Concept 1: Two Controllers with Dedicated COM Ports

Level 0: Plant Robot Input/Output

Robot

- Ambient Temperature
- Soil Moisture
- Humidity
- Water Level
- Light
- Color
- Location
- Acceleration
- Power
- Distance Detection (Light/Sound)
- Status Indicators
- Primitive Communication
- Translational Movement
- Wireless Link

Level 1: Platform Architecture Overview

- Color Sensor
- Temp. Sensor
- Moisture Sensor
- Humidity Sensor
- Light Sensor
- Water Reservoir Level Sensor

- Ultrasonic Object Sensor (Long Range)
- Infra-Red Object Sensor (Long Range)
- Infra-Red Interaction Sensor (Short Range)
- Ground IR Sensor
- Accelerometer

- Plant Sensor Interface
- Navigation Sensor Interface
- Power Block Local Regulation
- Audio Amplifier & Speaker
- LEDs

- SBC
- GPS Receiver
- WiFi Module
- LEDs

Motor Control Block (P12017)

Translational Movement

- Location
- WiFi
- Status Indicators
- Primitive Communication
Concept 2: One main controller interfacing to all sensors

Level 0: Plant Robot Input/Output

- Ambient Temperature
- Soil Moisture
- Humidity
- Water Level
- Light
- Color
- Location
- Acceleration
- Power

Robot

Distance Detection (Light/Sound)
Status Indicators
Primitive Communication
Translational Movement
Wireless Link

Level 1: Platform Architecture Overview

Color Sensor
Temp. Sensor
Moisture Sensor
Humidity Sensor
Light Sensor
Water Reservoir Level Sensor

Sensor Interface

Power Block Local Regulation

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GPS Receiver
WiFi Module
LEDs

Audio Amplifier & Speaker

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Translation Movement

Obstacles
Passer-bys
Terrain
Acceleration

Color
Ambient Temperature
Soil Moisture
Humidity Sensor
Light Sensor
Reservoir Level

Sensor Interface

SBC

GPS Receiver
WiFi Module
LEDs

Audio Amplifier & Speaker

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Translation Movement

Location
WiFi
Status Indicators
Primitive Communication

Ultrasonic Object Sensor (Long Range)
Infra-Red Object Sensor (Long Range)
Infra-Red Interaction Sensor (Short Range)
Ground IR Sensor
Accelerometer

Power Block Local Regulation

LEDs
Concept 3: Two Controllers with Master-Slave Communication

Level 0: Plant Robot Input/Output

- Ambient Temperature
- Soil Moisture
- Humidity
- Water Level
- Light
- Color
- Location
- Acceleration
- Power
- Distance Detection (Light/Sound)
- Status Indicators
- Primitive Communication
- Translational Movement
- Wireless Link

Level 1: Platform Architecture Overview

- Color
- Ambient Temperature
- Soil Moisture
- Humidity Sensor
- Light Sensor
- Reservoir Level
- Obstacles
- Passer-bys
- Terrain
- Acceleration

- Color Sensor
- Temp. Sensor
- Moisture Sensor
- Humidity Sensor
- Light Sensor
- Water Reservoir Level Sensor
- Ultrasonic Object Sensor (Long Range)
- Infra-Red Object Sensor (Long Range)
- Infra-Red Interaction Sensor (Short Range)
- Ground IR Sensor
- Accelerometer

- Plant Sensor Interface (Master)
- Navigation Sensor Interface (Slave)
- Power Block Local Regulation
- Audio Amplifier & Speaker
- GPS Receiver
- WiFi Module
- LEDs

Motor Control Block (P12017)

Translational Movement

Location

WiFi

Status Indicators

Primitive Communication