**TECHNICAL SPECIFICATION FOR GPS BASED VEHICLE TRACKING SYSTEM AT RSP**

**CHAPTER-1**

**Introduction**

**1.1 INTRODUCTION :**

Rourkela Steel Plant (RSP) was established in 1959. Rourkela Steel Plant has 6 major commercial gates in which 3rd party vehicles enter/exit to deliver or pickup goods from various locations/ different department and 3rd party vehicle for internal transportation. There is a large road network spread inside RSP.

|  |  |
| --- | --- |
| S.No. | Gate |
|  | Traffic Gate |
|  | Hirakud Gate |
|  | New Tarapur Gate |
|  | SSSY Gate |
|  | Slag Granulation Plant Gate |
|  | Hot Strip Mill-2 Gate |

The major department of RSP as follows

|  |  |  |  |
| --- | --- | --- | --- |
| S.No. | Department | S.No. | Department |
|  | Raw Material Handling Plant(RMHP) |  | Sinter Plant-3(SP-3) |
|  | Sinter Plant-2 (SP-2) |  | Blast furnace-5 (BF-5) |
|  | Steel melting shop-2 (SMS-2) |  | Calcining Plant-2 (CP-2) |
|  | Tonnage Oxygen Plant-2 (TOP-2) |  | Coke Ovens (CO) |
|  | Coke oven Battery-6 (COB-6) |  | Coal chemical Department (CCD) |
|  | Sinter Plant-1 (SP-1) |  | Instrumentation & EMD building |
|  | Blast furnace |  | Lime Dolamite brick plant (LDBP) |
|  | PS-2 Store |  | Communication engineering department (CED) |
|  | Traffic & Raw material (TRM) |  | Power Distribution (PD) |
|  | Steel melting shop-1 (SMS-1) |  | Special plate Mill (SPP) |
|  | Plate mill (PM) |  | Central Store |
|  | Modernization Store |  | Cold rolling Mill (CRM) |
|  | Hot strip Mill-1 (HSM-1) |  | Hot strip Mill-2 (HSM-2) |
|  | New Plate Mill (NPM) |  | Silicon steel Mill (SSM) |

The tracking route may be created from any gate to any department or vice versa or any department to department inside plant for internal purpose.

Rourkela Steel Plant intends to procure and commission a system to track movement of road Commercial vehicles inside the Plant Works area by installing GPS based Vehicle tracking system. The devices shall be installed on the vehicles at the gates during entry inside the Plant and will be handed over during exit. The GPS tracking system(SIM based) will provide entry/exit of vehicle data including their route tracking inside plant. The System shall be integrated with SAP & ERP system of RSP so that the vehicles can be linked to Purchase or Delivery orders.The system shall be monitored on PCs over URL application and on Mobile/Tabletsover android/IOS based mobile application.

Initially the system shall be installedwith 200 GPS trackers. This system will be in operation for 3 months after installation and commissioning and checked for operation. Service of additional GPS tracker shall be installed at RSP at the existing rate after satisfactory operation of the system for 3 months.The service of GPS trackers shall be extended for minimum 5 years. During this 5 yearsperiodone time cost of GPS tracker and quarterly rent(towards service charges) per tracker shall remain fixed. The service may be extended after 5 years on mutual agreement basis between successful bidder & RSP. Development of new route due to addition of new gates& departments or additional development of route for existing gates& departments shall be under the scope of successful bidder during the 5 year period.

**1.2INTENT OF SPECIFICATION**

1. The intent of this tender specification is to furnish required details for enabling the bidder to submit their best offers (technical & commercial) as per the scope of work mentioned at chapter 2.0, technical specifications at chapter 3.0, and commissioning & performance guarantee at chapter 4.0.
2. This tender specification shall be read in conjunction with other documents enclosed with the NIT.
   1. **SITE VISIT AND OTHER REQUIREMENTS.**
3. The bidder shall visit the site, study available drawings/ documents and discuss with the employer/ project engineer, if required, regarding any technical clarification and get satisfied with respect to the nature and extent of work involved. The bidder shall also obtain first-hand information regarding location, work terrain, climate condition, railways, roads, airports and communication etc. before offering the bid for the job.
4. All materials/ equipment/ machinery/ fabricated items to be used in the subject package shall be according to the specification given herein and any deviation should be clearly brought-out in schedules of exclusions and deviations attached with this TS. No mention of exclusions and deviations shall mean that the bidder has accepted the scope and specifications given herein.

**1.4DRAWINGS AND TECHNICAL DOCUMENTS TO BE SUBMITTED WITH THE OFFER.**

The Bidder shall submit along with the bid, drawings / documents / data as per the following details:

1. Data sheet of GPS tracking devices
2. Manufacturers' catalogues/ brief technical descriptions of offered equipment and bought-out items
3. Schedule of quantity of equipment
4. Delivery/ commissioning schedule (Bar chart/PERT Network).

**1.5 SCHEDULES TO BE DULY FILLED AND SUBMITTED WITH THE OFFER**.

1. Declaration of site visit
2. List of exclusions
3. List of deviations
4. Details of authorized person of bidder during tender evaluation.

**CHAPTER – 2**

**SCOPE OF WORK**

* 1. **SCOPE OF WORK:**

1. The bidder shall be responsible for execution of jobs envisaged for “ Design, supply , installation and commissioning of GPS based tracking system for commercial vehicles inside Rourkela Steel Plant ” on turnkey basis.
2. The scope of work shall cover design, engineering, procurement, manufacture, fabrication, supply, transportation, insurance, storage, handling, erection, testing, commissioning, stabilization and demonstration of performance guarantee of the complete GPS based tracking system and equipment to the satisfaction of the employer. The GPS based tracking system equipment supplied shall be new and best of its kind. The systems and components shall be designed as per specification and shall conform to all latest relevant statutory norms/ guidelines. Preparation of Design and detailed engineering drawings and documentation, bill of materials with specification as per the relevant standard.
3. Interfacing with SAP/ERP system for getting Vehicle details, vehicle source/destination, Gate entry/exit details etc through a Gate Way PC with required fire wall/protections.
4. Creation of Digital Map of Rourkela Steel Plant
5. Creation of designated route for vehicles
6. The full road network of RSP has to be mapped using live locations using Google maps or similar tools. Route Segments should be created by clicking starting/end points on the map. Any cost on account of License etc shall be borne by the vendor.
7. Creating Geo-Fence for the plant Works area and ability to create localised Geo-Fenced area within the work area.
8. Vehicle movement data should be stored on the server for minimum 8 years. If requirement arises, for specific vehicles, provision to store the data for a longer period should be done.( for accident / legal cases etc).
9. The database servers which shall be required in the solution shall be either on cloud or in bidder own premises (in India only) provided all statutory government rulings regarding data localization, security, high availability, etc are met. This may be clearly mentioned in the Bid & cost shall be included in Bid. Undertaking / Proof of data localization may be submitted
10. Development/customization of application software in-line with TS.
11. Installation of PCs, Monitor, Charging station etc at designated location.
12. Interfacing of PCs with RSP network
13. Proper Laying & termination of power cables, Network cables etc
14. Supply of all erection accessories, consumables and miscellaneous material not indicated in specification but required for completing the job in all respects.
15. All items to be supplied strictly from the approved make list provided in Annexure. Item for which approved make is not specified; approval for supply shall be taken from RSP on case to case basis during engineering.
16. All the manufacturing/ fabrication works shall be carried out only on the basis of approved drawings and schemes or as directed by the employer. Approval given by the employer shall not relieve the bidder of any obligations under the contract.
17. Any equipment/ work/ service, which may not have been specifically mentioned in this document but is necessary for completeness of the work, shall be clearly brought out in the offer and included in their scope of work.
18. Civil Work: Civil works like chipping/cutting of floor/walls or making grooves or laying pipes/cables, making holes/openings through walls, ceiling or floor, grouting of frames, hooks on walls/ceiling etc required for execution of work shall be included in the scope. After installation, the surfaces shall be made good by plastering and painting to the original shape and finish.

**2.2 Scope of Services.**

1. Arranging inspection of equipment at manufacturer’s/ sub-supplier’s works as per approved QAPby RSP personal along with bidder before dispatch of material/equipments.
2. Receiving of equipments from bidder’s stores/employer’s stores and transportation to site.
3. In order to avoid damage due to multiple handling, all the supplied equipments and items are to be diverted to CED after required documentation at modernization stores and will be kept under bidder’s custody. Watch and ward at site is under bidder scope. Construction of suitable storage facility/space and site construction office with all required facilities, illumination etc inside the Plant is under bidder scope. Suitable open space shall be provided to the Successful Bidder for this purpose.
4. Unloading of equipment at site, unpacking, cleaning up, and checking for completeness and transportation to site for erection.
5. Supply of all erection consumables like oil, kerosene, cotton waste, oxygen and acetylene gas cylinders, electrodes, asbestos sheets, asbestos ropes, sealing compounds etc.
6. Arranging tools, tackles, construction & erection machineries, cranes and other handling & testing equipment, scaffolding, temporary platforms, erection fixtures, skilled/semi skilled/unskilled personnel etc.
7. Arranging, rendering equipment and personnel to employer for checking the correctness of the work in progress.
8. All equipment shall conform to the relevant provisions of Statutory and other Regulations in force such as Indian explosives Act, Indian Factories Act, Indian Boiler Regulation, State Factories Act, Indian Electricity Rules, Central Pollution Control Board, Indian Weights & Measures Act as applicable. The bidder shall provide all necessary assistance to the employer to get all the installations within the scope of supply approved by the concerned legal authorities.
9. Any rectification / modification of existing facilities required during erection of equipment.
10. Sundry works such as making of holes, grouting, chiseling of holes/ opening through walls, ceiling, floors, steel structures, etc. including providing inserts as per requirement, cleaning of site periodically and at the time of final handing over is in bidder’s scope.
11. Periodic transportation including Loading, unloading and spreading the unserviceable material, debris & surplus excavated earth with all lift and lead within plant premises unless otherwise specified.
12. Safety,covid-19 guidelines and security of personnel & equipment during transportation, installation, commissioning and testing as per RSP safety rules and regulation without violation.
13. Site survey for availability of mobile network to be done by the vendor.
14. The bidder should have spares and service support centre in India.
15. Maintenance of equipments& system during the Warranty period.
16. **Comprehensive Insurance Policy** – The supplier shall take Comprehensive Insurance Policy for all the equipment’s covered under Supply & Erection Plan for safe erection, testing, commissioning & stabilization of the above system.
17. **Warranty/CMC :**During 5 year contract period(from the date of commissioning) the following services are to be delivered
    1. Warrantyfor total system functioning including PCs, UPS, printers & LED Display units for a period 3 years.
    2. Comprehensive maintenance of GPS trackers and all its related software (local and cloud based) for a period of 5 years
    3. During thisCMC/Warranty period the party shall attend any breakdown calls within 24 hrs. If any defect is found in the design, engineering, materials and workmanship or of the work executed by the successful bidder, the bidder shall promptly, in consultation and agreement with the Employer and at its cost, repair, replace or otherwise rectify such defect.
    4. The warranty maintenance shall be inclusive of system administration, monitoring & trouble shooting of equipment, systems & software.
18. **Engaging Sub-contractors:** For engagement of any sub-contractor for execution of the job, the party shall take prior written approval of the executing department of RSP. All sub-contracts shall comply with the relevant rules and regulation in force in RSP.

**2.3 RSP’s SCOPE:**

1. As per availability, to be made available the drawing of existing system to successful bidder under copyright act.
2. Providing temporary power for installation & commissioning jobs. All required cabling , distribution with proper protection shall be in bidder scope.

**2.4 Implementation Schedule**

1. The project shall be implemented within a period of two (2) months from the effective date of contract up to commissioning.
2. The bidder shall submit time bar chart indicating starting and completion of all major activities Such as design procurement/manufacturing, inspection, civil works, installation, testing & commissioning. The commissioning schedule to be made considering the 24 Hrs working, accordingly the site engineer to be deputed.

**2.5 Documentation & Training**

1. Onsite training of RSP & CISF personnel (Operating & Maintenance) without any additional charges shall be in bidder scope. Training shall mainly consists carry out day to day work, install and remove devices and monitor the vehicles, respond to alerts , monitor the vehicles and use the proposed system effectively. Detailed course and duration shall be mutually worked out. Periodic refresh training shall be provided on need basis. Training Premises and infrastructure shall be provided by RSP.
2. The following drawings / documents shall be submitted by the bidder after placement of order:-

|  |  |
| --- | --- |
| S.No. | Description |
|  | Data sheets of GPS tracking equipments |
|  | Data sheets of PCs, Monitors, Printers, Network switches , UPS etc |
|  | Data sheet of Large screen LED Display |
|  | GA & Schematic drawing of Charging stations |
|  | Mobile signal strength report for different route |
|  | Operation Manual |
|  | Maintenance Manual |
|  | Any other drawing required for system |

