

EasyGo+ OBE personalisation, configuration and operating parameters

Enclosure B to Document 202 “Roadside and on board equipment”

**This copy of the document was published on www.easygo.com
and is for information purposes only. It may change without
further notice.**

Table of contents

DOCUMENT REVISION HISTORY	3
ABBREVIATIONS	4
1 INTRODUCTION	5
1.1 EFC ATTRIBUTE OVERVIEW	5
2 ATTRIBUTE DATA	6
2.1 ATTRIBUTE 0: EFC-CONTEXT MARK	6
2.2 ATTRIBUTE 32: PAYMENTMEANS	8
2.3 ATTRIBUTE 4: CONTRACTAUTHENTICATOR	9
2.4 ATTRIBUTE 16: VEHICLELICENCEPLATENUMBER	9
2.5 ATTRIBUTE 17: VEHICLE CLASS	10
2.6 ATTRIBUTE 18: VEHICLE DIMENSIONS	12
2.7 ATTRIBUTE 19: VEHICLE AXLES	13
2.8 ATTRIBUTE 20: VEHICLE WEIGHT LIMITS	13
2.9 ATTRIBUTE 22: VEHICLE SPECIFIC CHARACTERISTICS	14
2.10 ATTRIBUTE 23: VEHICLEAUTHENTICATOR	15
2.11 ATTRIBUTE 24: EQUIPMENTOBU ID	15
2.12 ATTRIBUTE 26: EQUIPMENTSTATUS	15
2.13 ATTRIBUTE 33: RECEIPT DATA 1	16
2.14 ATTRIBUTE 34: RECEIPT DATA 2	16
3 OPERATING AND CONFIGURATION PARAMETERS	17
3.1 MANUFACTURERID AND EQUIPMENTCLASS	17
3.2 DIFFERENTIATION OF OBU MODELS OR VERSIONS OF THE SAME MANUFACTURER IN EFCCONTEXTMARK	17
3.3 SETMMI	17
3.4 SECURITY FEATURES	17
4 KEYS	18
5 INITIAL DATA EX WORKS	18
6 REFERENCES	19
STANDARDS AND EXTERNAL DOCUMENTS	19
EASYGO DOCUMENTS	20
7 INFORMATIVE ANNEXES	21
7.1 ANNEX A: ATTRIBUTE DATA FOR TEST CONTRACTS	21
7.2 ANNEX B: VEHICLE DECLARATION DOCUMENT	23

Document revision history

Version	Date	Author	Main changes
V1.0	13.12.2010	HHA	Doc. release
2.0	02.05.2013		Approved by steering committee
3.0	07.04.2016		Approved by steering committee
3.1	29.07.2016	HHA	Ch. 3.2 added.
4.0	24.11.2016		Approved by steering committee

Abbreviations

Abbreviation, Term	Description
TSP	Toll Service Provider, Contract issuer, issuer
CI	Toll Service Provider, Contract issuer, issuer
SU	Service User, customer,
TC	Toll Charger, Operator
PSP	Payment Service Provider
Penalty Fee	Fee to be paid by enforced users to avoid prosecution (“Ersatzmaut”)
EETS	European Electronic Toll Service
POS	Point of Sales
RSE	Roadside Equipment
OBU	On Board Unit (Term used often in DSRC standards for OBE too)
OBE	On Board Equipment
EFC	Electronic Fee Collection
MLFF	Multi Lane Free Flow
PAN	Personal Account Number
SP	Service Provider
HGV	Heavy Goods Vehicle
MII	Major Industry Identifier
IIN	Issuer Identifier Number

1 Introduction

This document specifies in detail OBE data content for operational EasyGo+ contracts.

Note: There can be differences between OBE requirements on attributes and the data format specified in this document, but this shouldn't be contradictory. If in this or other documents the term OBU is used, the meaning of «OBU» and «OBE» is to be interpreted identically.

1.1 EFC Attribute overview

OBE data is personalized to EFC attributes acc. to [IAP] with minor deviations (see column "Remarks")

Each Attribute contains one or several data fields according to EN 14906. Personalisation must be made by the Contract Issuer (TSP) according to the rules as specified in this specification.

For further details on specification of Attributes and security features which have to be implemented and supported by the OBE, see [EFC-API] and [OBU_req].

