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Foundations Directorate

Supplement 1 to Annex 1 to the FDF EETS and Fuel Card Providers Ordinance

EETS Provider KPIs

EUROPEAN ELECTRONIC TOLL SERVICE FOR THE LSVA   VERSION 2.2

Contents

1 Overview

1.1 Purpose of the document

This document is a supplement to Annex 1 and defines the requirements for EETS provider regarding the key performance indicators (KPIs) in the LSVA toll domain.

1.2 Limitations

The KPI definitions and limits contained in this document apply to the EETS provider's operations after its approval for the LSVA toll domain.

The KPIs required for the pilot operation are defined in Supplement 8.

1.3 List of changes

Version	Date	Section	Change
2.0	01.03.2020		First published version
2.1	21.08.2020	2.1	Precision, the reference value are the samples
2.2	01.01.2022	various	Renaming of the Federal Customs Administration (FCA) to the Federal Office for Customs and Border Security (FOCBS)

1.4 References

Document
[1]   Annex 1 to the FDF EETS and Fuel Card Providers Ordinance: Technical and Operational Requirements for EETS Provider
[2]   Supplement 8 to annex 1: Pilot Operation Specification - Level 4

1.5 Terms and abbreviations

Term/Abbreviation	Meaning
Assessment	Assessment is understood to mean the procedure by which the amount of LSVA to be paid is determined from the individual pieces of information presented (weights, distances recorded, etc.). Provided sufficient information is available, an ordinary assessment can be conducted. Ideally, this will be an automatic procedure that does not involve any manual steps. If there is not enough information for an ordinary assessment, the assessment will be made at the discretion of the FOCBS.
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.
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.

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Term/Abbreviation	Meaning
	An EETS journey begins with the entry into the LSVA toll domain and ends with the exit of the vehicle from the LSVA toll domain.
EETS OBE to vehicle linking	EETS OBE to vehicle linking is correct if the license plate number (including nationality) stored in the OBE matches the license plate number on the vehicle in which the OBE is installed. If the EETS OBE to vehicle linking is broken, this correspondence is not given.
Period	Measurement and evaluation interval of the KPIs

2 EETS provider KPIs

2.1 Vehicle data

KPI no.	1	Vehicle data
Function → Aim		The FOCBS measures the quality of the vehicle data collected and transmitted by the EETS provider, checks the personalisation of the EETS OBE and the EETS OBE to vehicle linking. → High quality of vehicle data and EETS OBE to vehicle linking
Description		The vehicle data is transmitted as part of the EETS journey declaration via the back office interface but is also read from the EETS OBE via a DSRC interface. The vehicle data is retransmitted for each EETS journey. The FOCBS verifies the correctness of the vehicle data (see Annex 1, section 2.4, specification 16). For this purpose, it scans the vehicle registration documents during checks and compares them with the data transmitted by the EETS provider. The correctness of the EETS OBE to vehicle linking (see Annex 1, section 2.1, specification 3) is verified manually at the border crossing or at the enforcement stations using the data stored in the EETS OBE.
Performance metrics		The quality of vehicle data, the OBE personalisation and the correct EETS OBE to vehicle linking over the measurement period
Definition		Ratio between the number of samples taken by FOCBS and the proportion of detected errors in the vehicle data supplied for this purpose, comprising the: • amount of vehicle data from the OBE recognised as incorrect on the basis of the vehicle registration documents without broken EETS OBE to vehicle linking • amount of different vehicle data from the OBE and in declaration data without broken EETS OBE to vehicle linking • number of broken EETS OBE to vehicle linking (vehicle license plate number does not match license plate number in OBE) over the measurement period.
Possible causes		• Error (e.g. due to typing mistake) during entry • Erroneous information intentionally entered by the holder • The holder does not report vehicle data changes to the EETS provider • Incorrect EETS OBE personalisation

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KPI no.	1	Vehicle data
		• EETS OBE in wrong vehicle (broken EETS OBE to vehicle linking)
Possible countermeasures		• Improvement in the EETS provider's vehicle entry process • Improvement of the process to verify the vehicle data provided by the holder • Improvement of user information
Possible consequences		• Incorrect assessment of the EETS journey
Input variables		A = Number of EETS journeys = amount of checked vehicle data (samples taken by the FOCBS) B = C + D (number of detected errors) C = Error from comparison of delivered vehicle data with vehicle registration document without broken EETS OBE to vehicle linking D = Different vehicle data from EETS OBE and in EETS declaration without broken EETS OBE to vehicle linking (error in OBE personalisation) E = Number of EETS journeys with broken EETS OBE to vehicle linking (detected manually or at enforcement stations)
Calculation		Proportion of correct vehicle data = $(A - B) / A \times 100\%$
Period		3 months (informative monthly evaluation)
Statistics		For a number of < 1000 EETS journeys (A) per period, a fixed number of permissible error cases (B) applies
Limits		99.9% (fixed number of error cases = 1)

