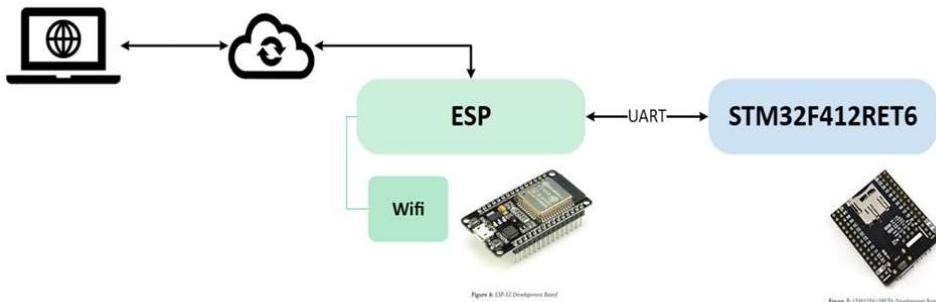


# Self-Reviewing Report

## I. All Tasks Done Throughout the Season:

### I. 1 Vehicle-to-Cloud Communication Setup

- Established communication between the ESP32 and STM32F4. My responsibility was exclusively managing the ESP32 side of communication.
- Configured the ESP module to interface with a Wi-Fi network.
- Transmitted received data by the ESP to the cloud in a standard form.



### I. 2 Implementation of a basic cloud system

Developed a simplified cloud-based system to receive and store key parameters from the ESP32. Additionally, implemented the required scripts to retrieve this data from the cloud using Python and PHP.

```
{
  "ID": "89",
  "left_inverter_max_temp": "120.00",
  "right_inverter_max_temp": "0",
  "ambient_temperature": "52.00",
  "car_speed_gauge": "80.00",
  "lat": "45.70",
  "lon": "10.50",
  "yaw_rate": "7.50",
  "baro": "131.69",
  "heading_angle": "208.84",
  "heading_dir": "West",
  "left_wheel_spd": "58.18",
  "right_wheel_spd": "57.36",
  "left_mosfet_1": "65.15",
  "left_mosfet_2": "68.49",
  "left_mosfet_3": "67.65",
  "left_motor_temp": "75.45",
  "right_mosfet_1": "91.89",
  "right_mosfet_2": "84.41",
  "right_mosfet_3": "91.34",
  "right_motor_temp": "82.72",
  "total_voltage": "105.12",
  "total_current": "4.34",
  "power_consumed": "13.92",
  "energy_consumed": "35.69",
  "soc": "81.90",
  "turnright": "1",
  "turnleft": "1",
  "lights_v1": "1"
}
```

### I. 3 Car's dashboard website-based application

The Car's Dashboard Website has been developed using PHP programming language.

The dashboard provides real-time parameters, designed to assist the driver in monitoring the vehicle's status



## 2. Rate the tasks

Task	Completeness (1-5)	Enhancements
Vehicle-to-Cloud Communication Setup	4	none
Implementation of a basic cloud system	5	Subscribe to a powerful server to reduce the latency
Car's dashboard website	4	Add the auxiliary system sensors to the dashboard (e.g., turn right)

## 3. Tasks to be done in the remaining season

1. Apply more test patterns and real patterns to verify the Communication Setup between the ESP32 and the STM32
2. Improve and measure the exact latency between the ESP32 and station in real data scenarios.
3. Add the auxiliary system sensors to the dashboard (e.g., turn right).