

Vibe.io

A latency-tolerant RTC audio interface for DAW

Shan Jiang

Why Is It Important

What has happened

Music record industry has declined.
Music streaming industry has slowed-down.

What is happening

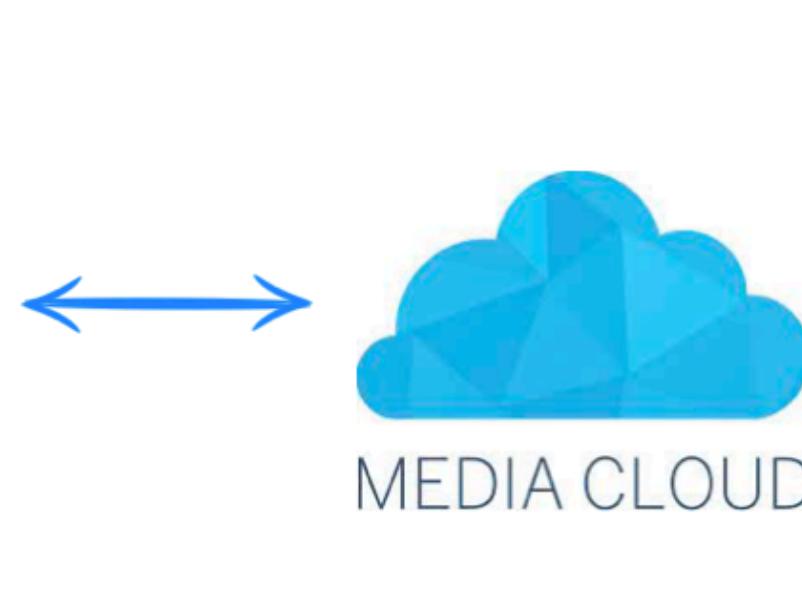
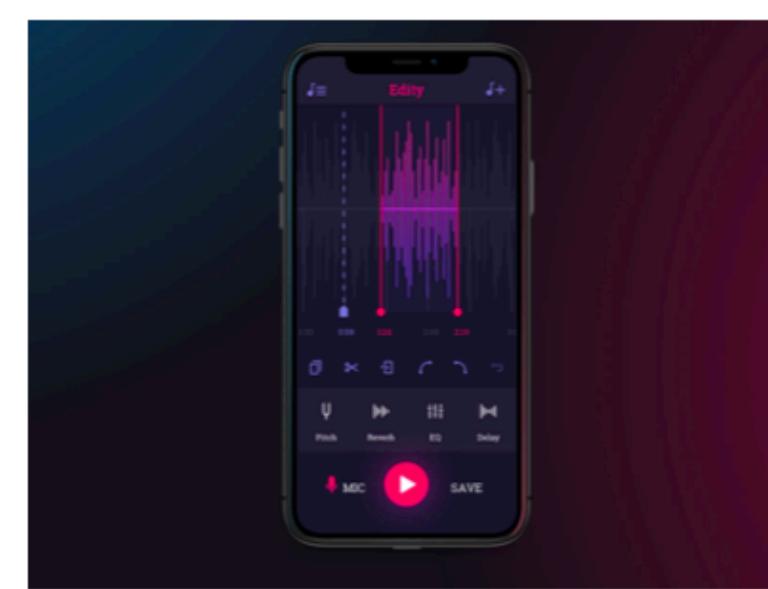
Karaoke is growing very fast.
Music covers go viral in social media.

What will happen

More part-time musicians will produce their own music.
The entry-level collaborative music production tools will dominate the market.

Phone (Common User)
"I'm happy that the sound engineer can give me real-time vocal suggestions and help me with mixing."

