May 23, 2021

To: Participants of the RFA

A Request for Applicants (RFA) to Join the Ayalon Highways Co. Ltd. Suppliers' Repository to Provide Advanced Technological Solutions in the Field of Transportation

Clarification Notice no. 1

Ayalon Highways Co. Ltd. (the "**Company**") is hereby publishing a clarification to the RFA Documents, as follows:

Please be advised that the Company has published the updated RFA Documents on its website, which include, inter alia, an updated list of transportation fields described in section 2.2, as well as for the updated list in section 3 of the RFA.

Clarification questions/Answers	Section	#
Section 2.2 and 3 will be updated and their wording will be as follows: 2.2.1 Means and systems for traffic control and management; 2.2.2 Safety and monitoring of bicycle paths; 2.2.3 Passenger counting systems (from outside and inside the vehicle); 2.2.4 3D printing; 2.2.5 Charging management systems for electric vehicles and buses; 2.2.6 Means of monitoring and managing infrastructure maintenance; 2.2.7 Command and control systems; 2.2.8 Demands management; 2.2.9 Technologies for terminals; 2.2.10 Structure arrangement and analysis of information; 2.2.11 Analytics; 2.2.12 V2X; **3 THE CHALLENGES FACING AYALON HIGHWAYS** 3.1 **Means and systems for traffic control and management** - With the increase in the number of vehicles on Israel's roads,	**Sections 2.2 + 3**	.1

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	both in urban areas as well as highways, there is a need for advanced traffic management to support efficient and safe flow of traffic. Being in charge of the integration of advanced technological means for improving and upgrading transportation in Israel, the Company is looking for advanced technologies and means/systems to monitor and control traffic to help to alleviate the situation on the roads and improve transportation safety. Such means may include, **for example**, smart traffic light systems, traffic light systems for optimizing waiting times and utilizing the capacity of intersections at both the local intersection level and along traffic arteries, methods and means for monitoring traffic in terms of infrastructure, technological systems that display data transmitted from third parties on a geographic layer, means for real-time traffic monitoring by using devices installed in vehicles, and the like. The solutions can be hardware, software or a combination of the two. It should be emphasized that reference in this section is to traffic management systems, and not stand-alone "discrete" products (such as cameras, sensors, etc.) that would require systemic integration to incorporate them in traffic management systems.		
3.2	**Safety and monitoring of bicycle paths** - Apart from the ever-increasing use of bicycles for sports and recreational purposes, the percentage of bicycles replacing motor vehicles as a mode of transportation is on the rise and becoming increasingly prevalent on Israel's roads and worldwide. Road congestion, lack of convenient parking spaces, costly fuel prices, the proliferation of road accidents, and rising air pollution are just some of the factors that motivate the public to choose bicycles as their primary means of transportation. Moreover, the Government of Israel, as well as many other countries, sees the national importance of encouraging this trend. This encouragement is reflected in the conversion of sidewalks and/or motor vehicle lanes into bicycle lanes, but also creates the vital need to use means that will increase the safety of cyclists and make their experience more enjoyable. As part of this trend, the Company is executing the "OfnayDan" (Dan Bicycles) project, a 110 km bicycle path. The Company is interested in proposals for high-tech products that will increase the safety		

	of cyclists and their surroundings, will support comfortable travel, identify areas, lanes and time intervals when bicycle congestion on the paths is high, monitor the maintenance status of the bicycle paths/lanes, and help to enforce cycling laws. For example, these products may include (**but not limited to**) advanced means for marking bicycle paths, indicators and traffic light priority for bicycles to increase safety, warnings against turns in the road where there is limited visibility, speed guidance warnings when approaching intersections, means of marking and transmitting information, means of identification and collection of information, and means of enforcement. The Company is also interested in smartphone apps and/or dedicated devices for cyclists in Hebrew for navigating and providing field maps, and will also be used for transferring data between the bicycle and the control center for monitoring and transmitting information, alert of incidents or potential incidents, etc.		
3.3	**Passenger counting systems (from outside and inside the vehicle) -** In recent years, transportation authorities worldwide are striving to reduce congestion on the roads by incentivizing and encouraging drivers to switch from private vehicles to public transportation and ride-sharing that increases the vehicle's fill factor. One of the increasingly commonplace methods is to designate a “fast lane” that is strictly for vehicles where the number of passengers exceeds a certain minimum (usually between two and four, including the driver). Several versions of such lanes have evolved. What they all share in common is the authorities’ need to know the number of passengers in each vehicle in order to prevent unlawful use of the lane (resulting in higher congestion and slowing down the driving speed). The government is also examining the possibility of encouraging raising the "fill factor" in private vehicles by incentivizing differentially and nationwide, depending on the point of departure and destination of the drive and travel hours. Since the possibilities of enforcing this option using "conventional" means, such as the police, are dangerous and difficult to implement, this has created the need for a technological solution to identify the number of vehicle occupants with a very high degree of accuracy, by using		

