



Statens vegvesen

Tender documents

Part B - Specification of requirements

**Hardware and software for automatic number plate
recognition**

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B.1. Specification of requirements

B.1.1. General

In 2010, the Norwegian Public Roads Administration (the Roads Administration) and the Norwegian Custom and Excise Authorities (the Customs Authority) entered into a collaboration on automatic number plate recognition (ANPR). The purpose of the collaboration was and is to exchange experience and assist one another in appropriate areas. Pilot projects and use have proved the ANPR to be a useful aid in the monitoring work of both organisations in their capacity as controllers. Further cooperation is advantageous with respect to both today's needs and future developments, in order to strengthen the surveillance authorities in the face of a growing national vehicle fleet and increased cross-border traffic, and in order to be able to deal with the steadily increasing professional criminality. The aim is to achieve a mutual overarching goal of a safer society.

The Roads Administration and the Customs Authority have joined forces to procure new ANPR equipment because the two authorities share this common objective, despite the differences in their needs and fields of activity. The specific needs of the authorities are described below (see points B.1.2 and B.1.3).

B.1.2. Description of the purpose/needs of the Roads Administration

The Norwegian Public Roads Administration, Section for Inspection and Control has the overall responsibility for surveillance and inspection of the vehicle fleet in Norway. The Roads Administration has implemented technology (ANPR) that has modernised and increased the efficiency of parts of its operational control activities.

The Roads Administration wishes to use modern technology to single out vehicles that do not meet the requirements for travelling on roads for various reasons and in various areas.

After approximately two years of using automatic number plate recognition technology by means of OCR reading of number plates, we have concluded that the effect has been positive in a number of areas.

- Traffic safety is being raised on and along roads.
- Monitoring and the use of this technology enable those vehicles that do not meet the requirements for travelling on the roads to be removed from the traffic.
- Monitoring and the use of this technology enables us to allow those who legally use the roads to avoid unnecessary control.
- Socially positive effect through a real increase in the risk of being checked.
- The Roads Administration benefits through a substantial improvement in the utilisation of the resources represented by its body of controllers.

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- Financial gain through a change in other routines; for example, elimination of licence stickers.

B.1.3. Description of purpose/needs for the Customs Authority

The Customs Authority is responsible for collection and follow-up of taxes on the vehicle fleet in Norway. The Customs Authority's control body also monitors other bans on driving for other public authorities. In order to simplify the selection of vehicles for control, the Authority has introduced technological aids which make it simpler to maintain efficient control of a large vehicle fleet and to swiftly pick out vehicles with a high probability of a driving ban.

In addition to checking vehicles for unpaid taxes and other driving bans, the Authority has an important control function in connection with all border crossings. The Authority wishes to employ technology to:

- Use control methods that ensure simple border crossing for those who observe the rules and regulations.
- Prevent customs duty and excise evasion and smuggling of taxable goods.
- Combat cross-border economic crime.
- Prevent smuggling of goods that constitute a threat to life, health and the environment.
- Protect society by maintaining a visible presence at the border and arrival in Norway.
- Engage in targeted intelligence work and systematic risk analysis.
- Be able to assist other public authorities with enforcement of their areas of authority.

B.1.4. Description of the deliverable:

To be procured is a complete system for automatic number plate recognition by means of cameras and software for scanning and interpreting number plates and checking the scanned number plates against various lists/registers that the Roads Administration and the Customs Authority use in their control assignments in Norway. The complete system that is proposed must additionally be modular and capable of being developed.

Tenders must be delivered for:

- *complete* installations including hardware, software, cables, racks, attachment devices and installation (see also points B.1.5, B.1.9, B.1.10, B.1.12, B.1.13 and B.1.14),
- upgrades, service and support (see also points B.1.7 and B.1.10 d5, h2 and j1)

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- documentation (see also points B.1.8,B1.9, B.1.10 k and B.1.10 j3)
- moreover, the Supplier must provide training (see also point B.1.10 11-13) of users and function testing for each of the installation sites (see also points B.1.8 and B.1.10 j3).

How these services are to be priced is shown in point B.1.16 of the price form (see also Appendix: Form for completion of Tender Documents).

The system that is to be procured is for the use of all Roads Administration teams for controls on and along the road, and for all the Customs Authority's control units.

The Roads Administration and the Customs Authority have equal rights to the actual use of the system. However, the purpose, conditions and requirements relating to the system are different. This applies primarily to data storage requirements pursuant to Norwegian privacy protection legislation.

All installations of automatic number plate recognition procured in this agreement are to form part of the same system for both the Roads Administration and the Customs Authority.