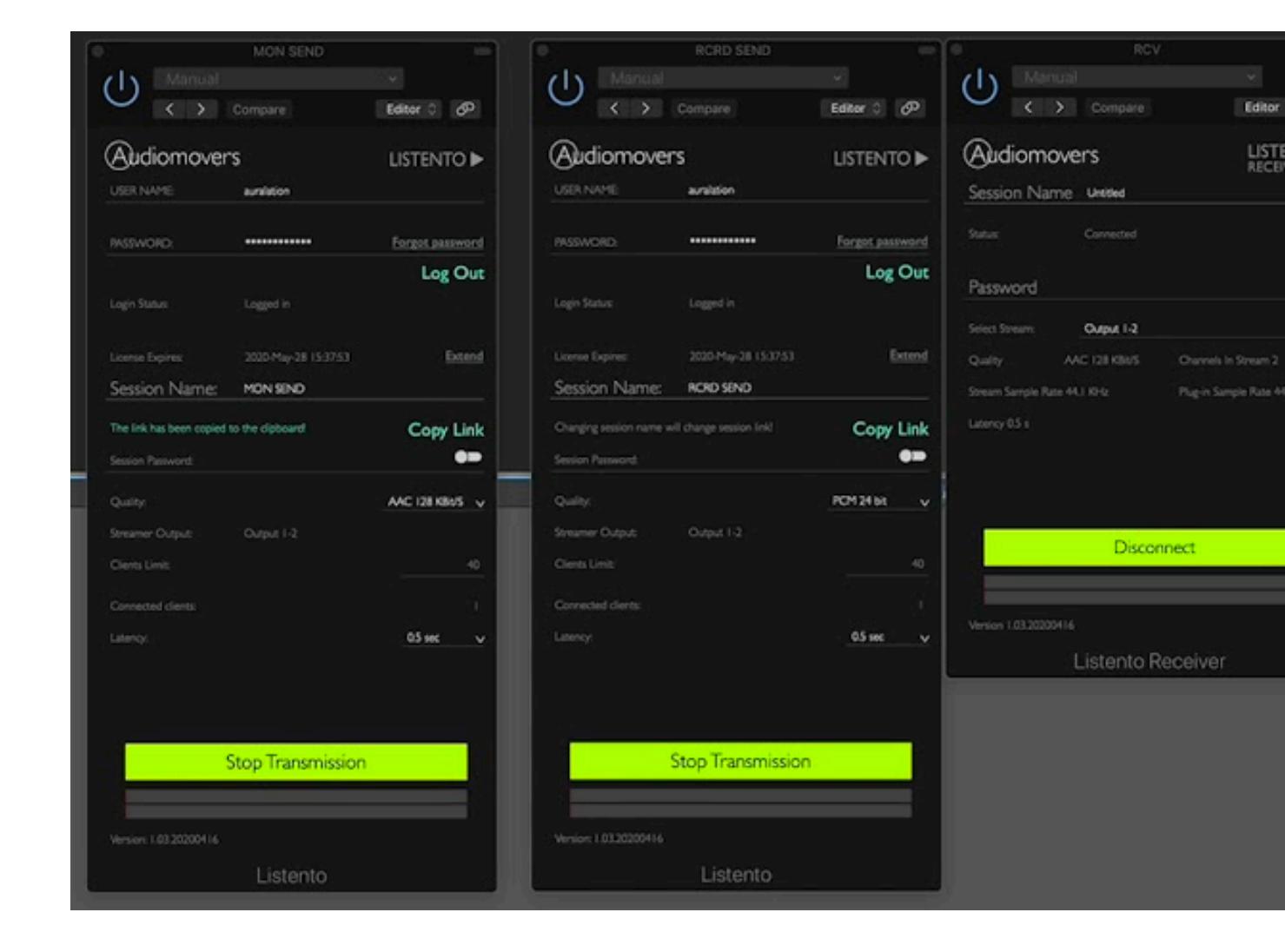
Studio (Audio Engineer)
"My clients come from all over the city and I work from home every day."
Source: <https://www.gobbler.com/7-recording-mistakes-most-musicians-dont-even-know-theyre-making/>