	passenger counting systems. For more than a decade, attempts have been made worldwide to develop technological systems for counting passengers using a variety of methods, but so far, the Company has not yet identified a system capable of producing sufficient levels of accuracy. With the rapid development of such fast lanes in Israel, the Company is interested in a passenger counting system, whether by using instrumentation outside or inside the vehicle, which will be able to provide an available and accurate solution to the problem.		
3.4	**3D printing** - In recent years there has been a steep increase in the use of printers and robots for building infrastructure elements (bridges, passageways, railings, roads, etc.) such as printing/casting passageways. The proposals the Company will review must be in compliance with the required standards for elements that the Company will wish to construct. In this technological field, proposals for printers/robots for printing elements will be reviewed. Proposals should include information on the size of the printable elements, the range of materials that can be used, and a detailed cost estimate (initial cost, operating cost, cost and availability of materials, etc.) involved in the implementation of the proposed technology.		
3.5	**Charging management systems for buses** there is a growing trend in the buses industry is showing a growth shifting to electric-driven buses. The Company, supporting this trend, is currently designing and implementing smart EV charging systems for bus fleets. Thus, the Company is interested in reviewing proposals for such charging systems, of various types, which include, among others, static and dynamic charging systems, fast charging systems, slow charging systems, systems that include optimization and charge management dictated by the needs of the bus fleet as well as electricity rates at different hours, various types of electricity storage, super-capacitors, methods for storing and generating energy from vehicular traffic, **and more**. The specification of the proposed system should indicate the component features, connection methods, infrastructure work requirements, compatibility with different types of		

	buses, maintenance requirements, and the capabilities of their management systems.		
3.6	**Means of monitoring and managing infrastructure maintenance work** - Employees and operational vehicles engaged in infrastructure maintenance work are high-risk workers and, more than other road users, are victims of road accidents. The Company, which maintains Highway 20 from Mevo Ayalon to Highway 57 (in both directions), is requesting information on products and technologies for ongoing monitoring of maintenance work. This information may include technological means for managing and streamlining maintenance work, means for monitoring the condition of the infrastructure, etc.		
3.7	**Command and control systems** - Due to the increase in the amount of information sources and the need to manage numerous interfaces, resulting from the optimization and integration between systems, as well as the need to collect and process a great deal of information and the ability to manage and streamline processes. Therefore, the Company wishes to receive proposals for command and control systems that can provide an integrative solution to the aforesaid challenges, which can be implemented in various and diverse areas, such as: traffic, public transportation, parking, events, smart city, autonomous and semi-autonomous vehicles, spatial management (including a space within the city, terminal, parking lot, etc.), and projects in connection with the above.		
3.8	**Demand management** - The reality on the roads demonstrates that infrastructure alone is not enough to cope with the large number of vehicles on the roads, and that the way to alleviate the problem of road congestion is by demand management. In light of this, the Company, which promotes demand management programs at the private level, the employer level, the local authority level and the technological level, is interested in examining technologies that support a transportation-oriented solution and smart transportation management, which enable examining cross-entity and day-to-day applications in similar areas for the provision of alternative solutions to the private car, in proving economic/social/ecological viability, including		

solutions, such as shared transportation and platforms for employers and remote work management.

3.9 **Technologies for terminals** – The Company is planning the construction of about ten public transport terminals and the upgrade of existing terminals. An important element in the construction of a terminal is complementary technological solutions, including solutions to improve passenger and driver experience, passenger and driver navigation at the terminal, safety, bus monitoring and maintenance status as well as aids for people with disabilities.

