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भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
रेलवे बोर्ड (RAILWAY BOARD)

No.2022/Sig/17-SigEquip/DAC

New Delhi, dated 11.03.2025

PED/S&T,
RDSO, Manak Nagar,
Lucknow.

Sub: Technical System Application Approval (TSAA) of Digital Axle Counter system installations before commissioning.

Ref: RDSO letter no. RDSO-SIG0MISC(DACS)/1/2020-O/o ED/Signal/RDSO dated 06.12.2024

The proposal by RDSO for TSAA approval for DAC System installation by SAG level officer vide letter under ref has been examined in Board's office.

The proposal is agreed as submitted by RDSO subject to the following:

- (i) DAC application to include sidings also (TSAA checklist item 1e, 3d and 5.a(i))
- (ii) In addition to OEMs certificate, Contractor's certificate (work executing agency) also to be submitted on standard format to be decided by RDSO.
- (iii) Training details of maintenance staff shall be included under new item no.8 of TSAA application checklist.
- (iv) RDSO to include latest instructions on earthing, bonding, surge & lightning protection (issued vide TAN 3006 ver3.0.) in the TSAA checklist.
- (v) Also to include wiring of PF contact of SPDs to Datalogger under item no.2g of the TSAA checklist.

RDSO may update TSAA checklist accordingly and shall advise Zonal Railways for further implementation over IR. TSAA approval shall be accorded by CSE of the zonal railways or a nominated SAG officer in case of CSE is not in position with no further delegation.

This issue with approval of AM/Signal.

Shyam Kumar Verma
Digitally signed by
Shyam Kumar Verma
Date: 2025.03.11
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श्याम वर्मा / Shyam Verma
कार्यकारी निदेशक/सिग्नल (विकास)
Executive Director/Signal (Dev.)

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Ref: RDSO-SIG0MISC(DACS)/1/2020-O/o ED/Signal/RDSO

6th December 2024

The Executive Director/Signal (Dev.),
Railway Board, Rail Bhawan,
New Delhi.

Sub: Checklist for Technical System Application Approval (TSAA) of Digital Axle Counter system Installations.

Ref: 1. Discussion in “Workshops on asset reliability of signalling equipment” held in RDSO/LKO on 4th & 5th July 2024.

2. Discussion in Railway Board’s meetings on 23.09.2024 and 05.11.24.

During above referred meetings, it was deliberated that having a checklist of the important guidelines for installation of Digital Axle Counter, to check it before the commissioning, is likely to significantly improve the quality of DAC system installation. Similar exercise in Electronic Interlocking (EI) has helped in ensuring compliance of all the instructions required for good quality installation before commissioning.

On the same line, a checklist for Technical System Application Approval (TSAA) of Digital Axle Counter Installation has been prepared by this office, which can be used by Zonal Railways to verify the DAC system installation before its commissioning. This checklist dully filled and with all the necessary documents attached may be submitted to a nominated, at least SAG level, open line officer in Zonal HQ for approval before the commissioning.

This checklist, along with the recommendation to implement it over the Indian Railways is being sent for suitable advice to Zonal Railways. This has the approval of PED/S&T/RDSO.

DA: Checklist for TSAA of DAC Installation.

Digitally Signed by
Triambak Tiwari
Date: 06-12-2024 18:28:28
Reason: Approved
(Triambak Tiwari)
Director/Signal-II
for Director General/S&T

**CHECKLIST FOR TECHNICAL SYSTEM APPLICATION APPROVAL
(TSAA) OF DIGITAL AXLE COUNTER (DAC) INSTALLATION**

Sl. No.	Information/ Details to be submitted by Railways	Remark
1.	DAC installation details	
	a) Division and Zonal Railway	
	b) Station/Section name	
	c) MSDAC/SSDAC/HASSDAC	
	d) Make of DAC with Model No. & Version	
	e) Application - Yard/ABS/IBS/BPAC	
	f) Number of Detection Points	
	g) Number of Detection Track section	
	h) Software Version No.	
	i) Software Check-Sum No.	
2.	Plan/ Documents	
	a) Signal Interlocking Plan	
	b) Pre-Commissioning Check List (PCCL) dully filled and signed	
	c) OEM's certificate	
	d) Compliance of RDSO's TAN- STS/E/TAN/7010 version 1.0 or the latest.	
	e) Dully filled and signed Pre-Commissioning Checklists for Earthing & Bonding System (RDSO/SPN/197, Ver, 1.0) provided for MSDAC system (Indoor & Outdoor equipment) as applicable.	
	f) Earthing Plan	
	g) Record of provision of SPDs with make and model details.	
	h) Inspection Certificate (IC) of the system supplied.	
	i) Photocopies of the relevant pages of maintenance record created for the MSDAC system being installed.	
3.	A. Connectivity Details and schematic diagrams of Power cables, Quad cables and OFCs (Main and standby)	
	a) IPS room to Relay Room.	
	b) Relay Room to field units.	
	c) Relay Room to ASM Room (for resetting).	
	d) Station to station communication (Main and standby, along with method of changeover) (for BPAC/IBS/ABS application)	
	B. Power Supply arrangement	
	a) Availability of dedicated power supplies with N+1 modules from IPS.	For indoor DAC equipment.
		For outdoor DAC equipment.
	b) Availability of separate power supplies for dual systems	For indoor DAC equipment.
		For outdoor DAC equipment.
4.	A. Provision of external Data logger	
	a) All relay contacts are hard wired with Data logger monitoring?	
	b) Clocks of data logger and event logger of DAC are matching?	
	c) Monitoring of IPS DC-DC converters used for DAC system (Internal and external) through potential free contact is available in data logger?	
	d) DAC system failure reporting through the data logger exception report is	

	available?	
	e) In case of dual detection, if the two relays associated with them are not picking up and dropping down together, failure reporting through data logger exception is available?	
	B. DAC's event logger	
	a) Whether DAC's event logger report generation facility is verified?	
5.	Manual reset arrangement	
	a) Whether resetting arrangement is as per the provisions of IRSEM, July-2021	<div>(i) Clause 17.7.4 for ABS/IBS/BPAC applications</div> <div>(ii) Clause 17.7.5 for yard applications</div>
	b)What is provided for resetting operation? Reset Box or VDU	
	c)Whether reset boxes are provided with clear writing of the track section associated?	
6.	Earthing & Lightning protection	
	a) Whether earthing is provided as per the relevant clauses of RDSO's Technical Advisory Note no. STS/E/TAN/7010, OEM's recommendations and applicable PCCL?	
	b) Whether Surge Protection Devices (SPDs) are provided as per the relevant clauses of RDSO's Technical Advisory Note no. STS/E/TAN/7010, OEM's recommendations and applicable PCCL?	
7.	Other	
	a) For IBS/ABS installation using MSDAC, whether line wise electronics is planned. In which, there is no single point of failure that can affect both the lines at the same time?	

Note: Application shall be submitted to Zonal Railway after thorough scrutiny, verification and forwarding by executing agency and open line officials.