SLOVENSKI STANDARD
SIST EN ISO 12855:2025/oprA1:2026

01-oktober-2026

Elektronsko pobiranje pristojbin - Izmenjava informacij med ponudnikom in operaterjem cestninjenja - Dopolnilo A1 (ISO 12855:2025/DAM 1:2026)

Electronic fee collection - Information exchange between service provision and toll charging - Amendment 1 (ISO 12855:2025/DAM 1:2026)

Elektronische Gebührenerhebung - Informationsaustausch zwischen Dienstleistern und Gebühreneinzugsunternehmen - Ergänzung 1 (ISO 12855:2025/DAM 1:2026)

Perception de télépéage - Échange d'informations entre la prestation de service et la perception du péage - Amendement 1 (ISO 12855:2025/DAM 1:2026)

Ta slovenski standard je istoveten z: **EN ISO 12855:2025/prA1**

ICS:

03.220.20	Cestni transport	Road transport
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

SIST EN ISO 12855:2025/oprA1:2026 **en,fr,de**

DRAFT Amendment

ISO 12855:2025/ DAM 1

Electronic fee collection — Information exchange between service provision and toll charging

AMENDMENT 1

Perception de télépéage — Échange d'informations entre la prestation de service et la perception du péage

AMENDEMENT 1

ICS: 03.220.20; 35.240.60

ISO/TC **204**

Secretariat: **ANSI**

Voting begins on:
2026-07-31

Voting terminates on:
2026-10-23

This document has not been edited by the ISO Central Secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO 12855:2025/DAM 1:2026(en)

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Published in Switzerland

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Electronic fee collection — Information exchange between service provision and toll charging

AMENDMENT 1

1 Scope

Replace the last paragraph with the following text (in which "any complex transfers (transactions), i.e. sequences of inter-related ADUs that can possibly involve several APDU exchanges has been removed"):

This document does not specify, amongst others:

— any communication between TC or TSP with any other involved party;

— any communication between elements of the TC and the TSP that is not part of the back-office communication;

— interfaces for EFC systems for public transport;

— processes regarding payments and exchanges of fiscal, commercial or legal accounting documents;

— definitions of service communication channels, protocols and service primitives to transfer the APDU.

2 Normative references

Amend the following normative reference from:

IETF RFC 6040, *Tunnelling of Explicit Congestion Notification, February 2013*

to:

IETF RFC 6040, *Tunnelling of Explicit Congestion Notification, November 2010*

Amend the following normative reference from:

ISO 19299, *Electronic fee collection — Security framework*

to:

ISO 19299:2020, *Electronic fee collection — Security framework*

Add the following references:

IETF RFC 6347, *Datagram Transport Layer Security Version 1.2, January 2012*

IETF RFC 9147, *The Datagram Transport Layer Security (DTLS) Protocol Version 1.3, April 2022*

IETF RFC 8446. *The Transport Layer Security (TLS) Protocol Version 1.3, August 2018*

IETF RFC 9601, *Propagating Explicit Congestion Notification across IP Tunnel Headers Separated by a Shim, August 2024*

4 Symbols and abbreviated terms

Add the following abbreviations:

IETF	Internet Engineering Task Force
JSON	JavaScript object notation
JWT	JSON web token
LTPA	lightweight third-party authentication
REST	representational state transfer
RFC	request for comments
SOAP	simple objects access protocol
TCP/IP	transmission control protocol/internet protocol
UDP/IP	user datagram protocol/ internet protocol

6.1 Overview

Replace the first paragraph with the following:

This clause specifies the computational objects for the information exchanges between TCs and TSPs. Each computational object is identified by:

— a name;

— the function(s) it performs and

— the ADU(s) it can generate or accept.

6.2.1 General

Replace Table 2 with the following:

Table 2 — Data elements of `InfoExchange`

Data element	Data type/data description	Status
`infoExchangeContent`	`InfoExchangeContent` (see Table 3) The data element shall contain the ADU(s) as content of the APDU.	`M`
`infoExchangeAuthenticator`	`AuthenticatorEfc` (see Table 16 and 7.3.2) The data element may optionally contain a calculated signature over the data element `infoExchangeContent`. This signature can be calculated either by the APDU originator or the information sender (see 6.2.2).	O

Replace Table 3 with the following:

Table 3 — Data elements of `InfoExchangeContent`

Data element	Data type/data description	Status
`Apci`	`ApciFields` (see Table 4) The data element shall contain the APCI of the APDU specifying originator, sender and recipient of the APDU, its relation to other APDUs and the version of the protocol.	M
`Adus`	`Adus` (see Table 7) The data element shall contain the ADUs as payload of the APDU.	M