2.2   Holder data

KPI no.	2	Holder data
Function → Aim		The FOCBS measures the quality (completeness, correctness) of the holder data transmitted by the EETS provider. → High quality of holder data
Description		For each EETS journey, the FOCBS requests the holder data for the vehicle from the EETS provider. The EETS provider then transmits the holder data requested for this vehicle (see Annex 1, section 2.4, specification 15).
Performance metrics		The quality of the holder data over the measurement period
Definition		Ratio between the total amount of holder data supplied and the proportion of assessments with this holder data without complaints from the holder regarding inaccurate, incomplete or incorrect addresses for the assessment. Complaints are assigned to the measurement period based on when the disputed assessment is created.
Possible causes		• Error (e.g. due to typing mistake) during holder data entry • Mix-up of holder data during entry • Incomplete holder data entry

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KPI no.	2	Holder data
Possible countermeasures		• Improvement in the EETS provider's holder data entry process
Possible consequences		• The electronic assessment decision is prepared for the wrong holder • The electronic assessment decision is formally disputed with respect to the holder data
Input variables		A = Amount of holder data supplied B = Number of complaints regarding holder data
Calculation		Proportion of correct holder data = (A – B) / A x 100%
Period		6 months (informative monthly evaluation)
Statistics		For a number of < 1000 holder data sets provided (A) per period, a fixed number of permissible error cases (B) applies
Limits		99.9% (fixed number of error cases = 1)

2.3 Position data for the EETS journey

KPI no.	3	Position data for the EETS journey
Function → Aim		The FOCBS measures the quality of the declared position data used to describe the EETS journey. → Ensure the calculation of the distance travelled in the LSVA toll domain is within the permissible deviation
Description		The EETS provider automatically transmits the GNSS position data for each EETS journey to the FOCBS (see Annex 1, section 2.5, specification 17), which must comply with the qualitative specifications (see Annex 1, section 2.5, specifications 19, 20 and 21). The FOCBS measures the quality of position data during the assessment. The quality of the position data for an EETS journey is unsatisfactory if the assessed distance (based on the FOCBS's calculation algorithm) of the EETS journey has a deviation and/or an uncertainty of > 4% relative to the declared distance. In this case, manual intervention by FOCBS staff and discretionary assessment are necessary.
Performance metrics		The quality of the position data for the EETS journeys over the measurement period
Definition		Ratio between the total number of EETS journeys and the number of EETS journeys with sufficient position data quality
Possible causes		• Manipulation by EETS user(s) (shielding GNSS antenna, jammers, etc.) • Insufficient GNSS reception due to poor OBE installation • OBE failure • Route of an EETS journey not fully covered by position data
Possible countermeasures		• Increase OBE availability (correct installation and quality) • Improve user information

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KPI no.	3	Position data for the EETS journey
Possible consequences		• Increased number of manual interventions with discretionary assessments • Increased number of appeals against manual assessments
Input variables		A = Total number of EETS journeys B = Number of EETS journeys without manual assessment
Calculation		EETS journeys without manual assessment steps = B / A x 100%
Period		3 months (informative monthly evaluation)
Statistics		For a number of < 1000 EETS journeys per period for which position data was delivered, a fixed number of permissible error cases applies
Limits		99.7% (fixed number of error cases = 3)

2.4 EETS provider data delivery

KPI no.	4	EETS provider data delivery
Function → Aim		The FOCBS measures compliance with deadlines for the delivery of EETS journey declarations and holder data. → Ensure that all data is delivered for the timely assessment of EETS journeys
Description		The EETS provider shall submit the EETS journey declarations (TollDeclarationADU) automatically and on time (see Annex 1, section 2.5, specification 17). For each EETS journey, the FOCBS requests the holder data (ProvideUserDetailsADU) from the EETS provider, which it shall also submit in good time (see Annex 1, section 2.5, specification 22). Timely delivery is deemed to have taken place if a complete EETS journey declaration and the associated holder data are available at the start of the assessment process. The assessment process starts at the latest 24 hours after the declaration that completes the EETS journey. If the EETS journey is not completed by the available declarations, the assessment process starts two days after the last EETS journey declaration received.
Performance metrics		Compliance with the timely and complete delivery of all EETS journey declarations and the timely delivery of the associated holder data over the measurement period
Definition		Ratio between the number of EETS journeys delivered on time with the complete number of EETS journey declarations and holder data also delivered on time and the total number of EETS journeys during the measurement period. Note: Data that is not delivered on time due to lack of availability of the FOCBS's back office is not taken into account.
Possible causes		• EETS OBE failure • No or poor EETS OBE mobile communication • Problems in the EETS provider's back office
Possible countermeasures		• Increase EETS OBE availability • Stabilise the EETS provider's back office

EETS Provider KPIs

KPI no.	4	EETS provider data delivery
Possible consequences		• Discretionary assessment • Electronic assessment decision issued without holder data
Input variables		A = Total number of EETS journeys B = Number of EETS journeys for which the complete EETS journey declaration and holder data were delivered on time
Calculation		Proportion of deadlines respected = B / A x 100%
Period		3 months (informative monthly evaluation)
Statistics		For a number of < 1000 EETS journeys per period, a fixed number of permissible error cases applies
Limits		99.7% (fixed number of error cases = 3)

