Request for Information Topsector Logistics

Managing the access of motorized traffic in urban areas with limited access

Background

In the Netherlands, some urban areas are restricted to motorized traffic. Mostly it concerns areas in (old) innercities, where different functions (shops, restaurants and housing) are combined. Limiting access prevents too much traffic, parking problems and helps to keep the area attractive for residents and public (shopping, nightlife, entertainment etc.).

There are several ways to limit the access to an area. The physical closure of an area by means of (retractable) poles or barriers is common. At the same time access is granted to parties that are allowed to have access according to local policy (see annex for a list of possible parties).

In the current practice access is permitted by (sometimes a combination of):

- RFID pass
- entering a code
- a transponder (emergency services)
- license plate recognition
- remote calling via the intercom or telephone administrator

The current access management systems based on the above features have a number of disadvantages, such as:

- Parties with right to access (logistics or persons) sometimes lose their card or forget their code
- Parties that drive a different car than usual do not get access (number plate recognition)
- The management costs are relatively high because of the issuing and (especially) collecting of passes, the issuing and management of licenses, one-time access, such as for taxis or recurring episodes
- The monitoring of actual use is difficult
- The possibilities for fraud are too large, i.e. the enforcement is difficult

Administrators of these vulnerable areas are looking for opportunities to offer more flexibility at lower management costs, to improve analysis and monitoring, and to do this in a modern and user-friendly way. Furthermore, flexibility is desired. For example to provide more space for clean and silent transport that is well organized, without granting access to unwanted vehicles.

In the Action Line City Logistics/Green Deal Zero Emission City Logistics, the Topsector Logistics is looking for ways to improve the access process that allows the use of more flexible and user friendly access systems. The goal is to be much more flexible in order to deal with access control, and to make it more manageable and controllable. This gives more space to the parties that need access, and prevents abuse.

We are investigating the possibility to do a pilot implementation in Amsterdam, in a location with two barriers/poles. This pilot would test the operation of the new access system in practice. If this test is a success, we will try to scale it up to similar locations in the Netherlands, in cooperation with municipalities.

An important starting point of this RFI is that the penetration of smartphones (with internet and cameras) is so high that the availability of a smartphone can safely be assumed to be a basic rule for the process. Not having a smartphone is seen as an exception. Also communication technologies like mobile Internet, WiFi and Bluetooth Low Energy are widely distributed and are well supported by the operating systems on smartphones. Smartphones are already being used to control secure access, such as mobile banking, or so-called two-factor authentication. People are used to carry their smartphones with them, anytime and anywhere. Situations in which this is not the case are an exception to the rule.

Commercially supplied systems with electronic keys on smartphones that provide access to car parks, with cloud-based management systems, already exist.

Our questions are:

1. Does your company already deliver essential systems or parts of systems that can be applied to the situation above?
2. Is the development of such a system part of your roadmap or strategy?
3. Are you interested in competing for a pilot implementation in Amsterdam, in a location with two barriers/poles?
4. If yes, could you please indicate how you would address this issue?
5. Do you have a support organization in the Netherlands?

We would like to ask you to respond in a text document of up to 10 pages or a PowerPoint presentation up to 20 pages and e-mail this no later than February 24 29017 to TSLogistiek@connekt.nl.

In Annex 1 we elaborate on requirements and possible solutions. Annex 1 is not normative but merely intended to better convey the intent.

Analysis of requirements and potential solutions

The access for people who regularly need to be in an area or need to be there one single time, such as:

- residents,
- shopkeepers,
- suppliers,
- emergency services,
- (service) technicians,
- waste collectors
- and taxis for people in need of transportation

People without permission with a motor vehicle are to be refused entrance

Permission to access is customized and linked to a person or entity with an exemption, or a one-time permission.

Rights and rules for access are clear to all (potential) users and non-negotiable.

People with dispensation must have access in an easy manner, without the need for all kinds of complicated operations to enter or leave the area.

A permit, or one-time permission should be granted in a fast, easy, and are well traceable process (issued to who, used when?). Management and management information can be easily accessed and made accessible cheaply.

The threshold for abuse is high

The system is robust, the process can withstand technical problems, failure of communication and power, people can forget their phone, drive a different car etc.

Users can easily generate transparent information about the status of their permission etc.

Low management costs.

One possible solution is:

- Access is obtained any single time with a unique code. This code is needed to get into the area and to leave the area. The code is communicated through the visitor's smartphone (for example, via an app, such as Google authenticator).
- Two way identification: **1**: Directly through bluetooth between smartphones and visitor installation that communicates the unique code and **2**: Visitors enter unique code. Bluetooth requires extra security and is suitable for regular visitors.
- Regular visitors receive a new access code automatically (and on time) after leaving the area.
- If no code is available, for example because there is an internet outage, it should be possible to call to get a code and still gain access to the area by entering the code.
- Departure from the area requires the same code that gave access.
- The use of the codes is recorded, and is visible online.
- The management determines whether codes are issued (once or regularly). Hotels, bars, restaurants and the like are allowed to give a one-time set of permissions itself: this is recorded, so it can be traced back to find out if agreements are being fulfilled.

Management and monitoring

- Web-based management interface
- Automatic monitoring of usage, statistics, analysis can be made to gain insight in for example use and business
- Signaling functions (triggers) can be set, preferably per permit, but also in general
- Management of regular visitors (who, valid period, any other restrictions (time of day, number of times in and out per day weekdays?, if multiple ports which ports in and out)?
- Issuing access for occasional visitors (period only, any other restrictions (time of day, number of times in and out per day weekdays?, if multiple ports, which ports in and out)?
- Override: to be permanently open or closed