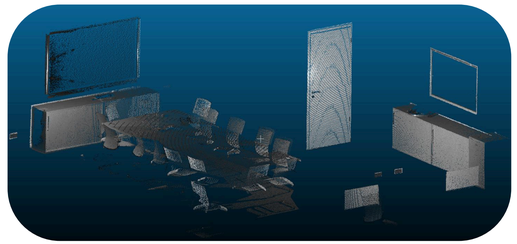
# LiDAR2BIM Demonstrator

## From Point Cloud to IFC

**1**

Scan the environment using LiDAR sensors:

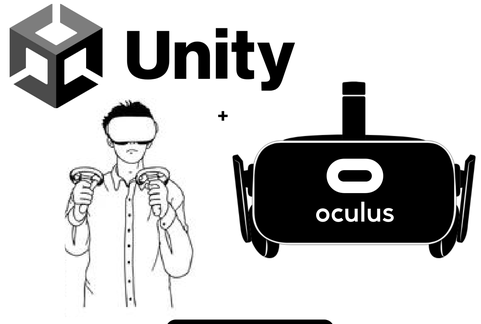
- Trimble TX8
- Leica BLK2GO
- iPhone Pro



**2**

Export the point cloud in one of the preferred formats:

- PLY
- LAS
- E57

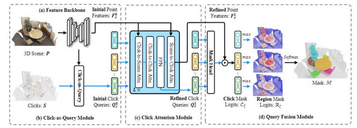


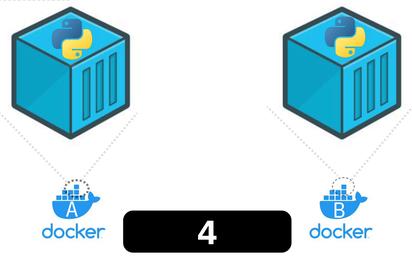

**3**

Use the Unity app with Oculus Quest.

- The system establishes communication via IP and port.

AGILE3D / OneFormer3D

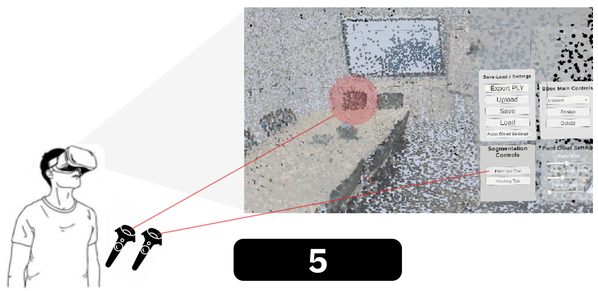





**4**

The VR application sends the point cloud to a server configured with two Docker environments:

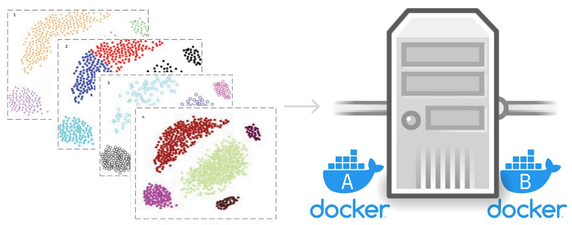
- Docker A: Machine Learning models (AGILE3D, OneFormer3D)
- Docker B: IfcOpenShell



**5**

The user can segment the point cloud:

- Manually or
- Using a Machine Learning model



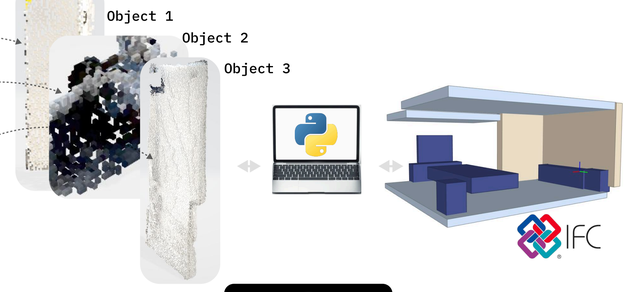

**6**

After segmentation, the individual scene components (e.g., walls, tables, doors) are sent to the server.


**7**

In Docker A, each segment is converted into a separate .glTF file, corresponding to a specific object:

- Wall
- Table
- Door
- (...)




**8**

In Docker B, the .glTF files are translated into IFC format using the IfcOpenShell library, resulting in a single file with all objects:

- IfcWall
- IfcFurniture
- IfcDoor
- (...)

**Project Contact**

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**Project Partners**

- X-Visual Technologies GmbH
- BASS Engineering

XVISUAL Engineering Software

BASS ENGINEERING SOLUTIONS

**Project Website**

- www.ifaf-berlin.de/projekte/lidar2bim

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