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 Wednesday, 9th March, 2016

1. In terms of Railway Board's letter no. 2016/CE-I/INNOV/2/TMIR, dated 23/02/16; meeting of the 'Mission Implementation & Coordination Committee (MICC)' to the "Technology Mission for Indian Railways (TMIR)" was held on 09.03.2016 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)	Shri Vinay K. Agarwal, *ED/Research/RDSO*	*edresrdso@gmail.com*	*9794863022*
(5)	Dr. Sanjay Bajpai, *Scientist(G) & Adviser/MoST*	*neerajs@nic.in*	*9810753972*
(6)	Dr. Sunil D. Sherlekar, *Industry Member*	*sunil.d.shelekar@gmail.com*	*9663090004*
B.	**Other Participants :**		
(7)	Shri Brijesh Kumar, *ED/GE/RDSO*	*sredgerdso@gmail.com*	*9794863003*
(8)	Dr. Ashish K. Darpe, Assoc. *Prof., IIT/Delhi*	*akdarpe@mech.iitd.ac.in*	*9911112446*
(9)	Prof. Joseph John, IIT/Mumbai	*jjohn @ee.iitb.ac.in*	*9769008448*
(10)	Shri Anil Kumar, *Dir./CE(G)/RB*	*dcegrb@gmail.com*	*9717647611*
(11)	Shri Amit Saran, *Dir./E&R(ME)/RB*	*derme@gmail.com*	*9717647259*
(12)	Shri Akhilesh Mishra, *Dir.C&IS/M/RB*	*akhiles.misra@gov.in*	*9717640768*
(13)	Shri A.M. Rizvi, *Dir./GE/RDSO*	*dirgerdso@gmail.com*	*9794863289*
(14)	Shri Rishi Gangwar, *Dir./Res.(Civil)/RDSO*	*drcrdso@gmail.com*	*9794863280*
(15)	Shri Amit Srivastava, *Dir./Res.(Mech.)/RDSO*	*rdso.drrm@gmail.com*	*9794863072*
(16)	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. As decided earlier, a reference to MHRD to be made for waiving off Institution Overheads for the projects being undertaken under TMIR.

5. Also, a reference to MoST & MHRD is to be made for knowing their commitment of funds for the current year, out of their share of 25% each, for the sanctioned TMIR Projects.

6. Sanction by Railway Board on the Mission Management Manual (MMM), which was duly signed by all the MICC members on 12th January '16 needs to be closely monitored.

7. Annexure-1B to the MMM on IPR needs to be finalized early. ED/Finance/RDSO to initiate activity towards preparing the IPR document.

8. In this year's Budget only Rs. 2 crore has been allotted for TMIR. However, it was felt that this allotment can subsequently be increased in revised budget estimate and funds shall not be a problem in execution of the sanctioned projects.

9. RDSO was advised to procure Video Conference Telephones to MICC Members, out of TMIR funds, for facilitating frequent interactions amongst the MICC members and also for communication with other stake-holders.

10. Prof. N.S. Vyas, Chairman/TMIR mentioned about offer of Korea Railroad Institute (KRRI) for visit of 3-4 persons to their Institute, for which KRRI will provide all local hospitality. It was decided that it can be considered when formal offer is received from KRRI

11. **Discussions on Projects :** Following project proposals were presented during the meeting and decisions were taken, as detailed below –

11.1 **New Apparatus for Year Around Navigation (NAYAN) - A feasibility study :**

(i) This project was identified for submitting detailed proposal in the TMIR meeting held on 24.9.2015. The modified proposal was submitted and presented by Shri Amit Srivastava, Director Research Mechanical/RDSO (PI from Academic Institution is Prof. Utpal Das, IIT/Kanpur).It was decided to issue sanction letter for this Project at a cost of Rs. 4.77 crore.

(ii) Following was brought out with regard to this Project :

(a) Requirement of NAYAN vis-à-vis TCAS was deliberated as under :

✓ TCAS will be implemented only on High Density Routes (which constitute 40% of IR network) and balance 60% still will require NAYAN for viewing signal in adverse weather conditions.

✓ Also, since TCAS will not impart vision of the Way Ahead to the Loco Pilot, NAYAN will be required on all the routes (including high density) for enhancing visibility and detecting any obstruction on the track ahead (boulders, trees, vehicles, etc.).

(b) A project at a cost of Rs. 6.58 crore has already been sanctioned by Railway Board in year 2013-14 for Fog Vision System, being pursued by Motive Power Dte./RDSO. Few field trials of systems of two firms have been carried out. However, there has not been any favourable outcome so far. Moreover, this project of NAYAN under TMIR intends to develop indigenous knowhow for the purpose of self reliance, economy and Make in India objectives. This needs to be mentioned in the project proposal.

11.2 **Design Methodology and Software Development for Railway Formation Design :**

(i) This project was identified for submitting detailed proposal in the TMIR meeting held on 24.9.2015. Subsequently, the detailed proposal was presented in TMIR meeting on 16.11.2015 & 12.01.2016 in which it was advised to make the cost realistic and keep the duration of the project as 2 years.

(ii) The modified proposal was submitted and presented by Shri A.M. Rizvi, Director GeoTech./ RDSO (PI from Academic Institution Prof. Satyendra Mittal, IIT/Roorkee). It was decided to issue sanction for this Project at a cost of Rs. 1.68 crore.

(iii) PI was further asked to carry out minor revisions in the Justification of the proposal to bring it in line with the final outcome/deliverables and also elaborate the Benefits of the Project. Provision for regular updating of software being developed, also needs to be added.

11.3 **On-Board Diagnostics :**

(i) This project was identified for submitting detailed proposal in the TMIR meeting held on 24.9.2015. Subsequently, the detailed proposal was presented in TMIR meeting on 16.11.2015 & 12.01.2016 in which it was advised to develop two prototypes within 6 months of issue of sanction letter, curtail the duration of the project to 2 years and make cost realistic, duly supported by the budgetary quote/price list, wherever possible.

(ii) The Project was presented by Dr. A. Darpe, IIT/Delhi in association with Research Directorate of RDSO For a cost of Rs. 9.19 crore. The proposal was acceptable, but it was advised that cost of equipment, outsourcing and allocation to IIT/Guwahati needs to be reviewed.

(iii) Dr. Sunil Sherlekar shall explore the possibility of involving TCS in this and inform the outcome by 20th March'16. The revised proposal should be submitted by 27th March'16.

(iv) This project, intends to develop indigenous knowhow for the purpose of self reliance, economy and Make in India. This should be mentioned in the project proposal.

11.4 **MEMS Based Energy Harvesters for Fire Alarm Sensors & Emergency LED Lamps :**

It was presented in the 12th Jan'16 meeting by Prof. Rudra Pratap, IISc/Bengaluru, in which it was decided that this presentation will be referred by ED/Research to the concerned directorate of RDSO (ED/Carriage, ED/PS&EMU & ED/EM) for adjudging the utility of this project. Carriage Dte. has expressed interest in taking up this Project. Accordingly, Prof. Rudra Pratap may be called for discussions in RDSO.

11.5 **Digital Train Communication Network :**

(i) Presented by Shri Akhilesh Mishra, Director/C&IS/Railway Board.

(ii) Preliminary discussions on this project were held in a special TMIR meeting on 23.11.2015 & then in TMIR meeting on 12th Jan '16. Dr. Sunil Sherlekar was requested to coordinate for deciding the partner institution.

(iii) ED/Research/RDSO will also be in touch with Telecom and Carriage Dtes. for possibility of taking up this Project.

11.6 **Electronic In-Motion Weigh-Bridge :**

(i) Preliminary meeting for this project was held with Chairman/TMIR at IIT/Kanpur by ED/ Wagon/RDSO and ED/Research/RDSO on 29.12.2015 and then in TMIR meeting on 12th Jan '16 in which it was advised to develop the prototype in 6 months and curtail duration of the project to 18 months.

(ii) The modified proposal, submitted and presented in the meeting, by Shri Manish Pande, Director/Wagon/RDSO (PI from Academic Institution Dr. Nachiketa Tiwari of IIT/Kanpur), needs further improvements.

(iii) More interaction was suggested between PI, RDSO, Chairman/TMIT Prof. N.S. Vyas & Prof. Joseph John, IIT/B for re-working the methodology and cost for execution of the Project.

11.7 **Way Side Monitoring System :**

(i) Preliminary discussions on this project were held in a special TMIR meeting on 23.11.2015.

(ii) Presented by Prof. J. John of IIT/B in association with Research Dte of RDSO. A review of the project proposal needs to be done between RDSO, IIT/B & Prof. Narendra Ahuja, of UIUC / USA.

(iii) Dr. Sunil Sherlekar shall explore the possibility of involving TCS in this Project and inform the outcome by 20th March'16.

(iv) The revised proposal should be submitted by 3rd April'16.

(v) In this regard it was brought out that there are many firms in the World who are supplying such systems However, this project in TMIR, intends to develop indigenous knowhow for the purpose of self reliance, economy and Make in India objective. This should be mentioned in the project proposal.

11.8 **Design of Advanced Performance Next Generation Track Friendly Freight Bogies alongwith Wagon :**

(i) This project was identified for submitting detailed proposal in the TMIR meeting held on 24.9.2015.

(ii) Subsequently, the detailed proposal was presented in TMIR meeting on 16.11.2015 & 12.01.2016, in which it was advised that Chairman/TMIR will give guidance to wagon directorate for finalizing partner institutions and foreign collaborators for all three sub-projects.

(iii) Subsequently, two meetings (Video Conference) held by Prof. N. S. Vyas and Wagon Dte. officials with Professors of KTH/Sweden and Lulea Railway Research Centre on 25th Feb '16 & 4th March '16.

(iv) Further discussions are required for fine tuning the proposal, especially regarding the decision on place of manufacturing of prototype wagons, including bogie.

11.9 **Development of Capability for Testing of High Speed Rolling Stock :**

(i) This project was identified for submitting detailed proposal in the TMIR meeting held on 24.9.2015. Subsequently, the detailed proposal was presented in TMIR meeting on 16.11.2015, in which it was advised to reformulate the project.

(ii) Further discussions on this project were held with Chairman/TMIR at IIT/Kanpur by ED/Research and ED/Testing. It was decided that Chairman/TMIR shall guide in deciding the partner institutions and foreign collaborator.

(iii) Further discussion are required for fine tuning the proposal

12. In terms of the provisions of Mission Management Manual :

(i) The Chairman/Co-Chairman, TMIR may accord approval to the agreed projects mentioned at 11.1 & 11.2 above and the Sanction Letters for these projects alongwith similar decisions taken by MICC during earlier meetings, may be issued by ED/Research/ RDSO for release of funds, as per the approved proposals.

(ii) Also, Agreement and Memorandum of Understanding between "Parties of the Consortium (POTC)" for these projects, as per format given in Annexure-1A of the MMM needs to be signed before start of the work on the Projects.

(No. 2016/CE-I/Innov./2/TMIR, New Delhi, Dated 29.03.2016)

29/03/16

(आलोक कुमार)
Co-Chairman – 'Technology Mission For Indian Railways'
And **Chief Engineer / HQ, Northern Railway**
[Phone: 030-32370 (Rly.); 011-23387869, 011-23047577 (MTNL); 09910487302 (CUG Mobile)]
e-mail address: alokalokindia@rediffmail.com; cctmir@gmail.com and cehq@nr.railnet.gov.in

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.
- ED/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