1. Drawing / document submission methodology:

* The bidder shall submit 2 hard copies to the employer for scrutiny. After scrutiny, the comments from employer shall be given in e-mail within 7 days from drawing submission. If there is no comments/observation on drawing, same will be approved / accepted for reference and one copy shall be given to bidder. The bidder shall scanned the copy and give it to employer.
* In case, the drawing is not approved, the bidder shall prepare therevised drawing, after suitably incorporating the comments givenby employer and submit the same for approval, in 2 hard copies of the drawing to the employer for scrutiny. The above process shall be continued tillthe drawing is approved.
* Format of bidder drawing list shall have minimum following fields:-Sl. No., Employer drawing No, Bidderdrawing No, Name of consortium member, Area, Drawing/Document Name, Category (Approval/Reference), Discipline , Stage (BE/DE), Schedule date of submission, Remarks
* Editable /searchable PDF format soft copies (3 sets) on CD/DVD & 5 set of hard copy of all “As-Built”drawings (full set of drawings as per the approved drawing list) and manufacturing drawings of critical parts, spares and fast wearing partsshall be supplied by the bidder after commissioning.
* In case the proposed plant uses any process, equipment or softwarewhich is covered under any patent and SAIL / RSP is required to havethe relevant user’s license for the same, the scope of work of this tendershall include transferring such licenses to SAIL and indemnifying SAILagainst infringement of any intellectual property rights.
* All the drawing (which are to be submitted) shall be legible, proper font size and with proper

**CHAPTER – 3**

**TECHNICAL SPECIFICATION**

**3.1: Site Location & Climatic conditions**

Rourkela Steel Plant is situated in the Sundargarh district in the state of Odisha, India. It is well connected with both rail and road. The climatic condition in the vicinity of plant site is as follows:

1. Ambient temperature 50°C (maximum), 20°C (minimum)
2. Relative Humidity 100 % (maximum)
3. Rainfall Highest annual 1400 mm
4. Highest monthly rainfall 500 mm.
5. All the electrical equipments shall be derated for 50°C ambient temperature for indoor equipments.
6. All the equipment and system shall be designed considering the seismic zone.
7. Since the site is inside the steel plant which is very dusty environment, all equipment shall be dust, vermin and weather proof design.
8. All the electrical equipment / materials supplied shall be designed to work smoothly under average ambient temperature of 55°C.
9. All equipment shall be suitable for continuous operation delivering rated output without affecting system performance under variation in power supply, i.e. 230V AC +/- 10% and 50Hz +/- 5% and without exceeding permissible temperature rise over maximum ambient temperature.

**3.2: Local Conditions.**

The contractor, before submitting his bids, shall visit the site and ascertain the local conditions, labour rules, availability of approach roads/paths, traffic restrictions, and all obstructions in the area and also ascertain all site conditions and shall allow for any extras likely to be incurred due to all such conditions in his quoted prices. After the award of work, no additional claims shall be entertained on these accounts under any circumstances, whatsoever.

**3.3: GPS tracking System ComponentsSpecification :**

1. **GPS tracking Device:** The feature of device as follow

* Portable/handy for operation
* There shall be magnet for fixing it on magnetic surface. The magnet shall be strong enough to hold it during any jerk.
* There shall be system to generate alarm in monitoring system for tampering/removal of devices once installed.
* SIM based (single) for GPS tracking. Supply of SIM & its charges shall be under scope of bidder.
* GPS tracking of vehicle position at designated intervals. These Intervals can vary from 15 seconds to few minutes. Interval can be through application program under administrative login.
* Inbuilt rechargeable battery of 6000mAH or more to provide a backup of minimum 72hr at an interrogation rate of 15sec.
* Non wired & Inbuilt antenna
* location accuracy: less than or equal to 10 mtrs,
* Operating temperature: 0 deg C to 55deg C
* LED indicator for working status
* Ingress protection: ip65 or better.
* There shall be marking (Gate ID & SIM no) on GPS tracker.
* There shall be LED indication for charging. it will blink during charging and steady upon full charge. There shall be facility of automatic cut-off after full charge.
* There shall be system to generate alarm in monitoring system for tempering/removal of devices once installed.
* Storage of route tracking in case of failure of mobile network and transfer the data to system once availability of network.
* Suitable charger for GPS Tracker to be included.

1. **Application software:** The feature of application software as follow.

