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Foundations Directorate

Annex 1 to the FDF EETS and Fuel Card Providers Ordinance

Technical and Operational Requirements for EETS Provider

EUROPEAN ELECTRONIC TOLL SERVICE FOR THE LSV

VERSION 2.2

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Technical and Operational Requirements for EETS Provider

1 Overview

1.1 Purpose of the document

This annex 1 to the FDF EETS and Fuel Card Providers Ordinance and its supplements contains

- the technical and operational specifications for the LSVAs toll domain for the EETS provider for approval and permanent fulfilment,
- the quality criteria with the key performance indicators to be measured, and
- the specifications for the approval procedure to be carried out and for the repetition of individual approval steps to maintain the approval.

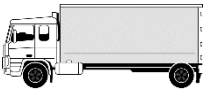

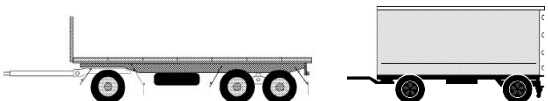
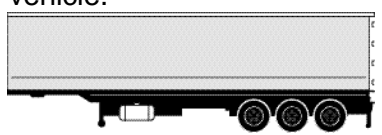
1.2 List of changes

Version	Date	Section	Change
2.0	01.03.2020		First published version
2.1	21.08.2020	2.1 (6) 2.2 (7) 2.4 (16) 2.5 (21) 2.6 (25)	Resolution for setting the trailer weight Time limit for modification or deactivation Resolution of vehicle weight collection Minimum distance after exit Clarification billing period (15 calendar days)
2.2	01.01.2022	various	Renaming of the Federal Customs Administration (FCA) to the Federal Office for Customs and Border Security (FOCBS)

1.3 Supplements

Supplement
[1] Supplement 1 to annex 1: EETS Provider KPIs
[2] Supplement 2 to annex 1: LSVAs Compliance Check Communication
[3] Supplement 3 to annex 1: EETS Provider Interface
[4] Supplement 4 to annex 1: Implementation Concept Template - Level 1
[5] Supplement 5 to annex 1: CCC Integration Test Specification - Level 2
[6] Supplement 6 to annex 1: EETS Provider Interface Test Specification - Level 2
[7] Supplement 7 to annex 1: Trial Operation Specification - Level 3
[8] Supplement 8 to annex 1: Pilot Operation Specification - Level 4

1.4 Terms and abbreviations

Term/Abbreviation	Meaning
Lorries	<p>Lorries are heavy motor vehicles for transporting goods (categories N₂ or N₃) with a maximum of nine seats, including the driver.</p>  <p>In principle, lorries with a permissible total weight of more than 3.5t are subject to the charge; for exceptions, see Article 3 of the Heavy Vehicle Charge Ordinance (HVCO).</p>
Articulated lorries	<p>Articulated lorries are motor vehicles which are designed to tow semi-trailers.</p> <p>Only the permissible total weight of the articulated lorry is decisive for classification as a heavy or light vehicle.</p>  <p>In principle, articulated lorries with a permissible total weight of more than 3.5t are subject to the charge; for exceptions, see Article 3 of the Heavy Vehicle Charge Ordinance (HVCO).</p>
Trailers	<p>Trailers are non-self-propelled vehicles designed to be towed by other vehicles to which they are connected via a suitable coupling device.</p> <p>In principle, trailers for transporting goods with a permissible total weight of over 3.5t (classes O₃ and O₄) are subject to the charge; for exceptions, see Article 3 of the Heavy Vehicle Charge Ordinance (HVCO).</p>
Standard trailers	<p>Standard trailers are trailers whose towing device (drawbar) on the trailer can pivot vertically.</p> 
Semi-trailers	<p>Semi-trailers are trailers which are coupled to a motor vehicle (articulated lorry) in such a way that they partially rest on it. A substantial part of the weight of the trailer and its load is carried by the towing vehicle.</p> 
EETS	<p>European Electronic Toll Service. Service for international road haulage to levy and pay road traffic fees (tolls) in various European countries.</p>
LSVA toll domain	<p>The area in which the LSVA is levied.</p> <p>The LSVA is levied for the use of all public roads in Switzerland, the Principality of Liechtenstein, Büsingen, Campione and the "Flughafenstrasse" in Basel.</p>

