Philippine Ports Authority

**PORT MANAGEMENT OFFICE-NCR NORTH**

**TERMS OF REFERENCE**

**ONE (1) YEAR SUPPLY OF PARTS AND MAINTENANCE SERVICES OF THE**

**VESSEL TRAFFICMANAGEMENT SYSTEM (VTMS) AT THE PORT OF MANILA**

1. **INTRODUCTION**
   1. The Philippine Ports Authority, Port Management Office-NCR North (PPA, PMO-NCR North) wishes to engage the services of a Contractor to maintain the VTMS of the Port of Manila for a period of one (1) year.
   2. The Terms of Reference (TOR) is intended to convey the services and obligations required of the Contractor.
2. **OBJECTIVES**

The objectives of providing this TOR are:

* 1. To serve as guide to the eligible bidders interested to participate in the public bidding for the supply of parts and maintenance of the VTMS in consideration.
  2. To set out the general conditions in supplying spare parts and consumable items and in providing the maintenance services for the herein-mentioned VTMS that shall be made mandatory and shall form part of the Contract.

1. **SCOPE OF WORKS**
   1. The Contractor shall perform, among others, the following:
      1. Supply the spare parts and consumables Items listed in Annex “A”.
      2. Perform test and inspection of the subsystem, equipment and/or components contained in the VTMS on a regular basis in accordance with the Maintenance/Replacement Schedule (Annex “B”) and as detailed in the Maintenance Scope of Works-Annex “C”. The Maintenance/ Replacement Schedule shall be submitted by the Contractor for approval of PPA.
      3. Replace and/or supply items/parts listed in Annex “A” in accordance with the Maintenance/Replacement Schedule (Annex “B”) or those that are damaged or broken down due to wear and tear.
      4. If damaged part is not listed in Annex “A”, recommend procurement of the same. To ensure continuous operation of the VTMS, provide service unit/module for broken damage parts.
      5. Perform corrective maintenance on system faults or equipment or equipment failures and/or calibration or adjustment of equipment to optimal equipment performance and operation in accordance with Preventive and Corrective Maintenance Scope of Works (Annex “C”).
      6. Update or renewal of anti-virus software, update of virus definition files and perform virus scan and virus removal.
      7. Conduct a weekly visit for check and monitoring of equipment at the VTMS Control Center and Radar Station 1 (Isla Putting Bato) separate from the scheduled monthly preventive maintenance schedule.
      8. Conduct a monthly visit for check and monitoring of equipment at Radar Station 2 (Corregidor Island) separate from the scheduled monthly preventive maintenance.
      9. Conduct emergency repair services as per “Equipment Priority Level” (Annex “D”) and “Repair Response Time” (Annex “E”).
      10. Provide full technical support 24/7 for issues or concerns regarding system faults and/or equipment failures, maintenance and equipment operations.
      11. Submit monthly maintenance report inclusive of:
          1. Equipment Assessment and Status
          2. Maintenance Work Accomplished
          3. Recommendations to improve system or equipment maintainability
      12. Advise PPA on the status of appropriate documents/permits required by the National Telecommunications Commission and assist in securing, completing and updating the same.
      13. Conduct preventive and corrective maintenance services on third party supplied equipment and devices such as:
          1. UPS for Radars
          2. Network switches or hub
          3. Computers including peripherals and parts
          4. Serial/IP converters
          5. Media converters
          6. Web encoders
          7. Engine generators (including muffler and exhaust, except the supply of fuel)
          8. Power distribution board (main and branch panels)
          9. Automatic transfer switch
          10. Main panel TVSS lighting
          11. Component level or board level of all defective modules or printed circuit boards (PCBs)

However, third party supplied equipment installed or integrated into the VTMS, sub-systems, and its components that are not supplied and installed by the Contractor within the duration of this “Maintenance Service Contract” are not included in the preventive and corrective maintenance.

