Virtual 3D Audio

Design Review 3

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Background

- Positional 3D Audio allows for easier communication between people in helicopter
- Simulate 3D Audio using a stereo headset
- Incorporate interactive GUI
- Implement standalone version of design

Head-Related Transfer Functions

Improvements

- Discover method to increase accuracy in elevation plane

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- Synthesize this solution into MATLAB code

Portability

- Decide what hardware will be used, based on research by Max

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- Ensure code can be easily converted

Stuart Jackson

GUI

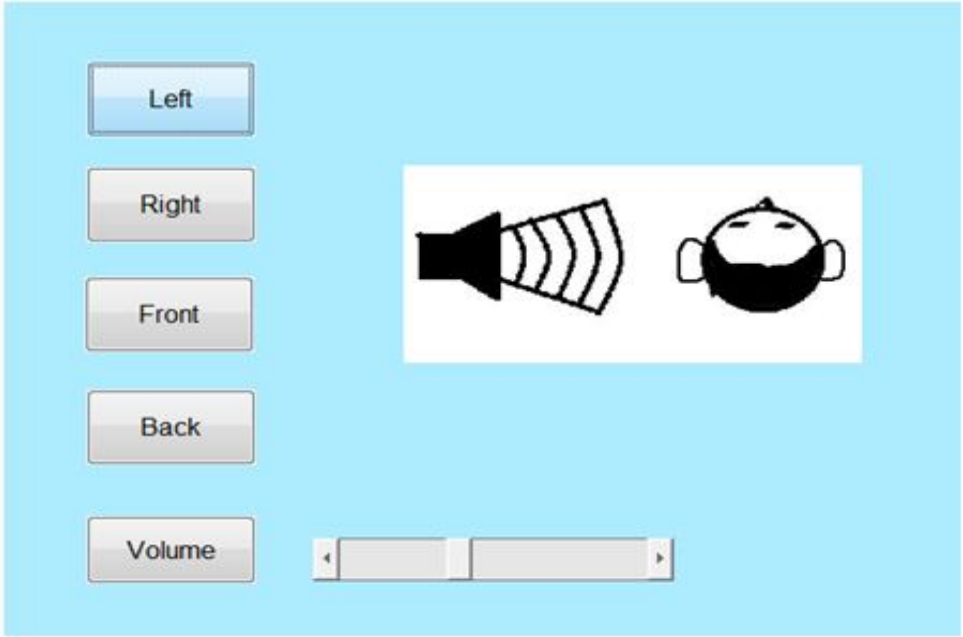
What we have done about GUI in prototype:

- 2D Audio
- Users only can choose four directions on the interface
- Can change volume of sound
- A standalone GUI, no connections with code

Hangdi Hu

GUI

The prototype of GUI



GUI

What our GUI will be:

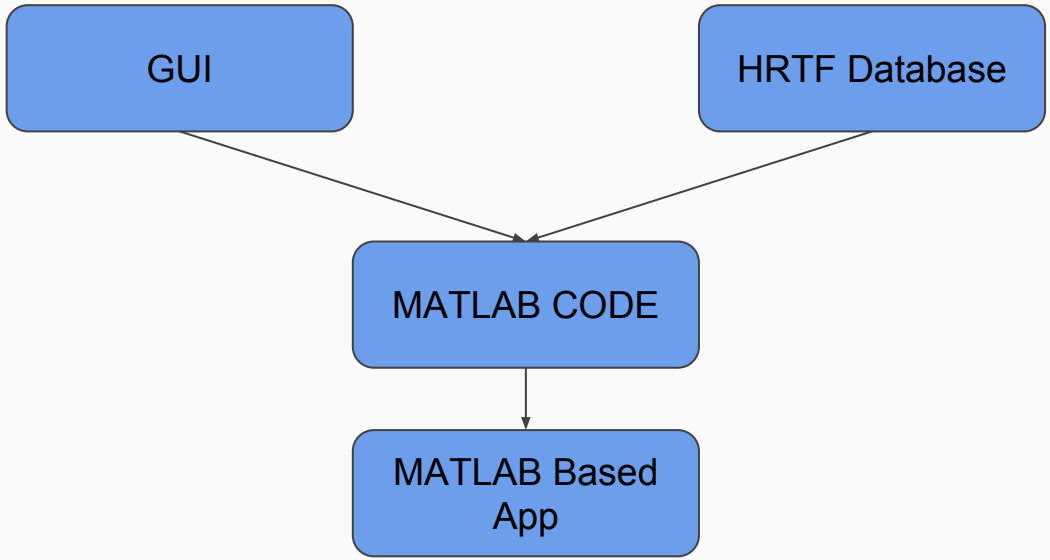
- 3D Audio
- Users can input desired locations through interface
- Location data includes azimuth and elevation
- Connects to code, at the same time used to test program