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Term/Abbreviation	Meaning
EETS journey	The journey of a vehicle in the LSVA toll domain subject to a charge is recorded via EETS and the charge due is paid via EETS. An EETS journey begins upon entry into the LSVA toll domain and ends when the vehicle exits the LSVA toll domain.
EETS OBE	On-board equipment; the device supplied by the EETS provider which is installed in the vehicle to record the EETS journey.
Simplified trailer declaration	The driver declares only the presence of a trailer on the EETS OBE.
Trailer weight declaration	The driver declares the presence of a trailer on the EETS OBE, indicating the total permissible weight of the trailer and the trailer type.
PAN	Personal Account Number
DSCR	Dedicated Short Range Communication
Border beacon system	Border customs office equipment with DSRC beacons for CCC transactions with the EETS OBEs. The systems consist of various system components (station computer, beacon terminal, DSRC beacons and, in some cases, signalisation display).
Exception list	A list with the entries of the EETS provider's blocked EETS contracts (= blacklist, EP blacklist). The PAN (Personal Account Number) of the EETS contract is listed as invalid in the exception list.
Interface test	The interface test is the integration test of the EETS provider system, the on-board equipment interfaces (CCC) and the back office into the FOCBS's EETS system.
Block	Limited functionality or validity results in the EETS provider remotely blocking the relevant on-board unit. On-board units which cannot be blocked remotely may be reported to the FOCBS by the EETS provider. In this case, the FOCBS assumes the technical implementation of the block. In both cases, the block results in a denial of entry.
Discretionary assessment	A discretionary assessment becomes necessary if the data in the EETS journey declaration is insufficient for an ordinary assessment, is missing or if the FOCBS itself has collected data on this EETS journey which is inconsistent with the EETS journey declaration.

Note:

The terms relating to vehicles correspond to the Swiss "Ordinance on the Technical Requirements for Road Vehicles (RVTRO) of 19 June 1995 (as at 1 February 2019)" (available in French, German and Italian).

2 Technical specifications

2.1 On-board units used by the EETS provider

Specification	Description
1) Declaration of conformity	The EETS provider shall have the EC declaration or certificate which attests the conformity of the OBE used. The declaration of conformity shall at least cover the requirements resulting from the implementation of the standard EN ISO 12813.
2) EETS OBE personalization	The EETS provider shall personalize the EETS OBE it provides to the EETS user to the registered vehicle. The EETS provider shall use the PAN in the EETS OBE as the unique key to the registered vehicle (vehicle data) with the corresponding vehicle holder (holder data).
3) EETS OBE assignment	The assignment of EETS OBE (PAN), vehicle and vehicle registration number, including the country code of the vehicle subject to tolls, to each other shall always be unambiguous at all times during the EETS journey.
4) Functionality of the EETS OBE	The EETS provider shall ensure its EETS OBE functions correctly for recording the LSVA. This concerns in particular the communication with the FOCBS's DSRC beacons and the recording of the route travelled by the EETS user in the LSVA toll domain. Functionality is measured using the KPIs according to specification 35) (KPI no. 3: position data for the EETS journey) and 38) (KPI no. 6: DSRC transaction rate).
5) EETS OBE recording capability	The user interface of the EETS OBE shall clearly indicate to the EETS user whether or not it is capable of recording in the LSVA toll domain. In particular, the EETS OBE's capability to record shall be permanently visible to the EETS user as a status (green = capable of recording).
6) EETS OBE user interface	The EETS user (driver) shall be able to enter via the EETS OBE user interface all information necessary for a trailer declaration, including either the information for a simplified declaration or a declaration with indication of weight (trailerMaxLadenWeight) and trailer type (trailerTyp). The weight shall be indicated in one of the following resolutions: <ul style="list-style-type: none"> • 10 kg rounded down • 100 kg rounded up • 1000 kg rounded up The EETS user shall be able to see all information regarding the current trailer declaration status on the EETS OBE. The result of CCC transactions completed with LSVA beacons shall be immediately signalled to the EETS user in accordance with the SetMMI.request command. The EETS user shall be able to distinguish clearly between the different results (see Supplement 2).

