

# The Odisha Gazette

EXTRAORDINARY  
PUBLISHED BY AUTHORITY

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No. 1813, CUTTACK, WEDNESDAY, OCTOBER 19, 2016/ASWINA 27, 1938

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## STEEL & MINES DEPARTMENT

### NOTIFICATION

The 19th October, 2016

No.8578–IV(A)SM-05/2016/SM.— Whereas, the registration of mineral carrying trucks is currently being made as per notification No. 9071, dated the 22nd November, 2011 issued under sub-rule(15) of rule 10 of the Odisha Mineral (Prevention of Theft, Smuggling and Illegal Mining and Regulation of Possession, Storage, Trading and Transportation) Rules, 2007 (hereinafter referred to as the OMPTS Rules, 2007).

And, whereas, the State Government have decided for introduction of a system for Global Positioning System (GPS) based tracking of mineral carrying vehicles on compulsory basis.

Now, therefore, in exercise of the powers conferred by sub-rule (15) of rule 10 of the OMPTS Rules, 2007 the State Government do hereby issue the following directions, namely:—

- (1) No vehicle shall carry or transport any mineral ore to which the Mineral Conservation and Development Rules, 1988 apply unless, the said vehicle has been fitted with a Vehicle Tracking Unit (VTU) conforming to the following specifications duly supplied or certified by an empanelled vendor.
- (2) The empanelled vendor is to be selected through empanelment process by the Odisha Space Applications Centre (ORSAC), the nodal agency of the State for providing remote sensing and Geographic Information System (GIS) application solutions to all Government Departments vide resolution No. 3765–ST-III-ORSAC-6/2009/ST., dated the 30th July, 2009 of Science & Technology Department, Government of Odisha.
- (3) Definition: Vehicle Tracking Unit (VTU) is an industrial and automotive grade product with aluminum casing, Integrated with Global Positioning

System (GPS) and General Packet Radio Service (GPRS), multiple input/outputs and geofence led. All the abbreviated expressions should be expanded and mentioned in the “definitions” clause(3).

(4) The Vehicle Tracking Unit must conform to the following specifications namely:—

**(a) General Features: It must have —**

- (i) Global Positioning System (GPS) with any augmentation type i.e. GPS Aided GEO Augmented Navigation (GAGAN) adopted by ISRO, Govt. of India (Location, speed, heading, timestamp) data polling and frequency capability of less than or equal to 10 sec;
- (ii) location on demand on General Packed Radio Service (GPRS)/Short Messaging Service (SMS);
- (iii) non-volatile memory to store min 10,000 positional log;
- (iv) configurable backup SMS facility in case of GPRS failure;
- (v) capability to send serving and adjacent cell identification (ID) as well as Network Measurement Report (NMR); and
- (vi) ability to send data at least 2 (two) Internet Protocol (IP) addresses simultaneously.

**(b) GPS Module Specifications: It must have —**

- (i) parallel GPS Receiver-20-Channel or more;
- (ii) acquisition sensitivity equal to or better than (-) 148 Decible milliwatt (dBm);
- (iii) tracking sensitivity equal to or better than (-) 165 dBm;
- (iv) accuracy of Less 6m Positional Accuracy 2(two) Digital Root Mean Square (DRMS) on ground or 2.5 m Circular Error Probability (CEP) on ground;
- (v) the ability for Hot start <30s;
- (vi) the ability for Cold start < 40s;
- (vii) the output as per National Marine Electronics Association 0183 (NMEA 0183); and
- (viii) assisted GPS (A-GPS).

**(C) Communication Module or Network Specifications : It must have—**

- (i) the in-built Quad band GPRS module/Modem.
- (ii) the device which should support the Machine to Machine (M2M) embedded Subscriber Identity Module (SIM)and M2M Robust Plastic SIM to survive the automotive operational requirement such as

vibration, temperature and humidity and provide long life span with at least 10 (ten) years life.

- (iii) the High Stress memory support > 2 Million Erase (E)/ Write(W) cycles per life,
- (iv) the Outside of Hardware Security Module (HSM) 500k Erase/Write cycles;
- (v) the Multi Slot GPRS;
- (vi) the GPRS class 10 or above;
- (vii) the ability to support all –SMS, voice, Data, GPRS, Transmission Control Protocol (TCP)/Internet Protocol (IP) with multi network switching and Over the Air (OTA) network update;
- (viii) the devices to support at least 2 (two) different network provides for GPRS connectivity and the device should try and shift between various service providers in case of GPRS failure.

**(d) Power Characteristics: It must have the following power sources and battery back up:—**

- (i) Power Source – Vehicle Battery input voltage range 8-32 volts; and
- (ii) Battery back up of minimum of 4 hours @ 60 seconds transmission.

**(e) Environment Variables: It must have the followings environment variables, namely:—**

- (i) Temperature range : -10° C to 85° C;
- (ii) Humidity Level : 5% to 95% non-condensing;
- (iii) Dust, Temperature, vibration and water resistant, Tamper proof;
- (iv) Ingress Protection-Totally protected against dust and protected against the effect of immersion between 15cm and 1m (IP 67) rated or better.
- (v) Automotive grade unit with components and manufacturing process as required for automotive use.

**(f) Antenna: It must have —**

- (i) internal GPRS antenna; and
- (ii) internal GPSA antenna.

**(g) Port or Sensors (External I/O): The port or sensors (external I/O) must have —**

- (i) 4 (four) or more digital inputs;
- (ii) 2 (two) or more digital outputs (for relays, sirens etc.);
- (iii) 1 (one) or more analog inputs (For analog inputs like fuel, temperature etc.);
- (iv) Ignition Sensing;
- (v) 1 (one) No.s RS 232 port; and
- (vi) 3 (three) Axis Accelerometer.

**(h) Geofencing: It must —**

- (i) be capable of storing 15 or more Geo fences; and
- (ii) have the facility to update Geo fence master over the air.

**(i) Other features —**

- (i) Device should be capable of sending a packet to at least 2 (two) different IP's;
- (ii) Status Light Emitting Device's (LED) to indicate Power, GPS and GPS status;
- (iii) Over the Air Download of firmware as well as configuration parameters; and
- (iv) Remote administration and firmware over the air.

(5) The Director of Mines is authorized to decide and publish the list of empanelled vendors for the supply, installation and maintenance of Vehicle Tracking Unit (VTU)s for information of the owners of vehicles carrying minerals/ores in consultation with ORSAC.

(6) Installation of Vehicle Tracking Units supplied by any vendor empanelled by the Director of Mines shall be mandatory for all vehicles registered to carry minerals or ores with effect from the date of expiry of two months from the date of publication of the list of empanelled vendors by the Director of Mines.

By Order of the Governor

R. K. SHARMA

Principal Secretary to Government