WebRTC isn't just for (video) conference calls

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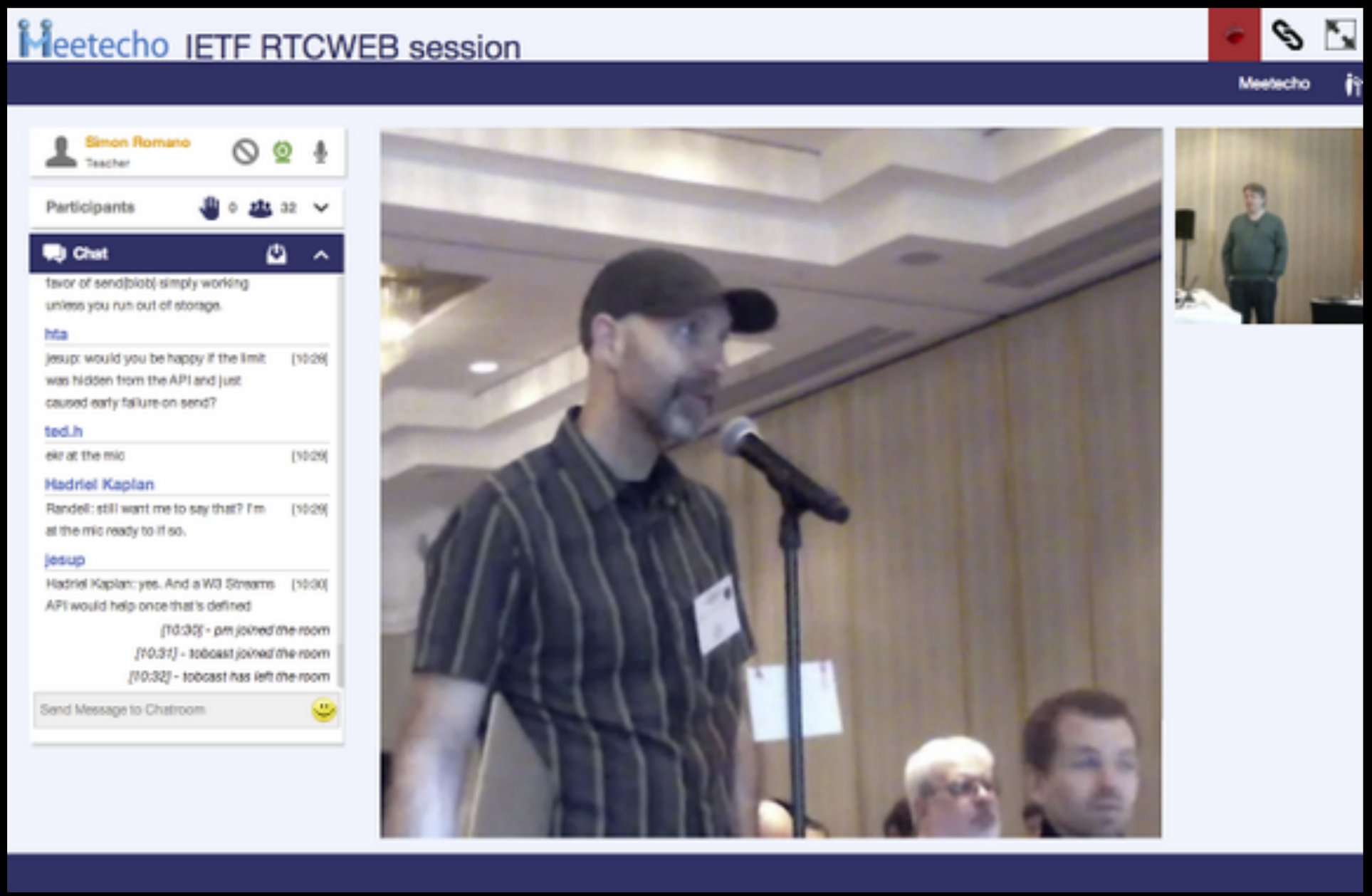
WebRTC

- Great for conf calls
- But also other things

Meetecho



Zero install (for users)
Semantics of IETF meeting
Complex media priorities

Miku

Privacy
Nat traversal
Bandwidth costs

Podcast Recorder

github:
Pipe/PodCall

Audio only
High quality
Mobile first

Https://distributedfutu.re

Stadia

Low latency
High bitrate
Playable games
In Chrome
On an old macbook

Remote access

Nat traversal

Zero install

Security

Demo

What have we learned?