B.1.5. Installation sites

Description of typical installation sites:

Fixed installations (control points):

- Equipment suitable for unmanned control site/station, for example, unmanned borders where a fixed installation functions as an advance post for vehicle control (see for example point B.1.10 a and b).
- Fixed control points that are manned (see for example point B.1.10 b).

Mobile installations (control points):

- Equipment suitable for complete mobile ANPR system installed in vehicles, both systems suitable for fixed installation and movable systems (see for example point B.1.10 a, c and B1.12).
- Equipment suitable for mobile display/dispatchers. Complete, compatible display/dispatcher that is connected up to a mobile or fixed ANPR camera system, and provides information about what is happening at a given location (see for example points B.1.10 a, b, c and B.1.11 m26 – m28).
- Equipment suitable for a coordinated system where one or more mobile ANPR units can use information (hot list) from one or more fixed units/installations. For example in connection with surveillance within the country where border crossings trigger a signal when a mobile surveillance post is passed (see for example point B.1.11 m 28).

Central installation (distribution point):

- Equipment suitable for a central distribution point for updating and generating various lists of number plates with a prohibition on use and reception points for statistics from all systems initially included in the system. The statistics must provide an overview of the total number of number plates read, the total number of number plates with a ban on use read, the number of incorrectly read number plates and when and where (GPS coordinates or equivalent) the camera units have been active. The central installation (distribution point) will be the same for the Roads Administration and the Customs Authority (see also point B.1.10 f, g and i).

B.1.6. Lists of vehicles

The main purpose of the system must be to alert controllers to passing vehicles that are registered on lists such as vehicles with a ban on use. The registers will be updated regularly, and are assumed to be distributed from a central distribution point one or more times a day. These lists form the basis for the ANPR system's reason and then alert in real time to the operator and controller who stops the vehicle for inspection.

The Supplier should describe the possibilities for how the Client should be able to use and make/change various lists in the proposed system. That is to say, functions for changing registers / lists, and for being to choose between an alarm/reaction being triggered by number plates on the lists (hot list) and the opposite, that an alarm is triggered by the number plates that are not on the lists (white list) (see also point B.1.10 f5-f8).

The Roads Administration and the Customs Authority will predefine various lists of "vehicles of interest". The registers/lists contain information about number plate, vehicle information and the main reason that the vehicle is on the list. The registers / lists are updated at least once a day and form the basis for the alert/reaction of the ANPR system. The Supplier must describe how the proposed solution functions (see point B.1.10 a12, e1, f4-f8, g1 and h3).

The Customs and Excise Authorities also needs to use the ANPR system for surveillance of traffic flows at manned and unmanned border crossings. The Supplier must also describe and document how the system can deliver lists of "vehicles of interest" that have passed a camera system and continued into another geographical area, for example by means of a dispatcher (see points B.1.5, B.1.10 b4, m26 and m28).

B.1.7. Service and maintenance

1.7.1. Regular maintenance (upgrades)

A service and support agreement containing a description of updates and new versions must be included. The Supplier should specify and describe all data

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processing that takes place on the Client's equipment in connection with service assignments. Routines and procedures for performing the task must be documented and form an attachment to the tender. Data processing routines in connection with service and support. This includes treatment of hardware components when replacing parts/storage medium. All such tasks should and must be dealt with within the framework prescribed by Norwegian privacy protection legislation.

New versions and software updates/improvements must be included in the service and maintenance agreement.

1.7.2. Support

The Supplier shall attempt to remedy problems within four - 4 - hours of the Client reporting a fault in the system. This may, for example, be done by remote control of a PC and assistance from a local Roads Administration or Customs Authority operator. The Supplier must diagnose the fault and correct it if possible. If it is not possible to diagnose the problem, the Supplier must instruct the Client's representative as to how fault correction/support can be carried out to remedy the situation.

The Supplier shall describe a method for remote control of the system and for maintaining a log of all activities.

In cases where remedying of faults requires a physical presence, this must be agreed with the Client.

B.1.8. Requirements relating to documentation and testing

Along with the proposal, documentation must be supplied that shows that the proposed product and solution meet the minimum requirements in the tender documents.

The evaluation of relevant tenders includes the Client, the Roads Administration and the Customs Authority being able to come to a given location to be shown around and see a demonstration /test of similar use/implementation.

This testing will be carried out before a contract is awarded. The Supplier must therefore make both personnel and testing equipment available. The testing date will be determined in the tender evaluation phase. The Supplier must indicate where the proposed equipment can be viewed and tested through the whole evaluation period.

The following equipment and system must be present during the evaluation period:

- A small vehicle containing mobile equipment concealed from outside view (i.e. not integrated in car cameras in the grill and/or bumpers).
- A small vehicle on which Norwegian number plates supplied by the Client can be mounted.

