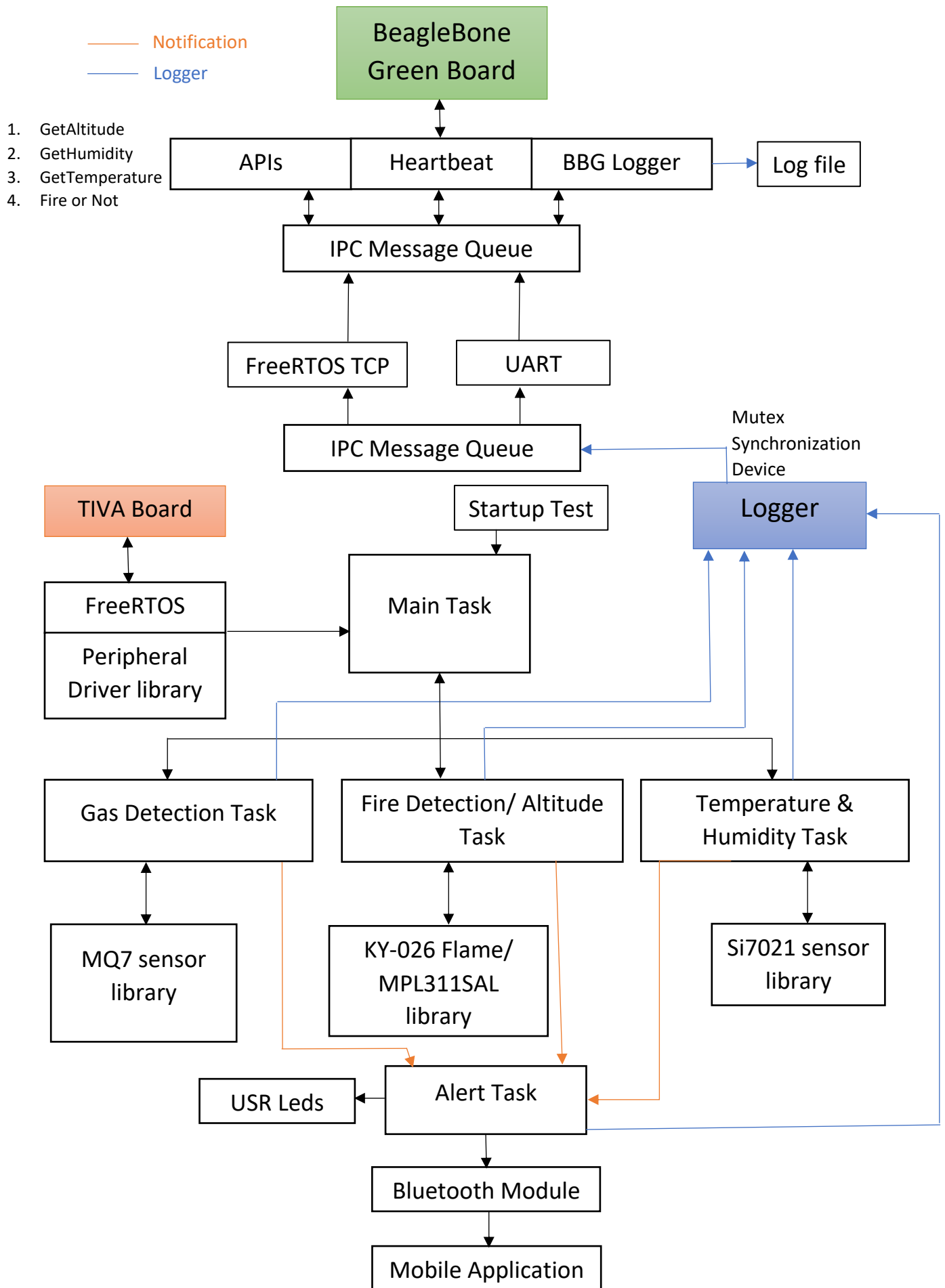


## APES Project 2

# Smoke and Fire Detection System

Team members:

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## TASK NAMES AND FUNCTIONALITIES:

### Main Task:

This task is the initial main task which is responsible for the generation of five tasks

- 1) Fire Detection Task
- 2) Gas Detection Task
- 3) Temperature and Humidity Task
- 4) Alert Task
- 5) Logger Task

### Fire Detection Task:

This task aligns with the KY026 Flame Sensor Module. It will detect the flame level and will give the alert in case of fire occurrence.

### Gas Detection Task:

This task aligns with the MQ7 Gas Sensor. It will detect the presence of carbon monoxide in the concerned area. It will also give out the alert in case carbon monoxide level increases above some threshold value.

### Temperature and Humidity Task:

We are planning to use humidity parameter of the Si7021 Temperature and Humidity Sensor and this task corresponds to the same. This task is responsible for continuous monitoring of the humidity and raise an alert if humidity increases above some level.

### Alert Task:

This task is responsible to get notified from any of above three mentioned tasks in case the value increases above some threshold. In that case. This task will send out an alert by turning on LED. This can be achieved by xTaskNotify and xTaskNotifyWait FreeRTOS APIs.

### Logger Task:

The logger task logs the data from gas detection, flame detection and humidity task after certain interval of time. This can be achieved by xTimerCreate and Software timer functionality of FreeRTOS.