



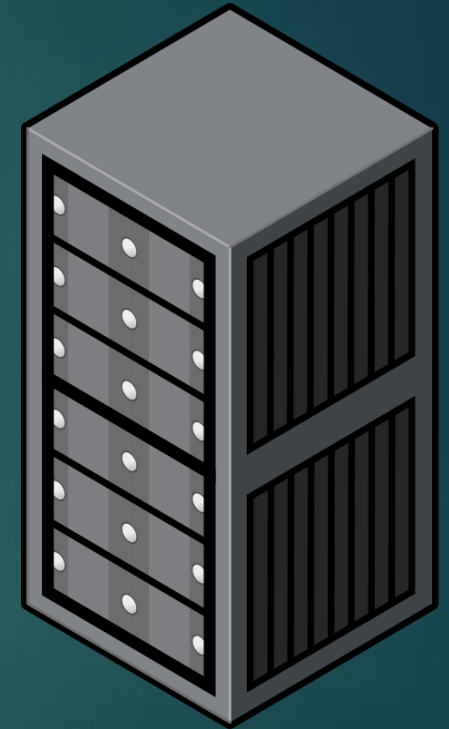
Greenfield

DISTRIBUTED AND PERVASIVE SYSTEMS

ADMINISTRATOR SERVER



- Reading sensors' averages via MQTT
- REST interface for the Administrator Client
- REST interface for the deployed robots



ADMINISTRATOR CLIENT



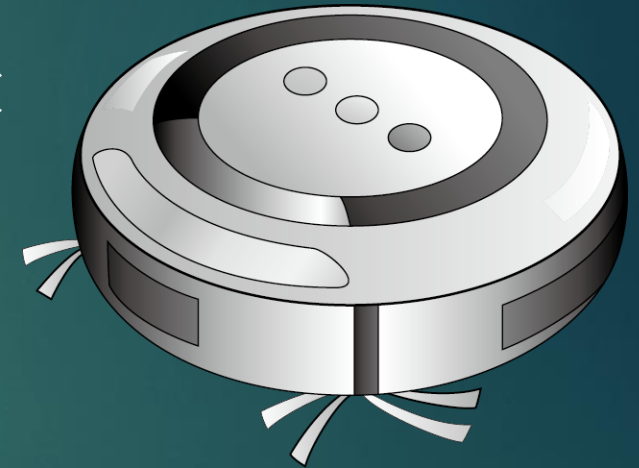
- Deployed robots list
- Average of the last n measurements for a robot
- Average of measurements between two timestamps



ROBOT



- Timestamp management (Lamport clock)
- Communications with other robots via gRPC
- Input possibilities (*fix*, *quit*)
- Reading data from sensors
- Crash detection and handling



MECHANIC AND REPARATIONS



- Core problem: mutual exclusion for the shared resource (the mechanic)
- Ricart & Agrawala algorithm
- A request queue for each robot

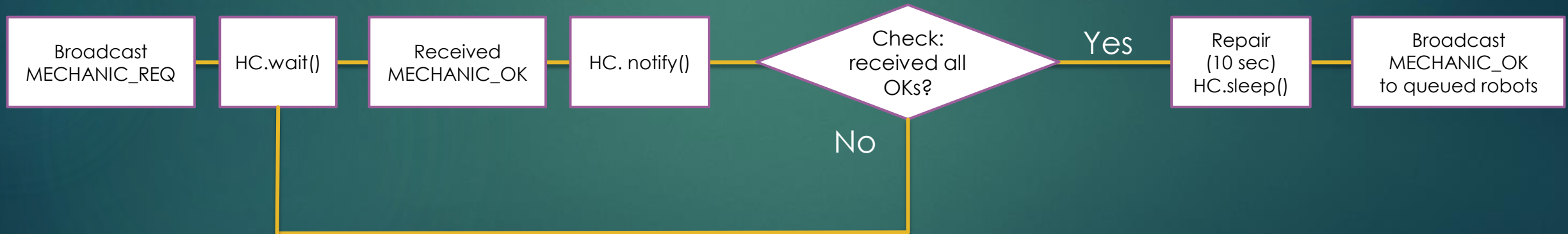


REPARATION PROCESS



When a robot needs to be fixed:

- It stops its own sensors operations
- It applies the Ricart & Agrawala algorithm: it broadcasts a mechanic request to the other robots and waits until every robot replies with OK, then releases the mechanic



Note: HC = Health Check thread