Source: SplitHit: Vocal Remover

Source: Design Studio

Source: Steinberg Cubase Artist 11



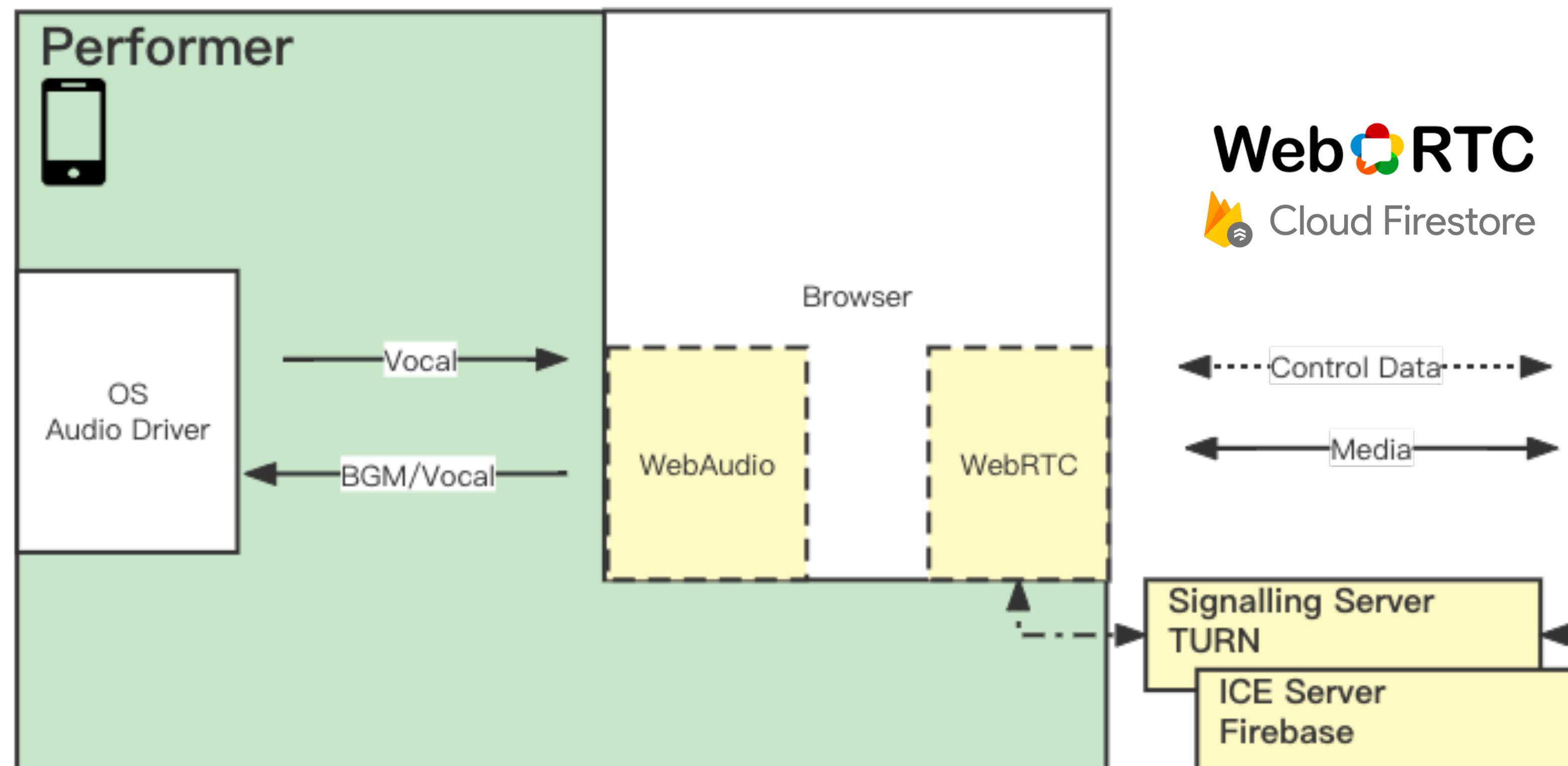
Source: How To Collab In Real Time Remotely with Audiomovers Listento



