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

No. 2017/Sig/Signalling/Modernization/Policy   **Dated: 25.02.2025**

PCSTEs   **PED/S&T/RDSO, Lucknow.**
All Zonal Railways.

MD/CRIS, New Delhi

Sub: Minutes of Meeting held regarding Remote Diagnostic & Preventive Maintenance System (RDPMS) in Signalling on 31.01.25.

Ref: RB letter No. 2017/Sig/Signalling/Modernization/Policy dt: 28.01.25.

Please find enclosed a copy of the 'Minutes of Meeting' held on 31.01.2025 at the Railway Board regarding the implementation of the Remote Diagnostic & Preventive Maintenance System (RDPMS) in Signalling.

This is for your information and necessary action please.

Encl.: As above

Signed by
V B Mathur
Date: 25-02-2025 15:40:09

(V B Mathur)
Executive Director/S&T(Dev.)-I,
Railway Board.

Copy To: PPS/Member(Infra), For kind information of Member/Infra

Minutes of Meeting held regarding Remote Diagnostic & Preventive Maintenance System (RDPMS) in Signalling on 31.01.25

Members Present:

Railway Board	Zonal Railways
- Sh. Naveen Gulati, Member Infra - Sh. Sameer Dikshit, AM/Telecom - Smt. Vijaylaxmi Kaushik, AM/Signal - Sh. Sandeep Mathur, PED/SM - Sh. S.Bandopadhyaya, PED/S&T(Dev) - Sh. Vivek Kumar ED/S&T(Dev)-II - Sh. V B Mathur, ED/S&T(Dev)-1 - Sh. A.K. Singh, Dir/Tele-II	- Smt. Savita Gedam, PCSTE/ECR - Sh. Vijay Singh, PCSTE/SR - Sh. P.V. Murli Krishna, PCSTE/SCR - Sh. Prashant K Varma, CSE/NCR - Sh. Rajeev Kumar, CSE/NR - Sh. G.P. Khutey, CCE/SECR - Sh. Umesh Kumar, CSE-I/WR - Sh. B.K. Patel, CSTE/Proj/SER
CRIS	**Representatives of:**
- Sh. G.V.L. Satya Kumar, MD/CRIS - Smt. Surekha Sahu, Dir/Infra/CRIS - Sh. Sumit Garg, GM/EP/CRIS - Sh. Vivek Mohan, GM/Cloud/CRIS - Sh. Mukesh Sharma, PPE/Cloud/CRIS - Sh. Rahul Joshi, PPE/SMMS/CRIS	- M/s BITCOM, Noida. - M/s Energy 7, Bihar. - M/s Efftronics System Pvt. Ltd, AP. - M/s Jarsservice, Kolkata. - M/s Gadgeon Smart System Pvt. Ltd, Kerala.
RDSO	
- Sh. Deepu Shyam, ED/Sig-II/RDSO - Sh. M.K. Mohanty, SSE/Sig/RDSO	

The meeting was convened to formulate a strategy for the implementation of the Railway Diagnostic and Predictive Maintenance System (RDPMS) in Indian Railways. It was attended by representatives from Zonal Railways, RDSO, CRIS, and OEMs. Eight Zonal Railways with field and developmental experience were invited to provide valuable insights.

During the meeting, various aspects of RDPMS implementation like, use of AI & machine learning to create predictive models, achieving high prediction accuracy in data analytics, automatic parameter capturing from signaling gears and internal diagnostics of various interlocking sub-systems were discussed and deliberated with all stakeholders so as to get full benefits of maintenance optimization as the system continuously learns and refines its predictive models.

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The following actionable points were discussed and finalized during the meeting:

SN.	Item	Action By
1,	**The current scenario:** a. Presently there are around 100+ individual stations in various zones where RDPMS is working using different business rules as defined by OEMs in consultation with Zonal railways. b. RDSO in discussion with OEMs have already drafted Standard Business Rules and common protocol in the new draft FRS. c. These updated business rules are more comprehensive and exhaustive, covering a wider range of scenarios and inputs from data logger to improve fault detection and enable proactive maintenance. d. Zonal Railways shared their experiences and it was informed that even with the use of present OEM-defined business rules they have been able to prevent certain failures and detect abnormalities. e. Zonal Railways were of the view that to further improve the system and leverage the use of AI and machine learning sufficient bigger datasets were required.	PED/S&T/RDSO PCSTEs
2.	**Regarding the existing RDPMS stations and new being taken up by zonal railways the following was decided:** a. The standard business rules as defined in the new FRS shall be implemented at the existing RDPMS stations. b. For the above, OEMs agreed to implement the same for one station each by mid Feb 2025, 5 stations by Mar 2025 and balance in next 3 to 4 months. Zonal Railways and RDSO to ensure the same. c. As discussed with the zonal Railways, in order to get a larger database, the works which are being taken up by the zonal Railways should be implemented. d. Implementation works to be planned in such a way that sections involving major junctions and way side stations are covered, ensuring through train running condition also. e. RDSO will release an updated Functional Requirement Specification (FRS) by February 2025. All new and ongoing projects, including works under tendering, must adhere to this version. f. RDPMS data from these upgraded stations shall be shared with CRIS for development of unified application software at a later stage. OEMs to ensure data sharing with CRIS.	PED/S&T/RDSO PCSTEs MD/CRIS

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SN.	Item	Action By
3.	While finalizing the FRS RDSO shall ensure the following: a. In the new RDPMS installations all Edge and IoT devices should comply with CCSP standards. b. Ensure standardized data structures across OEMs to support interoperability among them. **c.** Finally a unified dashboard application for data visualisation & user control to be developed.	PED/S&T/RDSO MD/CRIS
4.	**Interoperability & Common Broker Layer:** CRIS will assess the feasibility of adopting CCSP or an alternative common service protocol. If CCSP is chosen, CRIS will coordinate with C-DOT to address the associated techno-commercial aspects.	MD/CRIS
5.	**Unified Application Development:** CRIS will develop a unified RDPMS application with a common dashboard for visualization and control across all OEM-specific software. In the meanwhile, existing OEM applications must also support necessary visualization and user controls in their respective RDPMS application software. A proposal for the same may be submitted by CRIS.	PED/S&T/RDSO MD/CRIS
6.	**Hosting and Data Storage:** To ensure development following shall be followed: a. Presently OEMs shall continue hosting their application software on their own servers to ensure uninterrupted availability of RDPMS benefits. The details shall be provided to CRIS as well. b. Subsequently the OEMs' RDPMS application software will be hosted on CRIS servers and integrated with SMMS. CRIS shall establish a scalable server and storage infrastructure to meet RDPMS deployment requirements for the next 3–4 years in the initial phase. c. Finally, CRIS to have common dash board and application software replacing individual OEM application.	PED/S&T/RDSO MD/CRIS
7.	**Sensor Testing and Calibration:** RDSO to standardize sensor calibration procedures & periodicity and ensure a robust power supply arrangement for IOT & edge devices in the updated FRS. A Pre-Commissioning Checklist (PCCL) covering these aspects needs to be issued by RDSO.	PED/S&T/RDSO MD/CRIS

This is issued with the approval of competent authority.

2017/Sig/Signalling/Modernization/Policy
Feb 18, 2025

Signed by
V B Mathur
Date: 25.02.2025 15:23:35
(V.B.Mathur)
Executive Director/S&T(Dev)-I
Railway Board