* Application software shall be URL based.
* Tracking of system shall be also available on android/IOS mobile system.
* Live location tracking on Google maps/ RSP digital Map.
* Geo Fencing, Route tracing & route deviation
* Satellite view, roadmap view.
* Running, idle & stopped indication & Speed
* Provision of at least 10 nos. of accounts with separate rights for operators /administrator
* Digital map of full road network of RSP has to be mapped using live locations using Google maps or similar tools. The necessary charges shall be included in BID.
* The digital map of RSP road network shall be only used for this particular application not open to all.
* The digital map shall be property of RSP and shall be handed over to RSP in suitable format.
* Creation of data base for GPS tracker according to gate.
* Creation of different route from source (entry Gate) ,Department and again exit gate in consultation with RSP & CISF personal.
* HMI of application shall show all vehicle inside plant by some suitable signal.
* Keeping the mouse on particular vehicle , all data like as vehicle no, entry gate , destination department, exit gate, time of entry etc shall be shown.
* If vehicle is in pre-defined route, its colour shall be green.
* If vehicle deviated from pre-defined route, it colour shall change to red with alarm generation.
* The vehicle colour shall be also changed to permanent red if any tampering/removal of GPS tracker with alarm generation.
* The vehicle colour shall also change to red if any vehicle is out of range more than 30 minutes.
* Exception event pop-ups with sound alarm are required to happen at CISF control room and entry/exit gate terminals within one minute of exception event happening.
* The application software shall have facility to search the vehicle details by entering the GPS tracker ID& vice versa.
* Interface to SAP system through a gate way PC(Server Grade workstation)vfor getting the data like as GPS tracker unique ID, vehicle no, driver name, gate no, GPS tracker no, destination department, exit gate etc.
* The GPS tracker unique ID will be fed in SAP entry gate permit window in SAP terminal.
* The gateway PC shall be connected to internet through RSP network.
* One PC shall be installed at each gate for monitoring and report generation in Gate In-charge room.
* One No PC with large screen and normal screen shall be installed at CISF control room.
* RFID PC terminal at gate shall be used during exit of vehicle for checking of GPS tracker with relevant data. The GPS tracker application will run in this PC along with RFID application to avoid use of two no PC by CISF personal.This PC shall be connected to internet through RSP network.
* During exit from RSP, the GPS tracker shall be removed from vehicle without any alarm generation and it can be ready for use for next incoming vehicle by acceptance/crossing etc in system.
* There shall be facility for report generation on daily basis, monthly basis and yearly basis. The report shall be available in both EXCEL as well as PDF format. The report shall be also stored on server and it can be downloaded any time.
* The report mainly consists of vehicle no, GPS tracker unique ID, name of entry & exit gate, Time of entry and exit, deviation of route; yes/no if yes then which route followed by vehicle etc. The details of report format shall be decided during details engineering.
* Data of GPS tracking system shall be stored in cloud base server.
* Vehicle movement data should be stored on the server for minimum 8 years. If requirement arises, for specific vehicles, provision to store the data for a longer period should be done.
* In case of any alert generated enroute (due to device tamper, overspeed, route diversion, entry/stoppage in prohibited area etc), the vehicle when returns to the Gates, a suitable flag on the screen to be raised so that it is thoroughly checked
* On occurrence of key events like device failure, entry into restricted areas etc, SMS need to be generated from the server to the designated mobile numbers (min 10 numbers). To be included in the scope.
* Any modification in application is required during the service/contract period shall be under scope of bidder
* MIS Reports are required by the management to assess the performance of the organization and allow for faster decision-making. A Management Information System providing the following informationregarding GPS system shall be under scope of the bidder :
* Monitoring of a defined geographical location for all vehicles passing through or stopping for a period ranging from hours to days.
* Various MIS including exception pop-ups etc. Creation and modification of data tools for analysis throughout the period of contract.
* Exception Wise Daily/Monthly report
* Tracking History for a vehicle date wise / detailed for a date
* Vehicles in an existing or newly created Geo-Fenced area between dates and/or time period and their details.
* Vehicles on a particular route between dates and/or time period
* Vehicles assigned dynamic route
* Night permission vehicle tracking

1. **Charging Station:** The feature of charging station as follow

* It shall be suitable for charging of 25 of GPS tracker.
* It shall be self standing and wall mounting type.
* The charging stations should have rack for keeping minimum 50 devices which are not under charging.
* The charging station shall have shutter door with lock & key facility. The lock shall be with minimum 3 key.
* The Charging stations should not have cable based charging system for GPS devices. The devices should get charged either by placing on charging system or snap into it.
* The general arrangement (GA) ,Internal general arrangement, schematic drawing of charging station shall be submitted for approval.
* The material for charging station shall be MS (minimum 2mm thickness) with powder coating paint (minimum 80 micron thickness).
* The input of charging station shall have constant voltage transformer (CVT) of suitable rating.
* There shall be cluster LED indication lamp for 230 V available. It shall be located at top of panel.
* There shall be surge protector in incoming supply.
* The charging station shall have facility of double earthing.
* There shall be minimum 2 no of charging station at each gate
* A MCB (DP with minimum 2 no of spare MCB) based PDB shall be provided at each gate for charging station.
* The power for PDB shall be tapped from nearest source within a battery limit of 100meter.
* Existing electrical earthing shall be used for earthing.
* Incoming power cable for PDB shall be 3 core 6sq mm (minimum), flexible armoured copper cable.
* PDB to charging station and UPS of PC shall be 3 core 2.5sq mm (minimum), flexible copper cable.
* The cable shall be properly laid in PVC conduit /wall saddling.
* Balance chargers apart from the ones used in the charging station to be supplied indivisually.