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2.2 Transmission of the contract data of the on-board units

Specification	Description
7) DSRC contract data	<p>The EETS provider shall transmit its DSRC contract data (CCC ContextMark, DSRC master keys, ManufacturerID and EquipmentClass) valid for the LSV A toll domain to the FOCBS.</p> <p>The EETS provider shall transmit changes to DSRC master keys or deactivation (deletion) of DSRC contract data to the FOCBS.</p> <p>Changes of DSRC master keys or deactivation (deletion) of DSRC contract data must be transmitted by the EETS provider to the FOCBS at least 15 days before the requested change or deactivation date.</p> <p>The detailed requirements for the content and transmission of DSRC contract data are defined in Supplement 3.</p>
8) Activation of new DSRC contract data	<p>New DSRC contract data (a new combination of CCC ContextMark, ManufacturerID and EquipmentClass) shall be submitted to the FOCBS by the EETS provider at least 90 days before the desired activation date.</p> <p>Upon request, the EETS provider shall supply the FOCBS with an OBE configured with the new DSRC contract for test purposes.</p> <p>The FOCBS will activate the data once the test has been successfully completed.</p>

2.3 Communication with the FOCBS's EETS systems

Specification	Description
9) Interfaces	<p>The EETS provider's system shall have the interfaces specified by the FOCBS in accordance with specifications 10) and 11), and operate them in accordance with the FOCBS's specifications.</p>
10) DSRC interface	<p>The EETS OBE shall have a DSRC interface with the CCC protocol in accordance with Supplement 2.</p> <p>The test procedure for verifying the DSRC interface is defined in Supplement 5.</p> <p>The EETS provider is responsible for the performance of its OBE when communicating via the DSRC interface.</p> <p>The performance is measured via the KPI according to specification 38) (KPI no. 6: DSRC transaction rate).</p>
11) Back office interface	<p>In order to exchange data with the FOCBS, the EETS provider's IT system shall have a back office interface in accordance with Supplement 3.</p> <p>The test procedure for verifying the back office interface is defined in Supplement 6.</p>
12) Time standard	<p>All time data transmitted between the FOCBS and the EETS provider as part of the data exchange shall be given in UTC.</p>
13) Unique vehicle identification	<p>During an EETS journey, the vehicle and thus also the vehicle holder shall be uniquely identifiable via the PAN (Personal Account Number, in accordance with ISO/IEC 7812-1).</p>

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	The PAN shall be stored in the EETS OBE.
14) Securing the back office interface	The back office interface between the FOCBS and the EETS provider shall be secured in accordance with the FOCBS's security requirements. These are defined in Supplement 3.

2.4 Registration of EETS users and their vehicles

Specification	Description
15) EETS user	<p>The EETS provider shall register the EETS user's holder data according to the registration certificate (COUNCIL DIRECTIVE 1999/37/EC) and keep this up to date.</p> <p>For the registration, holder data is prioritised as follows: C3 above C2 above C1.</p> <p>The information shall include all three subheadings Cx.1 (name or company name), Cx.2 (first name(s) or (if applicable) initials) and Cx.3 (address in the country of registration when the certificate was issued).</p>
16) Vehicle data	<p>The EETS provider shall register the vehicle data in accordance with the registration certificate (COUNCIL DIRECTIVE 1999/37/EC). Where EETS users collect the vehicle data themselves, the EETS provider will check the accuracy of the data collected. The EETS provider keeps the vehicle data up to date based on information obtained from the EETS user.</p> <p>At least the following categories shall be registered</p> <ul style="list-style-type: none"> F2: Total weight (vehicleMaxLadenWeight) F3: Total weight of the vehicle combination (vehicleTrainMaximumWeight) V9: Emission class (euroValue) <p>together with the registration number (licencePlateNumber) and country code (countryCode).</p> <p>When using the trailer declaration with weight indication and trailer type according to specification 6), the following category shall also be registered:</p> <ul style="list-style-type: none"> G: Unladen/net weight (vehicleWeightUnladen) <p>The EETS provider collects the weights with 10 kg resolution rounded down.</p>

2.5 Recording and declaring the chargeable trip

Specification	Description
17) Transmission of EETS journey declaration	<p>The EETS journey declaration consists of the registered vehicle data, the position data to describe the route travelled in the LSV A toll domain and the trailer data declared by the EETS user on the EETS OBE, including the corresponding position data.</p> <p>The EETS Provider shall transmit to the FOCBS on its own initiative all data concerning an EETS journey, separately for each EETS journey.</p>