1. **APPROVED BUDGET FOR THE CONTRACT AND MODE OF PAYMENT**
   1. The Approved Budget for the Contract (ABC) is **SIX MILLION FIVE HUNDRED FIFTY THOUSAND PESOS ONLY (Php 6,550,000.00)** covering the one (1) year period of contract.
   2. The mode of payment for labor cost shall be on a monthly basis, while the payment of the consumables and spare parts shall be based on the delivery schedule, duly received and accepted by PPA.
2. **EXCLUSIONS**
   1. The following are excluded from the services to be rendered by the Contractor:
      1. Board component level repair as defined in Annex “F”. Board component level repair and other, i.e. parts, shipping fees, custom fees, and other incidental expenses related to board component level repair shall be billed to PPA, subject to Authority approval. Boards that are determined to be un-repairable shall be recommended for replacement.
      2. Corrective emergency repairs for system faults or equipment failures that are caused by Third-Party supplied equipment.
      3. Any maintenance service which may include rust removal, repainting, and repairs to all steel tower structures, concrete tower structures and its steel members.
      4. Overhauling of Diesel Engine Generator (DEG) engine, overhauling of radiator, rewinding of DEG main alternator and/or charging alternator.
      5. Any maintenance service for elevators, air conditioning units, fire alarm system including sprinkler system, plumbing, water pumps, drainage, receptacle outlets, lighting and cable/wirings or rough-ins related to the electrical system.
      6. Any maintenance service for the building and structures comprising the building, i.e. fence, lamp posts, gate and other structures within the vicinity of station.
      7. All other services and provisions of items not included or mentioned in Paragraph 2 “Scope of Works” and Annexes thereof.
3. **RESPONSIBILITY OF PPA**
   1. Issuance of access pass, gate pass, and IDs to the maintenance personnel of the Contractor.
   2. Assignment of PPA representatives from PMO NCR North for coordination purposes.
   3. Payment of fees for securing, completing and up-dating appropriate documents/permits from the National Telecommunications Commission.
4. **OTHER TERMS AND CONDITIONS**
   1. All equipment upgraded and added by Contractor shall be continuously maintained as per “Maintenance Scope of Works” (Annex “C”).
   2. The Contractor shall not be liable for any system faults or equipment failures caused by Third Party supplied equipment or devices installed or incorporated in the VTMS and/or by works or services in connection with the VTMS during the covered period of the maintenance contract.
   3. Emergency corrective maintenance works performed by Contractor which was brought about by a failure of third-party supply equipment shall be billed accordingly to PPA.
   4. Cost of repair service and/or shipping out or transport of printed boards or modules that requires repairs at the manufacturer’s country of source shall be billed to PPA.
   5. Cost of replaced parts shall be billed to PPA, if the parts that need replacement are not included in Annex “A” list of consumables and spare parts.
   6. To ensure continuous operation of the VTMS, equipment or parts that are to be replaced or repaired but the same are not readily available, service unit/module or modification on the system shall be provided by the Contractor with no additional cost on the part of PPA
5. **WARRANTY POLICY**
   1. Maintenance service and parts warranty of the Contractor to PPA shall be governed by the following:
      1. Coverage
         1. Spare parts (excluding consumable items and DEG spare parts) contained in Annex “C”, shall be subject to one (1) year warranty period after spare parts has been delivered. Any parts found to be defective or causing system failure within the specified warranty period shall be repaired or replaced by the Contractor free of charge.
      2. Effectivity
         1. The parts and services warranty is only effective provided the VTMS and all its sub-system, equipment and/or devices are used in the conditions stated below:
            1. Equipment or device is operated in a suitable operating environment as recommended and described in the equipment manual provided by the Contractor; and
            2. Equipment or device is used for purposes for which it is intended and/or to the recommended use or operations stated in the equipment manual.
      3. Limitations of Warranty
         1. The Contractor shall not honor and shall consider the warranty voided if there has been any (1) tampering with the equipment’s external label or serial number or any identifiable marks on the product; (2) attempted or actual repair of defects without any authorization or recommendation from authorized personnel or representative of the Contractor; (3) installation of software which is not recommended or authorized by the Contractor.
         2. The Contractor warranty does not cover upgrades, alterations, updates or installation of any device or equipment to the system which is performed by any third party suppliers or contractors, wherein the modifications carried out contributes to system faults and/or equipment failures.
6. **CONSEQUENTIAL DAMAGES**
   1. To the maximum extent permitted by applicable laws, the Contractor shall not be held liable for any damage (but not limited to damage based upon inconvenience, loss of use of product, loss of time, commercial loss, or any other damages whether incidental or consequential) to other property while performing the provisions of the “Maintenance Contract” subject to the verification to be made by PPA.

