# Separation of Cloud Generated Audio Streams

Team StratoSplit

#### Introduction

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### **Problem Statement**

- Speaker per channel
- Application is installed locally on the computer
  - Requires access to specific computer to listen to the radio channels
- Complicated User Interface
  - Difficult to use and time consuming to learn



# **Solution Overview**

- Real-time 3D audio management
- Zero Trust secure architecture
- Advanced logging and monitoring tools
- Scalable, responsive design deployment
- Low-latency, high-quality audio streams





# **Key Requirements**

- Secure login and account management
- 3D audio control and adjustments
  - Assign unique virtual locations to audio streams
  - Support real-time adjustments of spatial positions
- Save, load, and clear configurations
- Comprehensive logging and error tracking
- Low-latency, scalable performance



# Feasibility

- Hosted on AWS through government servers

aws

- Operating system through Amazon
- Javascript
- Apache
- Jest
- MongoDB
- FFMpeg
- Docker
- Ambix









#### Risks



#### - Primary Risks

- Remote hosting can be a single point of failure
- Weak network connection reduces application performance
- Distorted radio signal enters application
- Mitigations
- Multiple hosting locations for redundancy
- Host and client side tools to detect weak networks
- Client side tools to improve audio quality



#### Schedule

Namo	Start Data	End data	Dave	Sontombor	Octobor	November	December	lanuany	February	March	April	May
Name	Start Date	Linu uale	Days	September	October	November	December	January	Tebluary	Warch	Арпі	IVIAY
Documentation	9/2/2024	5/9/2025	180									
Audio Generator	10/14/2024	12/31/2024	57									
Database	11/8/2024	1/30/2025	60									
User Interface	11/8/2024	3/31/2025	102									
Spatial Audio	11/8/2024	2/27/2025	80									
Testing	12/2/2024	4/29/2025	107									
Zero Trust	12/16/2024	4/16/2025	88									

# Conclusion

- Current software is inflexible and inefficient
- Our solution will be easier to use and implement
  - Access from anywhere
  - Compatibility with many platforms
  - Easy to maintain and update
  - Security through zero trust
- Low risk through redundancy