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- A larger vehicle on which Norwegian number plates supplied by the Client can be mounted.
- A mobile installation where both the object to be controlled (car) and controller vehicle are moving at normal speed on a road with traffic.
- An installation of key administrative equipment.
- An installation of a dispatcher point for monitoring several fixed installations.
- A mast or similar by the driving area on which fixed installation equipment is mounted at a height of at least 5 m.

B.1.9. General minimum requirements

The proposed ANPR system must be ready for use by the tender deadline. This means that only systems that are ready for use will be *accepted*. In the industry, systems of this kind are called 'off-the-shelf products'. A turnkey system ready for use in accordance with the purpose and needs at each installation point must be delivered, for example ready installed in a vehicle or at a control point, ready for use.

B.1.10. Functional requirements (table of requirements)

There are three types of requirements for *achievement of function* in the table of requirements. These are defined as:

- 1.) "Must" requirement. These are absolute minimum requirements for the delivery (see point A.3).
- 2.) "Should" requirements. Functions and solutions that are specified form an important part of the system and should be included in the proposed system (see point A.5). The Supplier must describe, document and price the proposed equipment as options (see also Appendix: Form for completion of Tender Documents).
- 3.) "Desirable" requirements. Functions and solutions that are desirable in the system, but where the Supplier has more scope for designing the solution (see point A.5). The Supplier must describe, document and price the proposed equipment as options (see also Appendix: Form for completion of Tender Documents).

The Client can choose to purchase or not purchase proposed options during the agreement period.

The Supplier must provide an independent assessment of his own ability to meet the requirements in the column of the table of requirements marked "Comments". The Supplier is requested to substantiate that the requirements are met in the tender by means of documentation, descriptions and principle diagrams.

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The Supplier must complete **all** the white fields in the table of requirements.

Table of requirements:

	Specification of requirements	Comment	Fulfilment of functional requirements
a	<i>General requirements</i>		
1	The system shall contain camera equipment/system for capturing number plates on passing vehicles that are moving or standing still and from unstable facilities and sound an alert adapted to the individual installation sites (see point B.1.5).		Must
2	It must be possible to take pictures of the number plate mounted on the front and the back of the vehicle being checked. The system must report only one of the occurrences of the same number plate.		Must
3	The tender must include image processing technology and presentation monitors for operation and for reporting findings to the operator.		Must
4	The system must communicate with the operator in Norwegian, alternatively in English until Norwegian is in place.		Must
5	The proposed solution must be capable of reading correctly 95% or more of the number plates that are scanned. The method for reading off precision must be specified, described and documented in the tender.		Must
6	The ANPR system must be capable of reading and interpreting the fonts used for European number plates in the same way as for Norwegian		Must

	number plates.		
7	<p>Number plate recognition must function equally well, irrespective of light conditions, for example daylight, dusk, darkness at night.</p> <p>Any accompanying light equipment for the camera system must not be a distraction for motorists on the road. Any light facilities must be specified, explained and documented.</p>		Must
8	The quality of number plate recognition must not be affected in varying weather conditions, such as snow, rain or mist (it is assumed here that the number plate is not dirty).		Must
9	All camera equipment, cables, leads and power supply units must be damp- and dust-proof. This must be IP 67 at a minimum.		Must
10	Cables must be flexible and it must be possible to use camera equipment at temperatures down to -20 degrees Celsius and up to +30 degrees Celsius.		Must
11	<p>The number plate recognition quality must have high tolerance for the use of different camera angles, before the quality of number plate recognition deteriorates.</p> <p>The system must be specified and documented in the tender.</p>		Must
12	In alerts to operator, the image of the scanned number plate must be presented together with a colour overview picture of the vehicle for visual verification of recognition. The alert must also contain all data registered in the list of "Vehicles of interest" for the vehicle in question.		Must
13	The camera system must count observations and maintain anonymised statistics of the number of vehicles scanned. This consists of the total number of observations, number of alerts triggered by these, description of why an alert was triggered and where and when the		Must

	<p>observations took place (GPS coordinates or equivalent).</p> <p>The solution must be specified and documented in the tender.</p>		
14	<p>The camera system must have a function that makes it possible to choose whether the data on the scanned objects should be stored or not, i.e. on and off. It must be possible to choose how long data should be stored and the quantity of information from the system. It must be possible to adjust this for the individual camera unit. The system must log when and by whom it is turned on and off.</p> <p>The solution must be specified and documented in the tender.</p>		Must
15	<p>The focal length of the camera must be between 5 – 20 metres, i.e. the distance between number plate and camera lens.</p> <p>The solution must be specified and documented in the tender.</p>		Must
b	<i>Fixed installation</i>		
1	Two or more cameras must be supplied for fixed installations, depending on how many lanes have to be monitored. The proposed ANPR system must read plates both at the front and the back of one and the same vehicle, and must also pick up motorcycles, trailers, veteran cars, tractors etc.		Must
2	<p>It must be possible to activate and deactivate the camera system at a fixed installation from the operator's place.</p> <p>The solution must be specified and documented in the tender.</p>		Must
3	Equipment, cables etc. must be protected against vandalism, as for example in armoured cables.		Must

