भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

Minutes Of The Meeting Of
'Mission Implementation And Coordination Committee (MICC)'
To
"Technology Mission For Indian Railways (TMIR)"

Held at Railway Board, New Delhi on Monday, 12th January, 2016

1. In terms of Railway Board's letter no. 2015/CE-I/INNOV/3/TMIR, dated 31/12/15; meeting of the 'Mission Implementation & Coordination Committee (MICC)' to the "Technology Mission for Indian Railways (TMIR)" was held on 12.01.2016 at Railway Board's office, New Delhi.

2. Following were present :

A. Members of The 'MICC' To 'Technology Mission For Indian Railways' (TMIR) :

(1)	Prof. N.S. Vyas, *Chairman*	*vyas.nalinaksh@gmail.com*	*9956292801*
(2)	Shri Alok Kumar, *Co-Chairman and EDCE(G)/RB*	*alokalokindia@rediffmail.com*	*9910487302*
(3)	Shri Nikhil Pandey, *ED/E&R/RB*	*eder@rb.railnet.gov.in*	*9910487329*
(4)	Dr. Kalpana Dube, *ED/Finance/RDSO*	*edfinrdso@gmail.com*	*9794863002*
(5)	Shri Vinay K. Agarwal, *ED/Research/RDSO*	*edresrdso@gmail.com*	*9794863022*
(6)	Dr. Neeraj Sharma, *Scientist(G) & Adviser/MoST*	*neerajs@nic.in*	*9810753972*
(7)	Shri Om Prakash Tantia, *Industry Member*	*tantiaom@gmail.com*	*9831008640*
(8)	Dr. Sunil D. Sherlekar, *Industry Member*	*sunil.d.shelekar@gmail.com*	*9663090004*

B. Other Participants :

(9)	Shri R. Subrahmanyam, *Addl. Secy.(TE), MHRD*	*rajendraverma@hotmail.com*	*9717644269*
(10)	Shri Brijesh Kumar, *ED/GE/RDSO*	*sredgerdso@gmail.com*	*9794863003*
(11)	Dr. Satyendra Mittal, *Assoc. Prof., IIT/Roorkee*	*satyendramittal@gmail.com*	*9412074237*
(12)	Dr. A.K. Darpe, *Assoc. Prof., IIT/Delhi*	*akdarpe@mech.iitd.ac.in*	*9911112446*
(13)	Dr. Utpal Das, *IIT/Kanpur*	*utpal@iitk.ac.in*	*9415131123*
(14)	Prof. Rudra Pratap, *Nano Sc., IISC/Bengaluru*	*pratap@cense.iisc.emet.in*	*9845078056*
(15)	Dr. T.V.K. Gupta, *Asst. Prof., VNIT/Nagpur*	*tvkgup@gmail.com*	*7024505515*
(16)	Shri Anil Kumar, *Dir./CE(G)/RB*	*dcegrb@gmail.com*	*9717647611*
(17)	Shri Amit Saran, *Dir./E&R(ME)/RB*	*derme@gmail.com*	*9717647259*
(18)	Shri Akhilesh Mishra, *Dir.C&IS/M/RB*	*akhiles.misra@gov.in*	*9717640768*
(19)	Shri A.M. Rizvi, *Dir./GE/RDSO*	*dirgerdso@gmail.com*	*9794863289*
(20)	Shri Rishi Gangwar, *Dir./Res.(Civil)/RDSO*	*drcrdso@gmail.com*	*9794863280*
(21)	Shri Amit Srivastava, *Dir./Res.(Mech.)/RDSO*	*rdsodrrm@gmail.com*	*9794863072*
(22)	Shri Sanjay Sahu, *Dir./Track/RDSO*	*dtd4rdso@gmail.com*	*9794863046*

(23)	Shri Vineet Singhal, *Dir.(Wagon)/IRDSO*	*dswwd.rdso@gmail.com*	*9794863129*
(24)	Shri Neeraj Srivastava, *Dir./Testing/RDSO*	*rdso.dirtest@gmail.com*	*9794863235*
(25)	Shri Manish Pande, *Dir./Wagon/RDSO*	*manpan25@yahoo.com*	*9794863033*

3. Shri Alok Kumar, Co-Chairman/TMIR extended warm welcome to the Mission Chairman, Members of the 'MICC' and all the participants of the meeting.

4. The Mission Management Manual (MMM), as deliberated earlier was finalised and was signed by the Members of MICC. Approval of Railway Board on MMM to be expedited for going ahead on 'TMIR' by all concerned in a systematic manner.

5. Following project proposals were presented during the meeting and decisions were taken, as detailed below –

(1) **"Fog-Vision Instrumentation – 'NAYAN'** (New Apparatus for Year Around Navigation)" - Presented by Prof. Utpal Das, IIT/Kanpur in association with Research Directorate of RDSO :

- ❖ In principle approval is granted to the Proposal with the following observations :
  - ✓ The Objective of the project must be to develop a prototype (for the IIT Kanpur component) and to be installed on a locomotive.
  - ✓ Deliverables and time-lines should be clearly mentioned.
  - ✓ The PI should re-submit the proposal with the above changes by Jan 27, 2016.

(2) **"On-Board Diagnostics & Condition Monitoring" -** Dr. A. Darpe, IIT/D and Prof. R. Tiwari, IIT/G in association with Research Directorate of RDSO :

- ❖ In principle approval is granted to the project proposal with the following observations :
  - ✓ Focus should be on installation of the Instrumentation System on the Coach / Loco.
  - ✓ The timeline for instrumentation installation should be six months and data collection, software development & diagnosis algorithm should be completed in 18 months.
  - ✓ Laboratory rig development, if needed, can take place in parallel. This activity can be proposed for a duration of two years.
  - ✓ Field data available with RDSO should be studied and utilised for development.
  - ✓ PI should re-submit the proposal with the above changes by Jan. 27, 2016.

(3) **"MEMS based Energy Harvesters for Fire Alarm Sensors & Emergency LED Lamps"**, presented by Prof. Rudra Pratap, IISc, Bangalore :

- ❖ The project should be examined by RDSO (ED/Carriage, ED/PS&EMU and ED/EM) for adjudging its utility.
- ❖ The PI should visit RDSO and re-submit his proposal by 12.2.2016.

(4) **"Design methodology and software development for Railway formation design**, with all possible variants of soil types, blanket material, axle loads, speed, use of Jute/Geo-synthetics etc.", presented by Prof. Satyendra Mittal, IIT/Roorkee in association with GE Dte. of RDSO :

- ❖ In principle approval is granted to the Proposal with the following observations :
  - ✓ The project should be made cost realistic and project duration to be made as 2 years.

- ✓ PI of the project should re-submit the proposal by 12.2.2016.

(5) **"Digital Train Communication Network"**, presented by Shri Akhilesh Mishra, Director/ C&IS/Railway Board :

- ❖ ED/Tele/RDSO to examine the project. Dr. Sunil Sherlekar, Member/MICC will coordinate with Shri Akhilesh Mishra for deciding the partner academic & research institutions. Final proposal to be submitted by 12.2.2016.

(6) **"Electronic In-Motion Weigh-Bridge"**, presented by Shri Manish Pande, Director/Wagon/ RDSO in association with Dr. Nachiketa Tiwari of IIT/Kanpur :

- ❖ Preliminary meeting for this project was held with Chairman/TMIR by EDs - Wagon & Research of RDSO on 29.12.2015.
- ❖ In principle approval is granted to the Proposal with the following observations :
  - ✓ The timeline for hardware development should be six months and for software development & validation should be eighteen months.
  - ✓ The PI should re-submit his proposal by Jan 27, 2016.

(7) "Wagon Project consisting of (i) **Software Package Development for Wagon / Bogie Design**; (ii) **Hollow Axle Design** and (iii) **Metal depository for use of alternate materials in wagon design"**, presented by Shri Manish Pande, Director/Wagon/RDSO :

- ❖ In principle approval is granted to the Proposal with a tentative budget of Rs. 10 crore.
- ❖ Initiation Phase is approved, as per the following details –
  - ✓ Objective — Discussion with Foreign Universities & Agencies for formulating the R&D Plan and Collaborative Engagement
  - ✓ Duration — 3 months
  - ✓ Amount — Rs. 15.00 lakh
  - ✓ Investigator — Prof. N.S. Vyas, IIT Kanpur (PI), ED-Wagon, RDSO (Co-PI)
- ❖ Chairman/TMIR will give guidance to Wagon Directorate for finalizing partner institutions and foreign collaborators for all the three projects.
- ❖ The proposal needs to be re-submitted by 28.2.2016.

(8) **"Development of capability for testing of high speed rolling stock"**, presented by Shri Neeraj Srivastava, Director/Testing/RDSO :

- ❖ In principle approval is granted to the Proposal with a tentative budget of Rs. 5 crore.
- ❖ Initiation Phase of the project is approved, as per following details –
  - ✓ Objective — Discussion with Foreign Universities & Agencies for formulating the R&D Plan and Collaborative Engagement
  - ✓ Duration — 3 months
  - ✓ Amount — Rs. 15.00 lakh
  - ✓ Investigator — Prof. N.S. Vyas, IIT Kanpur (PI), ED-Testing, RDSO (Co-PI)
- ❖ Chairman/TMIR will guide the Wagon Directorate for finalizing partner institutions and foreign collaborators for all the three projects.

- ❖ Modified proposal needs to be re-submitted by 28.2.2016.

(9) **"Design and Development of Aluminum based Door, Brake Beams and Brake Discs"**, presented by Shri TVK Gupta, NIT/Nagpur :

- ❖ Wagon Directorate to interact with the PI for adjudging its utility and submit feedback by 12.2.2016.

(10) **"Way-Side Monitoring System" -** Prof. Joseph John, IIT/B

- ❖ The PI is expected to submit his proposal by Jan 27, 2016

6. In terms of the recommendations of High Level Safety Committee, headed by Shri Anil Kakodkar, consultancy to be sought by RDSO from reputed organizations for setting up facilities for higher research in specific areas. RDSO to submit proposal for consideration of MICC.

7. A reference will be made to MHRD for waiving off the Institution over-heads for the projects being undertaken under TMIR.

8. Next meeting of TMIR shall be held at RDSO. Projects need to be formulated as in accordance with the project templates circulated on 8.12.2015 and presentation by the P.I. should be made to the MICC for consideration and sanction.

(No. 2016/CE-I/Innov./2/TMIR, New Delhi, Dated 25.01.2016)

(आलोक कुमार) 25/01/16

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Distribution :

- Director General, RDSO, Lucknow
- Chairman and all the Members of MICC to 'TMIR' (Technology Mission For Indian Railways)
- All the participants of the meeting.

Copy to :

- EDPG/MR and PS/MR for kind information of Hon'ble MR please.
- Adv.PG/MSR, PS/MSR and ED/Innovation/MSR for kind information of Hon'ble MSR please.
- PSO/Sr.PPS to CRB, ME, FC, MM, ML, MT, MS and Secretary for kind information of CRB, ME, FC, MM, ML, MT, MS and Secretary please.
- The Secretary, Ministry of Science & Technology and Secretary, Ministry of HRD, New Delhi for information please