




Upphandlande organisation

Västtrafik AB
Elise Säkkinen

Upphandling

Ticket validator system and cEMV
Functionality
1-1056-22
Publicerad 2023-01-09 13:10
Sista ansökansdag: 2023-02-09 23:59

Symbolförklaring Texten ingår i annonsen Texten kommer att ingå i avtalet Texten/frågan innehåller krav som måste uppfyllas Frågan är viktad och ingår i utvärderingen Frågan ställs endast upplysningsvis Frågan är markerad för särskild uppföljning Texten ingår i kvalificeringen Texten kommer att publiceras i avtalskatalogen Texten/frågan innehåller ESPD-krav Frågan är viktad och ingår i utvärderingen Frågan besvaras av upphandlaren

1. Introduction

1.1 Introduction

Västtrafik AB, organization no. 556558-5873 hereby invites interested market participants to apply to submit tenders according to the conditions in this document with attachments.

1.1.1 Background

Västtrafik AB, organization no. 556558-5873 hereby invites interested market participants to apply to submit tenders according to the conditions in this document with attachments.

Västtrafik is responsible for public transport throughout the Västra Götaland region. Västtrafik coordinates traffic, designs timetables, and determines routes and tours. Västtrafik is owned by and works on behalf of the government of Västra Götaland. The price of tickets is subsidized, about half of the cost is paid through tax funds. Västtrafik can contribute to developing the good life in the region by enabling travel to and from, for example, work and leisure activities.

To see more information about Västtrafik: <https://www.vasttrafik.se/en/about-vasttrafik/vasttrafik-ab/>

Some of Västtrafik's existing ticket systems are approaching end-of-life and lack support for future tickets and sales. Västtrafik has therefore started a major change work to transform the infrastructure for ticket sales and this procurement is a part of this change.

Västtrafiks' vision is to have one Validator which supports all onboard ticket sales and validation.

1.1.2 Procuring Organization, Västtrafik

Västtrafik AB is owned by the Västra Götaland region. Västtrafik is responsible for public transport in Western Sweden and has the task of acting as the public transport authority for public transport. Every day, over 400,000 customers choose to travel with Västtrafik's buses, trains, trams, and boats.

By developing and offering sustainable travel and smart services, Västtrafik must be the obvious choice. Thus, Västtrafik contributes to the good life in Västra Götaland and to an attractive and competitive region.

1.1.3 Partnership

Västtrafik is looking for a long-term partner in the development of our future system. This envisions a collaboration characterized by transparency, clarity, and mutual respect.

The validator and the supplier's software will be part of a larger structure of Västtrafik's system, where several parts will be in-house developed by Västtrafik.

In order to create good functionality and great customer value, the supplier will need to be able to act flexibly and responsively to the rate of development that Västtrafik will have during the entire contract period.

At the same time, Västtrafik expects that parts of the supplier's software will be shared with the supplier's other customers, and Västtrafik sees great opportunities to take part in the development and improvement of the software that this entails.

Västtrafik expects the supplier to be responsible for ensuring that all parts of the delivered system are life cycle managed, e.g., through continuous and well-planned updating of operating systems and third-party software.

Procurement scope details can be subject to changes. The final requirements will be included in the invitation to tender.

1.1.4 The Scope of the Procurement

1.1.4.1 The procurement

The procurement consists of the following deliveries:

A validator hardware with the following characteristics:

- Support for optical reading of tickets and NFC reading of tickets including cEMV support for reading bank cards.
- A touch display with the possibility to present information to the customer and give the customer a possibility to interact with the validator.
- To be placed on board vehicles (bus, train, tram, and boat), and withstand a Nordic climate.
- Possible to attach to a mounting cradle (see below)
- Mounting cradle
 - To be attached to a pole in a vehicle.
 - Supports swift replacement of validator.
- Validator software with the following functions:
 - Validation of BoB[1]-based tickets from
 - Optical reading of mobile app tickets and paper tickets,
 - Reading NFC based tickets, (i.e., Västtrafik ID-Based travelcard tickets).
 - Support for Contactless (cEMV) ticketing for Public Transportation.
 - A user interface for the customer on board.
 - An interface to Västtrafik's backend.
 - An interface to Västtrafik's on-board traffic information equipment.
 - An interface to and communication with Bank certified backend.
 - An interface to and communication with an Administrative backend.
 - The existing software supporting validation of mobile and paper tickets today can be

provided by Västtrafik for further development or reference, upon request.

