Sensors:

* **IMU**

This sensor iscomposed of a 3-axis accelerometer and gyroscope, the IMU allows the robot to measure its orientation, velocity, and acceleration. This sensor is crucial for understanding movement and orientation of the robot, especially when navigating or making turns. It ensures the robot can correct its path if it deviates from the planned route.

* **LiDAR Sensor**

This sensor is beneficial for determining ranges to objects, walls and obstacles by generating a detailed 3D map of the robot’s surroundings.

Onboard computers:

**Arduino Uno (MCU):**

* + Collects sensor data from the IMU and the LiDAR-sensor.
  + Processes the data and constructs a map of the environment.
  + Includes logic for movement.
  + Sends commands to motors for navigation.

Both the IMU and LiDAR sensors connect to the Arduino Uno via the I2C protocol. This common protocol simplifies wiring, allowing efficient, synchronized communication between the sensors and MCU. The I2C protocol also minimizes the need for multiple connection pins, helping keep the setup organized and efficient.

There would also be an alternative to use a secondary control unit for constructing the LiDAR map as this would be an intensive task in terms of computational power. This would also enable the robot to handle the sensor-inputs more asynchronously which could be beneficial.