- Not just video conferences
- Not all endpoints are laptop browsers
- W3C webRTC API (SDP) isn’t ideal for all use cases
- Not all endpoints run libwebrtc

Available rtcweb impl

- Pion (GO)
- |pipe| java
- Meetecho C
- Aiortc - python
- Mediasoup javascript
- Frozen mountain C#
- Gstreamer

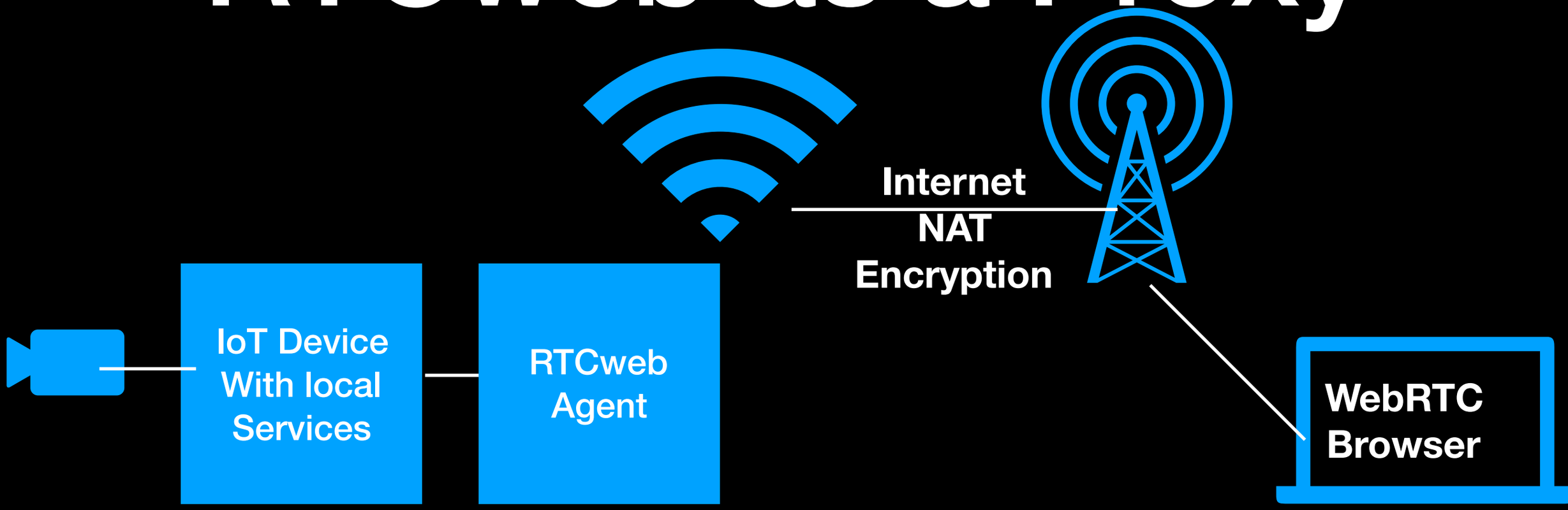
Benefits of open standards

Interop Hackathon at IETF 107

What is a good API?

- I don’t know.
- W3C doesn’t know x 2
- Google doesn’t know
- So... Let’s try something else....

RTCweb as a Proxy



- Existing services
- Need webRTC magic dust (NAT traversal, zero install etc)
- |pipe| agent as a configurable proxy

Obvious one

- RTP (RTSP) -> DTLS SRTP - video/audio. Etc.
- (Only complexity is encoder control)