"Read" and "Write" define access rights to a given Attribute for GET, GET Stamped or SET **used by RSE**. Definition of access rights for personalization is up to the TSP's OBE requirements.

ATTRIBUTES (EID>0)	AttrId	Type	Length in bytes	Read	Write	Remarks
CONTRACT						Information associated with the service rights of the Toll Service Provider (TSP=CI)
EFC Context Mark	0	32	6	Yes	No	Contains the TSP Identification (transmitted as part of the VST)
PAYMENT						Data associated with the Payment transaction.
PaymentMeans (including PAN)	32	64	14	Yes	No	Includes: <ul style="list-style-type: none"> the Personal Account Number, including the Payment Means Issuer (identified by the IIN), The PAN Expiry Date The payment means Usage Control
Contract Authenticator	4	36	4+1	Yes	No	Value defined by the CI (acc. to EN15509, Attribute is not mandatory)
VEHICLE						Information pertaining to the identification and characteristics of the vehicle.
VehicleLicencePlateNumber	16	47	Fixed to 14 + 3= 17 bytes	Yes	No	Length of the Attribute, incl. country code, Alphabet Indicator and length. **)
VehicleClass	17	49	1	Yes	No	
VehicleDimensions	18	50	3	Yes	No	
VehicleAxles	19	51	2	Yes	No	
VehicleWeightLimits	20	52	6	Yes	No	
VehicleSpecificCharacte	22	54	4	Yes	No	

ATTRIBUTES (EID>0)	AttrId	Type	Length in bytes	Read	Write	Remarks
istics						
VehicleAuthenticator	23	55	4+1	Yes	No	Value defined by the CI (acc. to EN15509, Attribute is not mandatory)
EQUIPMENT						
EquipmentOBUID	24	56	5 (=4+1)	Yes	No	Length of EquipmentOBUID is fixed to 4+1 bytes as specified in EN 15509
EquipmentStatus	26	58	2	Yes	Yes	Include transaction counter and black list flag
RECEIPT						
ReceiptData1 (last)	33	65	28	Yes	Yes	
ReceiptData2 (penultimate)	34	66	28	Yes	Yes	

**) Acc. to EN15509 the length of this Attribute is fixed to 17 bytes, but for compatibility reasons only the first 10 significant characters can be used (see chapter 2.4)

2 Attribute data

The general structure of Attributes and their data elements is shown in [EFC API], chapter “EFC attributes”.

2.1 Attribute 0: EFC-Context Mark

2.1.1 General

The **EFC-ContextMark** denotes a specific EFC context in the OBE, comprising the organisation that issued the contract, the type of contract and the context version. EFC-ContextMark data is transmitted in VST as part of the ApplicationContextMark to enable the RSU to select the suitable EFC application as well the appropriate OBE data element, if the OBE is presenting more data elements.

Data element	Definition	Use in EASYGO+ context
ContractProvider	Identifies the organisation that issued the service rights given in the Contract, i.e. the Toll Service Provider. Numbers shall be assigned on a national basis. It is outside the scope of this standard to identify the data that specify the service rights.	mandatory
TypeOfContract	ContractProvider-specific designation of the rules that apply to the Contract. Allows, e.g., for the determination of the tariff or designating the type of purse associated with the contract.	mandatory
ContextVersion	ContextVersion denotes the implementation version of the concerned contract within the context of the given ContractProvider, value assigned at the discretion of the ContractProvider. The ContextVersion may also be used as a security key reference.	mandatory

Note: For operational purposes in basic EasyGo and historical reasons different ContextVersions were used for different OBE types issued for operational contracts by the same TSP, but this is not mandatory anymore.
 EFCContext Mark data for test contracts is usually different to operational contracts and to be defined by the TSP (see chapter 7.1)

2.1.2 Attribute data for OBE issued by ASFINAG- ETS

OBE Type OBU3021-G from Kapsch TrafficCom (KAPSCH AT)

ManufacturerId: 01 h
 EquipmentClass: 7106 h

Data element	Use		Data for production phase	Remark
ContractProvider	mandatory		C04001 h	
TypeOfContract	mandatory		7100 h	
ContextVersion	mandatory		05 h	

OBE Type FZ3458-GO from EFKON (FENRITS)

