Building Control Dashboard Hologram for Node-Red

In the early days of teaching Home Automation, I have always referred to a (at that time) futuristic building automation movie by Siemens (Smart buildings - the future of building technology, https://youtu.be/gCuPx9shWT0). In that movie, an interactive holographic display is used to monitor and interact with a big office building in a seemingly intuitive and easy to comprehend way. Now, we are working, learning, and teaching in such a building ourselves, and the live data of all automation of our Delta building is available to us as well. We even have a 3D model of it.

For easy building automation and other IoT prototypes, we often use Node-RED and its easy to use dashboards, to build control panels. Wouldn't it be nice to rebuild the vision of the movie and explore possibilities of 3D visualization and interaction in VR and AR?

This should actually be quite doable using current WebXR (https://immersiveweb.dev/) technology (or building a special viewer with Godot - https://godotengine.org/). As we have access to several VR glasses at Delta, it should be possible to show real holographic interaction and monitoring, while building a Node-RED dashboard-like widget kit.

In this project, we will move in an agile manner to the final vision of holographic interaction with a complex building (or other large scale IoT projects).

You have to start, watching the Siemens movie and brainstorm ideas for potential GUI elements. You follow-up with envisioning the full scenario, looking at the data available from and for the Delta building, exploring WebXR and/or Godot as well as the Node-RED dashboard. Then you will implement some data-related prototypes for a virtual 3D environment, and finally generalize your prototypes into widgets that integrate into Node-RED. Due to lots of presentations and sprints, we can put the initial movie to shame and present our own evolving vision/version of future building interaction interfaces.

This project is to be carried out as a Scrum project with a team size of 4-10 people - you have to select a project owner and a scrum master in your team. You will work on 7-8 sprints of about 2 weeks each.

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