END-TO-END WEB-BASED FRAMEWORK TO BUILD AND CONSUME SHARED AND SOCIAL VR EXPERIENCES

VRTogether

FEATURES

Simplified Technology Pipeline

- Use of Web-based components:
  - » WebRTC for communication.
  - » WebVR, WebGL for rendering.
  - » React, Node.js and A-Frame for UI frontend.
- Using common off-the-shelve and consumer grade equipment for capture and display.

Fully orchestrated

- Session management, with per session setup options.
- Multi-person capture and rendering management.
- Synchronisation of live and virtual content.

REAL-TIME LIVE CAPTURE

- Live 3D capture of users using RGB-D cameras (e.g. Kinect or Realsense).
- Provide self-view and HMD removal for local user.

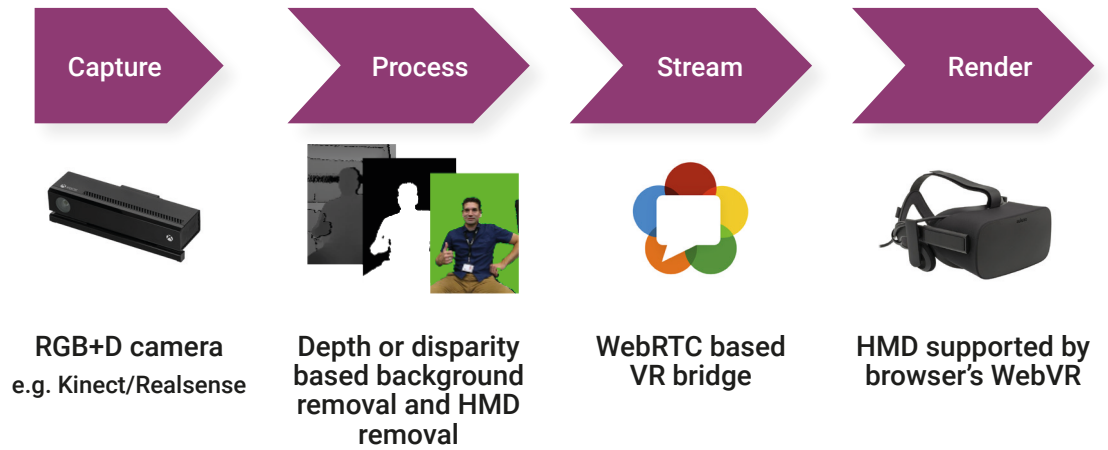## PEER-TO-PEER OR BRIDGED COMMUNICATION

- Communication service through WebRTC.
- Peer-to-peer or if needed for scalability through a VR bridge, combining all individual participant's streams in one large stream.

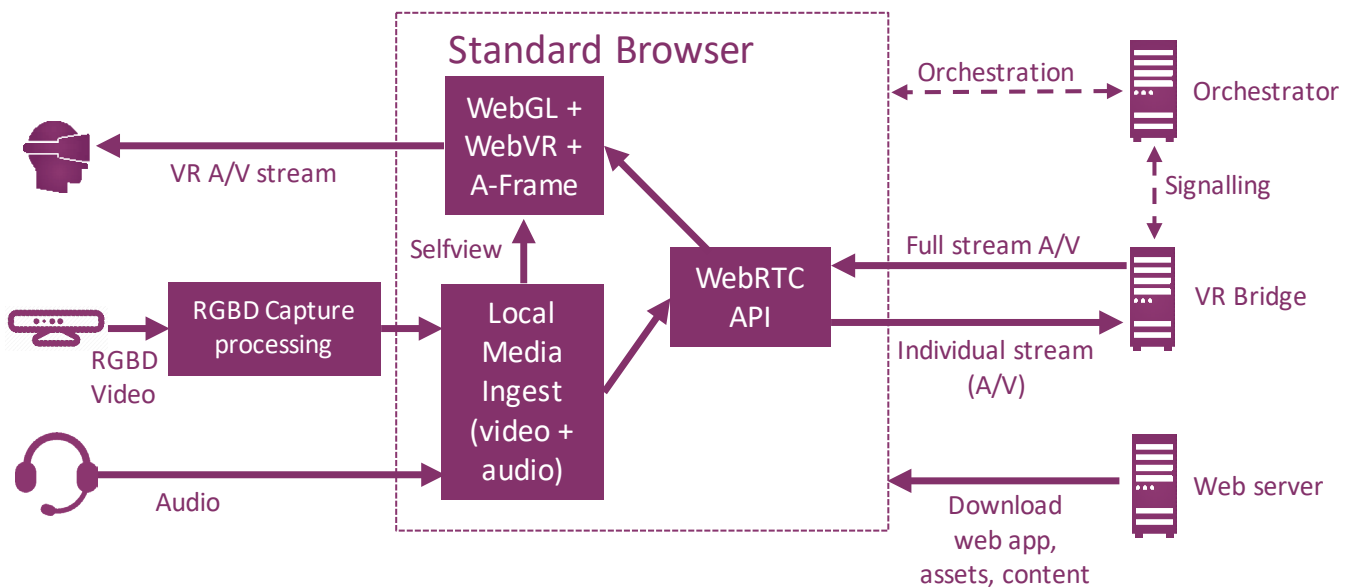## EASY INTEGRATION OF VIRTUAL ENVIRONMENT

- Support for photo-realistic 360 video and virtual 3D environments.
- Multiple concurrent sources possible, eg. live streaming video in a virtual environment.
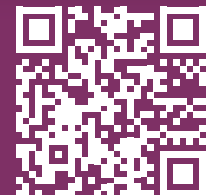
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SIMPLIFIED TECHNOLOGY PIPELINE

Capture → Process → Stream → Render

RGB+D camera
e.g. Kinect/Realsense

Depth or disparity based background removal and HMD removal

WebRTC based VR bridge

HMD supported by browser's WebVR

WEB ARCHITECTURE OVERVIEW

Standard Browser

WebGL + WebVR + A-Frame

VR A/V stream

Selfview

RGBD Capture processing

RGBD Video

Local Media Ingest (video + audio)

Audio

WebRTC API

Orchestration → Orchestrator

Signalling

Full stream A/V

Individual stream (A/V)

VR Bridge

Download web app, assets, content

Web server