4	For fixed installations, cameras to be mounted at <i>unmanned</i> control points or border crossings must have their own power supply units and communication systems. The Supplier must specify and document the solution in the tender.		Must
5	Equipment must be mounted at least 5 metres above the carriageway to reduce the effects of contamination, splashing and vandalism.		Must
c	<i>Mobile systems</i>		
1	Mobile systems must tackle the following user scenarios: <ul style="list-style-type: none"> • Control vehicle standing still, control object moving (for example at a stop control by the road). • Control vehicle is moving and the control object is moving (e.g. driving ahead of or towards a control object). • The control vehicle is moving and the control object is standing still (e.g. inspection of street parking or parking area). 		Must
2	In the event that ANPR systems mounted in front of and at the back of the control vehicle result in a duplicate interpretation, one must be deleted. If an alert is sounded, only one alert per vehicle must be presented.		Must
3	The proposed system for installation/use in service vehicles must be able to function with only a 12-volt power supply. The Supplier must provide an appropriate power supply for vehicles. The solution must be specified and described.		Must
4	It must be possible for mobile systems to function installed in vehicles and also to be set out by simple means for use along roads. The solution must be specified and described by the		Must

	Supplier.		
d	<i>Security</i>		
1	It must only be possible to use the system after security logging on predefined by an administrator. This must be specified and described.		Must
2	All data associated with updating of lists and interaction with other systems must be encrypted. This must be specified and documented.		Must
3	The ANPR must be secure against hacking. This must be specified and documented.		Must
4	The proposed system must primarily be able to communicate over wireless encrypted WLAN, secondarily via mobile networks UMTS/3G or better for updating of lists of vehicles of interest. The proposed equipment must possess these functions. Updating of lists of vehicles of interest must additionally be encrypted by the proposed system through connection of VPN.		Must
5	Communication and mobile network The Supplier must assist and describe an appropriate subscription for all relevant camera systems and for given locations. The Client is responsible for subscription.		Must
6	All log-ons to the systems must be recorded and logged. This applies to all users, including those who have remote access in connection with service etc. The Supplier must specify and describe the solution.		Must
e	<i>Data storage</i>		
1	When there are hits in Vehicles of interest, the reason for the hit must be given (this comes from the list of vehicles of interest).		Must

2	It must be <i>possible</i> to delete scanned number plates that do not cause a hit on the vehicles of interest list as soon as they have been scanned and checked. (Requirements pursuant to Norwegian privacy protection legislation). This solution must be documented and specified in the tender.		Must
3	<p>The camera system must have a function that allows the Client to set storage time, from immediately and up to deletion after 2 years.</p> <p>The camera system must be able to delete data immediately and at a minimum after 2 years.</p> <p>Similar functionality is required for alerts. The solution must be specified, described and documented in the tender.</p>		Must
4	Pictures of scanned number plates causing hits on the list of vehicles of interest must be retained for up to 1 hour before a <i>choice</i> can be made as to whether to delete them automatically or not (requirement pursuant to the Norwegian privacy protection legislation). This is the time it takes to complete a check. This must be documented and specified in the tender.		Must
5	The system must count and be able to provide information about the type of alert triggered, type of light vehicle or articulated lorry, the time of the alarm and where it was triggered. The system must not reveal plate number, picture or other information that can be related to personal information. The solution must be specified, described and documented in the tender.		Must
6	In connection with services and system upgrades, requirements regarding data storage in connection with processing of personal information must be observed. This must be documented, described and specified.		Must
f	<i>Import and export of data/information</i>		

1	It must be possible to compile and export reports and statistics from each individual unit, and if required print them out directly from the camera system.		Must
2	It must be possible for all camera systems to deliver statistics on the number of scanned number plates, number of number plates with hits, number of hits for various reasons, distributed on installation site (mobile and fixed systems) and time. This information must also be sent back to the <i>distribution machine in connection with synchronisation of lists</i> . It must be possible to choose whether a transmission of data/statistics contains number plates or pictures. This must be documented and specified in the tender.		Must
3	<p>Statistics and transfer of data to central system: the system must generate statistics and report automatically to the central system on contact (by means of network connection).</p> <ul style="list-style-type: none"> Percentage use. The system must provide information as to when the camera units have been in use (on and off) in the course of a day (minutes and hours). <ul style="list-style-type: none"> Must deliver statistics/information on total use in the course of a whole day, and also broken down by time and location. Hit percentages. The system must import statistics from all the camera units and provide information about the number of hits on the lists, broken down by list and cause of alert. Number of number plates scanned and total number of hits from each individual unit. <p>The solution must be documented and specified in the tender.</p>		Must
4	It must be possible to classify or categorise information from one or more databases/lists,		Must