- The Supplier shall provide backend supporting Contactless (cEMV) ticketing for Public Transportation. This Bank certified backend shall be hosted by the Supplier and shall contain the following functionality:
 - Management of card details and tap information from the validator.
 - Management of the requirements from the transit agreements MTT and CTAT.
 - Payment gateway functionality and interface to Västtrafik's acquirer.
 - Interface to Västtrafik's backend where information about a completed tap is communicated using tokenized card information. Västtrafik's backend will conduct price calculation and send payment order with defined amount to the suppliers' bank certified backend software.
- Certification of the solution for Support for Contactless (cEMV) ticketing for Public Transportation according to EMV level 3. The supplier is responsible for preparing and to perform the entire certification process in cooperation with Västtrafik's acquirer (who is formally responsible towards the card schemes).
- Administrative backend software hosted by the supplier.
 - Manage device software upgrading and downgrading
 - Logging, monitoring and notification of health and status of different parts of the system.
 - Handling of data needed for validation from Västtrafik's various systems and the possibility for Västtrafik to configure certain parts of the solution.
- Driver display software
 - User interface to be further developed on existing driver display hardware provided by Västtrafik.
 - The existing software supporting presentation of validation results in a driver display of mobile and paper tickets today can be provided by Västtrafik for further development or reference, upon request.
- Other processes which the supplier must be responsible for:
 - A software feature development process.
 - Training in the supplier's relevant processes and systems.
 - Delivery management and follow-up of orders and deliveries of hardware.
 - SLA for the software systems that the supplier is responsible for (mainly software for Contactless (cEMV) ticketing for Public Transportation and administrative Backend).
 - The support process for both hardware and software.
 - Testing and quality assurance of software and hardware deliveries.

[\[1\]](https://samtrafiken.atlassian.net/wiki/spaces/BOB/overview) BoB is a ticketing standard used by Västtrafik. See <https://samtrafiken.atlassian.net/wiki/spaces/BOB/overview>

1.1.4.2 Option

In addition to the above, Västtrafik will request an option for driver display hardware.

1.1.4.3 Out of scope for the procurement, to be provided by Västtrafik

- Västtrafik's backend managing and providing
 - Price logic and price calculations (including Contactless (cEMV) ticketing for Public Transportation, e.g., capping).
 - Business rules and validation data (e.g., product list and price list) needed to support ticket validation.
 - Sales and ticketing management.
 - Interface to other systems at Västtrafik such as customer service applications, financial systems, ticket control application, CRM system, Västtrafik's website.

Please note that Västtrafik's backend will only receive tokenized non-PCI-compliant information of completed Contactless (cEMV) ticketing for Public Transportation taps from the Bank certified backend provided by the supplier. Price calculation and decision about which cost should be deducted is calculated in Västtrafik's backend and sent back to the Bank certified backend for further communication with the acquirer.

- System support for ticket inspection.
- System support for Västtrafiks' customer service staff to verify transactions, travel history, and complete refunds or other settlements.

1.1.4.4 Installation and SLA

Västtrafik will be responsible for all vehicle installations using existing service personnel but expects the supplier to be involved in training of service personnel and to set up procedures for handling the hardware. The supplier needs to establish procedures for the repair of faulty hardware, and for the supplier's software. A support flow with SLA requirements on the supplier's availability will be established and agreed upon.

1.1.4.5 Volumes

The assessment is that the procurement of hardware includes approx. 8,000 validators on all possible types of vehicles: buses, trams, trains, and boats.

Furthermore, Västtrafik assesses that the supplier's software development within the framework of the agreement includes approx. 50,000 man-hours spread over four years.

1.1.5 Form of agreement

Västtrafik will sign an agreement with one (1) supplier.

1.1.6 Contract period

The Contract will come into force when signed and will remain valid for twelve (12) years after being signed with an option for Västtrafik to extend the agreement by at least one (1) year per extension for a maximum of 9 years. Maximum possible contract period is thus 21 years. Unless specified otherwise below, the Contract ceases to be valid when the contract period expires, without the prior serving of notice.

1.1.7 The structure of the Request for application

This Request for application consists of this document and the following attachments:

1. Application Supplier form
2. Code of Conduct for Suppliers
3. European Single Procurement Document (ESPD)

1.1.8 Confidentiality

The Swedish Public Access to Information and Secrecy Act (SFS 2009:400) regulates issues relating to document secrecy and the duty of confidentiality. Chapter 19, Section 3 of the Act states that in connection with public procurement, information relating to the tender may not under any circumstance be passed on to anyone other than the party that submitted the tender until all tenders have been published once a decision has been made or the case has otherwise been concluded.