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Specification	Description
	<p>The latter also applies if several EETS journeys take place on one calendar day.</p> <p>In the case of a one-day EETS journey, the data shall be transmitted to the FOCBS within 24 hours of the start of the EETS journey.</p> <p>For EETS journeys lasting several days, the data for the first calendar day shall be transmitted in accordance with the time specifications for a one-day EETS journey, and then within 24 hours from midnight of the day in question for each subsequent calendar day.</p> <p>This also applies to calendar days on which the vehicle does not move.</p> <p>The detailed requirements for the data elements and the transmission of the EETS journey declaration are defined in Supplement 3.</p>
18) Coordinate system	<p>Position data for the EETS journey shall be based on the WGS84 coordinate system.</p> <p>For details see: NIMA TR8350.2, Third Edition – Amendment 1, January 2000, Department of Defense – World Geodetic System 1984, Its Definition and Relationships with Local Geodetic Systems, issued by the National Imaging and Mapping Agency (NIMA), US Department of Defense.</p>
19) Accuracy of position data	<p>The position data transmitted by the EETS provider shall describe the route travelled by the EETS user in such a way that the FOCBS can calculate the distance travelled directly from the position data by means of vector calculation without using a road map.</p> <p>The deviation of the travelled distance determined in this way from the distance actually travelled shall not exceed +/- 4%.</p> <p>The declared position data shall include all sections of the self-driven trip, irrespective of whether this takes place on or off a defined road, in a car park or within a private area.</p> <p>The accuracy of the position data is measured using the KPI according to specification 35) (KPI no. 3: Position data for the EETS journey).</p>
20) Removal of redundant position data	<p>The transmitted position data should not include any multiple positions of immobile vehicles (e.g. resting positions, vehicles in traffic jams, etc.).</p>
21) Border recognition	<p>The EETS journey declaration shall contain sufficient position data before entering the LSVA toll domain and after leaving the LSVA toll domain for the FOCBS to be able to unambiguously identify that the border was crossed and the point at which it was crossed.</p> <p>The volume of position data outside the LSVA toll domain for this identification should be as low as possible.</p> <p>Consequently, the data transmission shall not contain any positions with a distance greater than 5km beyond the border of the LSVA toll domain (reference border according to Maps of Switzerland, www.geo.admin.ch). After the exit, however, the position data should contain a minimum distance of 1km.</p>

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Specification	Description
22) Transmission of holder data	<p>If a technical request is made by the FOCBS, the EETS provider shall also supply the correct vehicle holder data for each EETS journey within 12 hours.</p> <p>The technical request and holder data response are defined in Supplement 3.</p>

2.6 Assessment decisions and billing

Specification	Description
23) Assessment	<p>For each EETS journey, the FOCBS makes the assessment decision, together with the charge claim, available to the EETS provider for collection on the back office interface (BillingDetailA-DU).</p> <p>The EETS provider shall collect the assessments at least once a day and confirm their receipt to the FOCBS within 24 hours.</p> <p>The technical provision and confirmation of the assessment are defined in Supplement 3.</p> <p>By confirming receipt, the EETS provider accepts the decision with effect for the EETS users.</p> <p>The EETS provider shall make the assessment immediately available to the EETS user.</p> <p>The EETS provider shall keep the confirmed BillingDetailADU for at least 60 days.</p>
24) Daily claim	<p>The FOCBS supplies the EETS provider with a daily aggregation of assessments confirmed by the EETS provider on the back office interface. This forms the daily claim (PaymentClaimADU).</p> <p>The technical provision and confirmation of the daily claim are defined in Supplement 3.</p> <p>The EETS provider shall collect the daily claim at least once a day and confirm its receipt within 24 hours.</p>
25) Billing	<p>Twice a month the FOCBS prepares an invoice for the EETS provider. As a collective invoice, it includes all LSWA amounts levied via this EETS provider during the billing period (15 calendar days), based on the daily claims confirmed by the corresponding EETS provider (specification 24).</p> <p>The EETS provider receives the invoices sent by the FOCBS by e-mail in PDF format.</p>

2.7 Complaints by EETS users

Specification	Description
26) Complaints by EETS users	<p>The EETS provider examines the EETS users' complaints in accordance with the approval contract.</p> <p>If this results in a correction of the assessment, the EETS provider will be provided with a corrected assessment for collection on the back office interface, together with a reference to the original assessment (see BillingDetailADU, specification 23).</p>

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Specification	Description
	The amount in the BillingDetailADU corresponds to the difference between the corrected and the original assessment.

