1.The devices would transmit data to the Backend Control Centre using 2G/3G/4G

wireless connectivity (with SMS fall back) as per the protocol provided in

respective sections (Section 6).

2. The data from the devices would travel over the wireless telecom service provider network and finally get delivered at the Backend Control Centre. The detail about Device to Backend Communication Mechanism is mentioned in Section 7.

3. Device shall support standard minimum I/Os as mentioned: 4 Digital, 2

Analogue and 1 Serial Communication (e.g. RS232) for interfacing

external systems (E.g. Digital input for Emergency request button

interfacing.

4. Device shall be capable of transmitting data to Backend Control Server

(Government authorized server) via Wide Area (Mobile)

Communications network (GSM/GPRS) as per Communication Protocol

in Section 4.

5. Device shall be capable of transmitting Position, Velocity and Time

(PVT data) along with heading (direction of travel) to a Backend Control

Server (Government authorized server) at configurable frequency as per

Communication Protocol of Section 4.

6. The fixed frequency shall be user configurable, minimum frequency shall

be 5 sec during vehicle operation and not less than 10 minutes in

sleep/IGN OFF) as per the protocol defined in Communication Protocol

of Section 4.

7. Device shall be capable of transmitting data to minimum 2 different IP

addresses (1 IP address for regulatory purpose (PVT data) and 1 IP

address for Emergency response system other than the IP’s required for

Operational purpose.

8. On pressing of Emergency button, the system implementing VLT

function shall send emergency Alert (Alert ID 10 as mentioned in Sub-

section 4.2.1 of Communication Protocol Section 4) to the configured IP

address(s) as per the Communication Protocol mentioned in Section 4. In

the absence of GPRS network, the emergency alert shall be sent as SMS

message along with vehicle location data to configured control center

number(s). The SMS shall consist parameters as given in Sub-section

9. The Device shall have a unique identifier for identifying the VLT device

and data. The unique ID shall be stored in a read only memory area so

that it cannot be altered or overwritten by any person. The unique

identifier may be Vehicle Identification number or IMEI (International

Mobile Station Equipment Identity) Number.

3.1.1.13 Device shall store/write the registration number of the vehicle in the

internal nonvolatile memory.

3.1.1.14 Device shall have an Embedded SIM.

3.1.1.15 Device shall be designed to operate between 8VDC and 32VDC using

vehicle battery input voltage range 12 /24Volts.

Device shall have a sleep mode current ≤ 20 mA (If the function is

implemented in a dedicated system/device).

Device shall be dust, temperature, vibration, water splash resistant, IP 65 rated or better, tamper proof as per Section 6.

10. OEM to protect ISO 15170-B1- 3.1-Sn/K1 Socket (Female) Connector