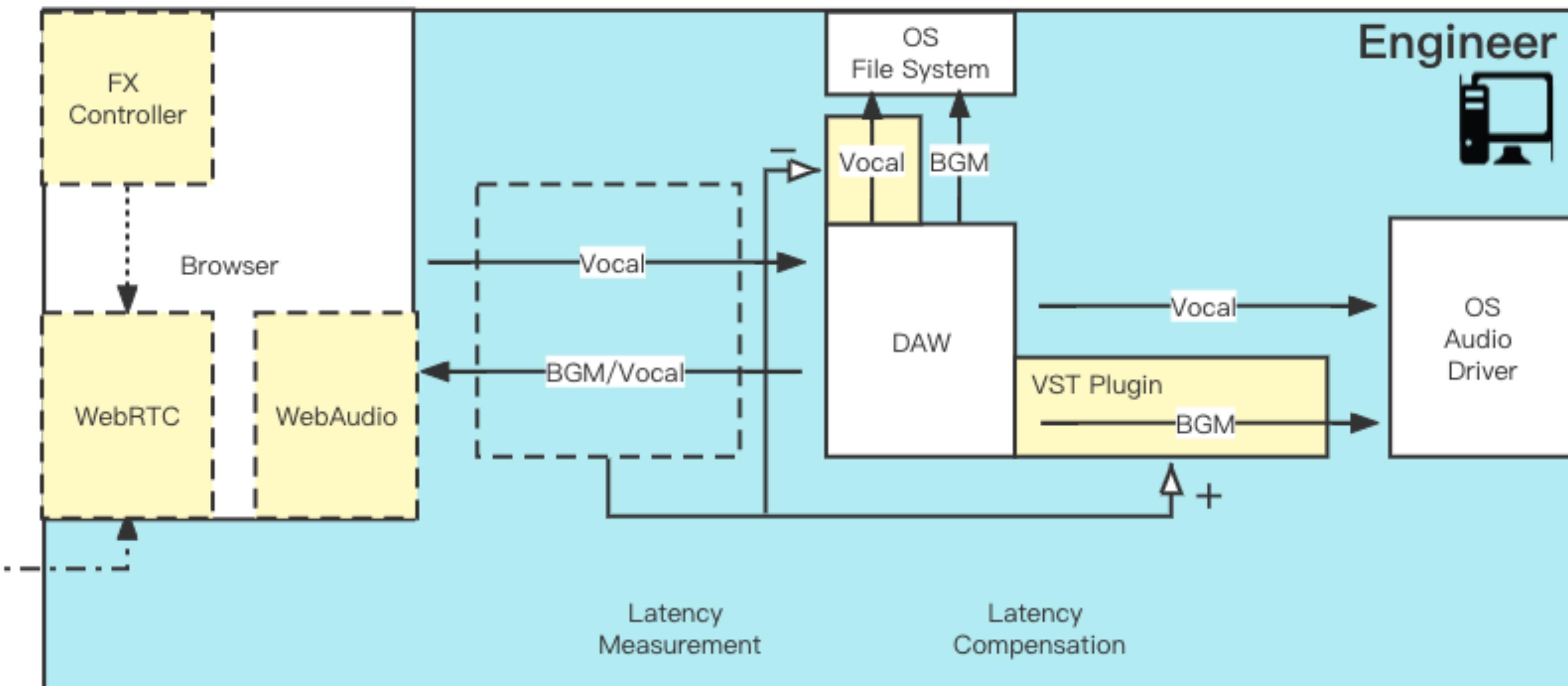
Listento

A software used to provide real-time network connectivity for DAWs.
Cons: Designed for audio engineers, no send-out channel from mobile to PC.