Easy one

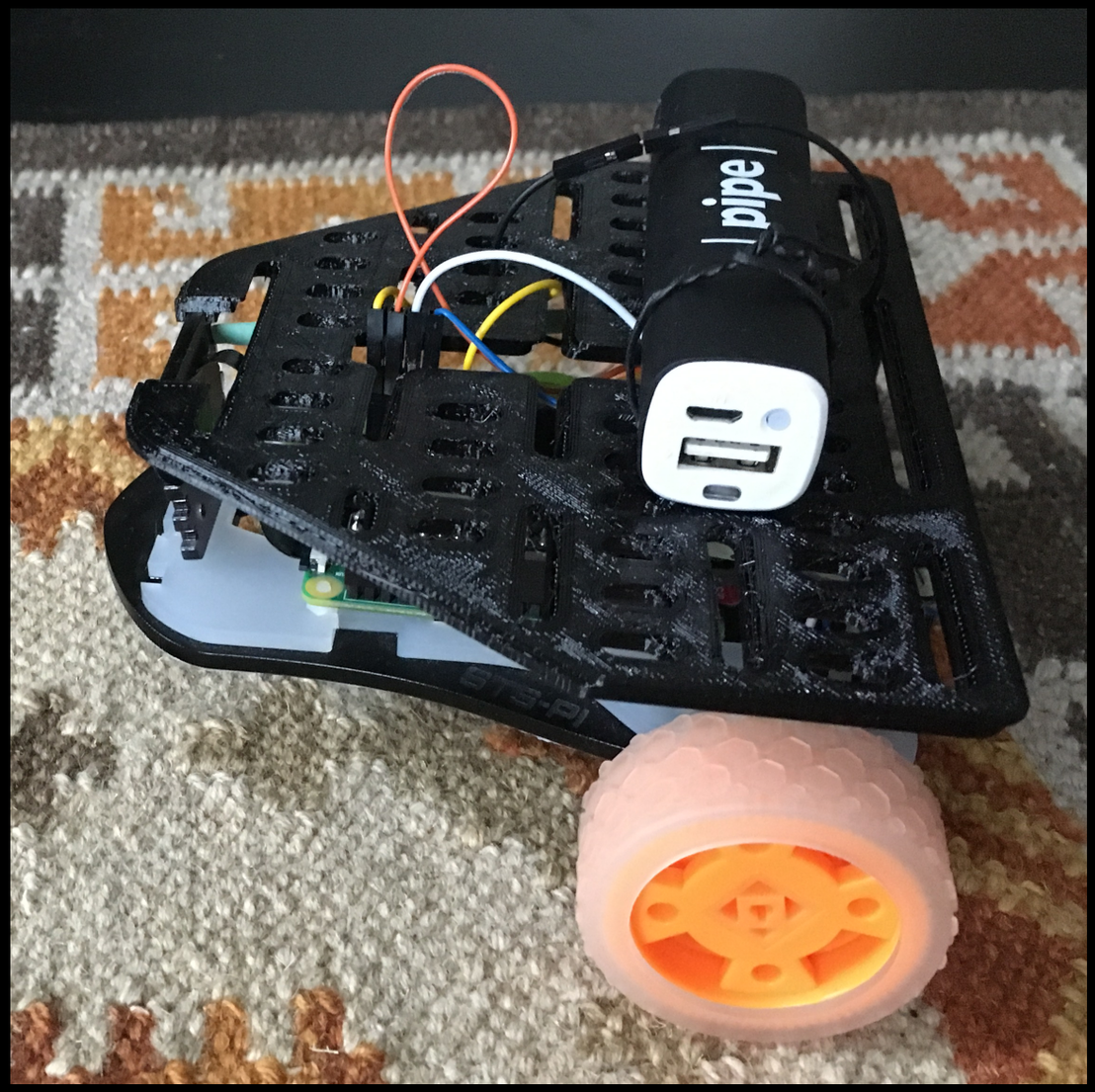
- Web sockets
- Data channel API in browser looks like websocket so, just return one and duct typing wins ;-)
- Proxy data over named rtcweb datachannel to agent, which opens actual local web socket.

The Magic one

- Http
- Abuse service worker
- Add iframe (because you cant have a peer connection in a service worker)
- Magic happens

What this lets us do:

- Droid pi zero
- Runs a local web service providing interface
- Websocket for motor control
- Gstreamer RTP for video
- Proxy http+ws+RTP to browser
- Drive the droid



How is that an API?

- Web page creates data channel
- Label contains a URI
- Proxy interprets the URI locally (eg ws://localhost/motor)
- Proxy verifies URI is on the permitted list
- Proxies the websocket traffic (and semantics) over the DC
- Web page hardly notices

Worth Standardising?

- Email me tim@pi.pe
- Tweet me steely_glint
- Catch me in person....

“ ... as simple as possible, but no simpler.”

–Albert Einstein