2.8 Transmission of blocked OBEs

Specification	Description
27) Transmission of exception list	<p>Before midnight each day, the EETS provider transmits to the FOCBS its exception list containing all blocked on-board equipment.</p> <p>The block becomes active in the FOCBS's systems from 4am the following calendar day.</p> <p>The exception list shall be transmitted even if it is empty.</p> <p>The exception list shall only contain blacklist type entries.</p> <p>Each entry in the exception list consists of a PAN and the vehicle registration number, including country code.</p> <p>The detailed requirements and rules for the transmission of the exception list are defined in Supplement 3.</p>
28) Maintenance of the exception list	<p>The EETS provider shall maintain the exception list transmitted to the FOCBS.</p> <p>Entries shall be removed from the transmitted exception list as soon as they are no longer needed. This is considered to be the case if one or more of the following criteria are fulfilled:</p> <ul style="list-style-type: none"> • The blocked EETS contract has been removed (deleted) from the EETS OBE. • The EETS OBE with the blocked EETS contract has been uninstalled from the vehicle. • The expiry date of the blocked EETS contract (Payment-Means.PaymentMeansExpiryDate) has passed. • The blocked EETS contract has been on the exception list for 30 days (or more).

2.9 Adjustments to the LSVA EETS system by the EETS provider

Specification	Description
29) Adjustment to the EETS provider's back office	<p>The EETS provider shall analyse the impact of planned software or hardware changes to its EETS system back office will have on the collection of the LSVA. If functional effects or quality level effects are to be expected, the provider shall record the planned changes with a functional description, together with the results of the impact analysis, and report them to the FOCBS.</p> <p>In addition, the EETS provider shall describe the measures taken to avoid or reduce the risk of adverse effects on the LSVA toll domain.</p>
30) New EETS OBE	New EETS OBE types are devices in which, relative to devices currently approved in the LSVA toll domain, functional units have been replaced by new units or

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Specification	Description
	<p>components for compliance with specifications (e.g. DSRC module, GPS receiver, mainboard, etc.).</p> <p>The EETS provider shall report the planned use of a new EETS OBE to the FOCBS. A description shall be given of the differences between the new EETS OBE and the approved types (specifications). If it is a completely new type, this shall be indicated accordingly.</p> <p>As a further part of the notification, the EETS provider shall describe at the software concept level the similarities and differences in data collection and transmission for the LSVA toll domain relative to the approved EETS OBE.</p>
31) Software change to approved EETS OBE	<p>For planned software changes to an approved EETS-OBE, the EETS Provider shall analyse the impact on data collection and transmission for the LSVA toll domain. If functional effects or quality level effects are to be expected, the provider shall record the planned changes with a functional description, together with the results of the impact analysis, and report them to the FOCBS.</p> <p>In addition, the EETS provider shall describe the measures taken to avoid or reduce the risk of adverse effects on the LSVA toll domain.</p>
32) Other changes	<p>For changes to the EETS provider's system that are not included in specifications 29), 30) and 31), the EETS provider shall analyse their impact on the collection of the LSVA and notify the FOCBS of the planned changes. When doing so, it shall submit the impact analysis and risk avoidance or mitigation measures to the FOCBS.</p>

2.10 Key performance indicators (KPIs)

Specification	Description
33) KPI no. 1: Vehicle data	The detailed specifications with descriptions for all KPIs are contained in Supplement 1.
34) KPI no. 2: Holder data	
35) KPI no. 3: Position data for the EETS journey	
36) KPI no. 4: EETS provider data delivery	
37) KPI no. 5: Timely transmission of FOCBS messages	
38) KPI no. 6: DSRC transaction rate	

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3 Operational specifications

3.1 Financial capacity

The role as an EETS provider for the LSVA requires financial capacity. For this reason, the EETS provider shall demonstrate to the FOCBS both during the approval procedure and during regular operation that it has sufficient liquidity to pay its users' LSVA debts.