2.5 Timely transmission of FOCBS messages

KPI no.	5	Timely transmission of FOCBS messages
Function → Aim		The FOCBS measures the timely collection of FOCBS messages with acknowledgement of receipt by the EETS provider's back office. → Ensure the possibility of timely transmission of data to the EETS provider
Description		Measures the number of cases in which the transmission of data (assessment data (BillingDetailsADU), requests for holder data (RequestADU), daily aggregation (PaymentClaimADU)) to the EETS provider's back office failed to take place on time because the EETS provider's back office did not collect any data from the FOCBS's back office or did not send an acknowledgement of receipt (AckADU) to the FOCBS's back office during this time. Timely transmission is deemed to have taken place if the EETS provider's back office - confirms receipt of the FOCBS data (AckADU) within the specified timeframe (see Annex 1, section 2.6, specifications 23 and 24) after they have been made available in the FOCBS's back office, or - answers the request for holder data (ProvideUserDetailsADU) within the specified timeframe (see Annex 1, section 2.5, specification 22).
Performance metrics		Proportion of transmissions that were made on time.
Definition		Ratio between the total number of transmissions and the number of transmissions made on time. Note: Data that is not delivered on time due to lack of availability of the FOCBS's back office is not taken into account.
Possible causes		• Temporary failure of EETS provider's back office • Temporary network failure
Possible countermeasures		• Increase availability/check measures to increase the availability of the network and the EETS provider's back office

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KPI no.	5	Timely transmission of FOCBS messages
Possible consequences		• Late transmission of the electronic assessment decisions to EETS provider and EETS users • Assessment without correct holder data
Input variables		A = Total number of transmissions B = Timely transmissions
Calculation		Timely transmission of FOCBS messages = B / A * 100%
Period		6 months (informative monthly evaluation)
Statistics		For a number of < 1000 transmissions per period, a fixed number of permissible error cases applies
Limits		99.7% (fixed number of error cases = 3)

2.6 DSRC transaction rate

KPI no.	6	DSRC transaction rate
Function → Aim		The FOCBS measures the rate of successful CCC transactions. → Minimise the manual processing portion of assessments due to missing or incorrect CCC transactions → Guarantee reliable CCC transactions during entry and exit, as well as during enforcement
Description		Measuring takes place in the FOCBS's back office. While successful and broken transactions can be determined directly from the recording by the DSRC beacons, missing transactions (not recorded by the DSRC beacons) must be determined at the beacon systems or enforcement stations using the position data and map matching. All CCC transactions are measured with all EETS OBE from all EETS provider. The transaction rate per EETS provider and the total transaction rate of the FOCBS are determined.
Performance metrics		Result of CCC transactions at beacon systems or enforcement stations: • successful CCC transactions • broken CCC transactions • missing CCC transactions
Definition		Ratio between the total number of successful CCC transactions and the number of crossings at beacon systems and enforcement stations where a CCC transaction should take place, per EETS provider and in total (total ratios) for the FOCBS. Note: Cases where border posts not equipped with beacon systems have been used and cases where the failure of a single DSRC beacon, the entire beacon system or the enforcement station have been recorded are to be excluded.
Possible causes		• Poor local conditions (e.g. reflections) • Problems with DSRC beacon • Bypass of DSRC beacon or its transaction zone • Problem with the power supply of the beacon system or enforcement station

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KPI no.	6	DSRC transaction rate
		• Poor radio characteristics of the EETS OBE
		• Incorrect installation of the EETS OBE, making DSRC communication difficult or impossible
		• Problem with the power supply of the EETS OBE
Possible countermeasures		• For location-specific problems, detailed diagnosis and corrective countermeasures at the affected beacon system or enforcement station
		• Problem analysis and corrective measures together with the EETS provider concerned
Possible consequences		• Manual recording of the EETS journey via the manual system (AT) and the resulting double declaration of the trip
Input variables		The values A to D are determined for each EETS provider and in total for the FOCBS
		A= Number of successful CCC transactions at beacon systems and enforcement stations
		B = Number of broken CCC transactions at beacon systems and enforcement stations
		C = Number of missing CCC transactions at beacon systems and enforcement stations
		D = Number of crossings at beacon systems and enforcement stations where a CCC transaction should take place (= A + B + C)
Calculation		Per EETS provider and for the FOCBS, transaction ratio = A / D x 100%
		Secondary indicators (non-KPI relevant) per EETS provider and in total for the FOCBS for error analysis:
		• Ratio of broken transactions = B / D x 100%
		• Ratio of missing transactions = C / D x 100%
		• Transaction success rate per location
		• Ratio of broken transactions per beacon system type and location
		• Ratio of missing transactions per beacon system type and location
Period		3 months
Statistics		For a number of < 1000 beacon crossings per period, there is a fixed number of permissible error cases per EETS provider
Limits		Per EETS provider and for the FOCBS: 99.5% Fixed number of error cases per EETS provider = 5