The Tenderer/Supplier must make sure that they comply with the Swedish Public Access to Information and Secrecy Act, during both the procurement period and the contract period.

There is an opportunity, subject to review, to declare information in documents confidential, including if there is special reason, e.g. if an individual party that has entered into a business relationship with the authority will suffer (financial) damage if the information is disclosed.

If a Tenderer claims that an item of information in a tender must be declared confidential, it must specify exactly to what information in the tender this relates, and how the Tenderer would suffer damage if the information were disclosed. Västtrafik does not, however, offer any guarantee that the information in question will be declared confidential. If no request for confidentiality is submitted, it will be interpreted as there is no demand for confidentiality on the part of the Tenderer.

a. Is there a request for confidentiality for parts of the application?



Ja/Nej

b. If the Tenderer claims that an item of information in a tender must be declared confidential, they must specify exactly to what information in the tender this relates, and how the Tenderer would suffer damage if the information were disclosed.



Fritext

2. Procurement regulations

2.1 Procurement procedure

The procurement is conducted through a negotiated procedure in accordance with the Act (2016:1146) on Public Procurement in the Utilities Sectors (LUF). The procedure allows for negotiation. Negotiation will only be done at Västtrafik's initiative. Västtrafik reserves the right to award a contract without prior negotiations.

In brief, the procurement means that:

1. The application invitation (this document) is published via TendSign. All suppliers may apply to participate in the procurement.
2. Interested suppliers submit applications.
3. Västtrafik qualifies submitted applications and selects the suppliers that will be invited to submit tenders.
4. Västtrafik invites applicants to submit tender.
5. Tenders are submitted.
6. Evaluation of submitted tenders in accordance with established award criteria.
7. Possible negotiations.
8. Award decisions is communicated, followed by signing of agreement.

2.2 Selection and invitation to tendering

Västtrafik will invite the applicants that meet all qualification requirements to submit bids. The invited applicants will receive a written procurement document containing the conditions and requirements for the assignment that is being procured.

2.3 Content and form of the Application

The application shall be written in the Swedish or English language. Documents submitted in any other language is not cause for disqualification, but applicants shall promptly submit a certified translation to Swedish or English if requested. Promptly means within seven days. If the applicant does not submit the requested documentation within reasonable time the application will be considered as not meeting this requirement.

Documents that must be signed shall be attached as a scanned pdf.

The application including appendices shall be submitted via Merzell TendSign, www.tendsign.com. If you have questions about or need support from Merzell TendSign please contact Merzell TendSign support by email tendsignsupport@mercell.com or by phone at +46 771 440 200.

2.4 Enquires during the application period

The applicant must ask any questions regarding the procurement in writing via TendSign. Västtrafik will publish answers to questions via TendSign. When answers are published, a message is sent to everyone who has downloaded the procurement documents.

Västtrafik can also, if necessary, send out clarifying information to the application invitation via TendSign during the application period. It is therefore of great importance that the tender applicant takes note of the clarifications made by Västtrafik.

All communication in this procurement takes place to the contact details that have been registered on the tender applicant's account in TendSign.

Questions should be asked in English.

The last day to ask questions regarding the procurement is 2023-01-31.

2.5 Last day to submit applications

Applications shall be submitted in TendSign no later than 2023-02-09 23:59. Late applications will be disregarded.

2.6 Correction and clarification of Application

Applicants are responsible for ensuring that all information provided in the application is correct. Applicant's possibilities to provide additional information after submission are very limited.

Västtrafik may allow or request that an applicant corrects a misspelling, miscalculation, or any other error in a document submitted by the applicant. Västtrafik may also allow or request that an applicant clarifies or complements such document. Such action shall comply with the principles of equal treatment and transparency. This means, among other things, that an applicant cannot correct or complement its application in a way that changes non-fulfilment of a requirement to fulfilment.

Any corrections, clarifications, and complementary information shall be confirmed in writing by the applicant.

2.7 Cancellation of the procurement process

Västtrafik reserves the right to cancel the procurement process, for instance, if no applicants meet the qualification requirements, if no tenders meet the quality requirements, or exceeds Västtrafiks' budget, if changed circumstances prevents the project to be finalized, or for any other objectively acceptable reasons to cancel the procurement process.

