



חברת כביש חוצה ישראל בע"מ
CROSS ISRAEL HIGHWAY LTD.

רשות ממונה למיזמים
■ מנהרות הכרמל ■ כביש 6 ■ הנתיב המהיר ■

15 בינואר 2104

לכבוד:

שלוש רב,

הנדון: מכרז/חוצה מס' 372/704/13 לפיתוח מערכות דור ב' לניטור נסועת כלי רכב

עדכון

במשך למסמך ההבהרות והעדכונים שפורסם ביום 14.1.2014, מצ"ב מסמך ג' מעודכן, אשר עודכן בעקבות מענה הועדה לשאלות הטכניות. מסמך זה מחליף ומבטל את מסמך ג' אשר צורף למסמכי המכרז.

מסמך זה על כל העדכונים וההבהרות המופיעות בו וכן נספחיו מהווים חלק בלתי נפרד ממסמכי ההליך, ויש לצרפם להצעת המציע כשם חתומים בחתימה המציע בשולי כל עמוד וחתימה מלאה בסוף עמוד זה במקום המיועד לכך.

בכבוד רב בברכה,

עו"ד גיא לויאן
האגף המשפטי

חתימה וחותמת המציע

תאריך

Functional Specifications

1. Hardware Requirements

- 1.1 Support in vehicle environment from year model 2010
- 1.2 Operating voltage range: 9-36v
- 1.3 Operating temperature range: -20 to 80 degc
- 1.4 Storage temperature: -40 to 90 degc
- 1.5 Tolerance to power drop/outage during operation without loss of data
- 1.6 Encrypted internal memory with unique serial number per the car VIN parameter
- 1.7 Integrated Endpoint Hardware Components:
 - 1.7.1 Cellular 3G
 - 1.7.2 Support in SIM Card and Virtual SIM Card
 - 1.7.3 GPS Module
 - 1.7.4 Integrated GSM and GPS Antenna
 - 1.7.5 Backup battery for alert transmission capability with min life period of 3 years
 - 1.7.6 Real time clock
 - 1.7.7 BLUETOOTH SMART module for Smartphone communications (alert indications, real time travel payment display and reports). The BT channel will be dedicated in parallel to the standard voice channel
 - 1.7.8 Sufficient processing power and memory for the required calculations and processing defined in section 2
- 1.8 The endpoint will support an internal local and hidden interface for maintenance
- 1.9 The endpoint will support start and end of travel detection (required for the travel payment calculation)
- 1.10 The endpoint will be able to detect a disconnection from the power source and transmitting an associated alert message
- 1.11 Autonomous system capable of transmitting a keep alive message every travel. In case where there is no GSM link the system will accumulate up to 1000 travel data (start point, end point, time of travel, total NIS payment). In this lack of GSM link the Network Operating Center (NOC) will send alert SMS/Email to the driver after a week.
- 1.12 The endpoint will support access from the vehicle CANBUS for the purpose of reading odometer and VIN (Vehicle Identification Number) data
- 1.13 The endpoint will support odometer readout for the following purposes:
 - 1.13.1 Identifying mismatch between the GPS calculated travel distance and odometer data
 - 1.13.2 Detecting odometer continuity from end of last travel to current new travel
- 1.14 The endpoint will be physically hidden, protected and secured
- 1.15 Simple installation: up to 15 minutes by single installer and standard tools

2. Software and Algorithm Requirements

- 2.1 The travel payment will be according to the following: the endpoint will store up to 1000 travel entries, which includes: time of departure, time of arrival, start/end coordinates of each charge area and time zone (e.g. changes in time and geography), travel distance and calculated fees. The stored data must be sufficient to allow drawing the entire driving route. Upon request, or configuration, the endpoint will send the data to the driver's dedicated Smartphone application (via Bluetooth) and to the NOC. If the driver will prefer a private mode only the travel fees data will be sent to the NOC.
In any of the operating modes, the endpoint will also transmit a keep alive message to the NOC in a configurable period (system parameter)
- 2.2 The endpoint will be identified by the NOC through the unique id number (the vehicle VIN)
- 2.3 Identification of the current location through the readout of the integrated GPS coordinates
- 2.4 The endpoint will know to calculate current location even in temporarily absence of GPS reception
- 2.5 Identification of the travel distance by reading the vehicle odometer data
- 2.6 Travel time identification using integrated real time clock
- 2.7 Calculating travel fees using provided formula and payment areas that will be stored in the endpoint memory (refer to the attached map payment areas). The calculated travel fees will be sent to the NOC at the end of the travel
- 2.8 Encryption of every transmission data to NOC (fees amount, ID etc)
- 2.9 Endpoint will transmit stored travels data when GSM link is resumed
- 2.10 The driver may select to delete the travel history stored in the endpoint but not the total km figure
- 2.11 Real time travel payment data will be displayed by Smartphone app or other dedicated endpoint display
- 2.12 The endpoint will transmit alert messages to NOC in the following cases:
 - 2.12.1 Mismatch between calculated travel distance to odometer
 - 2.12.2 Discontinuity of odometer (from end of last travel to start of current travel)
 - 2.12.3 Disconnection from power source
 - 2.12.4 Attempt of physical burglary
 - 2.12.5 Attempt to disrupt the endpoint operation by accessing one of the communication channels
- 2.13 Capability for upgrading the payment calculation parameters, formula and endpoint configuration file. The upgrade must be supported both locally (via the maintenance port) and over the air (from server)
- 2.14 Demo Smartphone application with the following requirements:
 - 2.14.1 Bluetooth smart interface with the endpoint
 - 2.14.2 Configurable Visual and audible indications

- 2.14.3 Support in the varies endpoint indications: power source disruption, endpoint hardware/firmware failures, lack of GSM link, lack of GPS reception, change in charge area
- 2.14.4 Usage reports display
- 2.14.5 Endpoint travel history log delete options
- 2.14.6 Endpoint server communication mode configuration (private or open)

3. Security Requirements

- 3.1 The communication to/from the endpoint will be secured by AES512
- 3.2 The endpoint will support FIPS140-2 data protection standard
- 3.3 The endpoint will not allow access to internal HW interfaces (JTAG, programming ports etc.)
- 3.4 The local maintenance port will be secured
- 3.5 The mechanical design will harden the option of physical opening the endpoint and the system will transmit a local and NOC alert in such an attempt

4. Communications Requirements

- 4.1 The protocol will be based on standard schemes (eg tcp/ip, etc.)
- 4.2 The protocol will be secured and support AES 512, SSL, PKI
- 4.3 The protocol will be based on "regular" internet medium and won't require any dedicated "relay" equipment (eg vpn termination hw at the cellular carrier)
- 4.4 The protocol will support upgrade of sw image and configuration files
- 4.5 The protocol will be the same for all the in-the-car unit providers (applicable for the 2nd phase, in the 1st phase the provider is entitled for its own protocol)
- 4.6 The protocol will carry the necessary data, both monitoring and functional
- 4.7 The protocol will support versioning
- 4.8 The protocol will offer delivery guaranty mechanism
- 4.9 The protocol will take into account scalability (ie large number of clients)

5. Standards Compliance

The endpoint must meet the relevant sections of standard 5905 (to be purchased by the potential endpoint manufacturer) as follows:

Reference to standard 5905 – applicable sections

The following sections are mandatory:

1. Functional requirements

- a. Section 1.3.1 – event definition
- b. Section 1.3.3 – falls alarm definition
- c. Section 1.3.6 – Command center definition
- d. Section 1.3.7 – drive events system definition
- e. Section 1.3.10 – drive definition
- f. Section 1.3.11 – public medium
- g. Section 2.1.1 – event identification
- h. Section 2.4.1 – location pinpointing
- i. Section 3.5.3 – save data in case external power was disconnected
- j. Section 5.1 – networking
- k. Section 6.1 – provider statement

2. General requirements

- a. Section 2.1 – working as normal definition
- b. Section 2.2 – marking definition
- c. Section 2.3 – connecting to vehicle
- d. Section 2.4 – form and content
- e. Section 2.5 – malfunction handling
- f. Section 2.6 – battery backup
- g. Section 2.7 – anchoring
- h. Section 2.8 – technical documentation
- i. Section 3.1 – temperature
- j. Section 3.2 – humidity
- k. Section 3.3 – vibration
- l. Section 3.4 – electromagnetic compatibility
- m. Section 3.5 – electrostatic considerations
- n. Section 3.6 – physical resistance
- o. Section 3.7 – water and dust (IP)
- p. Section 3.8 – saltiness

- q. Section 3.9 – fire spreading
- r. Section 4.1 – external voltage
- s. Section 4.5 – power consumption

3. Installations requirements

- a. Section 4 – general
- b. Section 5 – pre installations
- c. Section 6.1 – anchoring
- d. Section 6.2 – direction
- e. Section 7 – cables
- f. Section 8 & 9 – connecting the device
- g. Section 11 – tapping into vehicle systems

Section 12 – post installation testing / verification