1. **Personal Computers (PC)**The feature PC shall be offollowing minimum specificationsas given below (Qty:- 8 nos)

* Windows 11 or latest OS, Intel 12th Generation Core i9 (16Core, 30 MB Cache, Base Frequency 2.4GHz, Turbo Frequency upto 5.10 GHz)/Equivalent AMD
* Operating temperature: 0 to 50 degree centigrade, relative humidity 0-95%
* Memory: minimum 1 x 16 GB DDR5 RAM expandable to Minimum 64 GB, with Minimum 2 Free DIMM Slots
* Hard drive: 1TB SSD, Gen 4,class 40
* Network Card: 2 Nos of Integrated Gigabit (10/100/1000 NIC) LAN
* Small form factor
* Interface : USB, VGA, HDMI etc.
* The PC shall be interfaced to RSP network for internet within a battery limit of 50 meter. The connection (LAN cable laying inside PVC conduit) under bidder scope.
* Monitor: 27" Monitor with resolution of 1920 x 1080 or higher having minimum 1 VGA and 1 HDMI Port with anti glare, IPS properties.
* Keyboard & mouse: USB 104 Keys Multimedia Keyboard & USB 2 Button Optical Scroll Mouse with pad (both same make as PC)
* Laser A/4 B/W Multi-function printer (Print , scan, copy)
* UPS shall be provided for PC& monitor (not printer).
* UPS: capacity minimum 1KVA, Automatic Voltage Regulator (AVR) with Wide Input Voltage Range 145-290V, input frequency 47-55 Hz, Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof, Alarm when on battery, distinctive low battery alarm, overload continuous tone alarm, LED status display with On Line : On Battery : Replace Battery and Building Wiring Fault, Indian standard power plug and socket. Operating temperature: 0 to 50 degree centigrade, relative humidity 0-95%
* The metallic console to be provided for PCs. Material for console shall be MS (minimum 2mm thickness) with powder coating paint (minimum 80 micron thickness). The top of table shall be used for PC monitor with front glass. There shall be separate drawer for placement of keyboard and mouse. The bottom part (with fan, filter, louvers, Power socket-switch, UPS, gland plate) of table shall be used for placement of CPU.
* Consoles shall be dust and vermin-proof conforming to minimum IP-22 class.

The top & bottom portion of table shall have lock & key facility.

* One height adjustable chair with arm rest, back support to be provided.

1. **Workstation Grade desktop PC :**The Workstation grade PC ( for 24x7 operation) shall be of the following minimum specifications as given below (Qty:- 2nos)

* Windows 11 or latest OS, Intel 12th Generation Core i9 (16Core, 30 MB Cache, Base Frequency 2.4GHz, Turbo Frequency upto 5.10 GHz)/Equivalent AMD
* Operating temperature: 0 to 50 degree centigrade, relative humidity 0-95%
* Memory: minimum 1 x 16 GB DDR5 RAM expandable to Minimum 64 GB, with Minimum 2 Free DIMM Slots
* Hard drive: 1TB SSD, Gen 4,class 40
* Network Card:Integrated Gigabit (10/100/1000 NIC) LAN
* Small form factor
* Interface : USB, VGA, HDMI etc.
* The PC shall be interfaced to RSP network for internet within a battery limit of 50 meter. The connection (LAN cable laying inside PVC conduit) under bidder scope.
* Monitor: 27" Monitor with resolution of 1920 x 1080 or higher having minimum 1 VGA and 1 HDMI Port with anti glare, IPS properties.
* Keyboard & mouse: USB 104 Keys Multimedia Keyboard & USB 2 Button Optical Scroll Mouse with pad (both same make as PC)
* Laser A/4 B/W Multi-function printer (Print , scan, copy)
* UPS shall be provided for PC& monitor (not printer).
* UPS: capacity minimum 1KVA, Automatic Voltage Regulator (AVR) with Wide Input Voltage Range 145-290V, input frequency 47-55 Hz, Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof, Alarm when on battery, distinctive low battery alarm, overload continuous tone alarm, LED status display with On Line : On Battery : Replace Battery and Building Wiring Fault, Indian standard power plug and socket. Operating temperature: 0 to 50 degree centigrade, relative humidity 0-95%
* The metallic console to be provided for PCs. Material for console shall be MS (minimum 2mm thickness) with powder coating paint (minimum 80 micron thickness). The top of table shall be used for PC monitor with front glass. There shall be separate drawer for placement of keyboard and mouse. The bottom part (with fan, filter, louvers, Power socket-switch, UPS, gland plate) of table shall be used for placement of CPU.
* Consoles shall be dust and vermin-proof conforming to minimum IP-22 class. The top & bottom portion of table shall have lock & key facility.
* One height adjustable chair with arm rest, back support to be provided.

