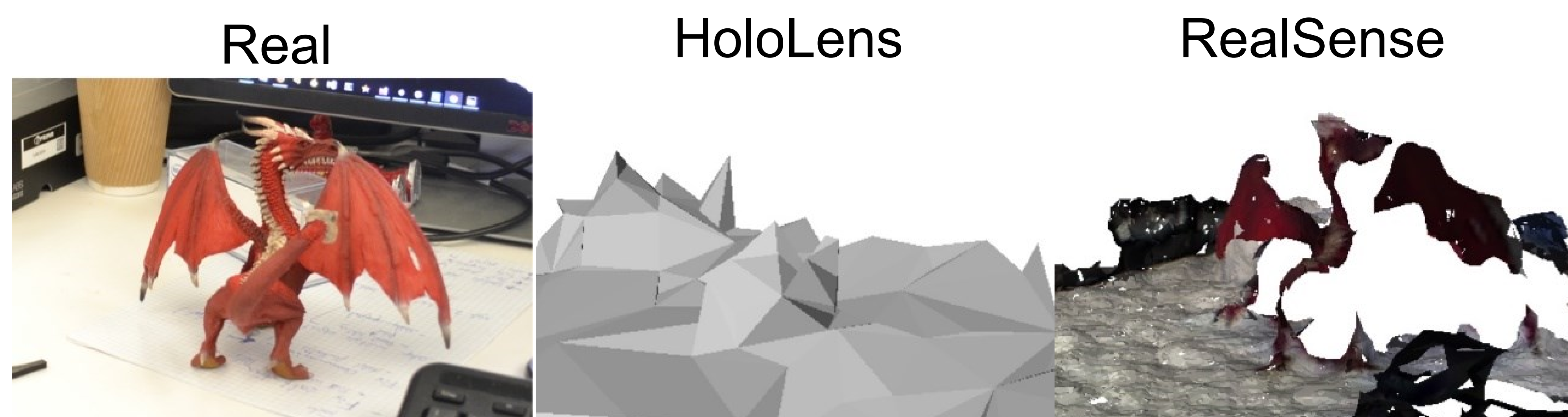


Overview

Problem: HoloLens provides a low resolution scene reconstruction with low update rate.

Goal: Provide real-time and high resolution depth information to HoloLens headset.

Solution: Integrate RealSense data on board the HoloLens.

