**STCAS Site Audit Report**

**For**

**<Station Name>**

**Installation Status:**  Completed  Not Completed.

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# Site Details:

|  |  |
| --- | --- |
| Station / Section |  |
| Station ID |  |
| Division |  |
| Date of installation |  |
| Initial date of Audit |  |
| Site Audit Team |  |
| I&C Team |  |
| List of Equipment’s | |  |  |  | | --- | --- | --- | | **#** | **Equipment** | **Qty** | |  | No of STCAS/LTCAS |  | |  | No of RIUs |  | |  | No of DC-DC Converters |  | |  | No of PDUs |  | |  | No of FIEs if any |  | |
| Audit Summary as on: | |  |  |  | | --- | --- | --- | |  | Open points | Closed Points | | Tower/RTU |  |  | | Station/ LC TCAS |  |  | | Relay Rack |  |  | | SMOCIP |  |  | | RFID Tags |  |  | | **Total** |  |  | |

# STCAS Unit Assembly Configuration\_ QR Code Verification

| **Unit/Card Description** | **Qty** | **Actual Sl.Nos at site** | **SI.No. as per Inspection certificate / ATR** | **SI. No as per PCCL** | **Remarks** |
| --- | --- | --- | --- | --- | --- |
| **Stationary TCAS unit** |  |  |  |  |  |
| **Peripheral Processing Card** |  |  |  |  |  |
|  |  |  |  |
| **Vital Computer Card** |  |  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Voter Card** |  |  |  |  |  |
|  |  |  |  |
| **Vital Gateway Card** |  |  |  |  |  |
|  |  |  |  |
| **Integrated Data Logger Card (IDL)** |  |  |  |  |  |
| **Dual GSM Card** |  |  |  |  |  |
| **Field Scanner Card 1** |  |  |  |  |  |
| **Field Scanner Card 2** |  |  |  |  |
| **Field Scanner Card 3** |  |  |  |  |
| **Field Scanner Card 4** |  |  |  |  |
| **Field Scanner Card 5** |  |  |  |  |
| **Field Scanner Card 6** |  |  |  |  |
| **Field Scanner Card 7** |  |  |  |  |
| **Field Scanner Card 8** |  |  |  |  |
| **SMOCIP Unit** |  |  |  |  |  |
| **Station Radio Power Supply card-1** |  |  |  |  |  |
| **Next Gen/. Cal Amp Radio Modem** |  |  |  |  |  |
| **Station Radio Power Supply card-1** |  |  |  |  |  |
| **Next Gen/. Cal Amp Radio Modem** |  |  |  |  |  |
| **GPS & GSM Antenna** |  |  |  |  |  |
|  |  |  |  |
| **DPS Card** |  |  |  |  |  |
|  |  |  |  |
| **EMI Filter** |  |  |  |  |  |
|  |  |  |  |
| **Media Converter** |  |  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Cable Extender** |  |  |  |  |  |
| **RIU-COM** |  |  |  |  |  |
|  |  |  |  |
| **FIU Termination Card 1** |  |  |  |  |  |
| **FIU Termination Card 2** |  |  |  |  |
| **FIU Termination Card 3** |  |  |  |  |
| **FIU Termination Card 4** |  |  |  |  |
| **FIU Termination Card 5** |  |  |  |  |
| **FIU Termination Card 6** |  |  |  |  |
| **FIU Termination Card 7** |  |  |  |  |
| **FIU Termination Card 8** |  |  |  |  |
| **PDU Box** |  |  |  |  |  |
| **RTU** |  |  |  |  |  |
|  |  |  |  |
| **RADIO** |  |  |  |  |  |
|  |  |  |  |

# Audit observations:

## Tower and RTU

| **Sl.No** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Visual Checks | Found Ok  Found No Ok |  |
|  | Verification of RF Antenna Fixing and LMR Cable Routing; | | |
| 2.1 | Verification of Antenna Fixing | Fixed  Not fixed |  |
| 2.2 | Verify the RF Cable joining to Antenna | Joined  Not Joined |  |
| 2.3 | Tie the cables to die pole antenna by using stainless steel cable tie at four locations. | Cable ties implemented  Cable ties not implemented |  |
| 2.4 | LMR 600 cables routing by using feeder clamps. | Routing done  Routing not done |  |
|  | Installation of RTU Box and connections with identification; | | |
| 3.1 | Visual inspection, Identification and Radios functioning | Functioning  Not functioning |  |
| 3.2 | LMR cable fixing | Fixed  Not fixed |  |
| 3.3 | Verification of RTU box Fixing on platform. | Fixed  Not Fixed |  |
| 3.4 | Tie the cables to structure by using stainless steel cable ties. | Cable ties implemented  Cable ties not implemented |  |
| 3.5 | Radios power supply 110V | Voltage found Ok  Voltage not Ok |  |
| 3.6 | Verification of RTU Earthing | Earthing connected  Earthing not connected |  |
|  | Verification of Tower | | |
| 4.1 | Tower Foundation & Fencing | Done  Not Done |  |
| 4.2 | Ladder Fixing | Fixed  Not Fixed |  |
| 4.3 | GI Earthing strip routing | Routing done  Routing not done |  |
|  | Verification of Tower and RTU Earth pit arrangement with brazing. | Done  Not done |  |
|  | Earthing for Tower as per Spec. < 2Ω | Ok  Not Ok |  |
|  | Verification of Aviation Warning Lamp, Functioning and power supply 110V | Voltage found Ok  Voltage not Ok |  |