Replace Table 4 with the following:

Table 4 — Data elements of `ApciFields`

Data element	Data type/data description	Status
`aidIdentifier`	`AidIdentifier` (see Table 5) specified as `INTEGER` ranging from 0 to 255 This data element shall contain a reference to a protocol version either based on a specific edition of this document or EN 16986 or in association with the value of `protocolIssuerId` a private implementation specification with additional restrictions or extensions of this document. Any change to a data specification shall be identified by a different value in `aidIdentifier`. Permitted values are specified in Table 5. See 5.3 on the use of private values. If a private value is specified, the indicated implementation specification shall be compliant to all normative requirements specified in a specific edition of this document or EN 16986. That edition shall be stated in the indicated implementation specification.	M
`apduOriginator`	`Provider` (imported from ISO 17573-3) This data element shall contain the identifier of the entity originating the contents of the APDU, which can either be a TC or a TSP. This may be, but is not necessarily, the actual sender of the information.	M
`informationSenderId`	`Provider` (imported from ISO 17573-3) This data element shall contain the identifier of the entity sending the APDU. It shall contain a different identifier as the data element `apduOriginator` when a technical entity is supporting the originator of the APDU in the task of compiling and transferring information. It shall contain the same identifier as the data element `apduOriginator` when the originator and the sender of the APDU are the same entity.	M

Table 4 *(continued)*

Data element	Data type/data description	Status
protocolIssuerId	Provider (imported from ISO 17573-3) This data element shall not be present if the protocol is based on a specific edition of ISO 12855 or EN 16986 stated in data element aidIdentifier without any private values, restrictions or extensions. This data element shall be present and shall contain the identifier of the issuer of a private protocol stated in data element aidIdentifier specifying any private values, restrictions or extensions. The data element protocolIssuerId shall contain the same value as the data element apduOriginator if the originator of the APDU uses its own private protocol. The data element protocolIssuerId shall contain the same value as the data element informationSenderId if the originator of the APDU uses a private protocol of the sender. The data element protocolIssuerId shall contain another value as the data element apduOriginator or the data element informationSenderId if the originator of the APDU uses a private protocol of someone else. EXAMPLE A TSP states the identifier of the TC to which it sends information to indicate the use of a private protocol, values or extensions specified by the TC. See clause 5.3 on the use of private values.	O
informationRecipientId	Provider (imported from ISO 17573-3) This data element shall contain the identifier of the entity to which the content of the APDU is sent, which can be a TC or a TSP.	M
apduIdentifier	ApduIdentifier specified as INTEGER ranging from 0 to 2^{63}-1 This data element shall contain a unique identifier for each apduOriginator. It is assigned by the originator of the APDU.	M
previousApduId	RelatedApduId (see Table 6) This data element may optionally contain the unique identifier of the previously sent APDU.	O
nextApduId	RelatedApduId (see Table 6) This data element may optionally contain the unique identifier of the APDU to be sent next.	O
inResponseToApduId	RelatedApduId (see Table 6) This data element may optionally contain the unique identifier of the APDU to which this APDU is sent in response.	O
apduDate	GeneralizedTime This data element shall specify the time stamp of the generation of the APDU in coordinated universal time (UTC).	M

Replace Table 5 with the following:

Table 5 — Values and semantics of AidIdentifier

Name	Semantics	Value
iso12855v4	Identifies the object identifier (OID) version 1.0.12855.4 of ISO 12855:2015	0
isoDIS12855v5	Identifies the OID version 1.0.12855.5 of ISO/DIS 12855:2020	1
isoFDIS12855v5	Identifies the OID version 1.0.12855.5 of the FDIS version of ISO 12855:2021	2
iso12855v5	Identifies the OID 1.0.12855.5 of ISO/FDIS 12855:2022	3
isoDIS12855v6m1	Identifies the OID 1.0.12855.6.1 of ISO/DIS 12855:2024	4