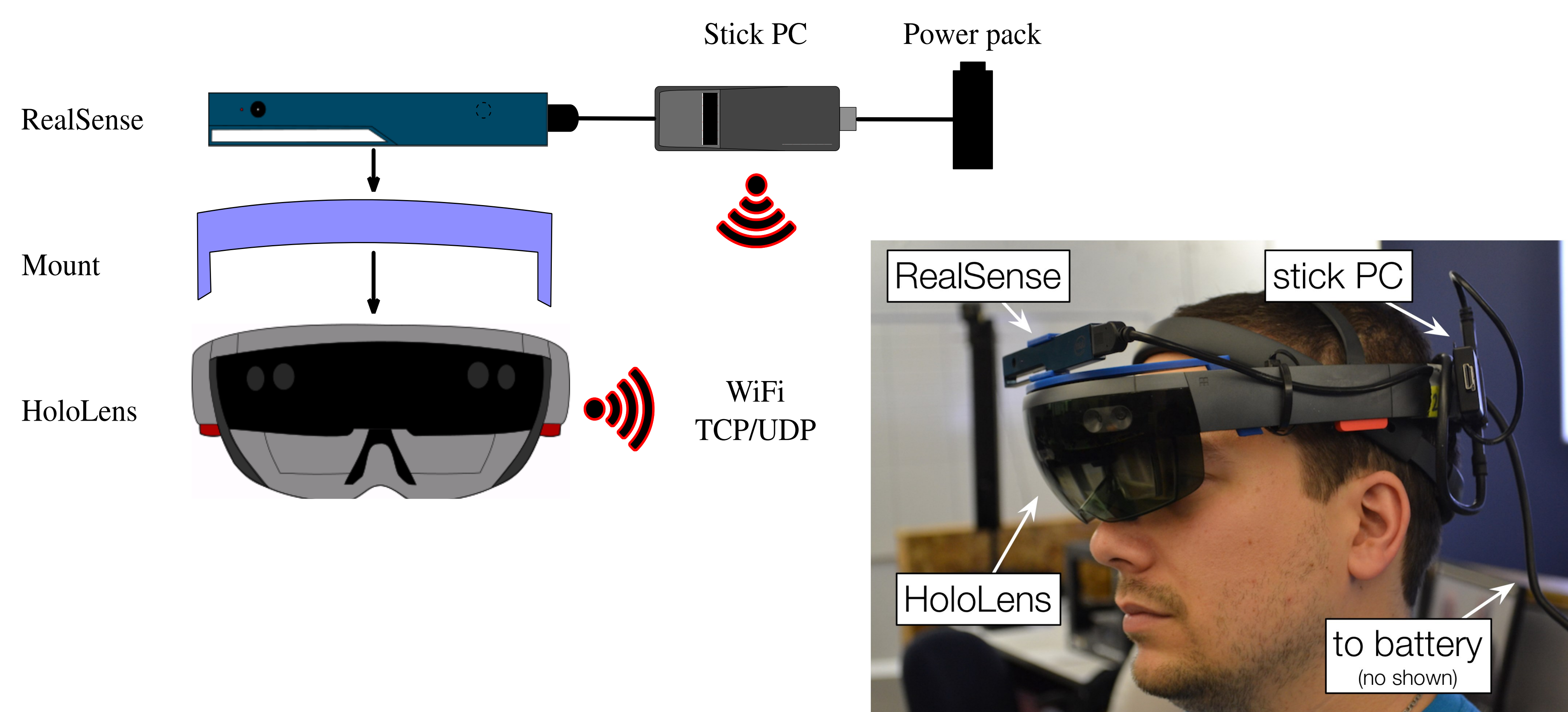


Hardware

A custom 3D printed mount holds the RealSense camera onto the HoloLens headset. RealSense is connected to an external computing unit (stick PC).

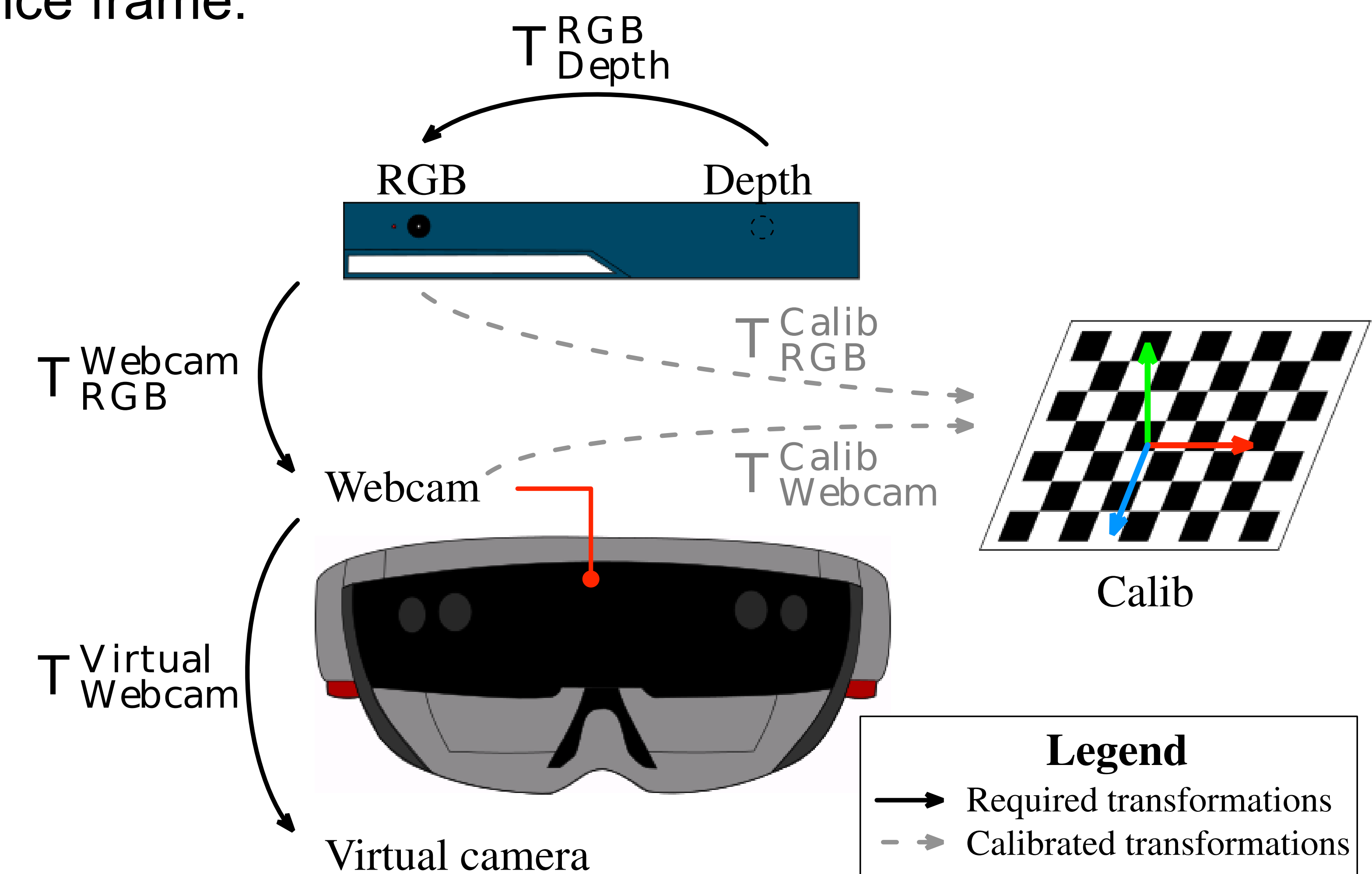
The whole system is still fully portable.

A custom communication protocol is used to minimize latency.



Calibration

We calibrate the transformation between the RealSense RGB camera and the HoloLens webcam to map the RealSense depth in the HoloLens reference frame.



Small object detection

We demonstrate the use of high resolution depth data by implementing small object detection via Linemod followed by geometric verification.

