

## **ANNEXURE FOR MSDAC SUPPLY AND INSTALLATION**

### **A. Multi Section Digital Axle Counter (MSDAC) system**

1. Supervisory track section shall be made for every 2 track sections in the Automatic Block section. In isolated cases, the number can be increased to 3 with the approval of the Engineer.
2. MSDAC shall be provided as per RDSO specification no. RDSO/SPN/176/2013 Ver.3 or latest.
3. As per Clause 5.0.36 of the RDSO specification for MSDAC, "Detection point at the junction of two consecutive sections shall be capable of giving feed to both the monitoring sections". This feature shall be complied without using additional DPs. At least one DP of evaluator system shall be able to share information of track section through modem of evaluator instead of providing cables quad cables to far end DPs of that track section.
4. Where Evaluator is installed in different locations under distributed architecture, it shall be possible to network these Evaluators over Optical fibre media for sharing common DP information through Evaluators. Network redundancy shall be possible without any external manual changeover arrangement.
5. MSDAC system shall provide local & remote diagnostics from centralized place on the network for the entire section or yard as per RDSO specification RDSO/176 para 6.1.1. A diagnostic terminal should be able to display the detection points in signalling layout format, and any warnings and errors shall be notified on that track layout at a place along the network.
6. It shall be possible to create one virtual/ physical supervisory section for two consecutive sections at no additional cost to purchaser for achieving higher availability of system by built-in automatic reset by supervisory system.
7. Supply of Event logger with monitoring software (one Set)/web interface with a provision for recording various events including manual reset and automatic reset events as per RDSO spec 176 item no. 5.9.
8. Axle Counter mounting shall be of Clamp type.
9. The number of Detection Points shall be as per design approved by the Engineer.
10. The length of lead wire/cable with Axle Detector DP shall be as per design approved by Engineer.
11. Special maintenance instruments and special tools, in required numbers, used for safe and reliable adjustment and maintenance of equipment be supplied along with the system.
12. The Contractor should comprehensively detail the impact of system failure on train detection and the impact on train detection once the failure is restored.
13.
  - (1) Resetting The Auto resetting scheme by corresponding Dual track and Supervisory track Section shall be implemented after prior approval of the Engineer at Design stage.
  - (2) Manual resetting of MSDAC tracks shall be as per clause no 5.4 of RDSO specn. and other RDSO guidelines and prevalent practice of Northern Railway.
14. Evaluator shall be installed at various locations, and it shall be possible to network evaluators over optical fiber media for sharing common DP information through evaluators. Network redundancy shall be possible without any manual changeover arrangement.
15. Supply of Event logger (In-Built) with monitoring software (one Set)/web interface with a provision for recording various events including manual reset and automatic reset events as per RDSO spec 176 item no. 5.9.
16. MSDAC system shall provide remote Centralized monitoring for the entire section of yard. For centralized monitoring a diagnostic terminal should be provided to display the detection points in signalling layout format and any warnings and errors shall be notified on that track layout at the control room. For such an arrangement Railway will provide railnet connectivity at one of the locations in the section.
17. There are 3 lines in Kalumna-Durg Section. Segregation to be maintained at evaluator level for each line for better reliability and availability of the system. Maintenance or failure of One evaluator shall not impact all the running lines. So Evaluator for each line should be separate.

### **B. Installation and Commissioning**

- (1) The Trackside equipment shall be installed on that side of the track, which is less dangerous for maintenance staff. It should not be installed between the main line tracks.

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- (2) The requirement of track maintenance machines (mechanized) shall be considered while installing outdoor equipment. Tracksides Equipment installations shall be agreed with the Engineer prior to installation to avoid conflict with track maintenance machines
- (3) The Contractor shall take adequate anti-theft measures to ensure security of tracksides equipment. The anti-theft measures shall be proposed by the Contractor and approved by the Engineer at the time of installation.
- (4) The detection points attached to the rail must be protected by means of deflectors against mechanical damage that can be caused by hanging parts of running trains. Deflector plates to be installed on both sides for protection of sensors.