Your application will be communicating with the rover systems along with the rover’s mapping system and AI. It is your responsibility to display both the telemetry data received from the rover as well as environmental data. You are also responsible for transmitting control data from the UI to the rover. Below is a description of the data to be processed, all data structures being sent and received will be in JSON format.

Telemetry Data (from rover, see “comm\_files/rover\_telemetry.json”):

* Position (xyz in meters)
* Rotation (xyz in degrees)
* Power/Battery Level
* State (idle, moving, error, etc)
* Velocity (m/s)

Environment Data (from rover, see “comm\_files/rover\_environment.json”):

* Object Type
* Object Size (xyz in meters)
* Object position (xyz in meters)
* Object rotation (xyz in degrees)

Settings Data (to rover, see “comm\_files/rover\_settings.json”):

* Motor Speed
* Camera Rotation (xyz in degrees)
* Other data based controls from UI.

Target (to rover, see “comm\_files/rover\_target.json”):

* Target Marker ID
* Target Marker Position (xyz in meters)
* Action (add, remove)

Action Command (to rover, see “comm\_files/rover\_action.json”):

* Action (start, stop)

For example code, run ‘rover\_ui/generate\_example\_data.py’ then look in ‘rover\_ui/comm\_files’ for json files in the valid format.