ManufacturerId: 1B h
 EquipmentClass: 0340 h

Data element	Use		Data for production phase	Remark
ContractProvider	mandatory		C04001 h	
TypeOfContract	mandatory		7100 h	
ContextVersion	mandatory		06 h	

OBE Type OBU3021-K from Kapsch TrafficCom (KAPSCH AT)

ManufacturerId: 01 h
 EquipmentClass: 7322 h

Data element	Use		Data for production phase	Remark
ContractProvider	mandatory		C04001 h	
TypeOfContract	mandatory		7100 h	
ContextVersion	mandatory		07 h	

OBE Type MVAVE 450 from EFKON

ManufacturerId: 15 h
 EquipmentClass: 0340 h

Data element	Use		Data for production phase	Remark
ContractProvider	mandatory		C04001 h	
TypeOfContract	mandatory		7100 h	
ContextVersion	mandatory		06 h	

2.1.3 Attribute data for OBE issued by BroBizz

OBE Type OBU4021-01-K from Kapsch TrafficCom (KAPSCH SE)

ManufacturerId: 03 h
 EquipmentClass: 7324 h

Data element	Use		Data for production phase	Remark
ContractProvider	mandatory		978003 h	
TypeOfContract	mandatory		0001	
ContextVersion	mandatory		07	

2.2 Attribute 32: PaymentMeans

2.2.1 General

The attribute PaymentMeans holds contract data as PAN, ExpiryDate and UsageControl:

Data element	Definition	Use in EASYGO+ context
PersonalAccount Number (PAN)	Coded according to financial institutions, consists of the Major Industry Identifier (MII), the Issuer Identifier Number (IIN, including the MII), the account number and a check digit (calculated with the Luhn algorithm).; acc. to ISO7812	mandatory
PaymentMeans ExpiryDate	Expiring date of payment means. Payment means expires at 24h of PaymentMeans ExpiryDate. (Expiry date to be chosen by issuing TSP)	Mandatory *)
PaymentMeans UsageControl	Indicates issuer's specified restrictions on the geographic usage and services allowed for the applications	Optional (or set to zero)

*) Note: Interpretation of PaymentMeansExpiryDate is mandatory at RSE, so the OBE must be personalized with a date (chosen by the issuing TSP).

2.2.2 Attribute data for OBE issued by ASF INAG-ETS

Data element	Use	Data	Remark
PersonalAccount Number (PAN)	mandatory	308417xxxxxxxxxxxx d	
PaymentMeans ExpiryDate	mandatory	Date of personalization + 5 years	
PaymentMeans UsageControl	set to zero	0000 h	

2.2.3 Attribute data for OBE issued by BroBizz

Data element	Use	Data	Remark
PersonalAccount Number (PAN)	mandatory	9208606298xxxxxxxx d	
PaymentMeans ExpiryDate	mandatory	01 12 2099	
PaymentMeans UsageControl	set to zero	0000 h	

2.3 Attribute 4: ContractAuthenticator

2.3.1 General

This attribute is not specified in EN15509. If implemented in OBE, it can be used for compatibility reasons in existing tolling contexts.

Data element	Definition	Use in EASYGO+ context
Contract Authenticator	Coding up to the SP	set to zero

2.3.2 Information about use in EasyGo+ context

Not used.

2.4 Attribute 16: VehicleLicencePlateNumber

2.4.1 General

This attribute is holding information about the vehicles licence plate content (LPN) and the registering country. The licence plate information can have up to 14 characters acc. to

15509,. The licence plate information always shall be padded with NUL characters after the last significant character to achieve the total length of 14.

Data element	Definition	Use in EASYGO+ context
CountryCode	Two letter countrycode(ISO 3166-1-alpha-2 code) . coded in ITA-2 alphabet acc. to EN14816	mandatory
AlphabetIndicator	Latin alphabet No1(ISO8859-1)	mandatory
Length determinant	14	mandatory
LPN	LPN characters , padded with NUL to achieve 14 characters	mandatory

2.4.2 Information about use in EasyGo+ context

For the LPN only latinAlphabetNo1 and upper case letters, numbers (without any spaces and hyphens!) shall be used for personalisation. Non Latin-1 characters are to be coded as lower case letters applying a translation table acc. to ISO140906:2011, Annex E.

Although LPN length is defined by EN15509 with a fixed length of 14characters, the data element should contain only max. 10 significant characters, because LPN information is truncated to 10 characters at RSE of some toll domains for historical reasons. Shorter LPN are always padded with NUL to the maximum length of 14characters.

Data element	Use in EasyGo+ context	Data	Remark
CountryCode	mandatory	xx xxxx xxxx b	
AlphabetIndicator	mandatory	00 0000 b	
Length determinant	mandatory	0000 1110 b	
LPN	mandatory	0000 0000 xxxx xxxx xxxx xxxx xxxx h	

2.5 Attribute 17: Vehicle Class

2.5.1 General

The attribute VehicleClass is holding information about trailer presence, the vehicles “Harmonised European vehicle Class” and a local class, if defined by the TSP for his own local use. In interoperable context general interpretation of LocalVehicleClass at RSE is not possible.

The data element Trailer Presence Indicator is used to indicate whether the vehicle is towing a trailer (Trailer not present = 0, trailer present= 1).

The data element EuropeanVehicleGroup is based on UNECE vehicle classes [UNECE].

European Vehicle Group	Description	Characteristics	UNECE Class
0	No entry		(formerly Motorcycles acc. to EN15509:2007)
1	small passenger vehicles	seats \leq 8+driver	M1 (See note 1)
2	Light goods vehicles	weight < 3.5 t	N1 (See note 2)
3	Large passenger vehicles	seats > 8 + driver	M2, M3 (See note 3)
4	heavy goods vehicles (up to 12 t)	weight > 3.5 t and \leq 12 t	N2
5	heavy goods vehicles (over 12 t)	weight > 12 t	N3
6	Motorcycles	2 or 3 wheels	L (new acc. to EN15509:2014)
7	other vehicles	weight > 3.5 t	See note 4

Note 1: Assumed to be \leq 3.5 tonnes, otherwise assigned to group 7

Note 2: Assumed to have 2 axles, otherwise the vehicle is assigned to group 7

Note 3: Assumed to be >3.5 tonnes Note that a few of these vehicles may be \leq 3.5 tonnes

Note 4: Any vehicle not defined in European Vehicle Groups 1- 6. This includes small passenger vehicles weighing more than 3.5 tonnes.

Weight is the information F2 in the European Certificate of Immatriculation for vehicles according to [Reg_doc].

Data element	Definition	Use in EASYGO+ context
TrailerPresencerIndicator	Trailer no/yes	mandatory
EuropeanVehicleGroup	European vehicle group based on UNECE	mandatory
LocalVehicleClass	Local vehicle class, defined by the TSP for special local use	Optional (or set to zero)

2.5.2 Information about use in EasyGo+ context

If the OBE shall allow manual declaration of additional trailer axles, TrailerPresencerIndicator shall be set to 0 at initial personalization and the TrailerPresencerIndicator shall be set automatically to 1 by the OBE logic, if additional axles are declared manually

The data element EuropeanVehicleGroup is used to distinguish between trucks, bus (both > 3.5 t) and other vehicles as follows:

European Vehicle Group	Description	Characteristics for use in EasyGo+	UNECE Class
0	No entry		
1	small passenger vehicles	seats \leq 8+driver; weight < 3.5	M1 (See note 1)
2	Light goods vehicles	weight < 3.5 t	N1
3	Large passenger vehicles	seats > 8 + driver, weight > 3.5	M2, M3 (See note 3)
4	heavy goods vehicles (up to 12 t)	weight > 3.5 t and \leq 12 t	N2
5	heavy goods vehicles (over 12 t)	weight > 12 t	N3
6	Motorcycles	2 or 3 wheels	L
7	other vehicles	weight > 3.5 t	See note 4

Note 1: Assumed to be \leq 3.5 tonnes, otherwise assigned to group 7. Motorhomes with weight > 3.5 shall be classified like «Large passenger vehicles (EuropeanVehicleGroup 3)

Note 2: --

Note 3: Note that a few of these vehicles may be \leq 3.5 tonnes

Note 4: Any vehicle not defined in European Vehicle Groups 1- 6. This includes small passenger vehicles weighing more than 3.5 tonnes.

Weight is the information F2 in the European Certificate of Immatriculation for vehicles according to [Reg_doc].

Vehicles in European Vehicle Groups 3, 4, 5 and 7 are considered to be “heavy vehicles” in terms of the EETS (weighing more than 3.5 tonnes); they are relevant for EasyGo+.

If LocalVehicleClass is not used by any TC for local use, the value shall be set to zero

2.6 Attribute 18: Vehicle Dimensions

2.6.1 General

The attribute VehicleDimensions is holding information about the nominal overall dimensions of the vehicle acc. to ISO 612.

Data element	Definition	Use in EASYGO+ context
VehicleLengthOverall	Nominal maximum overall length of the vehicle according to ISO 612, in dm, rounded to the next dm.	Optional (or set to zero)
VehicleHeightOverall	Nominal overall unladen height, according to ISO 612, in dm, rounded to the next dm.	Optional (or set to zero)
VehicleWidthOverall	Nominal overall width, according to ISO 612, in dm, rounded to the next dm	Optional (or set to zero)

2.6.2 Information about use in EasyGo+ context

Not used.

2.7 Attribute 19: Vehicle Axles

2.7.1 General

The attribute VehicleAxles is holding information about the first axle's height, the usage of dual tyres and the number of axles (including drop axles) for tractor vehicle and trailer.

Data element	Definition	Use in EASYGO+ context
VehicleFirstAxleHeight	Bonnet height, measured over the front axle, in dm, rounded to the next dm	Optional (or set to zero)
VehicleAxlesNumber	VehicleAxlesNumber.TyreType: Claimed tyre type	Optional (or set to zero)
VehicleAxlesNumber	VehicleAxlesNumber.NumberOfAxles.Trailer: number of axles on trailer including drop axles	mandatory
VehicleAxlesNumber	VehicleAxlesNumber.NumberOfAxles.Tractor: number of axles of the tractor unit including drop axles	mandatory

2.7.2 Information about use in EasyGo+ context

If the OBE allows to manually declare trailer axles, VehicleAxlesNumber.NumberOfAxles.Trailer shall be set to 0 at initial personalization; VehicleAxlesNumber.NumberOfAxles.Trailer will be automatically set by the OBE logic, if additional axles are declared.

If not other agreed for EasyGo+, VehicleAxlesNumber.NumberOfAxles.Tractor shall be set to values 2, 3, 4 only at personalization (Value4 will be interpreted as "4 or more" axles at the tractor vehicle).

2.8 Attribute 20: Vehicle Weight Limits

2.8.1 General

The attribute VehicleWeightLimits is holding information about vehicle weight limits acc. to ISO1176.

Data element	Definition	Use in EASYGO+ context
VehicleMaxLadenWeight	Maximum permissible total weight including payload, according to ISO 1176. 10 kg units, rounded down to the next 10kg step.	Optional (or set to zero)
VehicleTrainMaximumWeight	Maximum permissible weight of the complete vehicle train, as defined in ISO 1176. 10 kg units, rounded down to the next 10kg step.	Optional (or set to zero)
VehicleWeightUnladen	Nominal unladen weight, according to ISO 1176 in 10 kg units, rounded down to the next 10 kg step.	Optional (or set to zero)

2.8.2 Information about use in EasyGo+ context

Not used.

2.9 Attribute 22: Vehicle Specific Characteristics

2.9.1 General

The attribute VehicleSpecificCharacteristics is holding information about environmental characteristic (emission class), engine type and other vehicle characteristics.

Data element	Definition	Use in EASYGO+ context
EnvironmentalCharacteristics.EuroValue	Euro value as defined in EC directive 88/77/EEC and consecutive amendments	mandatory
EnvironmentalCharacteristics.CopValue	Cop value as defined in EC directive 2003/127/EEC.	Optional (or set to zero)
EngineCharacteristics	Claimed engine type	Optional (or set to zero)
DescriptiveCharacteristics	Vehicle shapes for silhouette	Optional (or set to zero)
FutureCharacteristics	Reserved for future use	Optional (or set to zero)

Coding of VehicleSpecificCharacteristics.EnvironmentalCharacteristics.EuroValue:

The EURO emission class is to be coded 1:1 as value to this data field, for EEV classified vehicles value 15 shall be used.