## Station TCAS

| **Sl.No** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Visual Checks (Ex.Equipment labels, External appearance, Dents, Shade, Rust, Cable entries at STCAS to be closed properly with rubber gaskets/grommets in STCAS) | Found Ok  Found No Ok |  |
|  | Verification of equipment placement and cable routing as per Relay Room Layout. | Routing done  Routing not done |  |
|  | Verification of Connections as per Power Supply Diagram cum Load Calculation: | | |
| 3.1 | Verification of Cable size and connectivity as per diagram | Found Ok  Found not ok |  |
| 3.2 | Implementation of Ferrule Lug 0.75mm | Implemented  Not Implemented |  |
| 3.3 | Implementation of Lug 2.5Sqmm | Implemented  Not Implemented |  |
| 3.4 | Implementation of Media Converter | Implemented  Not Implemented |  |
| 3.5 | Verification of 48V SMPS Charger & Battery Installation | Installed  Not Installed |  |
| 3.6 | MCB 2P Installed in IPS room | Rating as per Diagram:  Actual Rating: |  |
|  | TCAS system I/P110V DC supply | Voltage found Ok  Voltage not Ok |  |
|  | Cards Functional Checking as per ATR | Found Ok  Found not Ok |  |
|  | Review of PCCL Report | PCCL done  PCCL Not done |  |
|  | Earth Resistance of STCAS is ≤ 1Ω ( to be followed as per PCCL) | Found Ok  Found not Ok |  |
|  | Verification of PDU Box fixing and wiring. | | |
| 8.1 | Identification for Fuse, MCB’s etc. | Identification done  Identification not done |  |
| 8.2 | Verification of cable routing | Routing done  Routing Not done |  |
| 8.3 | Implementation of glands/ grommets. | Implemented  Not Implemented |  |
| 8.4 | Earthing | Connected  Not Connected |  |
| 8.5 | Verification of Voltage | Found Ok  Found not Ok |  |
| 8.6 | Verification of Fuse Ratings as per PSD Rating Table | Found Ok  Found not Ok |  |
| 8.7 | Verification of MCB Ratings as per PSD Rating Table | Found Ok  Found not Ok |  |
|  | Verification of DC-DC Converter installation | | |
| 9.1 | Identification | Done  Not done |  |
| 9.2 | Earthing | Connected  Not Connected |  |
| 9.3 | Implementation of glands/ grommets. | Implemented  Not Implemented |  |
| 9.4 | Voltage Input and Output | Found Ok  Found not Ok |  |
|  | Verification of GPS / GSM Antenna Fixing & Wiring | Found Ok  Found not Ok |  |

## Relay installation and wiring

| **Sl.No** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Visual Checks (Ferrules/ Stickering to be done for easily identification of cables). | Found Ok  Found No Ok |  |
|  | Total Qty of Relay panels and repeater relays used. | Panel Qty as per PSD:  Actual:  Repeater relays Qty as per PSD:  Actual: |  |
|  | Verification of Relay rack and interfaces are connected as per relay wiring drawing. | Connected  Not Connected |  |
|  | Verify slow blowing fuse placement and Fuse rating (2A) | Found Ok  Found not Ok |  |
|  | Verification of Relay Contact 24V supply (18VDA to 26VDA) | Found Ok  Found not Ok |  |
|  | Verification of Data Logger connectivity | Connected  Not Connected |  |

## SMOCIP

| **Sl.No** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Visual Checks | Found Ok  Found No Ok |  |
|  | Verification of SMOCIP Unit fixing, Connectivity & Fibre Splicing and Key on off position | Found Ok  Found No Ok |  |
|  | SMOCIP Health Status | Found Ok  Found No Ok |  |
|  | SMOCIP Earthing | Connected  Not Connected |  |
|  | Checksum verification as per FAT Report. | Matching  Not Matching |  |

## RFID tags

| **#** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Visual Checks (Cracks, Shade, No oil, Center Placement, Play and Tag Number & ABS location on TAG ) | Details in annexure -A |  |
|  | Verification of RFID TAG fixing  Fixing proper Brackets (Point sleeper Bracket & Normal Sleeper Bracket) as per drawing no 5 16 67 0490,106, CC Apran TCAS/2021\_02\_15 & RDSO Drawing No. SDO/S&T/TCAS/008 | Details in annexure -A |  |
|  | Verification of Tag Program as per RFID Tag layout | Details in annexure -B |  |
|  | Verification of RFID Tag Placement | Details in annexure -A |  |

## General and Safety

| **Sl.No** | **Check Points** | **Observations/ Remarks** | **Re-verification after rework if any** |
| --- | --- | --- | --- |
|  | Verification of Safety Practices as per Safety Instructions 5 16 72 0014 |  |  |
|  | Procedures for STCAS and Tower I&C. 5 16 76 0009 & 5 16 76 0010 |  |  |
|  | Training to field persons and S&T Staff. |  |  |
|  | Documents at site;   * Relay Interface drawing (Bell test copies) * RFID Tag Layout * RFID Tag Data * Cable Route Plan * Floor Plan * Tower site folder * Tag Data * TOC * Power Supply Schematic * STCAS connectivity drawing * Power load calculation sheet * Installation Manual * PCCL |  |  |
|  | Workmanship and quality of work  (Check whether all connections are made through crimped eyelets and are numbered with PVC cables marker rings) |  |  |