**PROJECTED UPDATION LIST OF GPS MODULE V-1.0 ACCORDING TO RSP TECHNICAL SPECIFICATION**

Below mentioned list are projected updations required upon current version of GPS module as per RSP technical specification and discussion with RSP’s concern person on site visit:

* Dedicated LED indication for module working status.
* Battery remaining charge in 5 levels through LED & Signal strength in 5 levels through LED.(Not included in RSP TS)
* Unique ID for each GPS tracker written on each device; preferably IMEI number of each module.(16-digit)
* Dedicated LED indication for GPS and GSM/GPRS network up or down status. (Not included in RSP TS)
* Dedicated UART port for URCs from modem. Main UART of modem connected with controller for AT command communications and another UART for incoming URCs from modem.
* Integration of hall sensor circuitry with PCB for firm metal attachment/de-attachment indication.
* Integration of charging circuit with PCB along with dedicated LED indication; Blinking when charging and steady ON when fully charged and auto cut-off from charging when fully charged.
* Integration of SIM card detection PIN with GPIO interrupt of controller
* Integration of RI (Ring Indicator) with GPIO interrupt of controller.
* Use of On board external flash storage for configuration file store and route path data storing in absence of network.
* Bi-directional communication with server needs to be implemented in firmware of the device. Like, data upload frequency coming from server, response for each data send to server etc.
* Modification in data packet sent from the device is needful like, inclusion of IMEI no, sequence no, metal attachment/de-attachment status etc.
* Scope of SMS communication need to release in the firmware of the device for any future use.
* Capacity of battery need to increase in order to enhance device up time as long as 72 hrs minimum.
* Magnet attachment should be as strong as vibration or jerk resistive for big vehicles. In any case, magnet atachment would not be released for heavy jerking.
* There sould be a mechanical lock or clip like system in order to release the device from a vehicle so that only known or security personel could uninstall it,not any other person.
* The device should not be powered off easily once it is installed in a vehicle. In order to power off, the device must unattach first from the vehicle. User must get the power on and off notification for each device. In order to meet that we can place power button on the back side of the device(Suggestion from RSP).
* We have currently GPS position inaccuracy upto 15 meters. RSP needs position inaccuracy less than equals 10 meters. In order to meet that we may increase GPS antenna gain or realtive changes.