	thereby enabling different systems to access and allow access to different lists. This must be documented and specified. The solution must be documented and specified in the tender.		
5	The system must be able to handle several types of "lists", i.e. databases, and make it possible to choose one or more of the databases the camera system is to respond to. It must be possible to do this on both fixed and mobile installations. Systems are defined here as "hot-list systems"; the system indicates when a vehicle in the database is registered. "White-list systems"; the system indicates when a vehicle that is not in the database is registered.		Must
6	The system must allow automatic import/updating of lists (hot lists, white lists). It must be possible to download these so that the system is operational if there is no network connection.		Must
7	The system must allow administration of manual hot lists and white lists where personnel in key roles can register number plates that require distribution without this being dependent on regular automated updating.		Must
8	It must be possible to adapt lists of vehicles of interest with respect to content.		Must
g	<i>Access to the system</i>		
1	The central system must have several access levels so that different functionality can be offered to personnel with different roles in the organisation. The minimum roles are: <ul style="list-style-type: none"> • Chief administrator, who can define new areas and change and make the functionality of all underlying roles. • System coordinator: Define new units and 		Must

	<p>users within a delimited group (organisational unit).</p> <ul style="list-style-type: none"> • Area coordinator: Able to retrieve reports and statistics for a given number of units and/or users. • Mobile coordinator: Able to link up to one or more fixed installations to extract "hot lists" to a mobile unit. • User: Operator of a camera system (with the reports and statistics this generates). <p>The solution must be documented and specified in the tender.</p>		
2	The system must possess technical possibilities for communicating with different networks, fixed line, Ice, GSM, etc.		Must
h	<i>Software</i>		
1	Software development kits for individual programming of the cameras' functions, to the central system.		Must
2	Updated software for all systems must be offered also after delivery.		Must
3	The proposed solution must be capable of importing lists of number plates with, for example, a ban on use, from external sources via XML. CSV, text files. This applies to both central installation and mobile units.		Must
i	<i>Requirements regarding analysis possibilities</i>		
1	Export of complete data records to external systems i.e. all meta data and photos). But only where the data storage function has been chosen. The Supplier must specify, describe and document the solution.		Must
j	<i>Delivery, implementation and follow-up</i>		

1	<p>The Supplier shall be a full-service supplier of the camera system and bear full responsibility. This includes responsibility for:</p> <ul style="list-style-type: none"> - installation of mobile and fixed systems - materials that are necessary to install the system safely and securely against possible threats - resources for assisting the Client in the event of wear and tear or vandalism of equipment, system faults, user faults and other defects that occur. 		Must
2	All necessary installation equipment, fastening devices, racks, cables, power converters, screws and assembly material must be delivered by the Supplier.		Must
3	Operation of the systems will be taken over by the Client once the system has been commissioned and handed over. This entails an acceptance test on handover. Handover documentation must be submitted.		Must
k	<i>Documentation</i>		
1	The system must be delivered with user manuals in Norwegian.		Must
2	System documentation and technical descriptions must be delivered in Norwegian or English.		Must
1	<i>Training</i>		
1	The Supplier must give all the different users groups of the system the necessary training and start-up.		Must
2	Training of users of mobile equipment must take place in Norway.		Must
3	Training of administrators must proceed in		Must

	Norwegian or English.		
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B.1.11. Options

The specification of requirements in the following table describes functions, services and supplementary equipment that are defined as "should" and "desirable" requirements (see point B1.10). All the requirement specifications below must be described and priced individually in the tender as options; i.e., they are not a part of the framework agreement that must be delivered, but can be ordered in addition by the Client in the course of the agreement period. Each individual requirement must be described and priced as described in Appendix: Form for completion of Tender Documents.

m	<i>Supplementary equipment and functions etc.</i>		
1	The ANPR system should be capable of reading and classifying the country of registration of the number plate (for all other than Norwegian plates). The Supplier shall specify, describe and offer the solution as an option.		Should
2	For mobile camera systems. A function that makes it possible to read where the camera has been active geographically. The solution may be automatic where there is a network connection, and capable of being installed manually by user if there is not. The Supplier must specify, describe and offer the solution as an option.		Should
3	For fixed facilities. A device for enabling the power to the camera system to be switched on and off, and for re-starting the system from the operator's place. The Supplier shall specify, describe and offer the solution as an option.		Should
4	Printer that is compatible and can make printouts from facilities centrally, at dispatcher sites and locally.		Desirable