Architecture



Peer A - Performer



Peer B - Engineer

Web APP - Local Monitor Audio FX

GUI - React, NexusUI

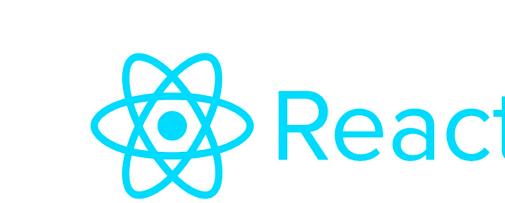
Network - WebRTC

- Audio Channel
- Remote Control Channel

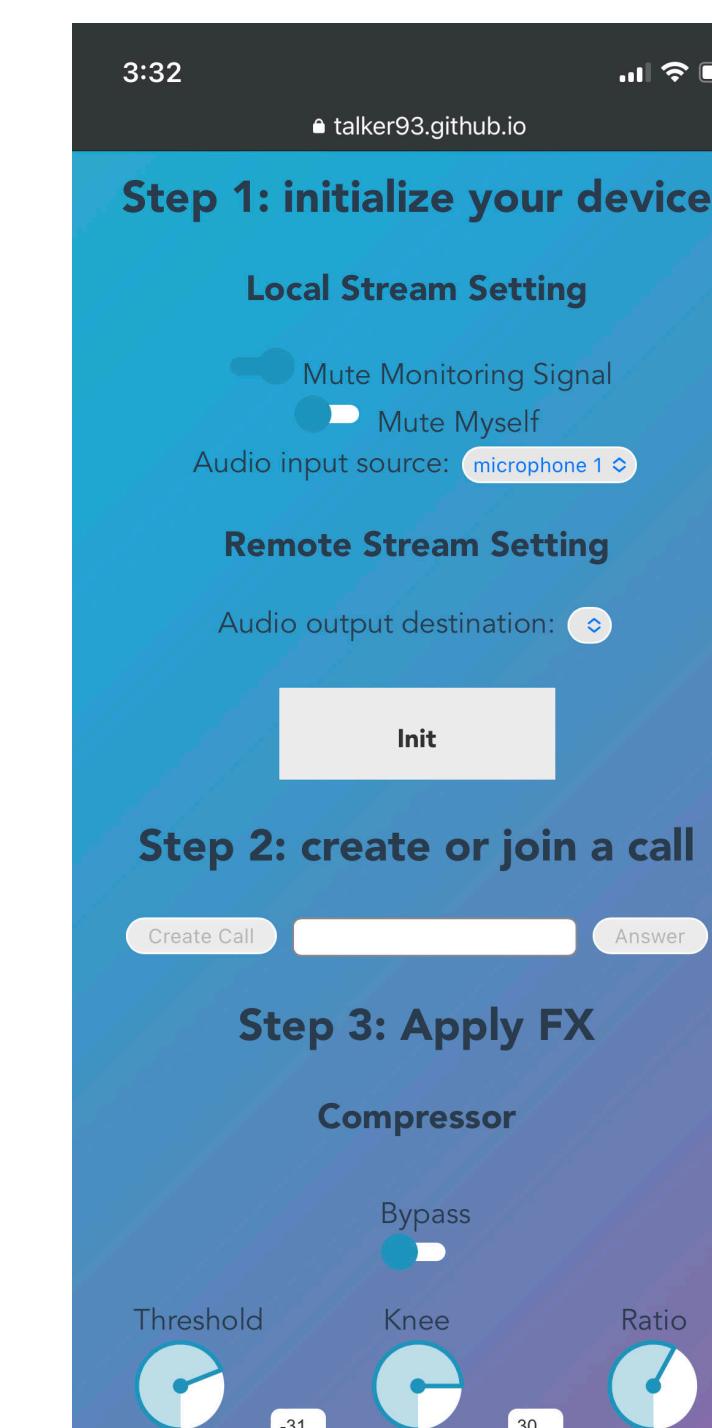
FX - Web Audio API

- Compressor/EQ/Reverb/Oscilloscope/Spectrogram

Distribution - Digital Ocean Ubuntu



Web Audio API



AU/VST Plugin

GUI - JUCE

Network - WebRTC

- Audio Channel

- Remote Control Channel

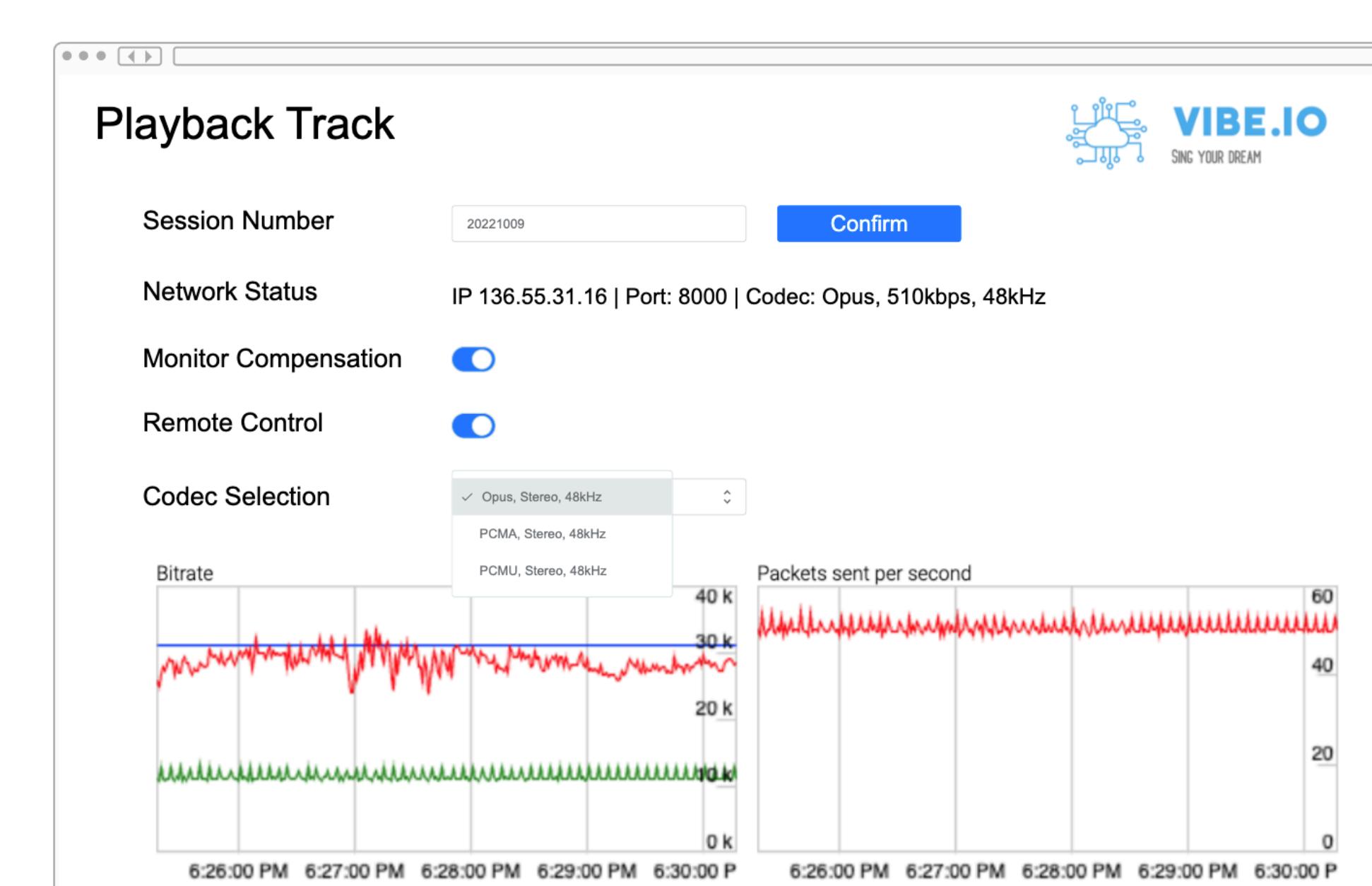
Dynamic Latency Tracking

- RTCStat.timestamp

Inter Process Communication

- Dolby.io C++ SDK —> Socket

- JUCE —> DatagramSocket



Question & Answer

1. Can / How social app (TikTok) user use Vibe.io?

There are two ways to utilize Vibe.io on mobile platforms:

- (By developer) Vibe.io - WebAPP is a static single-page application and written in JavaScript, it's easy to be integrated into mobile development environment, such as Android Studio or Xcode.
- (By user) iOS user can use AudioBus to route the audio between Vibe.io and the social app. Android user has more options for audio routing.

2. Is this a real-time system?

Yes, all audio data is processed block-wisely in real-time, and the loop-back latency is normally bounded to 100-500ms.

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GitHub Link

QR Code