1. **Large screen:** one LED large screen monitor along with PC monitor to be installed in CISF control room. The Feature of large screen shall be as follow.

* Size : 65 inch
* Resolution: UHD
* Connectivity: HDMI port qty: min02 nos, DVI in, USB, Audio in etc
* Power supply AC 110-240V 50/60 Hz
* Wall mounting bracket with push-pull type adjustment facility shall be provided.
* Necessary power cabling for PC & large screen to be done.
* Suitable for 24 X 7 days operation

1. **Managed L-2 network Switch – 24 port**with 10/100/1000 Base-T along with auto speed and auto-polarity **.**
2. **10 inch Screen (Tablet) : Samsung/Equivalent (SIM based /Android based)**
3. **Erection Accessories :**Power cables, LAN cables,cable lugs, saddle, fixing screw, PVC conduitsetc to be supplied as per requirement.

**Annexure-I**

**Tentative Bill of Materials**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SL** | **ITEM DESCRIPTION** | **UNIT** | | **QTY** |
| **Supply Set 1** | | | | |
|  | GPS trackers along with charger | | No | 200 |
|  | Charging station | | No | 7 |
|  | PDB | | No | 6 |
|  | PC with monitor, UPS, Printer & metallic console | | Set | 8 |
|  | Work station grade PC with monitor, UPS, Printer & metallic console | | Set | 2 |
|  | Network switches | | No | 5 |
|  | Large screen(Min 65 inch) | | No | 1 |
|  | Tablet PC(Min 10 inch screen-SIM based) | | No. | 2 |
|  | Erection accessories | | Lot | 1 |
| **Supply Set 2** | | | | |
|  | GPS tracker | | No | 500 |
|  | Charging station | | No | 7 |
|  | Erection accessories | | Lot | 1 |
| **Services** | | | | |
|  | Installation & commissioning of Supply set 1 along with 200 trackers | Lot | | 1 |
|  | Installation & commissioning of Supply set 2 including integration of additional 500 trackers | Lot | | 1 |
|  | Training | Lot | | 1 |
|  | Insurance | Lot | | 1 |
| **Rental /CMC Services (For 5 years)-After I&C** | | | | |
|  | CMC of GPS Trackers including maintenance of trackers total software and licenses including total setup’s Customization of application software, mobile app, Use of application software for 5 years , Use of cloud based server system, data storage on server for minimum 8 years ,SIM Charges etc. | Lot | | 1 |

**CHAPTER 4**

**COMMISSIONING AND PERFORMANCE GUARANTEE.**

4.1 **COMMISSIONING**

Commissioning test shall be undertaken by the bidder. On successful completion of commissioning test, employer shall issue commissioning certificate. The facilities shall be deemed to be commissioned on fulfillment of the followings:

* Commissioning shall be treated as successful after trouble free operation of the entire system under load for a total period of 30 days. The modus operandi of the same shall be mutually agreed between bidder & employer.
* Any other observations/ tests felt necessary for judging the performance of the equipment and mutually agreed between bidder and the employer shall be carried out.
* In case of any interruption during the specified period/duration of commissioning on account of reasons attributable to the employer, the acceptance of commissioning with regards to duration of commissioning tests shall be as per the mutually agreed terms between the employer and the bidder.

4.2**PERFORMANCE GUARANTEE:**

The Performance guarantee certificate will be issued after trouble free operation for 3 month operation. The order of second lot shall be placed after satisfactory operation for 3 month.

**CHAPTER 5**

**Payment Terms**

* **One time cost payment for Annexure-I Bill of Materials** 
  1. Supply Set 1
  2. Supply set -2
  3. Services
* **Quarterly payment forAnnexure- IBill of Materials**

1. Rental /CMC Services (For 5 years)-After I&C

**For supply items**

1. 80% of payment along with 100% taxes and duties shall be made against receipted challan of materials at RSP as per BOM as progresspayments.
2. 20% shall be paid after completion of commissioning jobs & issue ofcommissioning certificate.

**For installation &commissioning(services for 1st year)**

1. 100% after installation and commissioning.

**For insurance :**

1. 100% after installation and commissioning.

# 

# Penalty Clause

Penalty shall be applicable during CMC period. Deductions shall be made from the bills as per the applicability. Performance shall be calculated on a monthly basis as per Annexure-II.

# Annexure- II

# PENALTY CLAUSE EXECUTION FORMAT

Penalty Calculation: Monthly

Month of Report :\_\_\_\_\_\_\_\_\_\_

Base Amount : Monthly CMC value for backbone (X) = \_\_\_\_\_\_\_\_\_\_\_

(CMC for the relevant year as in Price-Bid Format / 12)

For GPS Trackers / Devices + Charging Stations(A):

|  |  |  |  |
| --- | --- | --- | --- |
| Date | No. of Devices Deployed on Date | No. of complaints | Remarks |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  | Total Device Days (D) | Count of complaints: N |  |

Penalty criteria: C=N/Dx100

Penalty Calculation:

|  |  |  |
| --- | --- | --- |
| **Penalty Head** | **A** | |
|  | Criteria(C) | Penalty % |
|  | <= 0.5 % | NIL |
|  | > 0.5-1% | 2% |
|  | >1 - 2% | 3% |
|  | >2 -5 % | 5% |
|  | >5-10 % | 10% |

Total Penalty %= Max 10%

Penalty Amount = Base Amount (X) \* Total Penalty %

Schedule No 1.1

**DECLARATION OF SITE VISIT**

(To be filled up by the Bidder)

I, hereby, declare that I have visited the site to understand the site conditions, and

acquainted myself with atmosphere prevalent therein. I have also understood the

extent of total works involved for this package.

Signature of the Bidder:

Seal of company Name

Designation:

Schedule No 1.2

**LIST OF EXCLUSIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Reference clause of TS** | **Details of Exclusions** | **Reasons** |
|  |  |  |  |
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Signature of the Bidder

Seal of company Name

Designation

Schedule No 1.3

**LIST OF DEVIATIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Reference clause of TS** | **Details of Deviations** | **Reasons** |
|  |  |  |  |
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Signature of the Bidder

Seal of company Name

Designation

Schedule No 1.4

**DETAILS OF AUTHORISED PERSON OF BIDDER DURING TENDER EVALUATION**

1. Name of Project :
2. Tender No. :
3. Name & Address of Bidder :
4. Name of authorized person (TECHNICAL) :
5. Email address :
6. Mobile No. :
7. Name of alternate authorised person (TECH) :
8. Email address :
9. Mobile No. :
10. Name of authorized person (COMMERCIAL) :
11. Email address :
12. Mobile No. :
13. Name of alternate authorised person (COMM) :
14. Email address :
15. Mobile No. :

Seal of Company Signature of the Bidder

Name:

Designation

**LIST OF ACCEPTABLE MAKES OF EQUIPMENT & SUPPLIES**

|  |  |  |
| --- | --- | --- |
| S.No. | Equipment | Make |
|  | NETWORK / ACCESSORIES | DIGILINK/SCHNEIDER,MOLEX,SYSTIMAX, TYCO(AMP) |
|  | UTP CABLE | DIGILINK/SCHNEIDER, ELKAY,MOLEX, SYSTIMAX, TELELINK, TYCO(AMP), UNIVERSAL |
|  | LT power & control cables: | CCI, FINOLEX CABLES, GEMSCAB INDUSTRIESLTD.,GLOSTER,HAVELLS, INSUCON, KEC, KEI, POLYCAB, RAVIN, THERMO CABLES, UNIVERSAL, LAPP, NANGALWALAINDUSTRIES(P)LTD |
|  | Un-interruptible power supply (UPS): | FUJI ELECTRIC CONSUL NEOWATT P LTD, HITACHI-HIREL, LIVE LINE ELECTRONICS, NUMERIC, SCHNEIDER (APC), VERTIV ENERGY PRIVATE LIMITED |
|  | Desktop PC | DELL, HP, LENOVO |
|  | Network Switch (Industrial) | ADVANTECH, CISCO, HIRSCHMANN, ROCKWELL, SCHNEIDER, SIEMENS |
|  | LED TV | LG/SAMSUNG/SONY/PANASONIC/HITACHI |
|  | PRINTER | HP/CANON/EPSON |