	The Supplier must describe the solution and offer it as an option.		
5	<p>Assist the Client in procuring signs that inform road-users whether the camera system is active or not. The Supplier is responsible for erection and equipment.</p> <p>The Supplier shall specify, describe and offer the solution as an option.</p>		Desirable
6	<p>For equipment installed in vehicles, the option of having the monitor installed centrally on the dashboard is desirable so that it can be operated by both driver and passenger.</p> <p>The Supplier must propose, specify, describe and offer the solution as an option.</p>		Desirable
	<i>Camera</i>		
7	<p>For fixed installation. If the technology enables a single camera to pick up more than one field / perform ANPR in more than one field, this should be offered.</p> <p>The Supplier shall specify, describe and offer the solution as an option.</p>		Should
8	<p>It is desirable for the camera system to be able to pick up number plates on vehicles moving at over 120 km/h, i.e. 240 km/h when the camera system is installed in a service vehicle and used in traffic with vehicles both coming the other way as well as driving the same way.</p> <p>The Supplier shall specify, describe and offer the solution as an option.</p>		Desirable
9	Concealed installation of mobile ANPR system where the camera is not visible (in the grill, bumper etc.) and external outlet for erecting a camera on a tripod for stop controls. The Supplier shall specify, describe and offer the solution as an option.		Should (Customs)
10	At fixed installations it should be possible to		Should

	<p>remotely control a camera position by means of a pan tilt function from a control place.</p> <p>The Supplier shall specify, describe and offer the solution as an option.</p>		
11	<p>In the case of fixed installations and use of one camera to cover more than one lane, an indicator of the driving direction of the individual passage is also desirable. The Supplier can offer various solutions that are supplementary or integrated into the ANPR system. The Supplier shall specify, describe and offer the solution as an option.</p>		Desirable (Customs)
12	<p>With fixed installations, a compatible counting system is desirable for registering the number of passing vehicles. The Supplier must describe the solution and offer it as an option.</p> <p>In connection with registration of discrepancies between a compatible counting system and registrations, an alert must be given of passages without registration. These alerts must also form part of the statistics as a separate group. The Supplier can offer various solutions that are supplementary or integrated into the ANPR system. The Supplier shall specify, describe and offer the solution as an option.</p>		Desirable (Customs)
13	<p>In cases where the camera system cannot read the number plate, a "missing" function is desirable to indicate that a vehicle whose number plate was not read has passed. When a number plate cannot be read, it is desirable to have notification of what the fault is due to (does not recognise the number structure, cannot interpret the font, fails to find the number plate, etc.) The Supplier can offer various solutions that are supplementary or integrated into the ANPR system. The Supplier must specify, describe and offer the solution as an option.</p>		Desirable
14	<p>In cases where classification is not possible, it is desirable to have notification of what the fault is due to (does not recognise the number structure, cannot</p>		Desirable

	interpret the font, fails to find the number plate, etc.) The Supplier can offer various solutions that are supplementary or integrated into the ANPR system. The Supplier must specify, describe and offer the solution as an option.		
15	Capability of distinguishing between information signs (e.g. dangerous goods), emblems and number plates, on the basis of dangerous goods marking. The Supplier may offer various solutions that are supplementary to or integrated into the ANPR system. The Supplier must specify, describe and offer the solution as an option.		Desirable
16	Be able to read signs / registration numbers on containers. The Supplier can offer various solutions that are supplementary to or integrated into the ANPR system. The Supplier must specify, describe and offer the solution as an option.		Desirable (Customs)
17	With mobile facilities an option should be offered of mounting a camera with a 'pan tilt' motor externally, the direction of which can be adjusted from the operator seat of a service vehicle. The Supplier must specify, describe and offer the solution as an option.		Should
18	For mobile camera systems. Different focal lengths in excess of the minimum requirement for the mobile camera facility (between 5 – 20 metres). Focal lengths must be offered, described and offered as an option.		Should
	<i>Data / software</i>		
19	Operations surveillance. Be able to register and document / log any system downtime. It should be possible to read this off and print it out as statistics from each individual unit. The solution must be described and offered as an option.		Should
20	Desirable that the cause of the downtime be logged in those cases where it is possible to determine it (camera, power, communications, etc.). The Supplier shall specify, describe and offer the solution as an		Desirable