3. Qualification criteria

3.1 General

This section outlines the requirements on the applicant. If these requirements are not fulfilled the application will be disqualified. The purpose of the requirements is to ensure that there are no grounds for exclusion, and to verify that the applicant that is awarded a framework agreement has the necessary economic, technical, and professional capacity to fulfil the commitments in the procured agreement.

3.2 ESPD

Applicants can choose to submit an ESPD instead of the evidence required for the requirements in sections 3.5 and 3.6. By submitting an ESPD the applicant confirms that there are no grounds for exclusion in accordance with chapter 13 1-2§§ LUF, and that all requirements on the applicant in sections 3.5 and 3.6 are fulfilled.

An ESPD shall be submitted in the standard form established by the European Commission as per Article 59.2 in Directive 2014/24/EU (ESPD). Applicants may limit the use of the ESPD by only filling out point a. in part IV.

If the applicant chooses to submit an ESPD Västtrafik will preliminarily accept it as proof that the applicant fulfils the requirements stated in this document. If an applicant submits both an ESPD and other proof the ESPD will prevail at the qualification of the applicant.

If the applicant wishes to submit an ESPD it shall attach a filled-out *Appendix: ESPD* to its application.

Västtrafik will accept an ESPD submitted by an applicant in a previous procurement if the applicant confirms that it is still correct and valid, presuming that that previous ESPD includes all requirements in this procurement.

Applicants that have submitted an ESPD shall promptly upon Västtrafik's request complete it with one or several of the documents in its scope. Västtrafik may make such request at any time during the procurement process if Västtrafik considers it necessary for the correct conduct of the procurement.

3.3 Reliance on the capacity of another company

Applicants may rely on the capacity of another company to fulfil the requirements relating to economic and financial standing and/or technical and professional capacity. Applicants that rely on another company's capacity shall provide the information required below. The applicant shall state which company's or companies' capacity is being called upon and to what extent.

An applicant that relies on the capacity of another company shall attach documentation that shows that the called upon company or companies fulfil the requirement(s) for which the company is called upon. Västtrafik will check the economic and financial capacity and standing of the company, as well as check that it has paid all due taxes. If the company is registered outside Sweden the applicant shall, upon Västtrafik's request, submit proof of economic and financial capacity and standing. If a company on which the applicant relies is registered outside Sweden the applicant shall also attach proof of permit in accordance with 3.5.1, and taxes in accordance with 3.4.2.

Applicant shall submit an attestation from the company or companies it relies on in accordance with *Appendix – Application Supplier form*. If the applicant chooses to submit an ESPD it must also submit an ESPD for each company it relies on. A separate ESPD shall be submitted for each company.

Applicants shall on Västtrafik's request be able to submit written binding agreement with companies they rely on. The agreement shall clearly show that the applicant has access to the relevant resources throughout the agreement period.

a. Name any companies relied on, as well as for what and to what extent:



Fritext

b. Attach Appendix – Application Supplier form for the company/companies relied upon:



Bifogad fil

c. Attach ESPD for the company/companies relied upon:



Bifogad fil

3.4 Exclusion of suppliers

3.4.1 Crime and other misconduct



An applicant to which any of the exclusion grounds in LUF chapter 13 1§, and 2§ first part, apply will be excluded from the procurement.

An applicant to which any of the exclusion grounds in LUF chapter 13 2§ second part, and 4§, apply may be excluded from the procurement.

As proof that no exclusion grounds apply the applicant shall submit an attestation as per *Appendix – Application Supplier form*. The attestation shall be signed by an authorised representative for the applicant. Thereby the applicant solemnly swears that no grounds for exclusion as per LUF chapter 13 1§, 2§, or 4§, apply.

a. Attach signed Appendix – Application Supplier form



Bifogad fil

b. Has the application attached Appendix – Application Supplier form?



Ja/Nej. Ja krävs

3.4.2 Requirements relating to taxes and fees



The applicant shall, in Sweden or in its country of registration, fulfil all legal requirements relating to payment of taxes and fees.

Västrafik will check with the Swedish tax office that the requirement above is fulfilled, and with the Swedish Enforcement Authority that there are no unpaid taxes and fees, for Swedish applicants.

Applicants registered outside Sweden shall submit proof that the requirements above are fulfilled. Such proof shall have been issued by a public authority and be dated no longer than three months prior to the last date to submit applications.

a. For applications registered outside Sweden: please attach proof as per the above:



Ja/Nej

b. Does the applicant fulfil the requirements in this section 3.4.2?



