

8 July 2021
28 Tamuz 5781

Request for Information (RFI) – Trials for Operating an Autonomous Public Transportation Service

The following is a concentration of deadlines set in connection with Request for Information (RFI) No. 5/21
(hereinafter: **The Request**):

Stage	Date
Request publication date	28 Tamuz 5781 8.7.2021
Final date for submitting information to email sternil@mot.gov.il	17 Av 5781 26.8.2021 At 10:00

1. General

- 1.1. The Ministry of Transport (hereinafter: **The Ministry**), hereby appeals to the bodies listed below, for information on the execution of trials in which operation of an autonomous vehicle as a means of public transport will be examined, as part of the system of municipal service lines.
- 1.2. For the purposes of this invitation:
 - 1.2.1. Autonomous Vehicle – any vehicle defined as level 3 and above according to SAE J3016¹ ranking.
 - 1.2.2. License to Operate Service Lines – a service line license given by the National Public Transport Authority in accordance with the provision of part E of the Traffic Ordinance 5721-1961 (hereinafter: **Traffic Ordinance**)
- 1.3. This Request is addressed to companies who operate or have the ability to operate autonomous vehicles (in Israel or in other countries) (hereinafter: **Technology Companies**) and to public transport operator licensees in Israel (hereinafter: **Public Transport Operators**) who have examined or are expected to examine the operation of autonomous vehicles, including through collaboration with Technology Companies, as part of their array of service lines, or those that have information on the subject.
- 1.4. After receiving the requested information, the Ministry shall consider implementation of a trial to examine the feasibility and manner of integrating autonomous vehicles in a municipal public transportation system (hereinafter: **Pilot** or **Pilots**), subject to budgetary, professional and competitive considerations.
- 1.5. It is clarified that such a trial, insofar as it is carried out, will be subject to the existing law at the time of the trial and from which the trial terms will be derived, including the vehicle's autonomy levels, driver presence

¹ https://www.sae.org/standards/content/j3016_202104

and other conditions, as defined by the National Transportation Superintendent under clause 16A of the Traffic Regulations.

- 1.6. Without prejudice to the option of Public Transport Operators collaborating with Technology Companies (as stated in clause 1.3), such a trial, if executed, will be carried out through the Public Transport Operators, subject to a Pilot license and Ministry guidelines.

2. **Background and Goals**

Whilst promoting and encouraging operation of an autonomous vehicle in Israel, while promoting the government's transportation goals, the Ministry is interested in examining integration of autonomous vehicles in the array of service lines that transport passengers as part of the public transportation network. Insofar as the Ministry decides to carry out this trial, it will be conducted as part of a Pilot in which various integration aspects of the autonomous vehicles will be examined as part of the array of service lines (initially, in the municipal system).

The Pilot designation options may be as an additional service line to existing service lines, as a transportation solution for transporting passengers to employment and/or recreation centers, as a line that is a solution to the first/last km challenge or to any other designation as decided by the Ministry after examining responses to this Request. The purpose of this Request is to assist the Ministry in making a future decision to examine implementation of Pilots to examine integration of autonomous vehicles in the public transportation system and it does not obligate and/or limit the Ministry, any future decision or agreement.

3. **Purpose of the Request for Information – General**

- 3.1. Obtaining information regarding the advantages and disadvantages of operating autonomous vehicles as part of municipal service lines.
- 3.2. Obtaining information regarding possible and optimal models within which the autonomous vehicle will operate within the framework of the municipal service lines, concurrently with non-autonomous vehicles, in the system of municipal service lines and in general.
- 3.3. Obtaining information about options for planning, booking and paying for travel in the autonomous vehicle operating in the system of municipal service lines.
- 3.4. Obtaining information about data that can be collected and analyzed during the Pilot.
- 3.5. Obtaining information about the cost of conducting a trial in the framework of which the operation of an autonomous vehicle will be examined as part of the system of municipal service lines.
- 3.6. Obtaining information about the vehicles that may be operating as part of such a Pilot.
- 3.7. Obtaining information about the safety of operating autonomous vehicles in the system of municipal service lines in various aspects.
- 3.8. Estimation of the length of time required for setting up the Pilot from the moment of consent until the beginning of its operation.
- 3.9. Additional information about the pilot / possible service.

4. **Required Information – Individual**

4.1. **Obtaining information about the advantages and disadvantages of operating autonomous vehicles as public transport vehicles on service lines.**

- 4.1.1. The added value of operating autonomous vehicles in the system of service lines in particular and in public transport (urban and intercity) alongside the advantages and disadvantages, challenges and opportunities that exist in operating these vehicles, compared to non-autonomous public transport vehicles.
- 4.1.2. Conclusions and lessons learned from pilots that have been carried out or are still being carried out in Israel and/or in other countries in the framework of which we will examine integration of an autonomous vehicle as a means of public transportation (as applicable).

4.2. **Obtaining information about possible and optimal models within which the autonomous vehicle will operate within the framework of the municipal service lines, concurrently with non-autonomous vehicles, in the system of municipal service lines and in general.**

We require details about the options available for integration of autonomous vehicles as public transportation vehicles, including the advantages and disadvantages of each option and the one that brings out the benefits of the vehicle in the best possible way. These options may be, for example:

- 4.2.1. Transporting passengers to and from high-demand and employment centers;
- 4.2.2. Solutions for the first/last km challenge;
- 4.2.3. Flexible on-demand service;
- 4.2.4. As an additional service line in the municipal space for the purpose of expanding the coverage of municipal public transportation.

4.3. **Obtaining information about options for planning, booking and paying for travel on the autonomous vehicle operating in the system of municipal service lines.**

With regard to each of the models referred to in response to this Request, we shall require:

- 4.3.1. Details about the options for planning a journey on the service to be provided by the autonomous vehicle (such as a journey planner).
- 4.3.2. Details about the options for booking a journey on the service to be provided by the autonomous vehicle.
- 4.3.3. Details about the payment options for a journey on the service to be provided by the autonomous vehicle. The response must refer both to payment options currently existing on regulated public transport in Israel (Rav Kav and Ministry licensed validation apps) and to other payment options, whether dedicated or not, such as cash, for example.
- 4.3.4. Details about the manner of picking up passengers by passenger type (occasional passengers, regular passengers who made a booking in advance or real-time bookings).

4.3.5. Details about solutions, if any, for passengers who do not have a smartphone or a Rav Kav card and for occasional passengers.

4.4. Obtaining information about data that can be collected and analyzed during the Pilot.

4.4.1. Details about the type of data that can be gathered and analyzed during the Pilot, as specified above, such as:

- i. Passenger travel habits (peak and off-peak times, origin and destination demand areas, etc.);
- ii. Daily and monthly cross section of the number of passengers;
- iii. Daily and monthly cross section of vehicle hours;
- iv. The distance each vehicle travelled in a daily and monthly cross section, including journeys with and without passengers;
- v. Passengers' average journey time and length;
- vi. Filler coefficients (calculations based on both duration and distance);
- vii. Details about revenue from passengers;
- viii. Service malfunctions as relevant to operation model –
 - Information regarding passengers rejecting a journey offer and system rejections of bookings, including the reasons for system rejections
 - Passengers' wait times
 - Walking distances from stations to passengers' origin and destination points;
- ix. Information regarding safety events.

4.4.2. Details about any information the Pilot operator does not intend to share due to commercial reasons.

4.4.3. Details about how the data in clause 4.4.1 will be transferred.

4.5. Obtaining information about the cost of conducting a trial in the framework of which the operation of an autonomous vehicle will be examined as part of the system of municipal public transport service lines.

Clarification: The Ministry reserves the right to make use of costing data for the purpose of preparing budgetary estimates in the future.

4.5.1. Overall estimated annual costs for operating the Pilot for examining operation of autonomous vehicles as a means of public transport, as a dependent on the following parameters (insofar as possible):

- i. Type and quantity of vehicles;
- ii. Operating model (as stated in clause 4.2 above);
- iii. Expected mileage;
- iv. Cost of infrastructure required for carrying out the Pilot (charging points, operational areas etc.);
- v. Cost of setting up and operating a planning, booking and payment interface for travel (as applicable);
- vi. Cost of compliance with the provisions of the law regarding accessibility of the service;

vii. Insurance costs;

viii. The Ministry reserves the right to expand or change the trial for intercity service.

4.6. Obtaining information about the vehicles that may be operating as part of such a Pilot, with reference to the following:

- 4.6.1. Vehicle's level of autonomy (in accordance with SAE definitions as stated above).
- 4.6.2. Information about the autonomous driving system, details about the technology and its manner of operation, use of sensors, guides, cameras and their location.
- 4.6.3. Information about the type of vehicles and their characteristics.
- 4.6.4. Number of vehicles expected to be operated in each Pilot, with reference to the relevant model as specified in clause 4.2 above.
- 4.6.5. Weather conditions that limit operation of the vehicles.
- 4.6.6. Operation times of the vehicles – whether there are limitations to vehicle operation at night.
- 4.6.7. The routes in which the vehicles can operate (crowded / urban / intercity / highways).
- 4.6.8. Level of interaction with road users – complexity levels of the vehicle's area of activity with regard to interactions with pedestrians, micromobility users and man-driven vehicles.
- 4.6.9. Vehicle's maximum speed.
- 4.6.10. Vehicle's maximum number of passengers (with reference to the number of seated and standing passengers).
- 4.6.11. Vehicle's propulsion method.
- 4.6.12. In the event vehicles are electric, information about charging requirements, mileage limitations, work hours before recharging and required charging time.
- 4.6.13. Required infrastructure deployment.
- 4.6.14. Places in the world where the vehicle operates as passenger transportation.
- 4.6.15. Information about adapting the autonomous vehicles themselves to the accessibility requirements specified in the Equal Rights for People with Disabilities Regulations (Public Transportation Services Accessibility Regulations), 5763-2003 and operating them in the municipal service lines in accordance.
- 4.6.16. Information about the measures that can and must be used to protect the autonomous vehicles from a cyber attack.
- 4.6.17. Information about the measures that can and must be used to protect the privacy of road users in general and autonomous vehicle users in particular, in light of the information gathered from and saved by the vehicle's system.
- 4.6.18. Information about adapting the autonomous vehicles themselves to the accessibility requirements specified in the Equal Rights for People with Disabilities Regulations (Public Transportation Services Accessibility Regulations), 5763-2003 and operating them in the municipal service lines in accordance.

4.6.19. It is required to provide general information about the Technology Company, their technology and its limitations, the vehicles and their characteristics that must be taken into account (such as electric vehicles), areas of activity – ODD (Operational Design Domain), infrastructure adaptations required etc. General information about the Company and its activities, and the Company's experience in operating such a Pilot.

4.7. Obtaining information about the safety of operating autonomous vehicles in the system of municipal service lines in various aspects:

- 4.7.1. Passenger safety inside the vehicle;
- 4.7.2. Passenger safety while vehicles are travelling up or downhill;
- 4.7.3. The safety of other road users;
- 4.7.4. Safety of the autonomous vehicle's integration in the service lines system, inter alia, integration with buses and other vehicles at terminals, central stations, stops along the route and on the road.

4.8. Estimation of the length of time required for setting up the Pilot from the moment of consent until the beginning of its operation.

In this context, we would like details about the time frame necessary for preparing operation of a Pilot that will examine the above, from the moment an instruction is given to embark on a pilot until actual execution.

We would like to know the total time required from the date of signing a Pilot agreement, insofar as such an agreement has been entered into, until its implementation, with reference to the periods of time as follows:

- 4.8.1. Estimated time period for an agreement between the Public Transport Operator Licensee and the Technology Company to be signed.
- 4.8.2. Estimated time period to accumulate the tools which will participate in the Pilot in Israel, as specified above.
- 4.8.3. Time required to establish the operational infrastructure to carry out the Pilot.
- 4.8.4. Time required to establish the technological and application infrastructure for the Pilot.

4.9. Additional information about the pilot / possible service:

- 4.9.1. Multimodality – the ability to change the vehicles' frequency / size in accordance with passenger demand.
- 4.9.2. Information about maintenance and operation of the vehicle fleet, needs and adjustments required from the Pilot site and the Ministry.
- 4.9.3. Information about the presence of safety drivers / operators in the vehicles and training programs for the safety drivers / distance operators.
- 4.9.4. Information about the Technology Company / Public Transport Operator Control Center which will be an integral part of the line's operation.
- 4.9.5. Information about vehicle safety mechanisms – those installed in the vehicle itself and also those used by the Safety Operator and by the Control Center.

4.9.6. Obtaining information about insurance options and the type of insurance required for operating autonomous vehicles in the municipal public transport service lines.

5. General Terms

- 5.1. For the avoidance of doubt, it is hereby clarified and emphasized that this Request is intended for information and for examining advisability and feasibility only and does not constitute an invitation or proposal for any contract and does not constitute a tender or other binding procedure and does not create a contract or any other legal relationship between the Ministry and any of the participants.
- 5.2. This Request does not obligate the Ministry in any matter, including for running a pilot or publishing a tender, or an invitation to tender or contacting any of the participants in the Request, for budgetary assistance in running a pilot or any part of it, or to continue or operate in any procedure, including engagements, orders, procurement, etc.
- 5.3. Responses to this Request shall not be a requirement for participating in a tender or process that may be conducted in the future; responses to this Request shall not award respondents with any advantage or preference in any tender procedure that may be conducted by the Ministry with regard to autonomous vehicles or any other matter. This Request is not an invitation to submit bids and is not part of a tender process, therefore, it does not create any obligation towards any of the respondents. The Request is intended only for the purpose of receiving information, and the Ministry shall then consider their continued course of action based on professional and practical considerations.
- 5.4. The Ministry shall not be responsible for and shall not bear any part of the participants' expenses for collection, preparation and submission of the information or the expenses of any other action related to this Request, and participants shall not be eligible for any return on expenses or other monetary compensation for these expenses.
- 5.5. The Ministry shall examine the information received and for this purpose may contact all or some participants, with a request for clarifications, presentations and demonstrations, requests to visit customer sites where autonomous vehicles are in use in some manner or supplier sites, and any other information, in writing or verbally, as required.
- 5.6. After receipt of the information required in the Request, the Ministry will use the information as they see fit and may include the information in Request for Proposal (RFP) documents or any other procedure, if any.
- 5.7. The Ministry may use the information obtained free of charge, for any need, at their sole discretion, including for writing a specification or requirements for the purpose of compiling a list of potential suppliers and pass the information on to its consultants and any other person entitled to receive it by law.
- 5.8. In addition to the above, participants in this Request will submit an additional copy of their response, in which information that in their opinion constitutes confidential information, a trade secret or a professional secret, which should not be disclosed to other participants, has been redacted. Participants will be prevented from claiming they may review responses of other bidders in the parts corresponding to those which they have marked as confidential in their reference. The redacted copy will be marked accordingly.

- 5.9. Furthermore, to the extent that a bidder believes that a clarification question that he intends to ask may disclose a trade or professional secret, he will indicate next to the question that it includes such a secret, and will add a paraphrase next to it that can be published alongside the answer.
- 5.10. The Ministry does not undertake to review all the material submitted, or to inform candidates what fruit this Request has yielded, if any, or what the results would have been in any other way.
- 5.11. Any entity selected to respond to this Request declares that they waive any claim in advance, including in the matter of intellectual property and/or a suit and/or demand towards the Ministry and/or towards someone on their behalf and/or towards the state and/or someone on its behalf in respect of information, in whole or in part, which the entity has provided in their response to this Request or in clarification requests that follow it, as the case may be.

6. **Reference Submission**

- 6.1. Bidders stating that certain information constitutes a trade secret may attach a paraphrase to be published alongside their question, and the committee reserves the right to decide whether it is, in fact, a trade secret.
- 6.2. Replies to the Request are to be submitted to email sternil@mot.gov.il no later than **18 Elul 5781, 26.8.21, at 10:00**.
7. Respondent detail forms can be found on the Government Procurement Administration's website.