	option.		
21	Analysis software is desirable. The Supplier can and must offer different solutions. The Supplier must specify, describe and offer the solution as an option.		Desirable
22	<p>ANPR system – requirements relating to analysis possibilities</p> <p>An integrated analysis functionality for analysing the data that can be registered in the system is desirable. This includes registrations both with and without alerts.</p> <p>Volume a minimum of 20 million records.</p> <p>It must be possible to use all elements in the records in the selection for analysis (such as camera (i.e. place and location data), date/time, number plate etc.). The analysis should include:</p> <ul style="list-style-type: none"> • occurrence in selection, • occurrences in selection after delimitation (for example time interval, selection of sites (camera), place, etc.) • all occurrences that exceed a specific value, • adjacent occurrences - the numbers of who passed before and after an occurrence <p>There should be an open field available in the record for subsequent registration of information, either manual or downloaded onto the list according to a unique key (number plate) or as a truncation processing of other values in the records.</p> <p>Wild card searches should be possible.</p> <p>The Supplier can offer various solutions that are supplementary or integrated into the ANPR system. The Supplier must specify, describe and offer the solution as an option.</p>		Desirable
23	The software solution for fixed installations should be user-friendly and by simple means provide an overview of a minimum of 16 camera systems at the		Should

	same time. The Supplier must specify, describe and offer the solution as an option.		
24	Software and software modules for use with the camera technology, such as weighing systems, trigger systems, laser measurement systems and other camera functions. The Supplier must specify, describe and offer the solution as an option.		Should
	<i>Lists</i>		
25	Manual lists must be maintained, and the system should have various parameters for service life, for example a day/week/month/year, and be deleted automatically on expiry. The Supplier must specify, describe and offer the solution as an option.		Should
	<i>Dispatcher</i>		
26	A function that makes it possible to monitor/read number plates from one or more ANPR systems from another location, for example by means of a dispatcher that controls several other ANPR systems. The solution should have a logical presentation of the alerts that are presented. The Supplier must specify, describe and offer the solution as an option.		Should
27	A dispatcher solution that can show/present up to 16 ANPR systems at the same time and handle large flows of incoming and outgoing alerts from a number of ANPR systems. The Supplier must specify, describe and offer the solution as an option.		Desirable
28	Be able to activate a function in a given interval of time, for example 1 or 2 hours, on one or more camera systems, which records all passages and sends these "passages" on to another system, which is the basis for the alert The Supplier must specify, describe and offer the solution as an option.		Desirable
	<i>Maintenance</i>		

29	The Supplier should offer a solution for maintenance of fixed camera equipment. The Supplier must specify, describe and offer the solution as an option.		Should
	<i>Costs of disposal / winding up/ phasing out</i>		
30	The Supplier should specify a fixed price for dismantling and further handling of the machinery at the end of its service life or the agreement period. The Supplier must specify, describe and offer the solution as an option.		Should

B.1.12. Installation of mobile unit in vehicles

There are two main scenarios for installation in vehicles for mobile use:

1) The aim is a configuration where a vehicle is equipped with two cameras, one for capturing number plates at the front of the vehicle and one for capturing the number plate at the back of the vehicle. The cameras are set up in the immediate neighbourhood of the vehicle on tripods delivered by the Supplier. A solution must also be offered for installing a camera safely in a vehicle, in order to use the equipment when the control vehicle is in motion.

2) A configuration is sought with two cameras mounted on the vehicle, one in front and one at the back, to capture number plates on vehicles both before and after passage. Preferably two variants, one of which has the cameras in a permanent concealed installation in the vehicle and one where the cameras are mounted such that they can be simply dismantled and moved to another vehicle. A complete cable system is also desirable for external connection of the camera system to a tripod.

A priced offer should be made for cables of various lengths, from 5 to 30 metres with 5 metre intervals; see price table point B.1.16.

The analytical unit is to be installed in the vehicle; see price table point B.1.16.

Monitor and keyboard must be installed so that they are available from the driver's seat, alternatively from the passenger seat.

For the Roads Administration's use, the analysis vehicle will primarily remain standing still, and traffic will pass at normal speed.

The Customs Authority will need to carry out surveillance with a moving vehicle with camera equipment, used for vehicles travelling both ahead of and towards it.

It must be possible to dismantle the system and move it to another vehicle in a simple manner.

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Installation in the vehicle must be carried out in a regulatory manner. The installation must also be carried out in a manner that is not an obstacle to normal use of the vehicle when the system is not active.

The Supplier is responsible for installation, and must document the installation and provide necessary training so that any moving can be done by the Client's personnel.

The installation is documented and signed off by the Supplier before the Roads Administration takes over responsibility for the installation. The Supplier's signing off also documents that the Supplier confirms that the system has been tested and that it functions in accordance with the Client's specification.

B.1.13. Installation of central unit for distribution of lists of vehicles of interest

The central system must be delivered as software including hardware. It must be possible to take safety back-ups.

