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सत्यमेव जयते

Government of India

ITEM SPECIFIC GUIDELINES
&
Schedule of Technical Requirement
FOR
MANUFACTURE AND SUPPLY

OF

GPS Based Oscillation Monitoring System (GPS-OMS)

ट्रैक मशीन एवं मानिटरिंग निदेशालय

अनुसंधान अभिकल्प एवं मानक संगठन

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Designation	JRE/SSRE	ADE/DTM-1/EDTM	PED/Infra-1

1.0 SCOPE

1.1 This document sets forth general, operational, technical and performance requirements for GPS based Oscillation Monitoring System.

1.2 Whenever this specification is referred by number only, without mentioning the year of issue, the latest issue of the specification is implied.

1.3 This specification is intended chiefly to cover the technical, material and functional requirements with testing details provisions only and does not cover the necessary provisions of a contract. In this specification GPS based Oscillation Monitoring System will be termed as "OMS".

1.4 The schedule of technical requirements covers the norms for manufacture and supply of GPS Based Oscillation Monitoring System (GPS-OMS).

1.5 Supplier is fully responsible to maintain the quality of product supplied to Indian Railways as per specification.

1.6 The OMS shall be capable of recording location referenced Vertical and Lateral accelerations of Railway Rolling Stock, running on the track.

2.0 REFERENCE DOCUMENTS:

Following standards/codes have been referred to in this specification. Updated copies of these standards/codes shall be available with the manufacturer.

(i) Latest ISO Apex Documents of RDSO.
(ii) Latest specification of GPS Based Oscillation Monitoring System

3.0 General and Manufacturing Facilities:

The vendors seeking approval shall comply all the below mentioned requirements.

3.1 The firm should possess experienced and sufficient man power like manager, supervisors, laboratory in charge, quality controller and workmen. The necessary qualification of the work force should depend upon their job requirements. The firm should maintain approved QAP, copy of which should be available at the firm's premises. The specification and drawings along with all the IS/BIS specifications mentioned in GPS Based Oscillation Monitoring System (GPS-OMS) should be available at site for reference. The firm should preferably possess a valid ISO certification.

3.1.1 The firm should have adequate Space for stacking/storage of Raw material & finished product. The lay out plan of firm should be available.

3.1.2 Covered area free from dampness and humidity with adequate space for storage of related components.

3.1.3 The firm should have environment conducive to the production of Quality goods. (Orderliness, lighting, cleanliness of around working conditions etc.)

3.1.4 The weighing facilities for measuring various raw material constituents and the product at various stages.

3.1.5 Facilities for installation of components.

4.0 M&P for manufacturing

i. Burn in test chamber for PCB.
ii. Drill machine
iii. Hand grinder, tool grinder, angular grinder.
iv. Temperature controlled Soldering station , SMD Soldering and re-work station
v. Solder dispensing system for repair of card.
vi. Functional testing of PCB's preferably with computer.
vii. Green masking machine for PCB.
viii. Ultrasonic cleaner for PCB.
ix. Test bench.
x. Lathe machine
xi. Shaper machine
xii. Power hacksaw
xiii. Welding set portable (welding machine)
xiv. Digital Multi Meter with 3/4 Digit True RMS, Regulated Power Supply 0-200 Volts, Oscilloscope 200MHZ

5.0 TESTING FACILITIES & INFRASTRUCTURE REQUIREMENT FOR QUALITY ASSURANCE

5.1 : For GPS Based Oscillation Monitoring System (GPS-OMS)

i. The firm should have good facility for storing the raw materials and finished product so as to maintain them in a healthy condition.
ii. ISO certification.
iii. The firm should have capability to open service Centre /branch offices, one each in eastern, western, northern, southern and central regions within six months from date of approval of prototype, so that they can attend the reported failure. All service Centre's should be manned by experienced/competent staff.
iv. Environmental test chamber -20°C to 150°C and up to 97% RH.
v. Circuit design and PCB art work design work station for PCB layout.
vi. Personal computer with printer.
vii. Dust free environment for the assembling of PCB's.
viii. Temperature controlled wave soldering machine with auto fluxing facilities for through hole technology (THT) components and SMD technology.

5.2 Steel Scale (Linear), weighing machine, thickness gauge should be available.

5.3 Any other facility required for testing method given in the specification. There should be a system to ensure the traceability of the product from raw material sample to finished product stage. This system should also facilitate to identify the raw material composition from the finished product stage.

5.4 There should be QAP for the product detailing following aspects:-

i) Organizational chart
ii) Flow Process Chart
iii) Stage inspection details
iv) Plants and machinery as per STR.
v) All the relevant specification and IS Standards should be available with the firm.

6.0 Major Components details:

SN	Name of component	Self-make	Procured from outside agency	Remark
1.	PCB designing & soldering	Drawing details, manufacturing details should be available.	Details of Outside agency should be available.	Raw material / equipment shall be procured only from the reputed & well-proven sources, conforming to relevant standards.
2.	Encloser Assembly	-Do-	-Do-	
3.	Software/ GUI Based Data Acquisition and	-Do-	-Do-	

	Analysis Software			Critical components shall be procured from reputed OEMs or their accredited agents / ROSO approved sources.
4.	Accelerometer assembly	-Do-	-Do-	
5.	Transducer box Assembly	-Do-	-Do-	
6.	Android Tableted/Laptop	-Do-	-Do-	
7.	Wireless dongle	-Do-	-Do-	
8.	Power bank	-Do-	-Do-	
9.	USB charger	-Do-	-Do-	
10.	two/Dual Axis acceleration sensors (lateral as well as vertical)	-Do-	-Do-	
11.	A signal conditioner with suitable low pass filter	-Do-	-Do-	
12.	Data acquisition system and GPS module.	-Do-	-Do-	
13.	Event Marker	-Do-	-Do-	
14.	GPS Receiver Module	-Do-	-Do-	
15.	Wiring diagram	-Do-	-Do-	
16.	Battery holding management	-Do-	-Do-	

7.0 Working manual:

The firm should have working manual of product.

i) Operating manual
ii) Maintenance manual
iii) Service manual
iv) Parts manual

8.0 Power availability (KVA): Following document should be available.

(a) General allotted capacity
(b) Standby generator and its capacity, if available.
(c) Name the party/person in whose name the power is sanctioned and your agreement with the party/person (Support with documents)

9.0 Calibration Record :

SN	Name of the machine & quantity	Year of manufacture	Capacity	Date of calibration	Due date of calibration

10.0 Details of Manpower:

i) The firm should have separate in-charge of Quality Control & production.
ii) The firm should have minimum 01no. skilled staff and 02 nos. un-skilled staff.

SN	Name of Staff	Designation	Qualification	Experience

11.0 Raw material record:

The firm should maintain list for raw material/bought outs.

SN	Name of Item	Quantity	Date of Incoming	Approved source (Yes /No)	Details of source

12.0 Document:

i) Ownership details of the firm should be available.
ii) The firm should have necessary updated specifications, ISO apex. Document, IS Codes, Drawings, STR/Specification guidelines.
iii) The firm should possess digital signature & its registration with IREPS.
iv) The firm should have valid SSI/NSIC/ Factory license.
v) The firm should have valid GEM registration.
vi) The firm should have Local content details.