The EETS provider must provide proof of liquidity as follows:

a) During the approval procedure:

- The EETS provider shall submit to the FOCBS an up-to-date business plan for the LSVA business (at least 4 years, including balance sheet and income statement).
- The EETS provider shall provide the FOCBS with a current balance sheet and income statement, as well as its audit report. The annual accounts shall be drawn up in accordance with recognised international accounting standards.
- The EETS provider shall retroactively inform the FOCBS of its monthly debtor turnover rate for at least the last 12 months in a verifiable and traceable manner. The guideline value for the debtor turnover rate is 12. (Debtor turnover rate = turnover divided by average debtor portfolio). Note: in order to obtain the correct value, you must ensure the same periodicity is used, e.g. turnover for 12 months (October 20xx-1 to September 20xx) and average debtor portfolio (portfolio as at end of September 20xx-1 plus portfolio as at end of September 20xx divided by 2).
- The EETS provider shall disclose its ownership structure (shareholders/partners) to the FOCBS with official documentation.

b) During regular operation:

- The EETS provider shall voluntarily submit a current balance sheet, income statement and the audit report to the FOCBS once a year after the annual financial statements have been prepared. The annual accounts shall be drawn up in accordance with recognised international accounting standards.
- The EETS provider shall voluntarily provide the FOCBS with its debtor turnover rate on a monthly basis or, in the case of stable performance, on a quarterly basis in a verifiable and traceable manner. The guideline value for the debtor turnover rate is 12. (Debtor turnover rate = turnover divided by average debtor portfolio). Note: in order to obtain the correct value, you must ensure the same periodicity is used, e.g. turnover for 12 months (October 20xx-1 to September 20xx) and average debtor portfolio (portfolio as at end of September 20xx-1 plus portfolio as at end of September 20xx divided by 2).
- If significant changes occur with regard to the confirmed ownership structure, it shall notify the FOCBS immediately without being requested to do so. Significant changes to the confirmed ownership structure are a change in the voting or capital share of 10% or more and attaining a capital or voting majority ($\geq 50\%$).

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3.2 Quality assurance system

The EETS provider is certified in accordance with EN ISO 9001 or an equivalent standard.

Any EETS provider holding certification other than EN ISO 9001 shall be able to demonstrate the equivalence of its quality assurance certification with EN ISO 9001.

3.3 Risk management plan

The EETS provider shall have a permanent risk management plan which covers toll collection in all toll areas in which it operates.

The management plan shall consider the main risks facing the provision of EETS, such as

- interruption of business operations (interruption of the information processing chain),
- cash flow/liquidity risk,
- economic slowdown,
- increasing competition,
- loss of reputation,
- difficulties in achieving the necessary levels of service,
- liability,
- changes in regulations/legislation.

The management plan shall specify in detail the avoidance and mitigation measures to be taken to counter these risks.

The EETS provider shall voluntarily provide the FOCBS with the current, approved risk management plan at least every two years.

3.4 Implementation concept

The EETS provider must document the implementation of the technical specifications and the processes required to collect the LSVAs in a concept. In particular, the concept must describe how the functions for the LSVAs are to be integrated into its EETS system.

If the EETS provider intends to make changes to its EETS system, it must update the implementation concept and submit it to the FOCBS, together with the corresponding notification of change.

If the FOCBS has any plans to change the technical specifications, the EETS provider must also update the implementation concept and submit it to the FOCBS.

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4 Approval procedure

The following principles apply to the approval procedure:

- The specifications for the individual stages in the approval procedure apply both to the initial approval of an EETS provider and, after approval has been granted, to the mandatory repetition of approval stages.
- An existing approval procedure must be completed before a new approval procedure is launched for a new EETS OBE of the same EETS provider.
- The EETS provider shall provide the documents in PDF/A format. Microsoft Office formats are also acceptable for additional attachments such as transaction logs.
- The EETS provider shall submit the approval application in one of the official Swiss languages. The documents that evidence compliance with the approval requirements can also be sent to the FOCBS in English.

4.1 Level 1 – Eligibility test

The aim of the eligibility test is to demonstrate that

- the operational requirements are met,
- the declaration of conformity exists for the on-board units which the EETS provider wishes to have approved, and
- the technical requirements can be met.

