

Request for Information (RFI)
regarding a ticketing system through smart phones
in public transportation

February 2015

1. Introduction

The Ministry of Transport (hereafter: “The Ministry”) hereby requests to receive information regarding systems that enable the performing of ticketing activities through smart phones in public transportation. The Ministry sees the integration of the smart phones as a major means that supports the Ministry’s goals to improve the service level to the passenger in the field of ticketing in general and in a way that will also support the shortening of passengers’ boarding time at the stations in particular.

The following is partially based on the existing ticketing system’s definitions as guided by the Ministry of Transport, and partially on new approaches that The Ministry of Transport wishes to examine. To remove any doubt it shall be clarified that the following constitutes no ruling or decision by The Ministry of Transport regarding the strategic action in the field of ticketing for the upcoming years.

2. Definitions

- Mobile app – A smart phone application that enables the passenger to perform ticketing actions in public transportation.
- The Respondent – A corporation (or a group of corporations) that can offer a system that includes a mobile app in the reply to this document. It shall be clarified that a public transportation operator as hereby defined is not allowed to submit a reply as part of this request.
- Stake Holder – Someone who holds, directly or indirectly, including through a voting agreement, at least 5% of the issued shares capital of The Respondent. For the purpose of this definition, “**holding**” – includes the holding as an agent or as a trustee, or a corporation that such individual or entity holds 25% or more of its issued shares capital or of a certain type of means of control.
- Public Transportation Operator – a corporation that holds a valid line license to operate public transportation services given to it by the transportation supervisor or an interest holder in such said corporation or a corporation that operates public transportation that has an interest in it.
- Purchase – a process that involves payment and concludes with the receipt of a transport arrangement.
- Charge – The registration of the actual transport performance, in a way that holds a financial meaning for the passenger. The registration is conducted in the passenger means or the operator means or in a remote server.
- Activation – An action performed by the passenger that enables the fulfillment of the conditions for the transport in practice. The action can be performed before, during or after the charge. The terms for the actual transport will be defined in the Respondent’s proposal and can be, for example, one or more of the following list:
 - Presenting a certain mobile app screen to the driver

- An examination that the passenger is not on a black list
- An examination that the transport is covered under a valid transport arrangement or by means of insurer (valid credit card).
- Charge
- Validation – An action that combines Activation and Charge.

3. Description of the Current Situation

3.1 General

The public transportation in Israel is managed through a central prism by the Ministry of Transport, which grants licenses to the operators to operate in defined zones for a period of time defined under the terms of the license.

According to the specifications of the engagement with the operators all the ticketing revenues belong to the state (kept in trust by the operators) and the settlement of accounts with the operators, subsidies based, is based on criteria such as transport distance, number of passengers and so forth.

Under every regional operating license the operators are required to establish and operate an independent ticketing system that implements the international “Calypso” standard together with public transportation smart ticketing procedures, called “Israeli Calypso”. A specification of the implementation procedures of the “Israeli Calypso” can be found on the Ministry of Transport’s [website](#). This way it is possible to use different devices, by different manufacturers, that meet the standards requirements, while sharing ticketing methods that are shared by all operators.

As part of the license each operator is required to issue, to give service to the smart card that was issued through it and to allow the charging of the smart card with transport arrangements through other operators’ ticketing machines. In order to allow the transfer between transports of various operators, a specific agreement is required between operators regarding the contracts scheme and the validation logics. Such agreement exists between operators in the Dan Region and in Haifa and between the train and various operators.

As of today, approximately 2,000,000 smart cards of the “Calypso” standard (“Rav Kav”) are in operation in Israel. The operators have a vast variety of devices: issuance posts, transport rights / stored values charging posts (Contracts), validation posts on busses, on platforms, in the train’s cars, inspectors validation means and so forth.

The Ministry of Transport is establishing a central system that constitutes a national database that enables the accounting settlement between the operators and the Ministry of Transport, and the operators’ subsidy charges, as well as the handling of

recovery of lost or damaged cards. Each operator is required to interface to the clearing house in order to periodically transfer the data regarding the transports records made through its system for the purpose of future accounting. The architecture of the ticketing system through a national perspective (multiple operators) is illustrated in illustrator 1.