Hangdi Hu

Integration

Integration of GUI and HRTF;

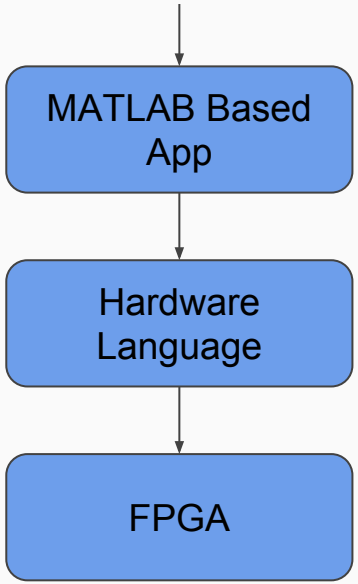
From database and standalone GUI to a user friendly and functional application.



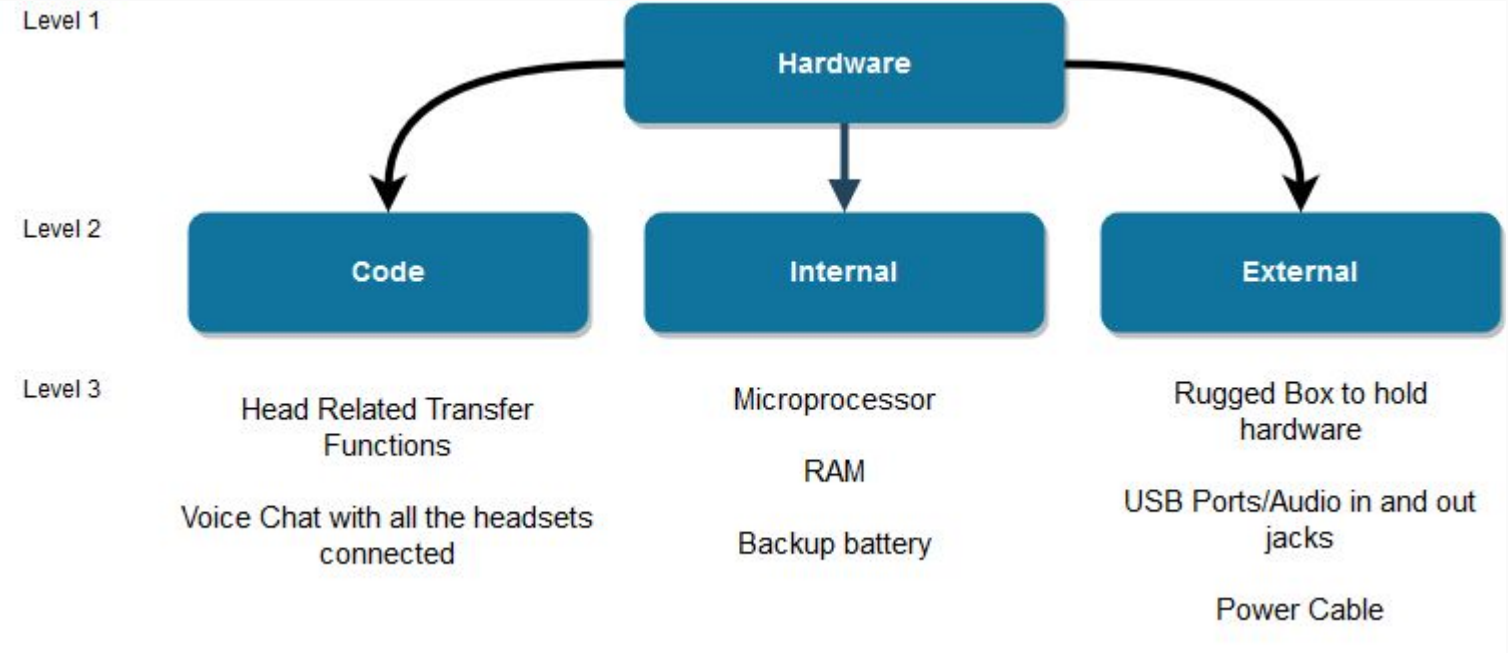
Integration

Integration from MATLAB based app to FPGA.

From MATLAB language to hardware language like VHDL.



Hardware



Max Jones

Thanks!

Contact us:

Slack channel url
nau-3d-audio.slack.com