3.10 **Structure arrangement and analysis of information** - Upon the massive entry of new technologies and the increase in the amount and variety of information flow in the operational fields of the Company, the Company is interested in setting up data infrastructure for the purpose of managing the information and making it accessible to various parties, such as planners, researchers as well as the public, at generally accepted standards. For this purpose, the Company is looking for, among other things, companies specializing in the handling and management of transportation data, companies specializing in the retrieval of information from databases, open systems and in open code, companies that know how to create smart algorithms based on information that provide answers to complex questions, and more.

3.11 **Analytics** - One of the challenges facing the Company is the advanced and effective analysis of data collected from various types of sensors: whether an image obtained from stills or video cameras or information collected from sensors and other detectors currently existing and/or that will be installed in the area that needs to be analyzed. The required analysis will also be done in real time, using algorithms and deep learning, to enable event identification and monitoring, passenger counting and classification, and the like.

3.12 **V2X** - With the technological advancements in this field, the Company expects that V2X (Vehicle-to-Everything) technology will be integrated in all new vehicles in the future. Aside from the automotive industry, there will be many opportunities for various industries and organizations related to vehicles, having the ability to communicate and

	interact with other vehicles supporting V2X communication. For example, this includes industries and organizations dealing with smart infrastructure, smart cities, parking facilities and private locations with high vehicle density (e.g. airports), smart buildings, electric vehicles, and more. Systems, applications, services, infrastructure, components and products that support the creation of an ecosystem that connects in real time, and in a mobile medium, between means of transportation, passengers and drivers, passers-by and road infrastructure could be relevant to this field. **For convenience purposes only, and without the foregoing being a closed or exhaustive list, following are some exemplary applications:** • **Safety applications:** Location data regarding nearby vehicles; warning of failure to keep distance between cars / swerving from lane / emergency braking; coordinated maneuvering (lane change, braking, etc.); transmission of road data between vehicles, pedestrians and cyclists to vehicles "blind" to the obstacle; warnings of work construction, hazards, traffic jams and accidents; alerts at interchanges (e.g. information on hazards, dangerous turns, changing traffic light, speeding towards a red or changing traffic light); autonomous vehicles; smart and dynamic infrastructure with the ability to monitor, mark and alert. • **Support for autonomous vehicles and coordinated driving:** Support for driving in a highway convoy; "coordinating" of driving maneuvers between vehicles (autonomous vehicles); all the data regarding safety applications as detailed above. • **Applications for message dissemination to drivers and vehicles for traffic management:** Dynamic vehicle signage, including free text; dynamic updates on speed limits on specific highway segments; alerts on permissible speed limit change (passing segment / initiated change by the control); dynamic lane management; traffic jam alert; other signals. • **Event placement and management applications** - for navigational purposes; receive information on traffic and events (e.g. location data, failure to keep distance		

between vehicles, dangerous swerving, dangerous braking, etc.). • **Development of an overall and local traffic situation:** Develop an overview of irregular events. • **Traffic management (relating to the v2x field):** Prioritizing public transportation and dedicated vehicles; management of public transportation routes; alternating and dynamic traffic lanes; prioritizing public transportation traffic at traffic lights; prioritizing designated vehicles at traffic lights; general management of intersections; speed control; regulation and coordination of general traffic speed.		
Suppliers currently contractually engaged with the Company, who wish to apply for admission to the Suppliers' Repository, are required to submit a proposal for the relevant field, in accordance with the instructions specified in the RFP.	**general**	.2
Sections 6.1.1-6.1.2 will be updated and their wording will be as follows: 6.1.1 As stated above, the Company will from time to time publish on the Company's website specific requests to join the Company's Suppliers' Repository in additional fields, specifying the requirements for joining the relevant field in the Suppliers' Repository A candidate wishing to join the Suppliers' Repository must submit its response to the RFA **in attaching all the documents and references set out in the RFA as well as Appendices A - C to its application, completed and signed by it** (according to the requirements for joining the relevant field in the Repository). In its response, the candidate must clearly indicate to which of the Suppliers' Repository listed in section 2.2 of the RFA the response is submitted. To dispel any doubt, there is no limit on the number of suppliers' repository for which each candidate may submit a response. If additional repositories of suppliers are published in the future, each candidate may also submit a response thereto, subject to the provisions of the RFA and subject to being in compliance with the necessary requirements for each relevant field.	**Sections 6.1.2 +6.1.1**	.3