ANNEX – A

**SUPPLY OF SPARE PARTS AND CONSUMABLES**

**VTMS EQUIPMENT CONSUMABLES**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Item No.*** | | ***Description*** | | ***Quantity*** | | ***Unit*** |
| **1.** | | **RADAR SPARE PARTS** | |  | |  |
| 1.1 | | Radar Interface Unit Board | | 1 | | set |
| 1.2 | Radar TRX DC Power Supply | | 1 | | set | |
|  | Spare parts Customs Duties (15% of above) | |  | |  | |
|  |  | |  | |  | |
| **2.** | | **VHF SPARE PARTS** | |  | |  |
| 2.1 | | Power Amplifier Unit | | 1 | | set |
| 2.2 | | Antenna Duplexer (Model No. AW-158YB) | | 1 | | set |
|  | | Spare parts Customs duties (15% of above) | |  | |  |
|  | |  | |  | |  |
| **3.** | | **RECORDING/PLAYBACK PROCESSOR** | |  | |  |
| 3.1 | | DVD Multi Drive | | 1 | | set |
|  | | Spare parts Customs Duties (15% of above) | |  | |  |
|  | |  | |  | |  |

**SOFTWARE COMPONENTS**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Item No.*** | ***Description*** | ***Quantity*** | ***Unit*** |
| **1.** | **ANTIVIRUS Software** |  |  |
|  | Antivirus Software for Server (Kaspersky) | 1 | Set |
|  | 1 year subscription |  |  |

**DIESEL ENGINE GENERATOR (DEG) SPARE PARTS AND CONSUMABLES**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Item No.*** | ***Description*** | ***Quantity*** | ***Unit*** |
| **1.** | **CONSUMABLE PARTS** |  |  |
|  | ***@ Control Center with 90KVA DEG*** |  |  |
| a. | Oil Filter (c-602 A) | 1 | pc |
| b. | Fuel Filter (FC-510) | 1 | pc |
| c. | Engine Oil (SAE 40API CF) | 21 | liters |
| d. | Air Filter (DA-352 S) | 1 | Pc |
| 1.1.5 | Alternator Belt (17X135OLi) | 2 | Pcs |
|  | | | |

ANNEX – B

**MAINTENANCE SERVICE SCHEDULE**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Item No.** | **Work Description** | **12-Month** | | | | | | | | | | | |
| **2016 – 2017** | | | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **1** | **Initial Assessment of Equipment/System Condition and Status** |  |  |  |  |  |  |  |  |  |  |  |  |
| **2** | **RADAR SYSTEM** |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.1 | RDP and Radar TRX Operation and Status Check |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.2 | Radar System Function and Performance Check (1) Operator Console 1 & 2 (RDP; (2) Extra RDP |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.3 | Radar Antenna Maintenance Works |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.3.1 | *Radar antenna cleaning (Quarterly)* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.3.2 | *Operational and Performance check (Quarterly)* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.3.3 | *Lubrication (semi-annual)* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.4 | Checking of waveguide, dehydrator and cable fixing (check for corrosions, loose bolts, removal of rusts and lubrication) |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.5 | Radar TRX Performance Check |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.5.1 | *TRX Operational Test* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.5.2 | *Checking of radar echo and image* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.5.3 | *Specification check and inspection* |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.5.4 | Replacement of Magnetron (every 6000 hours Transmit time) if needed |  |  |  |  |  |  |  |  |  |  |  |  |
| **3** | **COMPUTER SYSTEM** |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.1 | VTMS Software Application Operations & Performance Check: (1) Network Digital Recorder; (2) CCTV Monitor 1, 2; (3) Network & Sensor Monitoring Processor; (4) Meteorological Monitor Display; (5) AIS Server; (6) Database Terminal; (7) Multi-Sensor Integrate Processor; (8) Record/Replay Processor |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.2 | Antivirus update and virus scan (for all computers) |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.3 | Network Devices (L2 switches, L3 switch, Serial/IP Converter, Fiber Optic Media Converter Router) |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.4 | Database Server Maintenance Works |  |  |  |  |  |  |  |  |  |  |  |  |
| **4** | **RADIO AND NAVIGATION EQUIPMENT (Other Sensor Equipment)** |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1 | AIS |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1.1 | *Operation & Status check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1.2 | *Radio Performance check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.2 | VHF Transceiver |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.2.1 | *Operation & status check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.2.2 | *Radio Performance check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.3 | VHF DF |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.3.1 | *Operation & status check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.4 | Microwave Radio Link |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.4.1 | *Performance & Status Check* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.4.2 | *Events and error logs gathering* |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.5 | CCTV System |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.5.1 | Status check |  |  |  |  |  |  |  |  |  |  |  |  |
| **5** | **OUTDOOR EQUIPMENT (VHF/AIS Antenna, Parabolic Antenna, CCTV Camera, Meteorological Sensors, cables and cable fixing materials)** |  |  |  |  |  |  |  |  |  |  |  |  |
| 5.1 | Inspection of physical condition |  |  |  |  |  |  |  |  |  |  |  |  |
| 5.2 | Cleaning (Camera, Meteorological sensors) |  |  |  |  |  |  |  |  |  |  |  |  |
| 5.3 | Fixing of loose cables and re-tightening of brackets (if necessary) |  |  |  |  |  |  |  |  |  |  |  |  |
| 5.4 | Cleaning of Parabolic Antenna ,Microwave Radio (Annual) |  |  |  |  |  |  |  |  |  |  |  |  |
| **6** | **OVER-ALL/GENERAL** |  |  |  |  |  |  |  |  |  |  |  |  |
| 6.1 | Cleaning of equipment rack (clean exhaust fan, exhaust vents/ducts, check cables for any signs of deterioration) |  |  |  |  |  |  |  |  |  |  |  |  |
| 6.2 | Investigate reported equipment faults or errors/Repair items that needs to be repaired |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **7** | **EQUIPMENT POWER SYSTEM CHECK** |  |  |  |  |  |  |  |  |  |  |  |  |
| 7.1 | Power condition check |  |  |  |  |  |  |  |  |  |  |  |  |
| 7.2 | UPS status check |  |  |  |  |  |  |  |  |  |  |  |  |
| 7.3 | TVSS/Arrester status check |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **8** | **DIESEL ENGINE GENERATOR** |  |  |  |  |  |  |  |  |  |  |  |  |
| 8.1 | Inspection of various components (lubrication, starting and charging, cooling, combustion, fuel and exhaust, and electrical system) |  |  |  |  |  |  |  |  |  |  |  |  |
| 8.2 | Cleaning of engine and radiator assembly |  |  |  |  |  |  |  |  |  |  |  |  |
| 8.3 | Replacement of oil filters, fuel filters and engine oil  (***VTMSCC/RS-1***) |  |  |  |  |  |  |  |  |  |  |  |  |
| 8.4 | Replacement of air filter, fan belt and radiator coolant (***VTMSCC/RS-1***) |  |  |  |  |  |  |  |  |  |  |  |  |

***Note:*** *(1.) Weekly system/equipment check shall be conducted at VTMS Control Center and RS1-IPB separate from the scheduled preventive maintenance schedule. (2.) Conduct a monthly visit for check and monitoring at RS2-Corregidor Island separate from the scheduled monthly preventive maintenance schedule. (3) The submitted schedule may be subject to change, in case a high level priority issue arises or if schedule cannot be undertaken, and (4) If there is deterioration of equipment performance found during operation and performance check that needs to be performed in order the system to be in optimal operating conditions.*

ANNEX-C

**PREVENTIVE AND CORRECTIVE MAINTENANCE SCOPE OF WORKS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item No.** | **Equipment** |  | **Scope of Works** | |
| **Preventive Maintenance** | **Corrective Maintenance** |
| **1** | **Radar System** |  |  |  |
| 1.1 | 18ft./19ft. X-Band Radar Antenna |  | Visual inspection  Performance check (RPM, rotation sound)  Cleaning of Antenna pedestal and radiator  Periodic greasing of gears  Periodic V-belt replacement and calibration | Trouble shooting of equipment failure  Module level repair(if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 1.2 | Dual Radar Transmitter-Receiver |  | Visual inspection  Cleaning of frame, exhaust vents, and fan  Status and performance check (with the use of RDP)  Periodic replacement of magnetron and tuning | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 1.3 | Radar Data Processor |  | Visual inspection  Cleaning of frame and exhaust vents  Status and performance check  Checking of Radar echo and image  Operational test | Trouble shooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/ module).  Adjustment/calibration to optimal performance |
| **2** | **AIS Base Station** |  |  |  |
| 2.1 | AIS Transponder |  | Visual inspection  Cleaning of frame and exhaust vents  Status and performance check  Self-diagnostic test | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 2.2 | Base Station Controller |  | Visual inspection  Cleaning of frame and exhaust vents  Status check | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 2.3 | AIS-VHF Antenna |  | Visual inspection | Trouble shooting of equipment failure  Repair of connector termination due to wear and tear |
| 2.4 | AIS-PPS Antenna |  | Visual inspection | Troubleshooting of equipment failure  Repair of connector termination due to wear and tear |
| **3** | **VHF Communication System** |  |  |  |
| 3.1 | VHF Radio Transceiver |  | Visual inspection  Cleaning of frame and exhaust vents  Status check  Operation and performance check (including VSWR test) | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 3.2 | Duplexer |  | Visual inspection | Troubleshooting of equipment failure |
| 3.3 | Coaxial Arrester |  | Visual inspection | Troubleshooting of equipment failure |
| 3.4 | VHF Antenna |  | Visual inspection | Troubleshooting of equipment failure  Repair of connector termination due to wear and tear |
| **4** | **CCTV System** |  |  |  |
| 4.1 | CCTV Camera |  | Visual inspection  Cleaning of camera enclosure and lens  Operational and performance check | Troubleshooting of equipment failure  Adjustment/calibration to optimal performance |
| 4.2 | Web Encoder |  | Visual inspection  Cleaning  Status check | Troubleshooting of equipment failure  Re-configuration of settings  Adjustment/calibration to optimal performance |
| 4.3 | Network Digital Recorder |  | Visual inspection  Operational and performance check | Troubleshooting of equipment failure |
| **5** | **VHF Radio Directional Finder** |  |  |  |
| 5.1 | DF Unit |  | Visual inspection  Cleaning  Status check  Operational and performance check | Troubleshooting of equipment failure  Adjustment/calibration to optimal performance |
| 5.2 | DF Antenna |  | Visual inspection | Troubleshooting of equipment failure  Repair of connector termination due to wear and tear |
| **6** | **Meteorological Sensors** |  |  |  |
| 6.1 | Datalogger |  | Visual inspection  Status check | Troubleshooting of equipment failure  Re-configuration of settings as needed |
| 6.2 | Meteorological Sensors |  | Visual inspection  Cleaning  Periodic replacement of silicon oil/bearing assembly | Troubleshooting of equipment failure |
|  |  |  |  |  |
| **7** | **Microwave Radio Equipment** |  |  |  |
| 7.1 | IDU |  | Visual inspection  Cleaning  Status check  Event/error logs gathering | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 7.2 | ODU |  | Visual inspection  Status check | Troubleshooting of equipment failure  Adjustment/calibration to optimal performance |
| 7.3 | Parabolic Antenna |  | Visual inspection  Cleaning | Troubleshooting of equipment failure  Repair of connector termination due to wear and tear |
| **8** | **Computers** |  |  |  |
| 8.1 | Multi-Integrated Processor/Multi-Radar Tracker |  | Visual inspection  Cleaning  Operational status check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 8.2 | Operator Console 1 and 2 |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan  Chart update | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 8.3 | Database Server |  | Visual inspection  Cleaning  Operational status check  Anti-virus update/Virus scan  Periodic Database Optimization | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 8.4 | Database Terminal |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module).  Adjustment/calibration to optimal performance |
| 8.5 | Recording/Replay Processor |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair(if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| 8.6 | AIS Server |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan  Chart update | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| 8.7 | CCTV Monitor Display |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| 8.8 | Meteorological Monitor Display |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| 8.9 | Network and Sensor Monitoring Processor |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| 8.10 | Extra RDP/Large-Display Monitor |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan  Chart update | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
|  |  |  |  |  |
| 8.13 | Service Display |  | Visual inspection  Cleaning  Operational and performance check  Anti-virus update/Virus scan  Chart update | Troubleshooting of equipment failure  Module level repair (if spare parts are not available contractor must provide service unit/module)  Adjustment/calibration to optimal performance |
| **9** | **Uninterrupted Power Supply (UPS)** |  |  |  |
|  | UPS |  | Visual inspection  Cleaning  Status check  Battery replacement | Troubleshooting of equipment failure  Setting reconfiguration |
| **10** | **Diesel Engine Generator (DEG)** |  |  |  |
|  | DEG |  | Inspection and test of the following:   1. Starting & charging system; 2. Air intake system; 3. Exhaust system; 4. Fuel system check; 5. Cooling system; 6. Lubrication system; 7. Generator assembly; 8. Protective & indicator devices; 9. Control & monitoring; 10. General parts   Cleaning of radiator (if necessary)  Replacement of consumable parts as per Maintenance  Schedule (Annex-B) and consumable parts (Annex-C)  Engine tune-up | Troubleshooting of DEG failure  Module level repair (i.e. radiator hose, radiator assembly,  ECU, oil pressure switch, fuel gauge, etc.) |
| **11** | **Equipment PDB** |  |  |  |
|  | Equipment PDB |  | Visual inspection  Voltage and current check | Troubleshooting of equipment failure |
| **12** | **Others** |  |  |  |
| 12.1 | Network Devices (Including, L2 switch, L3 switch, Serial/IP converter, fiber optic media converter, router) |  | Visual inspection  Status check | Troubleshooting of system fault  System level repair |
| 12.2 | Printer |  | Visual inspection  Cleaning  Status check | Troubleshooting of equipment failure |
|  |  |  |  |  |
| 12.4 | Waveguide |  | Visual inspection  Repainting of rigid waveguide | Tightening of waveguide connections and clamps  Supply of replacement waveguide |
| 12.5 | Outdoor Cables |  | Visual inspection | Fixing of loose cable clamps, clips, connections and/or cable brackets |
| 12.6 | Equipment TVSS (Radar system, DF and Meteorological) |  | Visual inspection  Status check | Troubleshooting of equipment failure |

ANNEX-D

**EQUIPMENT PRIORITY LEVEL**

|  |
| --- |
| **PRIORITY LEVEL – 1 EQUIPMENT** |
| 1. Radar System |
| * 1. 18ft./19ft. X-Band Radar Antenna |
| * 1. Dual Radar TRX |
| * 1. Radar Data Processor |
| * 1. Waveguide |
| 1. VHF Communication System |
| * 1. VHF Radio Transceiver |
| * 1. VHF Controller |
| * 1. Duplexer |
| * 1. VHF Antenna |
| 1. Multi-sensor Integrated Processor |
| 1. Microwave Equipment (if link is totally cut, redundancy malfunction) |
| 1. Diesel Engine Generator (DEG) for stations w/o commercial power |
| 1. Operator Console/RDP |
| 1. Database Terminal |
| 1. AIS base Station |
| 8.1 AIS Transponder |
| 8.2 AIS - BSC |
| 8.3 AIS Server |
| 1. Recording and Replay/Playback Processor |
| 1. UPS |
| **PRIORITY LEVEL – 2 EQUIPMENT** |
| 1. CCTV Camera System |
| * 1. CCTV Camera System |
| * 1. Web Encoder |
| * 1. CCTV Monitor Display |
| 1. Large Display/Extra RDP |
| * 1. AIS-VHF Antenna |
| * 1. AIS-PPS Antenna |
| 1. Microwave Radio Link (with redundancy) |
| 1. Diesel Engine Generator (DEG) for Station w/ commercial power |
| 1. Any Computer peripheral problems or faults (includes: mouse, keyboard, monitor display, FDD, Optical drive) |
| **PRIORITY LEVEL – 3 EQUIPMENT** |
| 1. Meteorological System |
| * 1. Meteorological Sensor |
| * 1. Meteorological Data Logger |
| * 1. Meteorological Monitor Display |
| 1. VHF Directional Finder System |
| * 1. VHF DF Unit |
| * 1. DF Antenna |
| 1. Any Computer peripheral problems or faults (includes: mouse, keyboard, monitor display, FDD, Optical drive) |
|  |
|  |

