

EXPLANATORY NOTES

The upgradation of Indian Railways' SCADA systems to the latest security standards is driven by their classification as Critical Information Infrastructure (CII), following directives from the National Security Council Secretariat (NSCS) and the Railway Board to mitigate significant cyber vulnerabilities. Specification TI/SPC/RCC/SCADA/0134 addresses this critical need by mandating advanced technical defences, including hardware firewalls, biometric authentication, and robust protocol encryption for field communications. To facilitate this transition for the large population installations, Technical Instruction TI/IN/0048 defines a specific migration path that allows existing systems to achieve 0134-level security requirements through targeted software and firmware upgrades while prioritizing the reuse of existing hardware. Finally, Instruction TI/IN/0052 provides the necessary Standard Operating Procedure (SOP) for the protection of this infrastructure, ensuring a unified and standardized implementation of these cyber security guidelines across all Zonal Railways. These specifications are uploaded with the tender and are to be complied in all the upgradation process of SCADA for cyber security.

Schedule-1- SW-I: Upgradation of RCC for SBC-JTJ &SBC-Y and SDVL-BSN & YNK-KQZ Sections as per RDSO Spec TI/SPC/RCC/SCADA/0134

Schedule 1: SI No 01&2- Upgrading, testing & commissioning of Supervisory Control and Data Acquisition (SCADA) equipment at the Remote-Control Centre for full Cyber Security implementation as per RDSO Spec no. TI/SPC/RCC/SCADA/ 0134. (Existing Computer Hardware will be retained) (M/s Synergy Make) – Supply and erection

The price shall include the supply of all items required for the upgradation of the existing Server of SBC-JTJ &SBC-Y and SDVL-BSN & YNK-KQZ Sections for full Cyber Security implementation as per RDSO Spec no. TI/SPC/RCC/SCADA/0134. The price shall cover cost of supply of all required Hardware's i.e. Network Ethernet switches and firewalls etc., including accessories which required for upgrading of Existing SCADA system of SBC division which is installed as per RDSO specification No TI/SPC/RCC/SCADA/130 (Rev-2) at the (RCC-SBC) Remote Control Centre, for Cyber Security implementation as per latest RDSO Spec. no. TI / SPC /RCC /SCADA /0134 or latest. Upgradation of existing SCADA system shall confirm Cyber Security provisions included as per the directives of National Security Council Secretariat (NSCS), Government of India to address the Cyber Security Vulnerabilities present in the SCADA System. The price also includes transportation of materials if any are required. All small items if any required for upgradation of existing SCADA system like extension cables/wiring/plug/switch board's network switches shall be carried out by successful tenderer. All necessary RDSO/HQ/Division approved drawings/designs/layout of RCC/switching stations each 03 sets shall be handed over to railways as case may be applicable. All work shall be carried out under supervision of railway representatives with prior intimation & after approval of Sr.DEE/TRD/SBC.

The Technical Instruction TI/IN/0048 defines the migration path and specific methodologies for upgrading existing SCADA systems from older versions to meet the latest cyber security requirements of Specification 0134 Full compliance to Cyber Security implementation in-line with RDSO specifications TI/SPC/RCC/SCADA/0134 & TI/IN/0048 with the latest amendments should be ensured. Moreover, in compliance with the specifications, an annual cyber security audit by a government-approved third-party agency has to be conducted during warranty/AMC period.

Approved design/drawing/layout/FDS shall be available at working sites including RDSO Drawings/ specifications. Before start work modifications, changes shall be explained to railway representatives according to approved documentations as per RDSO specifications/Guidelines and approved Design/drawing/layout/FDS.

Schedule 1: SI No 03- Upgradation of existing SCADA Software at RCC as per RDSO Spec No. TI/SPC/RCC/SCADA/0134.(M/s Synergy Make)

The price shall include the Upgradation of existing SCADA Software at RCC as per RDSO Spec No. TI/SPC/RCC/SCADA/0134.(M/s Synergy Make) for the servers of existing Server of SBC-JTJ &SBC-Y and SDVL-BSN & YNK-KQZ Sections.

The Upgradation, installation, testing and commissioning of standard SCADA software as per RDSO Specification No.TI/SPC/RCC/SCADA/0134 and latest amendments, including the license fee for the supply and installation of Standard Electric Traction SCADA Software. The upgraded software should have all the features/facilities related to Cyber Security. All licenses including the license for any third- party software with lifetime validity, anti-virus software for all computers are included in the price. Upgradation, testing & commissioning of GPS Receiver at RCC as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 with latest amendments. The GPS Receiver should be used for synchronizing the SCADA System. Upgradation, Installation configuration & commissioning of Web server of standard SCADA software as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 with latest amendments. Furthermore, the manufacturer is responsible for identifying and deploying software patches for the Operating System and SCADA application throughout the warranty period.

Schedule-2- SW-II: Upgradation of RTUs as per RDSO Spec TI/SPC/RCC/SCADA/0134,

Schedule 2: SI No 01- Upgrading of TSS RTU of RDSO Spec. No. TI/SPC/RCC/SCADA/0130 (Rev02) for only cyber security as per RDSO Spec No. TI/SPC/RCC/SCADA/0134. (Only RTU firmware/configuration will be changed, no hardware item is included in the scope)(M/s Synergy Make)

The price shall cover upgradation, testing & commissioning of the existing TSS RTUs installed and commissioned as per RDSO specifications TI/SPC/RCC/SCADA/0130 REV-2, to cater the 25 KV system as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 for Cyber security. The price covers firmware upgradation and implementation of all the latest features of RDSO Specifications TI/SPC/RCC/SCADA/0134 in the RTU, such full Cyber Security upgrade of the existing system. All work shall be carried out under supervision of railway representatives with prior intimation & after approval of Sr.DEE/TRD/SBC.

Schedule 2: SI No 02- Upgrading of SP RTU of RDSO Spec. No. TI/SPC/RCC/SCADA/0130 (Rev02) for only cyber security as per RDSO Spec No. TI/SPC/RCC/SCADA/0134. (Only RTU firmware/configuration will be changed, no hardware item is included in the scope)(M/s Synergy Make)

The price shall cover upgradation, testing & commissioning of the existing SP RTUs installed and commissioned as per RDSO specifications TI/SPC/RCC/SCADA/0130 REV-2, to cater the 25 KV system as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 for Cyber security. The price covers firmware upgradation and implementation of all the latest features of RDSO Specifications TI/SPC/RCC/SCADA/0134 in the RTU, such full Cyber Security upgrade of the existing system. All work shall be carried out under supervision of railway representatives with prior intimation & after approval of Sr.DEE/TRD/SBC.

Schedule 2: SI No 03- Upgrading of SSP RTU of RDSO Spec. No. TI/SPC/RCC/SCADA/0130 (Rev02) for only cyber security as per RDSO Spec No. TI/SPC/RCC/SCADA/0134. (Only RTU firmware/configuration will be changed, no hardware item is included in the scope)(M/s Synergy Make)

The price shall cover upgradation, testing & commissioning of the existing SSP RTUs installed and commissioned as per RDSO specifications TI/SPC/RCC/SCADA/0130 REV-2, to cater the 25 KV system as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 for Cyber security. The price covers firmware upgradation and implementation of all the latest features of RDSO Specifications TI/SPC/RCC/SCADA/0134 in the RTU, such full Cyber Security upgrade of the existing system. All work shall be carried out under supervision of railway representatives with prior intimation & after approval of Sr.DEE/TRD/SBC.

Schedule-3 SW-III : Integration/hooking up of RTUs

Schedule 3: SI No 01- Modification/upgradation, testing & commissioning in existing standard SCADA software at RCC Equipment's of SBC-JTJ and SBC-Y sections for configuration, integration/hooking up of additional 22 RTUs of adjacent section with master station.(YNK-DMM section).

The scope includes modification/upgradation, testing, and commissioning of the existing standard SCADA software at the RCC equipment of the SBC-JTJ and SBC-Y sections to facilitate configuration, integration, and interfacing of 22 additional RTUs of the YNK-DMM section with the Master Station. The upgraded RTUs of the YNK-DMM

section, presently connected to a separate server, shall be integrated with the upgraded server of the existing SBC–JTJ and SBC–Y sections. All associated LAN infrastructure, communication channels, protocols, and interfaces shall conform to the latest RDSO specifications TI/SPC/RCC/SCADA/0134.

Schedule 3: SI No 02- Modification/upgradation, testing & commissioning in existing standard SCADA software at RCC Equipments of SDVL-BSN & YNK-KQZ sections for configuration, integration/hooking up of additional 17 RTUs of adjacent section with master station.(BYPL-OML section)

The scope includes modification/upgradation, testing, and commissioning of the existing standard SCADA software at the RCC equipment of the SDVL-BSN & YNK-KQZ sections to facilitate configuration, integration, and interfacing of 17 additional RTUs of the BYPL-OML section with the Master Station. The upgraded RTUs of the BYPL-OML section, presently connected to a separate server, shall be integrated with the upgraded server of the existing SDVL-BSN & YNK-KQZ sections. All associated LAN infrastructure, communication channels, protocols, and interfaces shall conform to the latest RDSO specifications TI/SPC/RCC/SCADA/0134.

Schedule 3: SI No 03- Modification/upgradation, testing & commissioning in existing standard SCADA software at RCC Equipments of SDVL-BSN & YNK-KQZ sections for configuration, integration/hooking up of additional 12 RTUs of adjacent section with master station.(BAW-HAS section)

The scope includes modification/upgradation, testing, and commissioning of the existing standard SCADA software at the RCC equipment of the SDVL-BSN & YNK-KQZ sections to facilitate configuration, integration, and interfacing of 12 additional RTUs of the BAW-HAS section with the Master Station. The RTUs in BAW-HAS section are of M/s Vbro make. The upgraded RTUs of the BAW-HAS section, presently connected to a separate server, shall be integrated with the upgraded server of the existing SDVL-BSN & YNK-KQZ sections. All associated LAN infrastructure, communication channels, protocols, and interfaces shall conform to the latest RDSO specifications TI/SPC/RCC/SCADA/0134.