6.1.1.1 **Appendix A** - The threshold conditions for each of the relevant fields. 6.1.1.2 **Appendix B** - Guidelines for submitting the technical response. 6.1.1.3 **Appendix C1 - C3** - The candidate's affidavits. 6.1.2 The Suppliers' Repository will be updated from time to time through invitations to join the Suppliers' Repository to be published on the Company's website.		
Section 6.4.1 will be updated and its wording will be as follows: 6.4.1 A candidate, which meets all the requirements specified in the RFA to join the Suppliers' Repository in a particular field and which has submitted in its response all the required information and documents and has signed an engagement agreement with the Company according to the wording determined by the Company, will be registered in the Company's Suppliers' Repository. The Company will send a notification to the candidate on its registration in the Suppliers' Repository.	**Section 6.4.1**	.4
Section 9.17 will be updated and its wording will be as follows: 9.17 The very submission of a proposal to be accepted in the Company's Suppliers' Repository will be deemed affirmation and consent by the applicant to the provisions of this document and as a waiver on its part of any contention and/or demand and/or claim against the Company and/or anyone acting on its behalf in respect of and/or in connection with the aforesaid provisions, in whole or in part.	**Section 9.17**	.5
The candidate must submit the technical response using this form. If the candidate wishes to attach additional documents, those must be attached to this form as numbered appendices, and refer from the relevant section of this form to each appendix (or part of it, relevant in response to that section).	**APPENDIX B – THE TECHNICHAL RESPONSE**	.6
1. Can a participant register as a consortium?		

2. If yes, do we need to submit financials of all members of consortium or just the lead member of the consortium?	**Threshold Conditions for Acceptance into the Suppliers' Repository** **1.1**	.7
A proposal to the RFP may be submitted by an authorized dealership or corporation, legally registered in Israel (a registered company or partnership) or in a country that has diplomatic relations with Israel, or alternatively by a joint venture or registered partnership whose members are authorized dealership/s or corporation/s as abovementioned, each liable, jointly and severally to the Company for complying with the obligations stipulated in the RFP documents (hereinafter: "**Joint Venture**"). Each member of the Joint Venture may submit one proposal only, in each field. A proposal submitted by a Joint Venture, including all documents and appendices, will be signed and stamped by the authorized signatory of each member of the Joint Venture. Without derogating from the above, it will be emphasized that the Company reserves the right to restrict the participation of a supplier who is a Joint Venture within the framework of specific competitive appeals which will be conducted in the future, and the members of the Joint Venture wave any claim and/or demand against the Company concerning such restriction. B. No. It is enough for the members of the Joint Venture to meet the threshold conditions together. For the avoidance of doubt, it is hereby clarified that the members of the Joint Venture must notify the Company immediately of the dissolution or change in the members of the Joint Venture. The dissolution of the Joint Venture will result in its removal from the Suppliers' Repository. Any change in the Joint Venture will be examined on its own merits, and the Company shall decide, at its sole discretion whether to remove it from the Suppliers' Repository, or not.		
Section 8 will be updated and its wording will be as follows: .8 **ELECTRONIC (ONLINE) PROCESS** 8.1 As part of Phase 2 set out in section 5.2 above, the competitive process will be conducted using the electronic system operated and maintained by Dekel Ltd. (the "Computerized System") .	**Section 8**	**.8**

8.2 A candidate wishing to participate in the competitive requests to be published by the Company must register in advance in the Computerized System. It should be clarified that a candidate who is a supplier of the Company, who has previously registered in the Computerized System, is not required to re-register. 8.3 After registering in the Computerized System, the candidate will receive an email notification confirming registration and details for logging into the system. It is recommended to save this confirmation for further follow-up and control . 8.4 If a registration confirmation is not received, the candidate should contact Ms. Katya Goldovich of Dekel Ltd. at tel. 04-8145400, extension 1 or by email: service@dekel.co.il and verify that the registration was carried out. The candidate is solely responsible for ensuring that the registration was carried out correctly and that it has been given access to the Computerized System, and the candidate hereby waives in advance and irrevocably any contention against the Company in this regard.		
Section 3.4 of Appendix A is deleted. Appendix D is deleted.	**Section 3.4 of Appendix A + Appendix D**	**.9**
Section 5 will be added and its wording will be as follows: 5.I confirm by my signature that I have read the RFA and its appendices, and I have understood what is stated therein, and I will not have any contention and/or claim against the Company in connection with what is stated in the foregoing documents.	**Section 5.1 of Appendix C1**	**.10**