C++ Project

Attached you will find a PCAP file that contains the data capture from an Ouster OS1 lidar and a JSON file containing the metadata from the capture. PCAP files tend to be large; therefore, sending the entire file is resource-intensive. We'd like to extract certain features from the file to avoid sending a multi-gigabyte file over the network. Ouster Studio allows you to visualize the lidar data from the PCAP file. Ouster also provides an SDK for their OS1 Lidars. You'll be using the C++ SDK to read and process the lidar data.

1. Create a client and a receiver that establish communication over a socket using C++.
    a. Upon connection, the receiver should create a separate thread to handle the request/process the transmitted data.
2. On the client side: for each frame in the lidar capture, find all of the points that are under 15 meters away from the sensor, convert them into cartesian coordinates, and transmit these coordinates to the receiver.
3. On the receiver side: Create a 3D graph of the transmitted cartesian coordinates that updates dynamically as the packets are received.

Requirements:

- The receiver should run on a Linux virtual machine on your computer and the client should run on the host OS.
- Feel free to use any external libraries. Please use a unified build system, containerize your C++ applications, and write simple bash scripts to start the containers.