(Until the completion of the central system the accounting process with the operators is conducted based on the transports data that is saved at the operators' server systems)

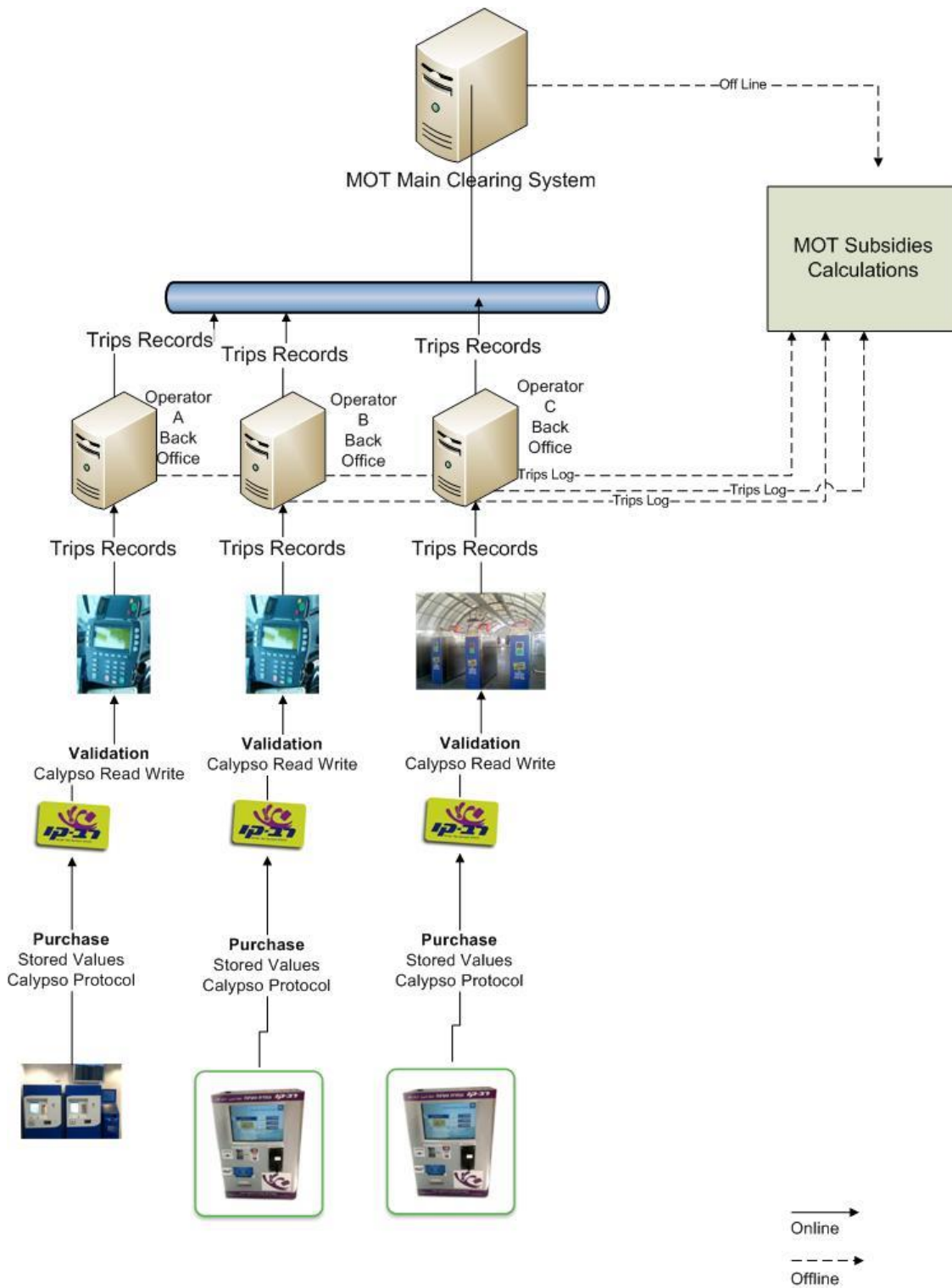


Illustration 1 – Illustrates the Architecture of the Ticketing System.

4. How to Submit a Reply

The Respondent shall submit the reply in the following specified structure. If the Respondent cannot or does not wish to answer a specific section, it shall write the section number, note the failure to response and the reason. The length of the reply shall not exceed 150 pages.

4.1 Information about the Respondent

4.1.1. Name of Corporation

4.1.2. Contact details: Contact Person's name, Email, Mailing address, Telephone.

4.1.3. Financial information: authorized financial statements from the past 3 years.

4.1.4. Background: Corporation seniority, organizational structure, number of employees.

4.1.5. Ticketing Background: experience in the field, number of employees in the field, performed projects in the field.

4.1.6. Strategic partnerships with relevant entities in public transportation ticketing.

4.1.7. Background and experience in other technological fields or in the fields of accounting and clearing.

4.2. Information regarding the system

4.2.1. System status: The Respondent shall clarify whether the system is in a conceptual stage or an initial development or a shelf product or a conversion of an existing system.

4.2.2. Operating sites status: in what client's sites (city/state) does the system operate? For each site please note:

4.2.2.1. What are the features of the ticketing scheme, systems and ticketing procedures on site.

4.2.2.2. Number of users in absolute and relative terms for the site (percentage of the total users).

4.2.2.3. Whether a process of transitioning from a close system to an open system had occurred. If yes, a breakdown of the transitioning process.

4.2.2.4. A general description of the fare structure in the site.

4.2.2.5. A general description of the implementation and assimilation processes including timelines.

4.2.2.6. Roles and responsibilities of the system's stake holders.

4.2.2.7. Clients' and users' feedback.

4.2.3. The System's Structure:

4.2.3.1. Architecture, components and interfaces (including such that are not within the responsibility of the Respondent).

4.2.3.2. Whether the system is open (Account Base) closed (all data is saved at the end component) or a combination of the options.

4.2.3.3 Back Office System

4.2.3.3.1 Description of the Back Office capabilities in the following contexts (can be expanded beyond):

i. Managing permissions by groups (eg financial managers, maintenance staff).

ii. Dashboard for the Authority - Situation display, Reports

iii. Managing fees - Create, update, cancel etc.

iv. Data analysis - using data from ticketing for analyzing general uses of public transport and ticketing use.

v. Accounting settlements between the various stakeholders.

vi. Storage and validation transaction management.

vii. Save credit card, making a purchase and clearance.

viii. Interfaces to external systems.

ix. Remote SAM server (where applicable).

x. Technical monitoring of the system.

xi. Customer service:

1. Profiles settings.

2. The issuance of receipts and invoices to customers.

3. Making a purchase for a customer.
4. Retrieval of account status for the customer.
5. Treatment reports of stolen cards / disappeared.
6. Cancellations and Refunds.
7. Performing searches by different criteria.
8. Handling of complaints.

xii. User accounts:

1. Registration and usage settings.
2. Set Method of payment / credit cards.
3. View ticketing account status including history.

4 different user actions (purchase, cancellations, appeals, reports of theft and loss, profile updates).

4.2.3.3.2 Description of the system capability to interface with an existing backoffice, which will provide the aspects of 4.2.3.3.1 and will be provided by the authority.

4.2.4. Description of the ticketing processes in the system:

4.2.4.1. Profile establishment – specifically whether and how it would be possible to import an existing profile from an outside database.

4.2.4.2. Purchase

4.2.4.3. Activation

4.2.4.4. Charge

4.2.4.5. Validation – with emphasis on:

- Methods of documentation and control over the validation for the purpose of accounting with the operator.
- The capability to identify the completion of the trip with a particular vehicle at a given time, notwithstanding communications issues. In this context the following details will be necessary:
 - The type of ID transmitted in the validation transaction (Vehicle ID, Line ID, Trip ID)

- How the Trip ID is integrated within the validation record
- The source of the identifier (ID) (e.g. vehicle computer servers, ticketing systems, NFC sticker on the bus, BT communications)
- Whether the Trip ID is essential to receiving confirmation for a validation transaction? If not, which ID is essential?
- The type of hardware and software components essential for the validation process – detail all possible alternatives suggested (including a diagram outlining the components and type of information transmitted between them).
- In case the ID doesn't identify the particular Trip ID:
 - Describe the process of retrieving the Trip ID from that ID
 - Where does the process take place? (e.g. ticketing system servers, operator servers, vehicle computers, mobile application).
 - Whether the process takes place in real time/ close to validation real time or occurs periodically (once a day/once an hour).
- In case it requires the installation of a device on the bus, whether and how the device is open for communication through a standard protocol and not only limited to communication with the proposed mobile app.
- Method of handling black lists.

4.2.5. Technologies

4.2.5.1. Validity technologies the mobile app is based upon (NFC, QR, BT) including performances.

4.2.5.2. Specification of the types of mobile phones and operating systems supported by the mobile app.

4.2.5.3. Standards implemented by the system.

4.2.5.4. Specification of the real time communication level required during the processes (volume, performances, continuity, technology).

4.2.5.5 – In the event the proposed system includes a mobile phone application that simulates (via emulation) a card that complies with the Calypso/Israeli Calypso Standard:

4.2.5.5.1 – What process is carried out for charging the travel contract to the NFC component in the mobile phone.

4.2.5.5.2 – Whether involving the cellular company within the process is necessary (e.g. requiring a SIM card, the need for using the cellular phone company's servers or third party (TSM)? If so, a diagram will be required detailing the flow of information and actions from the purchase of the contract to charging the contract on the phone.

4.2.5.5.3 – In case there's a knowledge of the 'Rav-Kav' systems in Israel, is the contract charged to the NFC component on the mobile phone fully compatible with the Israeli Calypso Standard (will be read by the existing readers and validations of the 'Rav Kav')? If not – what changes and adjustments will be required for full compatibility (including validators, gates, and existing readers).

4.2.5.5.4 – In case the proposed solution is based on HCE, describe the token and encryption process between servers and the mobile phone. Indicate if there's active implementation and please detail.

4.2.6. Data Security

4.2.6.1. Specification of the solution with regard to security and forgery prevention during the purchase process, holding the data of the transport contract, and validation.

4.2.6.2. Specification of the tools that will be used for the purpose of data security, both on the databases of the Respondent as well as the databases of others.

4.2.6.3 Presentation of various possible users usage scenarios, the suggested solution in that regard and the implementation method with an emphasis on fraud prevention.

4.2.6.4. The handling in case of a reported stolen or lost telephone device and how to prevent the abuse of the accrued transport contracts or the purchase of new transport contracts.

4.2.6.5. Specification of the data saved on the mobile app level (on the mobile phone). Specification of the data saved on the servers. Specification of data duplication, synchronization, backups, redundancy and recovery.

4.2.6.6. Specification of ongoing backup method of accrued data, that includes, among others, revenue data.

4.2.6.7. In case the suggested system saves the transport contracts data or any other financial data on the mobile phone's components, the Respondent shall specify the way a secured loading of the data is performed and the ongoing protection of such data.

4.2.6.8. What is the security level supported by the system in the field of credit cards.

4.2.6.9. Additional elaboration on the subject.

4.2.7. Clearance and Revenue management

4.2.7.1. Specification regarding the clearance method and the system's revenue holding.

4.2.7.2. Specification regarding the ways that the system reports stolen revenue.

4.2.7.3. Specification of the monitoring process over the receipt of payment from the credit card companies as required and the performed validations.

4.2.7.4. Specification of the system's fares update method.

4.2.8. System Implementation Method

4.2.8.1. In the Respondent's opinion can the system be integrated within the existing ticketing architecture (as defined under the Current Situation section) while maximizing the current means or alternatively propose a method of implementing the system while simultaneously working with the current infrastructure.

4.2.8.2. Which of the components implemented and tested by the Respondent and which components/modules should be developed. In case there is a need for development – description of development difficulty evaluation. Does a simultaneous development is required by sources outside of the system (operators, Ministry of Transport...).

4.2.8.3. Description of the system's openness for integration with external means and applications.

4.2.8.4. Description of the system's flexibility for modifications and extensions.

4.2.8.5. Specification of the work assumptions regarding what is needed for proper system processes (for example – communication with the cellular operator / ability to save credit cards etc).

4.2.9 Service, Maintenance and response to malfunctions

4.2.9.1. Specification of the methods through which the users will be supported during the work process with the mobile app.

4.2.9.2. Specification of the methods through which the system's client will be supported.

4.2.9.3. Specification of the various malfunctions feasibility and the handling method for each failure and specifically:

- Various communications malfunctions.
- Incorrect charges
- Theft and loss (mainly the aspect of balance recovery).

4.2.10 Business Models

4.2.10.1 Specification of the business model with the client (payment for system implementation, percentage of each transaction...).

4.2.10.2. Whether as part of the solution, third party agreement were required such as cellular providers, banks, credit card companies.

4.2.10.3. Whether the mobile app is branded under the name of the company or the name of the authority (White Label).

4.2.11 Risk Management

4.2.11.1 What are the main risks of implementing the system and the ways to cope with those risks (not necessarily technical risks).

5. Submission of Response

5.1. S. It is possible to contact with clarifying questions by 29/7/15. The questions shall be directed to Mr. Shay Jerby at the Ministry of Transport via email jerbys@mot.gov.il. The reply to the question will be published publically to all registered Respondents.

5.2. The Reply must be submitted by 12/8/15 at the latest. The reply submission method shall be via e-mail to Ms. Sarit Levi at levis@mot.gov.il.

5.3. All dates mentioned under this section are until 12:00 P.M.

6. The Ministry's rights and powers

6.1. It shall be specifically emphasized that this request is an initial stage of information gathering and does not constitute a request for proposals or a public tender or other binding process, and it does not constitute a commitment by the Ministry of Transport to continue and act towards any purchase process including the engagement method. The request was made for information receipt only and in its wake the Ministry will consider its future actions according to professional and relevant considerations.

6.2 It shall be emphasized that during a tender process should such take place in the future, the Ministry of Transport shall be entitled to change and add requirements and conditions all according to the Ministry's professional and relevance discretion and per its needs.

6.3. The Ministry reserves the right to use the information received through this request for the purpose of compiling a list of potential suppliers – all according to its sole discretion.

6.4. A reply to this request shall not constitute a condition for participation in a tender that will take place afterwards, shall not give advantage and shall not require the participation of those replied to the request or an engagement with them in any other form.

6.5. The Ministry of Transport reserves the right to approach any of the Respondents with a request to receive clarifications and content completions to the submitted response including conducting interviews, demo and presentation viewings, pilot performance, visiting the sites of the Respondents or their clients by appointment.

6.6. The Ministry shall not indemnify the Respondents and shall not compensate them in any way for this procedure, including in case of adding conditions, derogation of them, modifications or partial or full cancellation of the request for information.

6.7. The Ministry shall be entitled to use the information submitted in the reply to the request for information and the supplier shall have no copyright claims.

6.8. The Ministry is entitled, under the circumstances it sees fit, to flex and update the dates defined in this document in regards to some of the Respondents or all of them.

6.9. It is hereby clarified that all of the Ministry's authority powers are accumulative and shall not be interpreted as restrictive or as limiting its authority and the Ministry is entitled to use all of its powers independently, regardless of other sections, and without having the existence of similar sections or individual arrangement for a specific authority be interpreted as limiting (or as a "negative arrangement" or "positive arrangement") the authority of the Ministry in any way.

7. Cancellation / Modification of the Request for Information (RFI)

The Ministry shall be entitled to cancel the RFI, at any stage, for any reason per its sole discretion and without the obligation to give reason. Not exercising this power at any stage of the process does not prevent its use at a later stage.

The Ministry shall be entitled to postpone the RFI's dates and/or to come out with a new RFI, or modify terms of the RFI's terms, including through their cancellation or their redrafting or redefinition, and to allow the Respondents to submit an amended response according to the section that was cancelled, redrafted or redefined.

8. Confidentiality and right of access

The Ministry is not obligated to the confidentiality of the submitted offers and it shall be entitled to publish them as per its discretion and subject to the provisions of the freedom of information law. It shall be clarified that a Respondent shall not be entitled to review the response of another Respondent either fully or partially unless published as aforesaid.

9. Limitation of the right to sue

It is hereby clarified to the Respondents that their participation in the Request for Information (RFI) does not constitute any commitment by the state towards them, and that the state makes no representations to the respondents, accept for what is specifically stated on the RFI's documents.

The Respondent shall not be entitled to participation, indemnification or compensation from the state for its proposal and/or any loss, cost or damage caused to it due to the submission of the response and/or the response itself.

Without limiting the aforesaid it is hereby clarified to the Respondent that it shall have no right or claim against the state, that due to the publication of the RFI an investment was made, that caused it losses, loss or any damage.

By submitting its proposal the Respondent accepts the terms of this section, as well as the rest of the terms of the RFI.

10. Lack of applicability of the Mandatory Tenders Law and its Regulations

It shall be clarified that this Request for Information is not an order to perform work or a purchase of services. Accordingly, this RFI is not a tender and is not subject, among others, to the Mandatory Tenders Law 1992 and its regulations and any other law or regulation in connection with tenders laws.

11 Applicable law and jurisdiction

This Request for Information shall be subject and interpret according to the provisions of the law of the State of Israel. Any matter concerning this Request for Information and anything related to it shall only be heard in the authorized courts of the city of Jerusalem.