2.9.2 Information about use in EasyGo+ context

In some EasyGo toll domains a.o. the EURO Emission Class is used for tariff calculation.

2.10 Attribute 23: VehicleAuthenticator

2.10.1 General

This attribute is not specified in EN15509. If implemented in OBE, it can be used for compatibility reasons in existing tolling contexts.

Data element	Definition	Use in EASYGO+ context
VehicleAuthenticator	Coding up to the SP	set to zero

2.10.2 Information about use in EasyGo+ context

Not used.

2.11 Attribute 24: EquipmentOBU ID

2.11.1 General

The EquipmentOBUId shall be a unique identification number assigned to OBU by the manufacturer during the production process.

Data element	Definition	Use in EASYGO+ context
EquipmentOBUId	Coding and personalization by the manufacturer	mandatory

2.11.2 Information about use in EasyGo+ context

The EquipmentOBUId is used a.o. like PAN to identify a specific OBE e.g. for blacklisting purposes.

2.12 Attribute 26: EquipmentStatus

2.12.1 General

The attribute EquipmentStatus is holding EFC application-related information pertaining to the status of the equipment. The coding of the data element ‘EquipmentStatus’ is left to the toll charger.

The coding of EquipmentStatus has the bit ordered substructure LBL L CCCC CCCC CCCC, where:

CCCC CCCC CCCC: The lower 12 bits of this attribute are used for a transaction counter (increased by RSE at each transaction), which can be used for proving some instances of fraud.

LBL L = 4 bits for local use (coding and use is at the discretion of the operator).

Bit B can be used for blacklisting purposes (“Blacklist Bit”).

Data element	Definition	Use in EASYGO+ context
CCCC CCCC CCCC Transaction Counter	Set to zero at initial personalization	Mandatory update at RSE
LBLL Where B= Blacklist Bit	If the BlistBit= 1, the OBE can be treated as blacklisted (Use (set/ reset and interpretation up to agreements between SP and TC)	Optional (or set to zero)

2.12.2 Information about use in EasyGo+ context

Interpretation of the transaction counter is up to the TC's decision.

Blacklist bit:

Setting/ resetting the BlacklistBit is reserved to the TSP, and have to be agreed between TSP and TC. Anyway, if the BlacklistBit is set, the OBE is treated like to be on the blacklist.

2.13 Attribute 33: Receipt Data 1

2.13.1 General

The attribute ReceiptData1 contains information associated with the last transaction, including both financial and operational data according to EN ISO 14906. This attribute is written by RSE only; initial personalization shall be done with zeros. It is used only by the TC who has written it.

2.13.2 Information about use in EasyGo+ context

This attribute is written by RSE only; initial personalization shall be done with zeros. The attribute ReceiptData1 is used for enforcement purposes only.

2.14 Attribute 34: Receipt Data 2

2.14.1 General

The attribute ReceiptData2 contains information associated with the penultimate transaction, including both financial and operational data according to EN ISO 14906. This attribute is written by RSE only; initial personalization shall be done with zeros. It is used only by the TC who has written it.

2.14.2 Information about use in EasyGo+ context

This attribute is written by RSE only; initial personalization shall be done with zeros. The attribute ReceiptData2 is used for enforcement purposes only.

3 Operating and configuration parameters

3.1 *ManufacturerId and EquipmentClass*

Manufacturer identifier (ManufacturerId) and EquipmentClass are written by the manufacturer to the OBE. This information is submitted in VST and can be used at RSE e.g. to select transaction operating parameters suitable for this OBE.

Data element	Definition	Use in EASYGO+ context
ManufacturerId	Value assignment see ENV ISO 14816 Register of manufacturers.	mandatory
EquipmentClass	Shall be used to show different OBE versions from same manufacturer	mandatory

The value of EquipmentClass must be different for different OBE models and different OBE hardware/ software versions of the same OBE model.

3.2 *Differentiation of OBU models or versions of the same manufacturer in EFCCContextMark*

To enable transaction based OBU quality evaluation in systems where the EquipmentClass cannot be used to distinguish different OBU models or OBU versions with the same ManufacturerId for a given TSP (EFCCContextMark.ContractProvider) it is mandatory to vary EFCCContextMark.TypeOfContract and/ or EFCCContextMark.ContextVersion (The keyset could be the same).

3.3 *SetMMI*

In different versions of EN14906 different ActionParameters for SetMMI were defined.

For EASYGO+ the RSE shall use Container choice = 69 dec.

3.4 *Security features*

3.4.1 *Use of AccessCredentials*

Acc. to EN 15509 use of AccessCredentials is not mandatory, it is allowed to choose the security level.

For EASYGO+ exclusive use of security level 1(= use of AccessCredentials) is mandatory.

3.4.2 KeyReferences for authenticator keys

For EASYGO+ the key reference range for TSP Authenticator (CI authenticator, KeyRef to be used in the first GET_STAMPED.request) is 111 to 114.

For EASYGO+ the key reference range for TC Authenticator (Operator authenticator, KeyRef to be used in the second GET_STAMPED.request) is 115 to 118.

4 Keys

For the test phase use of a test key set different to the operating keys is recommended.

5 Initial data ex works

Unpersonalised OBE shall be delivered ex works with the following default settings:

AID: Unpersonalised OBE must always come with AID = 0 so it can not cause transactions with the RSE in transit.

EquipmentClass, ManufacturerId, ObeStatus: Data settings up to the manufacturer.

TypeOfContract: FF 00 h

Attribute data:

Data element	Setting ex works
ContractProvider	Coding acc. to purchasers requirements
TypeOfContract	FF 00 h
EquipmentOBUId	Coding and personalization by the manufacturer

All other attribute data shall be zero for OBE ex works (apart from EquipmentOBUId, or when otherwise agreed between supplier and SP).

6 References

Standards and external documents

For dated references, subsequent amendments to or revisions of any of these publications apply only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Reference	Document Ref	Date / Version	Document title
[L1]	EN 12253		Road Transport and Traffic Telematics (RTTT) – Dedicated Short-Range Communication (DSRC) – Physical layer using microwave at 5.8 GHz
[L2]	EN 12795		Road Transport and Traffic Telematics (RTTT) – Dedicated Short-Range Communication (DSRC) – DSRC data link layer: Medium access and logical link control
[EFC API]	ISO 14906:2011 with AMD1:2015		Road Traffic and Transport Telematics (RTTT) – Electronic Fee Collection – Application interface definition for dedicated short range communication
[IAP]	EN 15509	2014	EN 15509:2007 Road Traffic and Transport Telematics (RTTT) – Electronic Fee Collection – Interoperability application profile for DSRC
[UNECE]			ECONOMIC COMMISSION FOR EUROPE - INLAND TRANSPORT COMMITTEE - Working Party on the Construction of Vehicles TRANS/WP.29/78/Rev.1/Amend.2 - CONSOLIDATED RESOLUTION ON THE CONSTRUCTION OF VEHICLES (R.E.3)
[Reg_doc]			Directive 1999/37/EC on Registration Documents

EasyGo documents

Reference	Document Ref	Date / Version	Document title
	202		EasyGo: Roadside and on board units
[OBU_req]	202-A		EasyGo+: OBE Functional requirements
[OBU_data]	202-B		EasyGo+: OBE Data description (EasyGo+ OBU Personalization, Configuration and Operating Parameters)
[DSRC]	202-C		EasyGo+: DSRC Transaction for Tolling and Enforcement
	202-D		EASYGO+: RSE Functional Requirements
	202-E		EASYGO+: OBE Compatibility Tests

7 Informative Annexes

7.1 Annex A: Attribute data for test contracts

7.1.1 EFContextMark data for test contracts (TSP= ASFINAG- ETS)

7.1.1.1 OBE Type OBU3021-G from Kapsch TrafficCom (KAPSCH AT)

ManufacturerId: 01 h
 EquipmentClass: 7106 h

Data element	Use	Data for testphase		Remark
ContractProvider	mandatory	C04001 h		
TypeOfContract	mandatory	F200 h		
ContextVersion	mandatory	05 h		

7.1.1.2 OBE Type FZ3458-GO from EFKON (FENRITS)

ManufacturerId: 1B h
 EquipmentClass: 0340 h

Data element	Use	Data for testphase		Remark
ContractProvider	mandatory	C04001 h		
TypeOfContract	mandatory	F200 h		
ContextVersion	mandatory	06 h		

7.1.1.3 OBE Type OBU3021-K from Kapsch TrafficCom (KAPSCH AT)

ManufacturerId: 01 h
 EquipmentClass: 7322 h

Data element	Use	Data for testphase		Remark
ContractProvider	mandatory	C04001 h		
TypeOfContract	mandatory	F200 h		
ContextVersion	mandatory	07 h		

7.1.1.4 OBE Type MVAVE 450 from EFKON

ManufacturerId: 15 h
 EquipmentClass: 0340 h

Data element	Use	Data for testphase	Remark
ContractProvider	mandatory	C04001 h	
TypeOfContract	mandatory	F200 h	
ContextVersion	mandatory	06 h	

7.1.2 EFContextMark data for test contracts (TSP= BroBizz)

7.1.2.1 OBE Type OBU4021-01-K from Kapsch TrafficCom (KAPSCH SE)

ManufacturerId: 03 h
 EquipmentClass: 7324 h

Data element	Use	Data for testphase	Remark
ContractProvider	mandatory	978003 h	
TypeOfContract	mandatory	0001	
ContextVersion	mandatory	06	

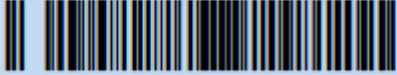

7.2 Annex B: Vehicle declaration document

The vehicle declaration document serves as an evidence for a valid contract in case of missing or defect OBE showing at least the following information:

- TSP name and address,
- License plate number and nationality of license plate,
- PAN,
- OBU-ID (ContractProviderId (6hex chars)+ManufacturerId (4 hex chars)+EquipmentObuId (8 hex chars) printed readable and as barcode (with an add. check digit, code 128A acc. to EN799, see example below),
- Euro emission category,
- Personalized number of axles of the tractor vehicle
- Personalized European vehicle class (UNECE)
- Issuing date and time

For an example of a vehicle declaration document see next page.

EasyGo+ VEHICLE DECLARATION (BroBizz+)

BroBizz A/S Vester Sogade 10 DK-1601 København V, Denmark VAT no. 31854822 www.brobizz.com easygo+@brobizz.dk , easygoplus@brobizz.dk Tel.: 0045 70 20 70 49 Fax.: 0045 33 44 34 99	
VEHICLE DECLARATION	
License Plate	
Nationality	
PAN:	
OBU-ID	
Emission Class	
Number of Axles of the tractor vehicle	
European Vehicle Class	
Date/ Time	
Advice for usage/ Nutzungshinweise	
<p>Please check before departure, if the above mentioned BroBizz+ OBE was installed properly in the aforementioned vehicle. With a built-in device, please check vehicle license plate number and EURO emission class. The vehicle declaration is kept by the driver of the vehicle while driving. By any change in the above, registered data loses the subject vehicle is declared invalid. <u>Changes must be reported to BroBizz A/S without delay</u></p> <p>Bitte überprüfen Sie vor Fahrtantritt, ob die oben angeführte BroBizz+ OBE in dem oben angeführten Kraftfahrzeug ordnungsgemäß montiert wurde. Die Fahrzeugdeklaration ist vom Kraftfahrzeuglenker während der Fahrt mitzuführen. Durch jedwede Änderung der oben angeführten, registrierten Daten verliert die gegenständliche Fahrzeugdeklaration ihre Gültigkeit. Änderungen sind der BroBizz A/S umgehend mitzuteilen.</p>	
Nutzung in Österreich	
<p><u>Hinweis für die GO Vertriebsstelle in Österreich:</u> Bitte klicken Sie am Bildschirm auf „Bestehender Kunde“ und „keine GO-Box aufgelegt/ externer Kunde“ und scannen Sie den Strichcode mittels Barcodescanner als Fahrzeuggerätenummer ein. Sollte dies nicht möglich sein, tippen Sie entweder die Nummer unter dem Strichcode ein oder suchen nach dem oben angeführten Kennzeichen und Land.</p>	
OBU ID:	 9780030003647A28B2
Usage in Scandinavia	
<p><u>In case of stop in a Toll Station with barriers in Scandinavia:</u> The toll attendant must use the barcode representing the PAN number below as the barcode for the PAN number is not on the OBE.</p>	
PAN No:	 9208606298027405