

East Central Railway
S&T Department

No. ECR/S&T/Sig/Policy/200 Pt-IV

Office of the
GM (S&T) HJP
Dt:-21.09.2020.

CSTE/Con/South & North/MHX
Dy.CSTE/Works/HJP/DHN/DDU/DNR
Sr.DSTE/DNR,DDU,DHN,SEE & SPJ,
East Central Railway.

Sub: Technical Specifications of Automatic media changeover

Please find enclosed herewith Technical Specifications of Automatic media changeover as Annexure duly approved by PCSTE.

It is requested to take necessary action so that the guidelines contained in the specification will be implemented positively.

DA:- As Above(03 Pages)

Digitally signed by GAUTAM
GUPTA

Date:Mon Sep 21 20:57:45 IST
2020

Reason: (Gautam Gupta)

Dy.CSTE/Signal/HJP
For GM (S&T)/ECR

Copy to:- CSTE/Works for kind information please.

AnnexureEast Central RailwayApproved Technical Specifications of Auto Media change over

S No.	Technical Specifications
1	Should interface Digital Axle Counter /UFSBI /Control Phone/Railway Telephone/Data over optical fiber/E1 with automatic changeover Mechanism.
2	<p>Connectivity to other system:</p> <ol style="list-style-type: none"> 1. Shall have at least two optical ports for dark fiber connectivity for point to point connectivity with another system and shall enable ring protection. Equipment shall support flexible network topologies- point to point connectivity through Optical Fiber/E1 and Chain/Multipoint connectivity through E1. 2. Shall have at least two E1 ports (balanced 120 Ohms supporting both G.703/G.704 as per ITU – T Standards) for connectivity through STM ¼ with another similar system. There shall be cross connecting facility. (Mandatory)
3	System shall have flexible ports to support various needs like Digital axle counter/UFSBI/Control Phone/Railway Telephone/Data.
4	System shall be housed in within 2U height Chassis which can be fitted in a standard telecom 19” inch rack.
5	<p>Interface with equipments:</p> <ol style="list-style-type: none"> 1. Shall have at least 6 E&M ports(ITU-T V.21 and V.23) and shall be possible to increase E&M ports to 8 if required by user & configurable to 2W/4W with adjustable gain as per requirement.(Minimum number of ports are mandatory) 2. It shall support FXO/FXS cards for hot line and extension of Railway telephones. 3. Shall have minimum two ITU-T V.24/RS232 ports to carry asynchronous data. Mandatory/Optional as per requirement of executive units. 4. Shall have Minimum 4 Ethernet port 10/1000 Mbps(IEEE 802.3) for internet or other services. (Mandatory) 5. Shall have SNMP/Telnet/Console ports for remote monitoring/Event Logging
6	<p>Power Supply:</p> <p>Shall have redundant dual DC/AC power supply, DC power supply used, should be in the range of 18V-72V DC</p>
7	<p>Front Panel LED Indicators:</p> <ol style="list-style-type: none"> 1. Unit to have appropriate LED indicators to show the status of the unit E1/OFC uplink /Quad health, Power supply etc. 2. Quad health indication to be available on the front panel when Communication via E1/Dark Fiber is available <p>Mandatory</p>

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8	<p>Automatic changeover:</p> <ol style="list-style-type: none"> Automatic changeover shall take place between E1 and Dark fiber, in event of failure of either medium without any interruption to Axle counter/UFSBI/Control/Data etc. In event of failure of both E1 and Dark Fiber or system switch off, E&M ports shall automatically get connected to quad cable, if provided for uninterrupted working of Axle counter/UFSBI/Control/Data etc. In event of any interruption to dark fiber, ring protection shall become effective for uninterrupted function of connected systems. <p>Mandatory</p>
9	<p>Optical Module:</p> <ol style="list-style-type: none"> Optical Module should support dual mode (separate Tx/Rx) working up to 40 Kms & single mode (Tx/Rx through single fiber) 20 Kms – driving distance. Mandatory
10	<p>Potential Free Contacts:</p> <ol style="list-style-type: none"> The potential free contacts shall be provided for connecting to the data logger/RTU for remote monitoring various parameters such as- media in use, health of quad cable, power supply status etc. Alternatively it shall be possible to monitor various parameters through Telnet/Network Management ports. <p>Either of two is Mandatory</p>
11	<p>Audible Alarm(Link Failure):</p> <ol style="list-style-type: none"> The uplink E1 or OFC is cut front panel audible buzzer with resettable feature to be provided to draw attention. <p>(Mandatory)</p>
12	<p>Configuration of the unit:</p> <ol style="list-style-type: none"> A simple easy to use menu driven using hyper terminal by connecting PC/LAPTOP to console port or TELNET port of the device (Specific software for configuration resident in PC or LAPTOP for configuring the device is NOT allowed), any general PC or LAPTOP should can used to configure the equipment. (Mandatory) There must be provision of Event logging in the device which can be retrieved through any general PC/Laptop. Event logging of failures of E1/OFC/POWER OFF of the equipment to be available in a non-volatile manner for at least 1000 latest events with Date and Time stamp.(Mandatory)
13	<p>Operating temperature: -5°C to +55°C Relative Humidity: 5% to 95%. Prevailing latest Environment clauses issued time to time by TEC for this item must be complied and tested from Government accredited LAB - Mandatory</p>
14	<p>Equipment shall be warranted for the period of minimum 1 year from date of Commissioning. Installation and commissioning of equipment to be done by OEM only & certificate of Installation to be signed jointly with the Railway officials and OEM-Mandatory</p>
15	<p>Equipment shall be protected by SPD of reputed make like Phoenix, OBO Betterman, DEHN etc. having valid KEMA/DEKRA/UL Certification of sufficient rating. Mandatory</p>

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16	If PFC provided, wiring of PFC contact up to Data logger to be done as part of commissioning.
17	Wiring Diagram of equipment in existing OFC rack along with installation manual (both Hard copy and soft copy) to be handed over to railway officials after installation.- Mandatory
18	Db gain setting for proper working of axle counter/UFSBI/SCADA to be done as part of installation and commissioning and its adjustment training to be given to Railway Officials.
19	The Units and features as per the specifications to be demonstrated in Railway Premises Mandatory in specific before putting system into use.- Mandatory