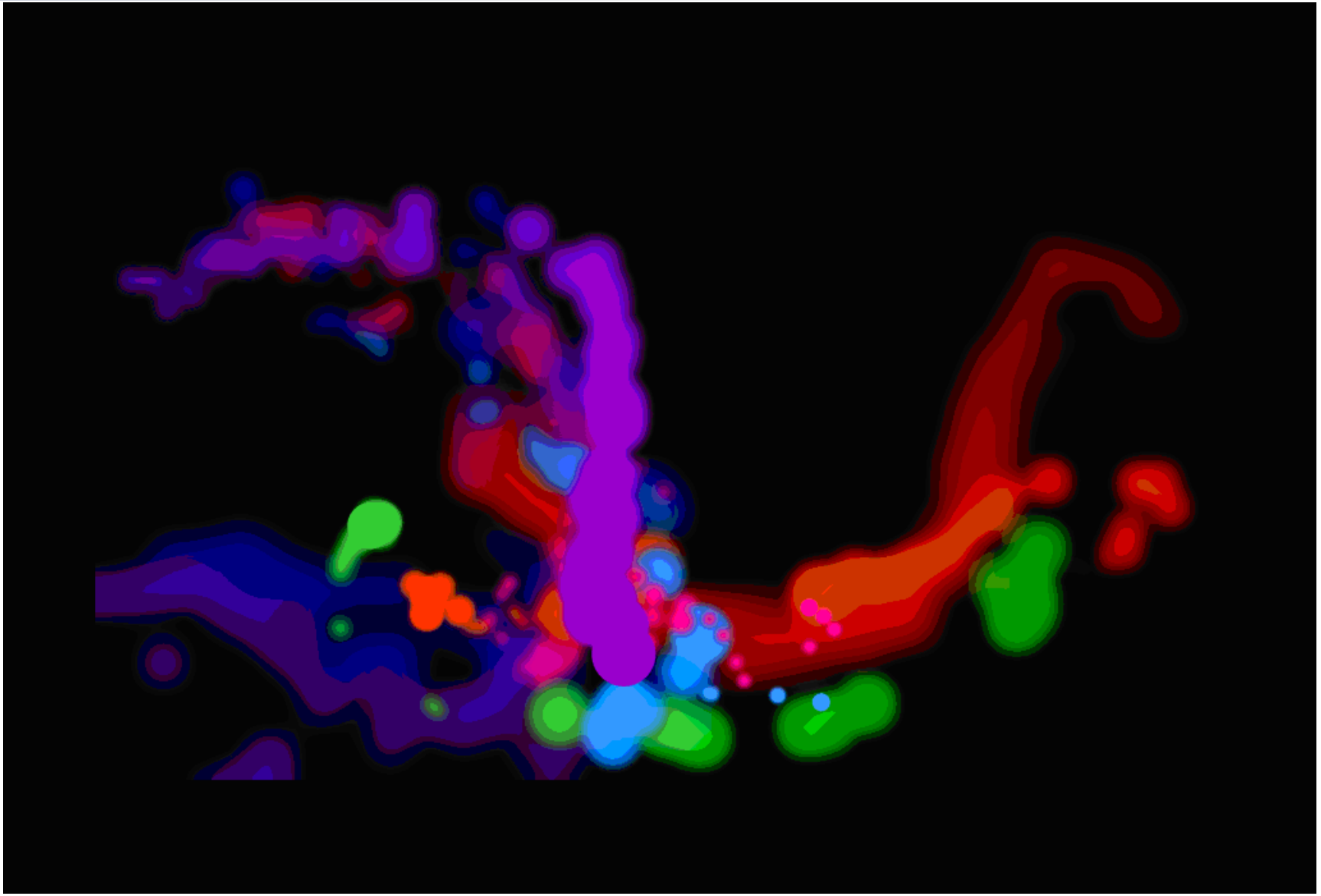
- Choosing samples
- Altering pitch & tempo
- Levelling and calibration
- Panning



Visualisation

- Why add a visualisation?
- End product:
  - Reactive animation to be projected onto a wall at the installation site
- What is Processing?
  - An open source programming language and environment for visuals
- Why use Processing?

Visualisation



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Testing

- Our own testing
  - Interaction sounds were too busy
  - Ghost tags in visualisation were too cluttered

- Feedback from others

The future installation

- Surround sound
  - Increase the illusion of your sound following you
- Custom-made sound samples
  - More atmosphere
- Larger space
  - More freedom of movement and variety of sound
- More Ubisense sensors
  - Better motion tracking

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