ANNEX – E

**REPAIR RESPONSE TIME**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Priority Level** | **Response Time** | **Repair Time** | **Actions to be Taken** | **Remarks** |
| Priority Level - 1 | * Within 24-hours from the time the fault/problem is reported (at Port of Manila VTMS Control Center and Radar Ststion-1. * Within 48-hours from the time the fault or problem is reported or when ferry is available for Corregidor Radar Station-2. | Within 1-day starting from maintenance team arrives at site. | Troubleshoot and replace equipment or parts, provided parts are readily available. | If parts are not available, provision of service unit/module must be employed by the contractor to sustain the operation of the system. For parts that are not available, alternative solutions shall be implemented as per PPA approval, until such time that spare parts will be available. |
| Priority Level - 2 | Within 1-3 days from the time the fault/problem is reported. | Within 1-2 days starting from maintenance team arrives at site | Troubleshoot and replace equipment or parts, provided parts are readily available. | If parts are not available, provision of service unit/module must be employed by the contractor to sustain operation of the system. For parts that are not available, alternative shall be implemented s per PPA approval, until such time that the spare parts will be available. |
| Priority Level - 3 | On the schedule maintenance time | During the schedule maintenance time. | Troubleshoot and replace equipment or parts, provided parts are readily available. | If parts are not available, provision of service unit/module must be employed by the contractor to sustain operation of the system. For parts that are not available, alternative solutions shall be implemented as per PPA approval, until such time that spare parts will be available. |

ANNEX – F

**REPAIR LEVELS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item No.** | **Level** | **Definition and Example** | **System/Equipment** | **Remarks** |
| 1 | System Level Repair | * Level of repair related to system troubleshooting. * Repair of system is by replacement of defective equipment or device within the sub-system of the VTMS.   e.g. Replacement of Serial/IP converter as a means to repair the VHF Communication System | Radar system, Database System, AIS System, VHF Comm. System, CCTV System, Meteorological System, VHF Radio-Direction Finder System, Network System, Microwave Comm. System, System, Fiber Optic Comm. System, Display and Control system, Recording and Playback system. | Provision of service unit to sustain the operation of the VTMS system.  Contractor must provide service unit/modules until replacement parts are available. |
| 2 | Module/Unit Level  Repair | * Level of repair related to equipment or device troubleshooting. * Module level repair is performed by replacement of modules or spare parts within an equipment or device, includes software repair, OS re-installation, which constitutes, but not limited to the following:   + Operating system re-installation and configuration   + Software application re-installation and configuration   + Software settings re-configuration   e.g. Replacement of a module or board of the VHF transceiver as a means to repair the equipment. | Radar Data Processor, Radar Antenna, Radar XCVR, AIS\_BSC, AIS-Transponder, VHF Transceiver, All computers (workstations and servers) | Repair can be carried out if spare modules or PCBA’s are available, to sustain the operation of the VTMS system.  Contractor must provide service unit/modules until replacement parts are available. |
| 3 | Board Component  Level Repair | * Level of repair related to troubleshooting of PCBA’s or modules of an equipment or device. * Component level repair is performed by replacement of electronic components of the PCBA’s or modules, e.g. replacement or resistors, diodes, capacitors, IC’s, transistors, and other semi-conductor components.   e.g., Replacement or resistor or IC’s as a means to repair a module board of the VHF Transceiver. | DC Power Supply, PA Boards, RX Circuits, TX Circuits, PA Modules, Control Boards, etc. | Board component level repair shall be shouldered by PPA if repairs are to be made. Likewise, cost of shipping the electronic boards and similar components to/from source factory outside the Philippines shall also be billed to PPA as additional fees. |