**LORA PROJECT MANUAL**

**Debug Indicators**

* O->displays when 30 seconds motion detection process is completed
* B->displays when button is pressed
* ov->displays when program is inside motion detection checking logic
* Md->displays if motion is detected by motion detection checking logic
* NMd->displays if no motion is detected by motion detection checking logic
* MdFC->displays when program is inside server sending logic for motion detection
* NMdFC->displays when program is inside server sending logic for no motion detection
* NGS->displays when gps antenna is not connected properly
* nm->displays If our device is not connected to server using lora gateway
* m-> displays If our device is connected to server using lora gateway
* NVD->display if gps is not getting valid data
* aerr->displays if accelerometer is not working

**Working of device**

* When the device will be power on,all the peripherals which are connected to microcontroller

will be configured.Here the peripherals are GPS,accelerometer and lora module ic’s.

* After configuring peripherals device will start motion detection process
* In motion detection process device will detect if the object to which device is connected is doing any motion or not for certain time interval, in current firmware time interval is set to 30s.
* If object is not doing motion then after 10 seconds of completion of motion detection process device will send gps data containing current location latitude,longitude and altitude data to server.Current location latitude,longitude and altitude data will only be send to server if gps is placed correctly in open area and wired properly otherwise device will send error code

“0,0,0” to server describing that gps is not getting valid data.One such possible situation when gps will not get proper data is when it’s antenna is not connected properly or gps is not placed properly.

* If object is doing motion then after 60 seconds of completion of motion detection process device will send gps data containing current location latitude,longitude and altitude data to server.
* A button is placed on the device to send current location latitude,longitude and altitude data to sever instantly.
* If device is in working mode but unfortunately connection between device and server gets lost

In such case device will not be able to send current location latitude,longitude and altitude data to server.To tackle such case device will perform reconnection process in which it attempt to reconnect to server.If device is not able to connect to server after reconnection process gets over then LED will glow indicating that device is not connected to server.LED will

not glow if device is successfully connected to server.