

# **Technology Mission for Indian Railways (TMIR)**

***Supported by***

**Ministry of Railway  
Ministry of Human Resource Development  
Ministry of Science & Technology**

***January 2016***

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## I) PROLOGUE

- Railways have been the engine of economic and technical growth and development in India. Railway rapid advancement is not merely an area of national concern, but also poses challenges to the engineering and research community of the country. A **“Technology Mission for Indian Railways”** (TMIR) has been sanctioned to focus national attention and drive modern technologies of monitoring, control, communications, design, electronics and materials for Railway use. The earlier national programs on Space & Defence Research and Technology Mission for Railway Safety (TMRS) as well have not merely achieved goals, specific to the Missions; but have also provided impetus to technology endeavors in institutions all across the country.
- A Technology Mission for Indian Railways will similarly help to initiate and incubate design and development projects of significant national importance. Technology issues on Railway operations & infrastructure relate to multitude of engineering disciplines. The Mission will help in pooling the relevant engineering knowledge, expertise and resources, available in various research organizations and academic institutions in order to address these issues in an efficient manner. The Mission objective is to develop and adopt state-of-the-art design & control, technologies defined by needs related to Indian conditions.
- The Mission will formulate and implement projects aimed towards achieving higher throughput, lower per unit cost of transportation, safer train operation and improved infrastructure. It will, thus provide forceful impetus to India’s growth engine on the ‘Make in India’ vision of the Hon’ble Prime Minister.

## II) MISSION OBJECTIVES

- To strive towards achieving a sustainable R&D ecosystem for IR.
- To develop and adopt state-of-the-art design and control technologies, defined by needs related to Indian conditions. The Mission will implement projects aimed at achieving higher throughput, lower cost of transportation, safer train operation, improved environmental and energy footprints and improved Infrastructure & customer services.
- To encourage and initiate Research & Development activities pertinent to Indian Railways in academic institutions & laboratories and establish convergence & synergy among them.
- To disseminate technologies through participatory approach to other (non railway) application areas.

## III) MISSION APPROACH

- In terms of Railway Board’s order no. ERB-I/2015/23/23, dated 28.04.15; Ministry of Railway have decided to set up the “Technology Mission for Indian Railways” (TMIR) as a consortium of Ministry of Railways, Ministry of Human Resource Development, Ministry of Science & Technology and Industries on an investment sharing model for taking up identified railway projects for applied research and use on Indian Railways with Mission Office at New Delhi.

- “Technology Mission for Indian Railways” (TMIR) will also monitor the progress of Research Projects of the existing Railway Research Centre (RRC)/Kharagpur and 4 upcoming Railway Research Centers sanctioned in Railway Budget 2015-16. Thus, Railways’ investment in applied research activities will be converged and fruitfully converted to technology development for actual use in railway working. Execution of various projects under ‘TMIR’ will be dealt in terms of procedures, to be defined in this ‘Mission Management Manual’ (MMM). In case, an exception is required, it will be brought to the notice of MICC.
- A consortium from amongst (i) Ministry of Railways, (ii) Ministry of Human Resource Development, (iii) Ministry of Science & Technology and (iv) Industry Partner will be formed on case to case basis for individual projects.
- The indigenous technologies would successfully be developed with win-win scenario for all the consortium members. While Indian Railway would get the world class technologies, academic & research institutions would get involved in numerous applied research projects, which would help them in reorienting research towards national objectives. It would also help the institutions, labs & student/scholars and the industries in India to get introduced to new knowledge streams and indigenous product manufacturing; thus, leading to increased business turnover & more exports as well.

#### **IV) MISSION PROGRAMS**

- Projects will be identified by RDSO on the basis of needs to meet present and future challenges, along with due interaction with Zonal Railways, Production Units, Academic & Research institutions and industries, to meet Mission objectives of achieving higher throughput, lower per unit cost of transportation, safer train operation and improved infrastructure. Additionally, projects identified by other agencies will also be considered by MICC.
- Project team for respective projects, comprising concerned Executive Director/ Director from RDSO, representatives of academic & research institutions, having domain knowledge, and the concerned industry will be approved by the Mission Implementation and Coordination Committee (MICC).
- The progress of projects will be monitored quarterly by the Mission Implementation and Coordination Committee (MICC), as per provisions of this Mission Management Manual (MMM).

#### **V) MISSION BUDGET**

In Railway Budget 2015-16, Ministry of Railways have sanctioned ‘Technology Mission for Indian Railways’ at a cost of Rs. 300 crore through consortium approach in which Railways investment share would be 30%, i.e. Rs. 90 crore. In this connection, extract of the budget speech 2015 of Hon’ble MR is as under :

***“A consortium of Ministry of Railways, Ministry of Human Resource Development, Ministry of Science & Technology and Industries on an Investment Sharing Model is being set up as part of Technology***

***Mission for Indian Railways, to take up identified Railway projects***

**for Research.”**

**VI) FUNDING COMPONENTS**

• Ministry of Railways	30%	Rs. 90 Crore
• Ministry of Human Resource Development	25%	Rs. 75 Crore
• Ministry of Science & Technology	25%	Rs. 75 Crore
• Industry	20%	Rs. 60 Crore

**VII) MISSION DURATION**

Anticipated Mission Duration is 4 years. The Mission duration can be extended one year at a time based upon the progress of projects undertaken. Each such Extension will be decided by MICC and approved by Ministry of Railways.

**VIII) MISSION IMPLEMENTATION AND COORDINATION COMMITTEE**

- (i) Mission Implementation and Coordination Committee (MICC) will be the principal executive body of the Mission (TMIR). It will have the following:

**Constitution :**

1. Prof. N.S. Vyas, <i>IIT Kanpur &amp; former VC/RTU</i>	Chairman
2. Shri Alok Kumar, Chief Engineer/HQ/N.R.	Co-Chairman
3. Executive Director/Research, <i>RDSO</i>	Member
4. Executive Director/Finance, <i>RDSO</i>	Member
5. Executive Director/E&R, <i>Rly. Board</i>	Member
6. Dr. Anirudh Gautam, <i>GM/RITES (RS)</i>	Member
7. <i>Nominee of DST</i>	Member
8. <i>Nominee of Ministry of HRD</i>	Member
9. Shri O.P. Tantia, <i>MD, BESCO Ltd., Kolkata</i>	Industry Representative
10. Dr. S.D. Sherlekar : <i>Former Head/Embedded Systems,</i>	TCS Industry Representative

- (ii) **Tasks** of Mission Implementation & Coordination Committee include –

- The Committee will formulate the Mission Management Manual for functioning of TMIR & its approval from Ministry of Railways.
- Review of provisions in the Manual whenever & wherever necessary and making amendments in the Manual accordingly.
- The Committee will constitute domain specific Sub-Committees for various fields of Railways working and also for monitoring the progress of technology projects.
- Projects Team Constitution.
- Approval of “Detailed Project Proposals” including ‘Detailed Cost Estimate’ for each project. Approval of MICC would be sufficient for project sanction and its implementation.
- Obtaining funds from Ministries (MoR, MHRD, MoST) & Industry

partners.

- Budget Allocation to each identified project & authorisation for the related expenditure.
- Periodic Project Monitoring, including review of its scope & modification of approach.
- Short closure of any project, if felt necessary at any stage, can be approved by the MICC and communicated to the concerned Ministries.
- Seeking Government's advice (MoR/MHRD/MoST) on issues of policy.
- Other specific items, as decided during deliberations of MICC towards meeting the TMIR objectives.

## **IX) MISSION OFFICE**

- TMIR and its Mission Implementation and Co-ordination Committee (MICC) will have a Mission Office in New Delhi.
- Funding to all the projects will be done by the participating consortium partners to the respective institutes/ laboratory with the approval of Mission Chairman / Co-Chairman.
- Projects will be executed & implemented in accordance with the prevalent norms and procedures of the individual academic/research institutions, including outsourcing of developmental activities.
- Collaboration with foreign institutes / agencies is permissible on obtaining due approval from the Competent Authority of the individual institution, to which the project has been awarded.
- Budgetary allocation for the administrative and overhead expenses of TMIR and its MICC will be done through a project entitled "Mission Implementation and Coordination (MICo)". This project will be operated by the Mission Chairman, in consultation with the Co-Chairman, in accordance with the procedures of the parent organisation of the Chairman (currently at IIT/Kanpur).
- In addition, a camp office of the Mission will be opened at RDSO Lucknow, with Executive Director/Research as its Coordinator. He will communicate every quarter the expected fund requirements and expenditure for Camp office to the Mission Chairman. For this purpose, a bank account will also be opened at RDSO/Lucknow in the name of the TMIR Camp Office to manage & coordinate activities at its RDSO Camp Office.
- The **Nodal Directorate** for functioning of the 'Technology Mission for Indian Railways' (TMIR) and its 'Mission Implementation and Co-ordination Committee' (MICC) will be **Efficiency & Research Directorate** of Railway Board. Therefore, all related works/issues including Parliament questions, RTI cases, their execution, fund provision & other formalities shall be dealt with by the Nodal Directorate.