The EETS provider shall submit the following documents to the FOCBS with the application form

- the business plan for establishing the EETS for the LSVA (see 3.1a),
- the current balance sheet and income statement (see 3.1a),
- the monthly debtor turnover rate (see 3.1a),
- the current ownership structure (see 3.1a),
- the quality assurance system certificate (see 3.2),
- the current risk management plan (see 3.3),
- the implementation concept (see 3.4),
- list of on-board units (EETS OBE) to be approved, with precise type designation and corresponding declarations of conformity.

The EETS provider will receive an email containing information on the documents to be submitted with the application. The FOCBS may entrust third parties with the task of reviewing the documents.

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4.2 Level 2 – Testing in test environment/interfaces

The aim of the interface test is to verify that the interfaces have been implemented in accordance with the FOCBS's specifications.

As a prerequisite for these tests, the EETS provider's system shall be fully installed and all interfaces to the FOCBS's EETS system shall be operational.

The DSRC interface (CCC) tests are carried out by the EETS provider as a self-test under its own responsibility and at its own risk at the FOCBS's test facility. As the operator of the test facility, the FOCBS accompanies the test process. The EETS provider's EETS OBE which is intended for operational use is used for this. The tests to be carried out are defined in Supplement 5.

The EETS provider supplies the FOCBS with its test report with the underlying test and transaction logs.

The back office interface tests are carried out by the EETS provider as a self-test under its own responsibility and at its own risk in the test environment made available by the FOCBS. The test environment enables the EETS provider to carry out all tests in accordance with Supplement 6. The EETS provider supplies the FOCBS with its test report with the underlying test logs.

Interface test process:

1. Exchange of CCC keys and back office certificates for tests.
2. CCC testing (at Interlaken test facility). The FOCBS determines the schedule for the use of the test facility, depending on its availability, in consultation with the EETS provider.
3. Back office test.

Steps 2 and 3 can be performed in parallel or in reverse order. The order can be determined by the EETS provider.

4.3 Level 3 – Trial operation

The aim of the trial operation is to check that the FOCBS's requirements are properly met by the entire process chain of the EETS provider's system. Both the functionality and the operability of the system have to be demonstrated in real time.

During the trial operation, the FOCBS is the EETS provider's customer, i.e. the EETS user who receives the electronic assessment decision from the provider. The trial operation is conducted in the FOCBS's productive environment without the LSVA being levied. There are no charge demands and therefore no financial transactions between the FOCBS (in the roles of toll charger and EETS user) and the EETS provider.

The test cases are carried out by the EETS provider. The test cases to be performed are defined in Supplement 7. The EETS provider shall supply the FOCBS with a test plan which includes the test dates. The test trips should be completed within a month. If the EETS provider is planning a longer execution period, this shall be explained and justified in the test plan.

The FTA supports the EETS provider according to its role in the test specifications. The FOCBS reserves the right to participate in the execution of the EETS provider's test cases.

Technical and Operational Requirements for EETS Provider

The EETS provider may not use any vehicles subject to the LSVA for the test trips. However, due to the behaviour of the DSRC communication, the vehicles used shall have an angle of windscreen inclination similar to that of a lorry and allow the EETS OBE to be mounted at a similar height from the road.

The EETS provider shall document the execution of the test cases in test logs. The documentation in the test logs shall include the effective execution of the EETS journeys and all test results, including verification of the assessed charge.

The EETS provider supplies the FOCBS with its test report with the underlying test logs.

4.4 Level 4 – Pilot operation

The aim of the pilot operation is to demonstrate compliance with the EETS provider's system performance specifications during live operation.

The pilot operation is carried out solely with the operational systems of the FOCBS and the EETS provider using vehicles which are subject to the LSVA.

During the pilot operation, a predetermined minimum number of EETS journeys is carried out by a small number of the EETS provider's EETS users within a maximum period of two months. If the EETS provider anticipates a longer execution period, this shall be explained and justified to the FOCBS before the pilot is launched. The FOCBS may extend the execution period. The specifications are defined in Supplement 8.

During the pilot operation, the compliance of the EETS provider's system with the intended key performance indicators (KPIs) for the pilot operation is verified. Furthermore, observations are made as to whether other unwanted anomalies occur in the EETS provider's system during the pilot operation. The EETS provider shall report any irregularities in the pilot operation to the FOCBS.