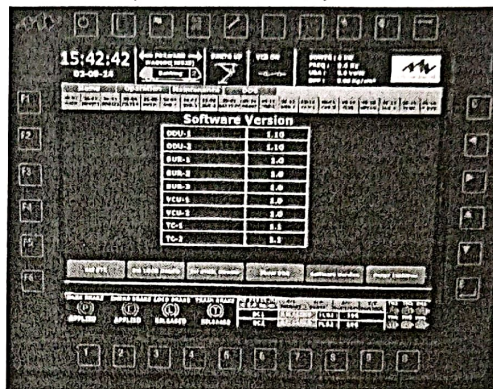


## Joint Note

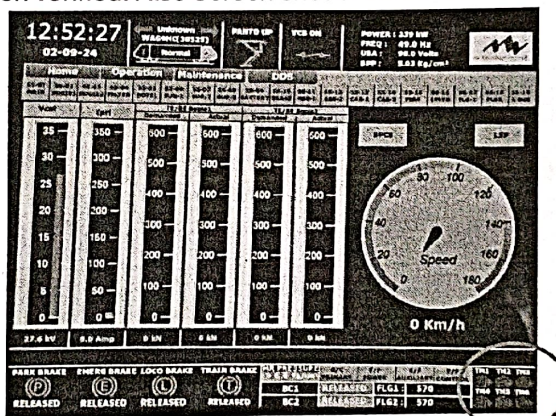
In compliance to CLW letter no. C-D&D/T/24(Part)/MV, Vol. VI (Part-II) dated 05.08.2024 and joint note dated 30.07.2024, firm has uploaded new software version. Further functionality and performance testing was done on 30.08.20234 and the observations are as follows:

1. The snapshot of software version which has been finally uploaded in the loco no. 38525 is as follow and the version are

**DDU-1/2 → 1.10, BUR-1/2/3 → 1.0, VCU-1/2 → 1.0, SR-1/2 → 1.1**



2. Graphical user interface (GUI) to monitor the healthiness of each motor has been implemented in DDU and same has been verified. Also Screen shot of same is attached below for reference



3. Recordings of 43 critical signals as per RDSO letter no. EL/3.1.35/17 dated 28.04.2023 has been implemented. The storing is being done for 72 hours and it is being downloaded through USB cable and the data displayed in Excel format which is provided as annexure.
4. Logic for energy-saving scheme, based on RDSO Modification Sheet no. 0482, rev 1, has been provided. Further whenever energy saving mode gets activated then a pop up message on DDU indicating "Loco in energy saving mode" along with the illumination of the BPFA light starts glowing.
5. Against implementation of DPWCS ICD firm confirmed that they have MVB ports ready for integration. However, due to unavailability of DPWCS in the locomotive the logic can't be verified.
6. Against implementation of WTB ICD firm mentioned that they are using standard WTB gateway unit of M/S AMIT which is already been used by other propulsion manufacturer. Same has been verified in loco. It can't be verified because similar propulsion system of M/s MV Electrosystem propulsion is not available.
7. Firm has provided Trouble shooting and Maintenance manual with Fault diagnostic list and mentioned that Compliance with the protection scheme is in already include in the manual and design documents. Thus, firm intimated to refer the same. Also firm has provided a joint test report which has been witnessed by CLW.

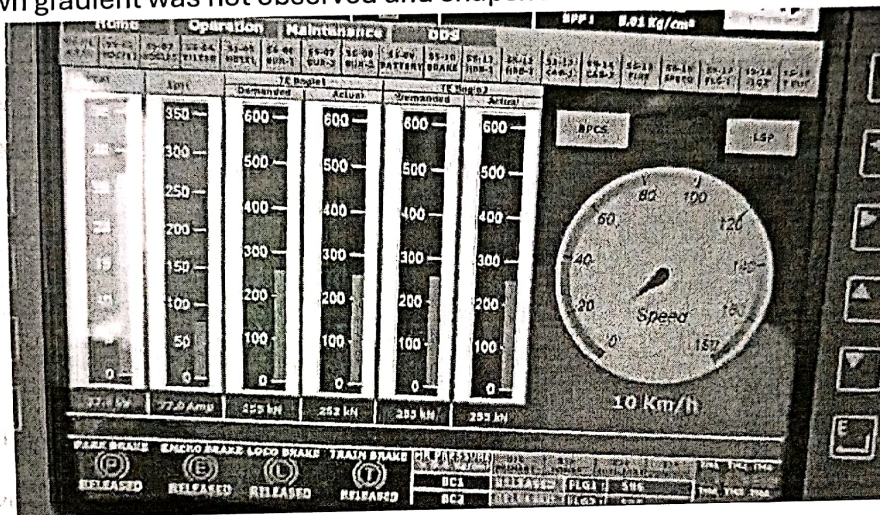
*Arbit Kumar Vasa*

*Wajid Hussain*



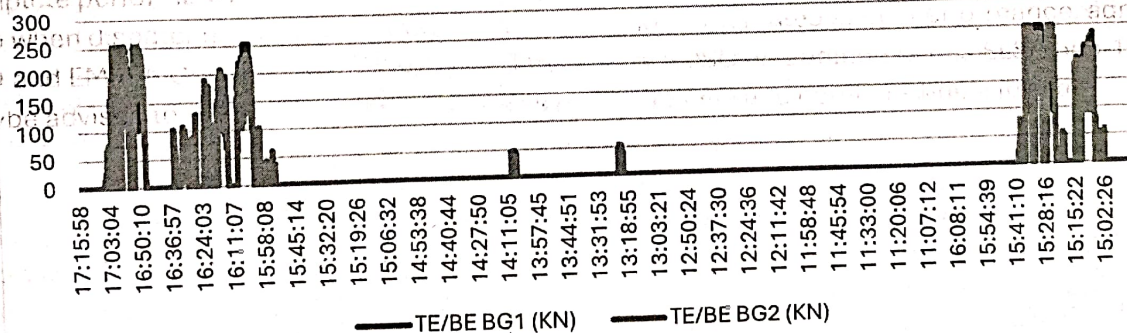
8. On 30.08.2024, a testing was conducted with two locomotives placed back-to-back in regeneration mode. The trail was done in both up and down gradient available inside CLW. In the testing following was observed

- On the day of testing it was fair and sunny and no rain was there.
- In the up gradient the maximum tractive effort which was reached was 492 KN and the maximum speed was 9 KMPH. Wheel Slip appeared sometime but no tripping of Traction converter
- In down gradient the maximum tractive effort which was reached was 506 KN (254 kN for Bogie 1 and 252kN for Bogie 2) and the maximum speed was 11 KMPH. Wheel slip in down gradient was not observed and snapshot for the same is attached for reference.



In addition to this the TE curve for complete testing period is attached for reference

TE VS TIME



9. Firm has also implemented that DDS for CAB-2 part and now same is accessible.

In view of above of it can be observed that slip slide control has been improved from last trial. Further presently the test which is carried out is with two locos which is connected back-to-back in regeneration mode and the loads are simulated. However more precise tuning may be required for matching the actual service condition during field trials. Also, due to speed and track limitation the complete performance can't be checked at higher speed so firm maybe advised to do foot plating of loco when dispatched from CLW. Further firm may also be intimated about Performance, adhesion, EBD and EMI/EMC/RFI test which will be conducted by RDSO. In addition to this ELS/Shop-19/CLW maybe advised to do the pre despatch tests as per the testing and commissioning format.

SSE/D&D/CLW

M/s MV Electrosystems