



महाराष्ट्र MAHARASHTRA

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BW 186858



MEMORANDUM OF UNDERSTANDING

Between

MAHARASHTRA STATE ROAD TRANSPORT CORPORATION,  
GOVERNMENT OF MAHARASHTRA

and

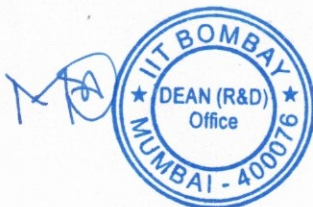
INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

This Memorandum of Understanding (MoU) is made and entered into on 6th March, 2023 By and between

Maharashtra State Road Transport Corporation (MSRTC), Government of Maharashtra, represented through Vice Chairman and Managing Director, having its registered office at MSRTC Central Office, Dr Anand Rao Nair Marg, Dalal Estate, Mumbai Central, Mumbai, Maharashtra 400008 (hereinafter called "MSRTC" which expression shall include its successors and permitted assignees).

And

Indian Institute of Technology Bombay, Powai, Mumbai, 400076, an Institute of national importance established by an Act of Parliament of India (hereinafter called IIT Bombay, which expression shall include its successors and permitted assignees).



Vice Chairman & Managing Director  
M. S. R. T. Corporation



Whereas

1. MSRTC is responsible for public bus transportation in the State of Maharashtra
2. IIT Bombay intends to work in the research and development area that could develop integrated solutions that benefit the society through research and development. Core areas of study will be Bus Transportation, Geographical Information Systems and Census

For the said purpose, the parties intend to enter into this Memorandum of Understanding (MoU) subject to the terms and conditions hereinafter contained.

## 1. Objectives of the MoU

Parties will collaborate to:

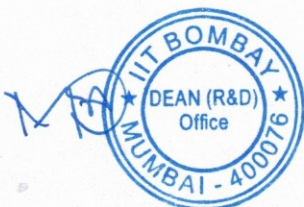
1. Carry out detailed studies, documentation and research on regional transportation and services and the operations of MSRTC in various districts and talukas of Maharashtra for the purpose of improvement in efficiency and social welfare.
2. Analyse Form 4, ETIM's data, crew duty schedule and other operational data in the selected talukas, districts, divisional and central offices, with the purpose of improving the processes of MSRTC.
3. Provide detailed recommendations to MSRTC which converge social welfare and efficiency through better technology and policies.
4. Assist MSRTC in its engagement with other agencies.
5. Carry out research for MSRTC on specific topics as decided from time to time such as:
  - a) Intercity bus transportation optimisation and management.
  - b) To optimise bus transportation within a taluka by improving coverage and efficiency.

## 2. Scope of the MoU

1. The scope of this MoU will be restricted to the state of Maharashtra. The studies will be carried out in broad areas and using research and study methodologies identified by IIT Bombay and MSRTC and partner agencies associated with either. At the outset, these are:

### (i) Data analysis and modelling:

- (a) Detailed study of the data available at MSRTC or allied agencies.
- (b) Reporting of the data as a data-book, which will be made available for public use.
- (c) Building of 'Digital Geography' models linking various data-sets for better management and improvement in the overall efficiency.



  
Vice Chairman & Managing Director  
M. S. R. T. Corporation



(ii) **Social Value Accounting:** A framework to account for the social value created by MSRTC operations. Planning and conducting surveys to measure the social value.

(iii) **Deployment Planning and Systems Description:** A GIS (Geospatial Information Systems) - based system incorporating various assets, supply and demand nodes, bus service provisioning infrastructure and the allocations achieved. A spatial and temporal description of various scenarios and strategies adopted.

(iv) **Bus service quality assessment:** A framework methodology for assessing service quality and customer satisfaction based on punctuality data, crew data, GIS data and extensive field work.

(v) **Inventory and Crew Management:** Use of optimization techniques to improve bus depot operations management, such as workshops and maintenance schedules, crew and vehicle utilisation.

### 3. Roles, Responsibilities and Obligations of MSRTC

(i) MSRTC will identify a person and communicate the name to IITB in order to coordinate the activities under this MoU and also project specific lead persons to interact with the study teams.

(ii) MSRTC will provide access to the data, report, facilities and personnel under their control, required for the study. Wherever possible, MSRTC will assist in the logistics, such as, travel to and on-site accommodation.

(iii) MSRTC will provide support to IIT Bombay in procuring data from other allied agencies which are of interest to MSRTC operations.

(iv) MSRTC will provide support to IIT Bombay for obtaining necessary permissions, approvals, cooperation and assistance, in a timely manner, from other allied agencies for undertaking site/field visits.

(v) MSRTC will ensure timely completion of formalities, administrative approvals, and review of data/work, if required, during the study to match with the requirements of the academic schedules and the Principal investigator from IITB

(vi) MSRTC will identify funding sources from within its own budget, e.g., under the in-house R&D head, or from Government of Maharashtra, and guide IIT Bombay on the formalities for the same. It will collaborate with IIT Bombay in making suitable proposals to other funding agencies.





#### 4. Roles, Responsibilities and Obligations of IIT Bombay

(i) IIT Bombay will identify a suitable person to lead the activities of the MoU and lead persons for each project area.

(ii) IIT Bombay will utilise existing academic frameworks and establish new frameworks if required so that the areas identified under this MoU are taken up for study by faculty, students and project staff of IIT Bombay.

(iii) IIT Bombay will identify suitable funds to supplement the support provided by MSRTC to conduct the studies. It will provide students and faculty members with the necessary liaison, logistical and coordination support to undertake the studies.

(iv) IIT Bombay will use the data and reports provided by MSRTC with discretion and will follow due diligence and use the same for academic purposes.

(v) The reports so generated by the studies will acknowledge the support provided by MSRTC. These will be used either for publication in academic journals as papers, internal reports or presented to MSRTC.

#### 5. Other Projects under this MoU

MSRTC, IIT Bombay may mutually agree to undertake together or separately, named projects under the auspices of this MoU. Each project may have its own list of lead persons, objectives, methodology, schedule, delivery, logistics, academic frameworks and funding.

Each of such named projects will be initiated by entering into a separate agreement between the two parties.

#### 6. Confidentiality

Either party shall hold in confidence all confidential information, received from the other and shall not disclose the same to any third party without prior written consent of the other, during the term of this MoU and for the period of two (2) years thereafter. The parties additionally agree that they will not publicise, disclose or allow the disclosure of any confidential information about the other in a manner that may be detrimental to the other.

#### 7. Arbitration and Jurisdiction

In case of any dispute or difference between the Parties arising out of or in connection with this MoU, Vice Chairman and Managing Director, MSRTC, Director, IIT Bombay will jointly resolve the dispute in a spirit of independence, mutual respect, and shared responsibility. Unresolved disputes, if any, will be resolved by arbitration, to be conducted under the Arbitration and Conciliation Act, 1996 at Mumbai in the English language.



  
**Vice Chairman & Managing Director  
M. S. R. T. Corporation**



## 8. Other Covenant

The use of the name Logo or official emblem of any of the parties or any publications, documents and paper concerned under this MOU may be allowed only after seeking explicit permission in writing.

This MOU does not give any authority to either party, to represent or exercise opinion or decision, on behalf of the other Party hereto.

## 9. Intellectual Property Rights

All rights pertaining to any intellectual property generated/created/invented in the due course of this MoU, will be the property of MSRTC, Government of Maharashtra, and/or IIT Bombay based on their contribution.

## 10. Terms and Termination

This MoU, unless extended by mutual written agreement of the parties, shall expire three (3) years after the effective date specified in the opening paragraph. This MoU may be amended or terminated earlier by mutual written agreement of the parties giving ninety (90) days prior notice at any time.

## 11. Relationship

Nothing in this MoU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.

## 12. Signed in Duplicate

This MoU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

## 13. General

The Parties undertake that this MoU is legally binding on each of them and is entered into by each such Party in good faith.



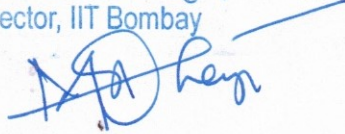
**Vice Chairman & Managing Director  
M. S. R. T. Corporation**

In witness whereof, the parties hereto have duly caused these presents to be executed on the day, month and year first above written.

For

**Indian Institute of Technology Bombay**

संकायाध्यक्ष, शोध एवं विकास  
Dean, Research and Development  
कृते निदेशक, आय आय टी मुंबई  
For Director, IIT Bombay



Name: Prof. Milind D. Atrey

Title: Dean (R & D)

Date: 06/03/2023

Witness 1



Name: Prof. Milind A. Sohoni

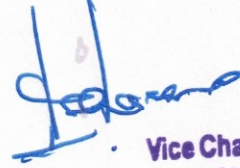
Title: Professor

Centre for Technology Alternatives for  
Rural Areas (CTARA)

Date: 10/03/2023

For

**Maharashtra State Road Transport Corporation**



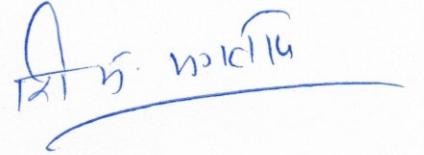
**Vice Chairman & Managing Director  
M. S. R. T. Corporation**

Name:

Title: Vice Chairman and Managing Director

Date:

Witness 2



Name:

Shivaji. M. Jagtap  
General Manager (Traffic)  
M.S.R.T.C.

Date: