Qt WebGL Streaming

• Kimmo Ollila
What's WebGL?

- WebGL (Web Graphics Library) is a JavaScript API for rendering 2D and 3D graphics within any compatible web browser

![Diagram of WebGL versions]

- OpenGL 1.5 → OpenGL 2.0 → OpenGL 3.3 → OpenGL 4.5
- OpenGL ES 1.1 → OpenGL ES 2.0 → OpenGL ES 3.0
- WebGL 1.0 → WebGL 2.0
What's Qt WebGL Streaming?

› Enables streaming of Qt applications using OpenGL ES2 (*)
  › Requires WebGL capable web browser
Some use cases

› Remote application access
› Publish applications
› Remote control
› Headless devices
› Presentations
How was it implemented?

- Qt Platform Abstraction (QPA) Plugin
  - Set of interfaces to customize behaviour of Qt applications

- Minimal WebServer
  - It is used to send basic files

- QWebSocketServer
  - Connects the application and the web browser

- JavaScript
  - Converts serialized GLES2 binary format to WebGL

- WebGL
What's supported?

› Qt Quick

› Qt OpenGL

› Single user
Qt WebGL demo
Qt WebGL demo

Bosch DruckMessWT Demo
with Michael Winkelmann
Qt for WebAssembly (TP)

› Technology preview

› A new platform to run Qt
   › Comparable to Windows, Linux, Mac, Android, iOS...

› All key browser engine has agreed upon support WebAssembly

› Zero-install Qt apps
   › Qt application binary downloaded by the browser and running in the browser
Thank you