Table 5 *(continued)*

Name	Semantics	Value
iso12855v7m1	Identifies the OID 1.0.12855.7.1 of ISO/FDIS 12855:2025	5
iso12855v8m1	Identifies the OID 1.0.12855.8.1 of ISO 12855:2025 amendment 1:2026	6
Values reserved for future ISO use		7..15
cen16986x2016	Identifies CEN/TS 16986:2016 NOTE There was no ASN.1 code for this edition and it is therefore not registered in the OID database.	16
enENQ16986v1m1	identifies the OID 1.3.162.16986.1.1.1, 1.3.162.16986.2.1.1, 1.3.162.16986.3.1.1 or 1.3.162.16986.4.1.1 of prEN 16986:2022 (i.e. the CEN Enquiry version)	17
en16986v2m1	identifies the OID 1.3.162.16986.1.2.1, 1.3.162.16986.2.2.1, 1.3.162.16986.3.2.1 or 1.3.162.16986.4.2.1 of EN 16986:2024	18
enENQ16986v3m1	identifies the OID 1.3.162.16986.1.3.1, 1.3.162.16986.2.3.1, 1.3.162.16986.3.3.1 or 1.3.162.16986.4.3.1 of prEN 16986:2026 (i.e. the CEN Enquiry version)	19
en16986v4m1	identifies the OID 1.3.162.16986.1.4.1, 1.3.162.16986.2.4.1, 1.3.162.16986.3.4.1 or 1.3.162.16986.4.4.1 of EN 16986:2026	20
Values reserved for future CEN use		21..31
Values reserved for private use		32..255

6.2.3 Application data units

Replace Table 7 with the following:

Table 7 — Data elements of `Adus`

Data element	Data type/data description	Status
requestAdus	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `RequestAdu` (see 6.4)	N/A
ackAdus	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `AckAdu` (see 6.5)	N/A
trustObjectAdus	List (ASN.1 SEQUENCE OF) of one element of data type `TrustObjectAdu` (see 6.7)	N/A
efcContextDataAdus	List (ASN.1 SEQUENCE OF) of one element of data type `EfcContextDataAdu` (see 6.8)	N/A
exceptionListAdus	List (ASN.1 SEQUENCE OF) of one element of data type `ExceptionListAdu` (see 6.9)	N/A
reportAbnormalBehaviourAdus	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `ReportAbnormalBehaviourAdu` (see 6.10)	N/A
tollDeclarationAdus	List (ASN.1 SEQUENCE OF) of one to 100 000 elements of data type `TollDeclarationAdu` (see 6.11)	N/A
billingDetailsAdus	List (ASN.1 SEQUENCE OF) of one to 100 000 elements of data type `BillingDetailsAdu` (see 6.12)	N/A
paymentClaimAdus	List (ASN.1 SEQUENCE OF) of one to 100 000 elements of data type `PaymentClaimAdu` (see 6.13)	N/A
reportQaAdus	List (ASN.1 SEQUENCE OF) of one to 1 000 elements of data type `ReportQaAdu` (see 6.14)	N/A
statusAdus	List (ASN.1 SEQUENCE OF) of one to 1 000 elements of data type `StatusAdu` (see 6.6)	N/A
provideUserDetailsAdus	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `ProvideUserDetailsAdu` (see 6.15)	N/A
reportCccEventAdus	List (ASN.1 SEQUENCE OF) of one to 100 000 elements of data type `ReportCccEventAdu` (see 6.16)	N/A

Table 7 *(continued)*

Data element	Data type/data description	Status
`provideUserIdListAdus`	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `ProvideUserIdListAdu` (see 6.17)	N/A
`paymentAnnouncementAdus`	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `PaymentAnnouncementAdu` (see 6.18)	N/A
`contractIssuerListAdus`	List (ASN.1 SEQUENCE OF) of one element of data type `ContractIssuerListAdu` (see 6.19)	N/A
`userComplaintAdus`	List (ASN.1 SEQUENCE OF) of one to 1 000 elements of data type `UserComplaintAdu` (see 6.20)	N/A
`userComplaintResponseAdus`	List (ASN.1 SEQUENCE OF) of one to 1 000 elements of data type `UserComplaintResponseAdu` (see 6.21)	N/A
`mediaSettlementDataAdus`	List (ASN.1 SEQUENCE OF) of one to 10 000 elements of data type `MediaSettlementDataAdu` (see 6.22)	N/A
`enforcementStatusAdus`	List (ASN.1 SEQUENCE OF) of one to 100 000 elements of data type `EnforcementStatusAdu` (see 6.23)	N/A

6.3.3 Version and validity of information

Replace Table 12 with the following:

Table 12 — Data elements of `UserId`

Data element	Data type/data description	Status
`pan`	`PersonalAccountNumber` (imported from ISO 17573-3) This data element may optionally be used to identify the user by the personal account number.	O
`contractSerialNumber`	`ContractSerialNumber` specified as `UTF8String SIZE(1..32)` This data element may optionally be used to identify the user by the serial number of the contract. NOTE 1 The data element `contractSerialNumber`, specified as data type `INTEGER` in ISO 17573-3, can be stated as a `UTF8string` if provided in this data element. NOTE 2 The definition of this data element as data type `UTF8string` also allows the provision of a character-oriented serial number.	O
`licencePlateNumber`	`Lpn` (imported from ISO 17573-3) This data element may optionally be used to identify the user by the structured licence plate number and the country of registration. NOTE 1 In Europe a structured licence plate number contains letters and numbers and the dash "-" or space " " as separation character for countries with non-unique licence plate numbers (currently Austria and Germany). No separation character is provided for countries with unique licence plate numbers. NOTE 2 In Europe, characters in a licence plate number from *latinAlphabetNo2*, *latinCyrillicAlphabet*, *latinGreekAlphabet* or *latinAlphabetNo10* are mapped to the corresponding *latinAlphabetNo1* lower case characters by applying the mapping table as specified in EN ISO 14906:2022, Table D.1.	O
`obeId`	`ObeId` (imported from ISO 17573-3) This data element may optionally be used to identify the user by the OBE identifier. The data element `efcContextMark` may be used to provide additional information about the OBE, if needed.	O
`equipmentIccId`	`EquipmentIccId` (imported from ISO 17573-3) This data element may optionally be used to identify the user by the number of an integrated circuit card (ICC).	O
`customerId`	`OCTET STRING SIZE(1..16)` This data element may optionally be used to identify the user by the customer identification issued by the TSP.	O
`efcContextMark`	`EfcContextMark` (imported from ISO 17573-3) This data element may optionally be used to provide additional information about an OBE. It shall not be used without the data element `obeId` as an identification of a user. NOTE 3 The data element `efcContextMark` is not suitable to identify the user by itself.	O

Table 13 — Data elements of `VersionAndValidity`

Data element	Data type/data description	Status
`version`	`VersionId` (see Table 14) This data element shall contain a unique version information of the information to which it refers. NOTE The format of the version information is specified by the originator or sender of the information and is outside the scope of this document.	M
`validFrom`	`GeneralizedTime` This data element shall contain the starting date and time of the validity of the information to which it refers. The decision to use UTC or local time is specified by the originator or sender of the information and is outside the scope of this document.	M

Replace Table 14 with the following:

Table 14 — Data elements of `VersionId`

Data element	Data type/data description	Status
—	`OCTET STRING SIZE(1..255)` This data element shall contain a unique identification of the version of an object. An object may be a list of data elements of a specific data type.	M

6.3.5 Authentication of data elements

Replace Table 17 with the following:

Table 17 — Data elements of `TbsAuthenticatorEfc`

Data element	Data type/data description	Status
`version`	`INTEGER` ranging from 0 to 2^{16}-1 with a default value of 1. This data element may optionally contain a version number of the certificate.	O
`signatureAlgorithm`	`AlgorithmIdentifier` (see Table 18) using the parameter `Pkcs1Algorithms` This data element shall contain the identifier and parameters of the algorithm used to generate the signature.	M
`issuer`	`Name` (see Table 69) This data element shall contain the name of the issuer to be used for the calculation of the signature.	M
`serialNumber`	`CertificateSerialNumber` specified as `INTEGER` This data element shall contain the unique serial number of the certificate to be used for the calculation of the signature.	M
`apduContentDigest`	`ApduContentDigest` (see Table 19) This data element shall contain the hash calculated of the cXER encoded payload and the identifier of the hash algorithm used to calculate the hash.	M

Table 17 *(continued)*

Data element	Data type/data description	Status
`signatureDate`	`GeneralizedTime` This data element shall contain the time stamp of the generated signature.	M
`certificates`	List (ASN.1 SEQUENCE OF) of one to 100 elements of data type `CertificateObject` (see Table 63) This data element shall be present and shall contain the certificate(s) needed to calculate the signature if they were not previously shared. This data element shall not be present if the certificate(s) needed to calculate the signature were previously shared. NOTE It is not advised to provide the certificates to calculate the signature in the same APDU as the signature itself, as this poses the risk of providing correctly signed data by an impostor. It would be better to provide the certificate by another means via a trusted channel or in a separate APDU via the `TrustObjectAdu` (see Table 59).	O
`signingCertificateHash`	`CertHash` (see Table 20) This data element may optionally contain a hash code calculated over the certificate provided in the data element `certificates` used to generate the signature. It may optionally be used to avoid an attack based on reissuing a certificate by a key certification authority with the same identification but other certificate attributes, i.e. the certificates to sign the APDU and to verify it are not identical.	O

6.3.7 Geographical points and areas

Replace Table 23 with the following: