

REQUEST FOR INFORMATION (RFI)

RFI # 300/2024	SUBMITTED TO: NTA Metropolitan Mass Transit System Ltd.
DATE:	
NEEDED BY: 8.7.2024	SUBMITTED BY:
PROJECT: Technology in the field of traffic management	

1. BACKGROUND AND PURPOSE OF THE RFI

NTA Metropolitan Mass Transit System Ltd. ("NTA") is the company responsible for the design and construction of a mass transit system for the Tel Aviv metropolis (the "**Mass Transit System**"). Through this Request for Information (the "**RFI**") NTA wishes to receive relevant information about technological innovative solutions, that could be integrated into its Mass Transit System, to support the improvement of "Traffic Management", especially during the construction phase (the "**Solutions**").

This RFI is a preliminary process initiated by NTA, solely for receiving information and conducting its initial internal evaluation and consideration. This RFI does not, in any manner whatsoever, constitute a tender, bid, offer, proposal, or request nor does it constitute an engagement, representation or warranty on behalf of NTA. Response to this request will not constitute a condition for participation in any subsequent tender, if issued, and no advantage will be given in the tender to those who responded to the RFI. Based on the responses to this RFI, suitable companies may be invited for further deliberations by NTA, at its sole discretion. Responses are welcome from both single suppliers and / or consortia that can provide a range of Traffic Management solutions.

2. INTRODUCTION OF NTA

NTA is the governmental company responsible for the development of the Tel Aviv Metropolitan Mass Transit System, a network of light rail transit and future metro railway lines. NTA is leading an economic and cultural revolutionary transformation in the transportation sector by constructing the mass rail transit system of the Gush Dan region. The Mass Transit System is the largest and most complex transportation project in Israel.

The Mass Transit System integrates with all means of transportation, including three Light Rail Transit (LRT) lines and three Metro Lines as follows:

- ✓ The **Red Line Project (RLP)**, that has recently commenced operating, extends from Bat Yam to Petach Tikva via Tel Aviv, Ramat Gan and Bnei Brak and is one of the most heavily used traffic corridors in the Tel Aviv Metropolitan area. It stretches, in total, over approximately 24 km, and comprises at-grade sections at both ends and a central underground section of approximately 12 km.
- ✓ The **Purple Line**. The total length of the line will stretch over approximately 27 km, with 46 stops. The line is entirely at-grade and includes bridges. At the eastern end of the line, a depot for heavy maintenance is located. Two Stops will be located on the bridges.
- ✓ The **Green Line**. The line connects between Rishon Le Zion at the south, Tel Aviv in the middle and Herzliya at the North. The line is 39 km long, with 4.5 km running underground. It has 62 stops, 4 of which are underground.
- ✓ The **Metro System** network includes 3 lines:
 1. The first line (M1) is 85 km long and includes two branches from the south and two from the north joining in a common section along the Ayalon-Namir corridor;
 2. The second line (M2) is 26 km long and serves the eastbound corridor from Petah Tikva to Ramat Gan, Tel Aviv and Bikat Ono;
 3. The third line (M3) is 39 km long and connects Tel Aviv north coast to the south coast via a half-ring to the east.

3. NTA TRAFFIC DEPARTMENT BASELINE

The NTA – Metropolitan Mass Transit System currently uses a strategic metropolitan model for traffic planning, supplemented by dynamic traffic simulations. In the Israeli market, traffic light manufacturers offer easy-to-implement applications that can connect online to municipal networks, enabling real-time adjustments to traffic plans and green times.

For the Red Line, which is already in operation, PTZ cameras have been installed at each intersection to allow continuous monitoring and collection of traffic data. However, further strategies are needed to improve traffic management in its upper section.

As for all other lines, there is currently a notable lack of involvement from traffic data providers, although there are plans to involve them. In the meantime, during the construction phase, NTA is utilising data from sources such as Google, to monitor traffic speed on critical links.

Temporary traffic arrangements have been put in place for road works and have been redesigned accordingly when congestion persisted or complaints arose. In these situations, the traffic engineer or consultants were responsible for finding prompt and effective solutions to alleviate the issues.

4. SUMMARY OF ADOPTING INNOVATIVE TRAFFIC MANAGEMENT SOLUTIONS

In today's rapidly expanding cities, effective traffic management is crucial. As urban areas grow, so do the complexities of their transportation networks. Urban traffic congestion has become a significant challenge that affects daily life, economies, and the environment. Therefore, cities must adopt innovative strategies to manage congestion effectively and ensure sustainable urban development.

Bollards, traffic lights, and pedestrian zones have traditionally been used for traffic management to ensure vehicle control and pedestrian safety. However, modern urban environments require a more complex approach to traffic management. This is why, today, the traffic management landscape comprises a mix of old and new technologies that attempt to keep pace with the rapid evolution of urban transport. As a matter of fact, many cities rely on existing traffic management systems, such as synchronized traffic signals, cameras, and manually operated traffic control centres. Although functional, these systems are limited by their lack of real-time adaptability and dependence on manual intervention.

To address the upcoming challenges, there is an increasing need for sustainable and efficient traffic management solutions. City planners and traffic authorities need technologies that integrate data from various sources, analyse traffic patterns in real-time, and dynamically adjust traffic controls to optimize flow. The objective is to move towards a more intelligent and data-driven approach to traffic management that can reduce congestion, improve road safety, and enhance the liveability of cities.

Some of the traffic management innovations, among many others, that have appeared in the last years are ‘Smart Traffic Lights’, equipped with sensors and cameras that collect real-time data; ‘AI and Machine Learning’ in traffic control, to predict traffic patterns and adjust the timing of lights accordingly; and ‘IoT Sensors’ for Real-Time Traffic Monitoring, providing real-time updates on various traffic conditions.

Briefly, innovation in traffic management solutions translates in context-aware solutions that rely on real-time data from connected road infrastructure and predictive analytics to effectively coordinate traffic across city arteries.

5. WHAT DOES THE TRAFFIC DEPARTMENT AIM AT?

The overall objectives that NTA is considering for the entire project are to:

- **Improve traffic efficiency** by reducing traffic congestion. For instance, by enhancing road intersection management, optimising traffic light cycle planning, and improving communication with road users by suggesting possible alternative routes.
- **Ensure safety for road users** by prioritising pedestrians, automating traffic light cycles to benefit vulnerable road users (i.e., pedestrians, cyclists, etc.), and dedicating protected and monitored routes.
- **Improve data collection.** As a matter of fact, NTA is interested in testing the analytical capabilities of permanent 360 camera arrays for real-time traffic monitoring. The so-far identified critical areas that require particular attention are the station areas to be built in dense areas throughout the project area.
- **Improve data analysis and traffic management:** the data from the previous point will constitute the input for developing simulation models and DSSs to test alternative scenarios to be adopted if needed.

6. SPECIFICATIONS FOR REQUESTED SOLUTIONS

Responses to this RFI are welcome from any supplier, consortium, or start-up that has experience in or has developed any kind of Innovative Traffic Management solutions to support either Public Entities (e.g., municipalities, public transport authorities, etc.) or Private Companies in collecting and analysing real-time information for transport simulation models and ‘Decision Support Systems’ (DSS).

These Traffic Management solutions should implement at least one of the following functionalities:

- **Collect real-time traffic data, including Origin-Destination flows:** the use of equipment and /or tools as for example CCTV already installed or to be installed, sensors for IoT (Internet of Things) solutions, FCD (Flow Car Data) and GIS (Geographic Information System) data are deemed necessary to feed up innovative and real time transport simulation models.
- **Tools based on Artificial Intelligence and Machine Learning algorithms** and/or others for the implementation of Digital Twin Models and DSS for Intelligent Smart City solutions.
- Development of **traffic simulation models** to:
 - Find the best time and place for setting up construction sites and reducing the impact on existing traffic.
 - Manage the interferences between road users (pedestrians, private cars, etc.) and LRT/Metro during construction works first and operational phase then.
 - Enhance the supply and/or disposal of materials to/from construction sites thus to limit the impact of the heavy traffic on the daily one.
- **Improve traffic management** to promote a better user experience by:
 - Informing and updating road users of road closures or traffic limitation and congestions
 - Advice road users on alternative paths to avoid traffic congestion.

7. A LIST OF DATES FOR THIS RFI

- Date of publication of the RFI: 1.5.2024.
- The deadline for submission of clarification questions by the Participants: 30.5.2024.
- The deadline for submission of responses to the RFI: 8.7.2024.

8. COMMERCIAL CONFIDENTIALITY AND WAIVER OF CLAIMS

1. NTA may use any information it receives during or in connection with the RFI from a Participant or any third party (the "**Information**") for any purpose it deems fit, including for preparing specifications, tenders or any other documents. In addition, NTA may transfer any such Information to any of its consultants or any person on its behalf. The supplier of the Information waives all claims and demands of any kind against NTA in connection with NTA's aforementioned rights, including (but not limited to) copyrights, commercial confidentiality, privacy, etc.
2. Without derogating from the above, the Participants may mark, in a clear, complete and legible manner, Information contained in the Response which is considered commercially sensitive or of a confidential

nature. To the extent permitted by applicable laws, and at its sole discretion, NTA shall consider refraining from disclosing such Information (if so requested).

3. The Participant declares and confirms that the provided Information is free from any violations of third-party rights, including (but not limited to) copyrights, commercial confidentiality, privacy etc. The Participant shall bear full and exclusive responsibility for any claims or demands arising from such third-party rights violations subsequent to this RFI, and all related expenses will be solely borne by the Participant.

9. INSTRUCTIONS REGARDING THE SUBMISSION OF THE RESPONSE TO THE RFI

1. The Participants are requested to fill in all the information on **Annex A**. Each question should be addressed separately.
2. It is recommended to attach supporting information in a visual format such as presentations, videos, photos, brochures, etc.
3. The response to the RFI shall be submitted in Hebrew or English. Appendices and technical specifications can be attached unlimited in scope.
4. The response to the RFI must be submitted in a digital copy by the deadline for submitting responses, as specified in section 7 above, via email: **Tender1@nta.co.il**. The email's subject line will state: " A Response to RFI for Traffic Management solutions."

NTA may postpone the response submission deadline at its sole discretion. A notice to that effect shall be posted on NTA's website and shall specify the new response submission date.

10. EXAMINATION OF THE RESPONSE

1. NTA reserves the right, at its sole discretion, to contact, as necessary, all or some of the Participants with requests for information and clarifications, for presentations and demonstrations, for visits to the Participants' sites and the sites of their clients, etc.
2. As part of the response examination process, NTA reserves the right to invite any Participant to present the solution proposed by it to a professional team on its behalf at a location and at a time determined by NTA.
3. As part of the response examination process, NTA reserves the right, at its sole discretion, to invite all or some of the Participants to launch a pilot project.

11. QUESTIONS AND CLARIFICATION REQUESTS

1. Clarification questions regarding this RFI must be submitted only in writing, via e-mail to NTA's contact person, as specified in section 13 below. The questions must be submitted no later than the deadline for clarification questions as detailed in section 7 above.

2. The Participant must verify that its questions were received by the contact person, as specified in section 13 below, by phone.
3. NTA reserves the right to conduct one or more rounds of clarification questions at its sole discretion.
4. The clarification questions will be submitted in Hebrew or in English, in the following format:

Number of the section in the RFI	Question

5. Answers to the clarification questions will be posted on NTA's website.
6. Clarification answers will be worded in a way that does not reveal the identity of the inquirer.

12. RESERVATIONS AND NTA'S DISCRETIONS

1. NTA may publish a new Request for Information, an invitation to pre-qualify, tender proceedings and/or any other proceedings with respect to the Project or any part thereof and/or with respect to any other project whatsoever, in any manner which it will deem appropriate. Without derogating from the above, NTA may pursue any engagement based on the information submitted in this RFI, whether through the conduct of a bid or a tender, or without conducting such proceedings, as NTA deems fit.
2. NTA may request additional information (in writing or otherwise) as it deems necessary, request to visit sites or facilities constructed or operated by the Participant, or carry out professional inquiries regarding any Participant (including by way of contacting third parties).
3. The Participants shall not be entitled to any payment for the information provided by them pursuant to this RFI. All expenses incurred by a Participant or anyone on its behalf shall be borne solely by the Participant. Participants shall not be entitled to any reimbursement or compensation for expenses in connection to their participation in this RFI.
4. NTA shall not be responsible or liable towards a Participant or anyone on its behalf in connection with this RFI, including in connection with information provided by or to NTA pursuant to or in connection with this RFI.
5. NTA may amend, withdraw, or cancel this RFI, at any time and without providing reasons or justifications for doing so.

6. This RFI is subject to the law of the State of Israel, including the Mandatory Tenders Regulations, 5753-1993 and the obligation to disclose information in accordance with Section 14A thereof.

13. CONTACT PERSON ON BEHALF OF NTA

The contact person on behalf of NTA regarding this RFI is Moran Hen, email: Tender1@nta.co.il.

14. ANNEX A - RESPONSE TO THE RFI

General:

- This Appendix must be fully completed by the interested party, providing all relevant information for the scope of this RFI. If a question cannot be answered, partially or fully, please specify the reason(s) why.
- Additional information should be attached to the relevant Appendix.
- It is recommended to attach supporting information in a visual format such as presentations, videos, photos, brochures etc.

A. Information about the Participant:

Supporting documents for questions 1-2 below shall be attached in a separate file captioned "**Appendix 1**".

1. General details regarding the company submitting the response (the "**Participant**"):

Participant's name: (Name of company or individual submitting the response)	
Classification of the Participant: (corporation, association, registered company etc.)	
I.D number/Company Registration Number:	
Contact Person: (Full name, position)	
Address:	
Phone no.:	
E-mail:	



Should NTA decide at its sole discretion to launch a pilot, would the Participant be interested in participating?	
2. Details about the Participant's knowledge and experience in the field of Transport Management and in the use of innovative tools and/or approaches (if any):	
B. Information about the proposed “Solution/s”: * Documents supporting answers to questions 3-11, complying where possible with the “Specifications” listed in section 6, will be attached in a separate file captioned " Appendix 2 ". <i>P.N. Responses are welcome from Suppliers / Consortium / Start-ups that have developed Innovative Traffic Management tools and/or approaches in similar Metro/Transportation project embracing all main project’s lifecycle, as well as from Suppliers / Consortium / Start-ups which do not totally comply with the “Specifications” provided on section 6 but that consider their Solutions suitable for this project.</i>	
3. Provide a detailed description of the proposed Traffic Management “Solution/s” (<i>one or more “Use Cases” Solution/s can be depicted, according to the different Assets managed and Project’s phase of application</i>). Report capabilities, advantages, and limitations for a Metro or Light Rail System environment.	
4. Has/have the “Solution/s” already been implemented in other similar big infrastructure projects (i.e., metro system, light rail system, railway project etc.) or in a big city to manage traffic congestion? If the answer is affirmative, please provide information regarding these ‘projects’, including implementation project phase, dates, duration, and overall results gained.	
5. What is the best way to prove the capabilities of the proposed “Solution/s”? Please provide a description of a pilot that could be implemented to test the reliability and effectiveness of the proposed Solution/s.	
6. Please describe how the “Solution/s” can support both construction and operation of the new LRT/Metro systems.	



7. How does/do your “Solution/s” work with third-party systems? Please provide information about the adaptability of your system to manage interfaces with existing software and technical solutions already implemented (refer to section 3)
8. How do you measure the performance (i.e., KPIs) of your Solution?
9. Please provide your concerns on possible market constraints which should be considered for the implementation of the “Solution”.
10. Please specify if any kind of works on the city’s urban network and/or if any software installation in the NTA internal system should be necessary to install the equipment necessary for the implementation of the proposed technical solution (s).
11. Please specify type of resources and effort is expected from NTA personnel to implement and use the solution.
C. Information regarding maintenance/update of the proposed Solution: * Documents supporting answers to questions of this section, will be attached in a separate file captioned " Appendix 3 ".
12. What is the required maintenance routine? How often should it be done? What faults may appear in the Solution over time, including disabling faults? What is the treatment method?
D. Information regarding the Solution's privacy protection and information security measures: * Documents supporting answers to questions of this section, will be attached in a separate file captioned " Appendix 4 ".



13. What measures exist in the Solution to guarantee the protection of privacy and the security of information?

E. Additional relevant information about the proposed technological Solution/s:

* Documents supporting further information will be attached in a separate file captioned "**Appendix 5**".

RESPONSE BY:

DATE:

ATTACHMENTS: