

Environmental Sensor Pod (EVA Pod)

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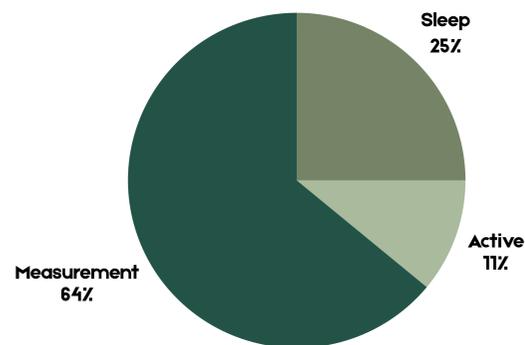
Product Overview

The NASA EVA Pod has two modules associated with it: the EVA Pod and a mushroom-shaped off-gassing and soil sensor.

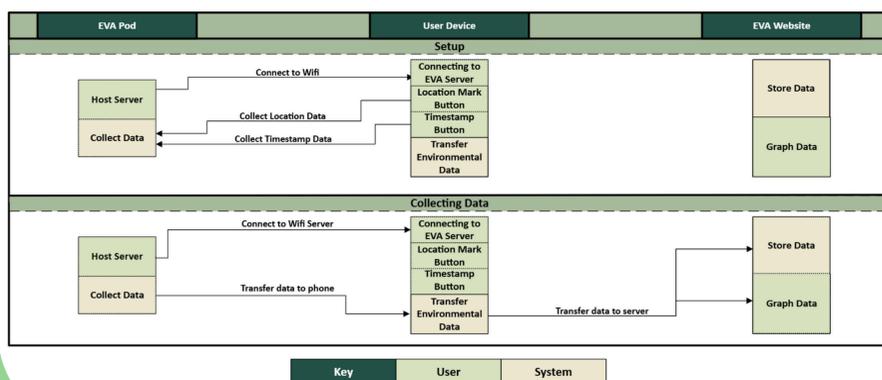
- Sensors utilized in the EVA
 - Temperature, Humidity, Pressure, and Gas (BME688)
 - Light (VEML 7700)
 - Current (INA219)
 - CO2 (U21000001)
 - RS485Max Transceiver Chip Module
- Sensors utilized in the Mushroom
 - 3-in-1 Soil Sensor (THPH-S)
 - 4 Gas Sensors: MQ-8 Hydrogen, MQ-4 Methane, MQ-135 Air Quality, and MQ-7B Carbon Monoxide
- Each module has its own 5V 8AH Li-ion battery

Power Budget

- EVA Pod is collecting data 6 times a day
- Gas sensors are running for 5 minutes every 24 hours
- Battery Life Estimate: Estimated to last 31 days for the EVA Pod and approximately 6 days for the Mushroom

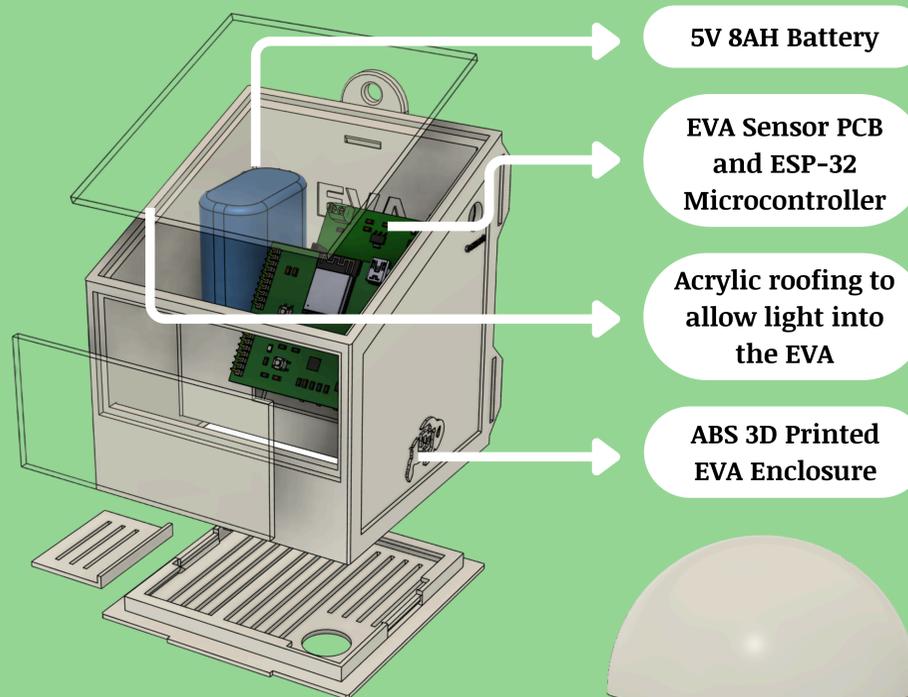
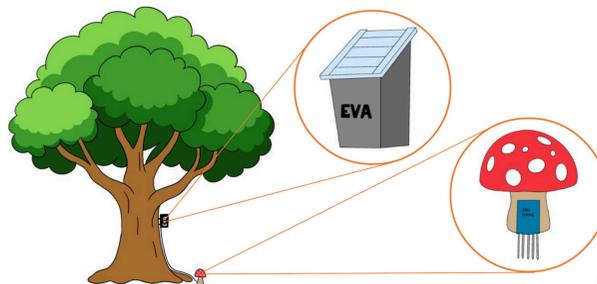


Data Flow



Objective

The NASA EVA Pod is designed to autonomously collect environmental data over several weeks, providing comprehensive background information. It works in tandem with the NASA STELLA Module, a hand-held device used to capture key environmental measurements during field visits, allowing for detailed data comparison.



Mushroom MQ Sensor PCB

ABS 3D Printed Mushroom Enclosure

3-in-1 Soil Sensor

5V 8AH Battery

User Interface

- Data Display Website:
 - Uses a Google Maps API to upload EVA Pod and NASA STELLA results to a shared website.
 - Allows comparison of STELLA's hand-collected data with EVA Pod data.
 - Supports Latitude and Longitude inputs to visually map which STELLAs correspond to specific EVA Pods.