B.1.14. Number of installations

An indication of the number of systems/volume for this procurement in the agreement period (including option period 2 years + 1 year + 1 year) is:

System	Number Roads Administration	Number Customs Authority
Mobile number plate recognition for installation in/on service vehicles	Approx. 5-10	Approx. 30 (rigged and ready in 60 – 80 vehicles)
Systems for fixed installation	Approx. 15-40	Approx. 3 – 80
Shared central system	1	

However, this is not a binding order volume.

The Roads Administration expects an increase up towards about 40 systems for fixed installations for the agreement period, and an increase of about 5-10 systems for installation in service vehicles is expected. The numbers of systems is only an indication of what one has in mind, and could vary, depending on a number of factors. These include quantities of findings, areas of use and the pace of other developments.

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For the Customs Authority, this is the start of using this kind of equipment. It will therefore not be possible to quantify the drawdown volume, but depending on finances, the intention is to cover all drivable border crossings (about 70) and all ferry terminals with international traffic (about 10). The Customs Authority also wishes to acquire about 30 mobile units, but has installed cameras and racks for use in 60 – 80 vehicles.

As regards a shared central system, allowance must be made for possible increases in the numbers of end-user systems the central system will have to serve. If the central system is subject to licensing with respect to the number of installed end-user systems, this must be made clear and priced.

B.1.15. Delivery terms and conditions

Delivery is to take place DDP (Incoterms 2010) at an agreed place and time as indicated in the relevant order. Delivery has not taken place before the goods are integrated, installed and approved in the installation.

Since this is a framework agreement, the delivery date will be agreed for each delivery, but individual deliveries must never take more than four weeks after the order has been placed. Factors over which the Supplier has no control and which may delay deliveries are taken into account, such as lack of power transmission to the installation site etc.

The Roads Administration and the Customs Authority are interested in a close connection with the manufacturer. The Supplier is to have total responsibility for the system in relation to the Client, but may have subcontractors and/or collaborate with other operators. Under any circumstances, the Supplier has the primary responsibility for quality assurance and communication with the Client.

This means that expertise and means according to the agreement must remain with the manufacturer. A negotiator will in many cases not be in a position to develop and maintain the necessary real expertise for serving the Roads Administration and the Customs Authority.

This responsibility is defined as "The Supplier's overall responsibility" /total responsibility, and includes Subcontractors, on the condition that the Holder of Expertise according to the contract is the responsible party.

In the event of delays in an agreed delivery between the Supplier and the Client, the right is reserved to impose sanctions if necessary. Sanctions can be imposed on the Supplier in the form of fines of 0.15% of the delivery value per calendar day's delay, but limited to 15 days. This text applies instead of point 6.2 in the condensed procurement agreement (Norwegian Government Standard Terms and Conditions for IT Procurement SSA-K-Lille).

B.1.16. Prices

All elements in the offer must be priced separately. This to make it possible to supplement any installations with individual elements if the desired functionality differs from the standard set-up. The Supplier must describe what the prices for each individual unit encompass. If package prices or 'bundles' are offered, this must be shown in the price overview, with a clear specification of what is included in the 'package'.

Prices must be quoted in Norwegian kroner NOK, exclusive of customs duty and value-added tax.

Mobile unit (prices)

Unit	Comments	Price per unit	Appendix no.:
Camera unit			A.6.7
Interpreter unit			A.6.7
Software licences including documentation			A.6.7
Service and maintenance			A.6.7
Accessories, supporting legs, cables, fasteners, screws etc.			A.6.7
Maintenance software/hardware			A.6.7
Installation / training mobile unit permanently mounted in vehicle			A.6.7
Installation / training mobile unit (movable)			A.6.7
Packaging, forwarding (insurance, if any) Delivery (various places in Norway)			A.6.7

Permanently mounted unit (prices)

Unit	Comments	Price per unit	
Camera unit			A.6.7

Interpreter unit			A.6.7
Software licences including documentation			A.6.7
Accessories, supporting legs, cables, fasteners, safety measures, screws etc.			A.6.7
Maintenance software/hardware			A.6.7
Installation / training			A.6.7
Packaging, forwarding (insurance, if any) Delivery (various places in Norway)			A.6.7

Central installation

Unit	Comments	Price per unit	
Software, licence costs			A.6.7
Increase in number of mobile/fixed units to be connected to central system (if relevant)			A.6.7
Training and installation			A.6.7
Packaging, forwarding (insurance, if relevant) <i>Delivery: Oslo, Norway</i>			A.6.7

Options

Requirement specifications that are described as options (see point B.1.11) form a part of the Supplier's offer, and must be documented as specified in Appendix: Form for Tender Competition.

B.1.17. Right to make a partial offer

It is not possible to make an alternative tender and/or tender for parts of the system (see point A.3.3).