Ja/Nej. Ja krävs

3.4.3 Ban on the award of contracts in certain cases, in light of Russia's invasion of Ukraine



In accordance with Council Regulation (EU) 2022/576 of 8 April 2022 amending Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine, Västtrafik is prohibited from awarding the contract that is the subject of this procurement to or with:

- (a) a Russian national, or a natural or legal person, entity or body established in Russia;
- (b) a legal person, entity or body whose proprietary rights are directly or indirectly owned for more than 50 per cent by an entity referred to in point (a) above; or
- (c) a natural or legal person, entity or body acting on behalf or at the direction of an entity referred to in point (a) or (b) above.

What is stated in point (c) above also includes, if they account for more than 10 per cent of the value of the contract to which this procurement relates, subcontractors/subsidiary suppliers/subcontracted consultants, suppliers/contractors/consultants, or enterprises or other entities whose capacity is cited in order to fulfil the requirements of economic and financial position or technical and professional capacity set out in this procurement.

The applicant confirms that none of the circumstances above, as further out in Article 5k in Council Regulation (EU) No 833/2014, apply to them.



Ja/Nej. Ja krävs

3.5 Qualification requirements

3.5.1 Authorization to conduct business



The applicant shall be registered in an association for companies or trade or another relevant organisation register in the country where the applicant's business is established.

Västtrafik will check that the requirements are fulfilled for applicant registered in Sweden.

To show that this requirement is fulfilled applicants registered outside Sweden shall submit a formal extract from the relevant association register in the country where the company is registered.

a. For applicants registered outside Sweden, please attach proof as per above:



Bifogad fil

b. Does the applicant fulfil the requirement relating to authorization to conduct business?



Ja/Nej. Ja krävs

3.5.2 Economic and financial standing



Applicants shall have an economic and financial standing that ensures that the applicant can implement the assignment in accordance with the procurement documents. Applicants shall therefore fulfil the following requirements relating to creditworthiness.

Applicants shall have a creditworthiness of at least 3 at the credit rating agency UC.

Västtrafik will check that the requirement for credit rating is fulfilled for applicants registered in

Sweden.

Applicants registered outside Sweden shall upon Västtrafik's request submit a certificate from a credit rating agency from the country of registration. The certificate shall show that the applicant fulfils the requirements for credit rating 3 in accordance with the credit rating agency UC. The certificate may be no older than six months counting backward from the last day to submit applications in this procurement.

If the applicant has a lower credit rating than UC 3, or if the applicant is a newly started company or for any other reason cannot be rated by UC, the applicant will be considered qualified if either of points a. and b. below are fulfilled.

1. On Västtrafik's request the applicant submits an explanation that adequately clarifies that the applicant has equivalent economic and financial standing. The clarification can be in the form of the latest financial report, auditor's statement, or other financial reporting that shows that the requirement regarding economic and financial standing is fulfilled.
2. On Västtrafik's request the applicant submits a guarantee from a parent company or other guarantor regarding the applicant's economic and financial standing. Such guarantee must be signed by an authorized representative of the parent company or guarantor. The applicant shall attach an extract from UC showing that the parent company or guarantor has a credit rating of at least UC 3.

a. For applicants registered outside Sweden, please attach proof as per above:

Bifogad fil



b. Does the applicant fulfil the requirement?

Ja/Nej. Ja krävs



3.5.3 Technical capacity



Applicants shall have suitable and adequate technical and professional capacity to implement the assignment, include sufficient and appropriate staff resources.

Applicants shall fulfil the following requirements:

- Applicants shall have adequate staff and organisational resources to deliver and implement the assignment, with the quality and quantity required by the procurement documents.
- Applicants shall be able to provide a Payment gateway solution. To prove this the applicant shall show either internal capability the capability from sub-suppliers.
- Applicants shall have processes that assure quality in the delivery of services.

Västtrafik will assess the submitted information and decide whether the applicant has the technical skills and capacity necessary for the assignment.

a. Applicants shall describe its staff and organisational conditions for the implementation of the assignment in a brief Power Point presentation.

Bifogad fil



b. Applicants shall describe their capacity for providing a Gateway payment solution in a brief Power Point presentation.

Bifogad fil



c. Applicants shall describe their process for hardware (including repair flows) in a brief Power Point presentation.



Bifogad fil

d. Applicants shall describe their process for software development in a brief Power Point presentation.



Bifogad fil

e. Applicants shall describe their production flow in a brief Power Point presentation.



Bifogad fil

f. Applicants shall describe geographic locations of their staff that will be part of this assignment, especially software developers and support staff.



Fritext

3.6 Reference assignments

It is important that applicants have the experience necessary to implement the assignment. Applicants shall therefore have two documented reference assignments.

Applicants shall present two reference assignments meeting the following requirements:

- The assignments shall include ticketing systems for public transport, including delivery of software and hardware installed on a fleet of public transport vehicles.
- At least one of the assignments shall have been put into production within the last six months.
- At least one of the assignments shall have included delivery of validators and related bank certified software for e cEMV solution (Functionality for Contactless Ticketing for Public Transport) that is in operation.
- At least one of the assignments shall have included delivery of equipment installed on trains or trams.
- At least one of the assignments shall have included delivery of ID-based travelcards.

Reference checks

Provided referees may be contacted for verification of the information submitted by the applicant, and to answer the questions below relating to the applicants handling of the reference assignment. The referee shall have been informed of its role as such and be in a position to answer the questions.

Questions to the referees:

1. Has the applicant been reliable in its performance? - By reliability we mean that the applicant inspires confidence, is well read up on the assignment and applicable laws and regulations. Furthermore the applicant should be well aware of current technological development in the sector and should actively follow up on the assignment, as well as monitoring and reporting on any deviations.
2. Has the applicant implemented the assignment in an efficient manner? - By efficiency we mean actively implementing the project, proactively ask for guidance rather than waiting for it, continuously raise and discuss issues and questions, and spread information internally in its own organisation.
3. Have sub-suppliers been used in the assignment? If so, has the applicant successfully worked

with the sub-suppliers to implement the assignment in accordance with expected results? - By expected results we mean that the applicant has successfully organised activities to co-deliver with the sub-supplier in the joint commitment.

4. Has the applicant actively contributed to good collaboration? - By good collaboration we mean that discussions between the applicant and the purchaser have been solution oriented.

Referees shall answer the questions using the following model:

“No”: The applicant has not adequately handled the issue to which the questions relates.

“Doubtful”: The applicant has only partly managed to adequately handle the issue to which the questions relates.

“Acceptable”: The applicant has adequately handled the issue to which the questions relates.

“Yes”: The applicant has managed to handle the issue to which the questions relates in an exemplary way.

Västtrafik will not approve a reference assignment if the referee answers any or several of the questions “no”, and/or the referee answers “doubtful” to two or more of the questions. If a reference assignment is not approved the application will be disqualified.

Västtrafik will contact referees in February. Applicants shall ensure that the referees are available during this period . Referees shall be able to answer the questions in writing. If necessary the referees shall also be able to answer the questions orally .

3.6.1 Reference assignment 1



a. Provide contact details for referee.



Name of company as well as name, professional title, phone number, and email address for referee.

Fritext

b. Briefly describe the scope and implementation period for the reference assignment, including approximate number of passengers per day, number of units on board, number and type of vehicles included in the installation.



Fritext

c. Describe how the assignment relates to ticketing systems for public transport, including delivery of software and hardware installed on public transport vehicles.



Fritext

d. When was the assignment made operational (within the last six years)?



Fritext

e. Describe how the assignment has included delivery of validators and related bank certified software for a cEMV solution (Functionality for Contactless Ticketing for Public Transport) that is operational.



Fritext

f. Describe how the assignment has included delivery of equipment that was installed on trains or trams.



Fritext

g. Describe how the assignment has included delivery of ID-based travelcards.



Fritext

3.6.2 Reference assignment 2



a. Provide contact details for referee.



Name of company as well as name, professional title, phone number, and email address for referee.

Fritext

b. Briefly describe the scope and implementation period for the reference assignment, including approximate number of passengers per day, number of units on board, number and type of vehicles included in the installation.



Fritext

c. Describe how the assignment relates to ticketing systems for public transport, including delivery of software and hardware installed on public transport vehicles.



Fritext

d. When was the assignment made operational (within the last six years)?



Fritext

e. Describe how the assignment has included delivery of validators and related bank certified software for a cEMV solution (Functionality for Contactless Ticketing for Public Transport) that is operational.



Fritext

f. Describe how the assignment has included delivery of equipment that was installed on trains or trams.



Fritext

g. Describe how the assignment has included delivery of ID-based travelcards.



Fritext