

DIN EN 16986:2024-09 (E)

Electronic fee collection - Interoperable application profiles for information exchange between service provision and toll charging; English version EN 16986:2024

Contents	Page
EUROPEAN FOREWORD	5
INTRODUCTION	6
1 SCOPE	7
2 NORMATIVE REFERENCES	8
3 TERMS AND DEFINITIONS	8
4 ABBREVIATED TERMS	13
5 CONFORMANCE	14
5.1 GENERAL.....	14
5.2 BASE STANDARD.....	14
5.3 MAIN CONTENTS OF THE IAPS IN THIS DOCUMENT.....	15
5.3.1 General requirements.....	15
5.3.2 Profiles	15
5.3.3 Interaction protocol	18
5.4 CONFORMANCE REQUIREMENTS.....	26
5.4.1 Relations between this document and the base standard	26
5.4.2 Conformance to profiles	28
5.5 CONFORMANCE STATEMENT	29
5.6 INTEROPERABILITY	29
6 GENERAL RESTRICTIONS	29
6.1 GENERAL.....	29
6.2 CODED VALUES AND RANGES.....	29
6.3 EXTENDED DATA TYPES.....	34
6.3.1 General	34
6.3.2 NominalVehicleParameters	34
6.3.3 UserParameterResponseDetails	36
6.3.4 ExternalCostsPerChargeUnit.....	38
6.4 INFOEXCHANGE APDU	38
6.4.1 Information sender and information originator	38
6.4.2 Restrictions in InfoExchangeContent data elements.....	39
6.4.3 InfoExchangeAuthenticator	40
6.5 ACKADU.....	40
6.5.1 General	40
6.5.2 Transaction protocol.....	40
6.5.3 Syntax and semantics	41
6.6 APDU TRANSFER MECHANISMS.....	41
6.6.1 ASN.1 encoding.....	41
6.6.2 Generic transfer mechanisms	41
6.6.3 Alternative transfer mechanisms for transaction type TRUSTOBJECTS	41
7 COMMON TRANSACTIONS	42
7.1 USERDETAILS - RETRIEVE AND PROVIDE USER DETAILS	42
7.1.1 Transaction sequence, triggers and timings.....	42
7.1.2 Syntax and semantics	44
7.2 LISTOFUSERS – PROVIDE A LIST OF USERS.....	46
7.2.1 Transaction sequence, triggers and timings.....	46
7.2.2 Syntax and semantics	48

7.3	EXCEPTIONLIST - MANAGING EXCEPTION LISTS	49
7.3.1	Transaction sequence, triggers and timings.....	49
7.3.2	Syntax and semantics	51
7.4	TRUSTOBJECTS - EXCHANGE TRUST OBJECTS.....	57
7.4.1	APDU transfer mechanisms	57
7.4.2	Transaction sequence, triggers and timings.....	57
7.4.3	Syntax and semantics.....	61
7.5	CONTRACTISSUERLIST – TRANSFER OBE CONTRACTUAL INFORMATION	62
7.5.1	Transaction sequence, triggers and timings.....	62
7.5.2	Syntax and semantics.....	64
7.6	EFCCONTEXTDATA – TRANSFER TOLL CONTEXT DATA INFORMATION	64
7.6.1	Transaction sequence, triggers and timings.....	64
7.6.2	Syntax and semantics.....	66
7.7	BILLINGDETAILS_TC – TRANSFER BILLING DETAILS FROM TC	66
7.7.1	Transaction sequence, triggers and timings.....	66
7.7.2	Syntax and semantics.....	68
7.8	BILLINGDETAILS_TSP.....	69
7.8.1	Transaction sequence, triggers and timings.....	69
7.8.2	Syntax and semantics.....	71
7.9	PAYMENTCLAIM – ISSUE A PAYMENT CLAIM	72
7.9.1	Transaction sequence, triggers and timings.....	72
7.9.2	Syntax and semantics.....	75
7.10	REPORTABNORMALOBE – REPORT DETECTION OF OBE MISBEHAVIOUR.....	75
7.10.1	Transaction sequence, triggers and timings	75
7.10.2	Syntax and semantics	77
7.11	USERCOMPLAINT – REPORT A USER COMPLAINT	78
7.11.1	Transaction sequence, triggers and timings	78
7.11.2	Syntax and semantics	80
7.12	QAINFO – EXCHANGE OF QUALITY RELATED INFORMATION.....	81
7.12.1	Transaction sequence, triggers and timings	81
7.12.2	Syntax and semantics	84
8	SECTIONDISCRETE PROFILE.....	85
8.1	DESCRIPTION.....	85
8.2	COMMON TRANSACTIONS USED BY THE PROFILE.....	85
8.3	ADDITIONAL PROFILE RESTRICTIONS.....	85
8.3.1	Apci restrictions	85
8.3.2	EXCEPTIONLIST restrictions	86
8.3.3	TRUSTOBJECTS restrictions.....	87
8.3.4	EFCCONTEXTDATA restrictions	87
8.3.5	BILLINGDETAILS_TC restrictions.....	94
8.3.6	PAYMENTCLAIM restrictions.....	97
8.4	SPECIFIC PROFILE TRANSACTIONS	98
9	SECTIONAUTONOMOUS PROFILE.....	98
9.1	DESCRIPTION.....	98
9.2	COMMON TRANSACTIONS USED BY THE PROFILE.....	98
9.3	ADDITIONAL PROFILE RESTRICTIONS.....	99
9.3.1	Apci restrictions	99
9.3.2	EXCEPTIONLIST restrictions	99
9.3.3	BILLINGDETAILS transactions restrictions	100
9.3.4	EFCCONTEXTDATA restrictions	101
9.4	SPECIFIC PROFILE TRANSACTIONS	101
9.4.1	General.....	101
9.4.2	TOLLDECLARATIONS_SECT.....	102
9.4.3	PAYMENTANNOUNCEMENT transaction	107

10	MESHEDDISCRETE PROFILE	110
10.1	DESCRIPTION	110
10.2	COMMON TRANSACTIONS USED BY THE PROFILE	110
10.3	ADDITIONAL PROFILE RESTRICTIONS	111
10.3.1	Apci restrictions	111
10.3.2	EXCEPTIONLIST restrictions	111
10.3.3	TRUSTOBJECTS restrictions	112
10.3.4	EFCCONTEXTDATA restrictions	112
10.3.5	BILLINGDETAILS_TC restrictions	115
10.3.6	BILLINGDETAILS_TSP_restrictions	117
10.3.7	PAYMENTCLAIM restrictions	117
10.4	SPECIFIC PROFILE TRANSACTIONS	117
11	AREADISTANCEAUTONOMOUS PROFILE	118
11.1	DESCRIPTION	118
11.2	COMMON TRANSACTIONS USED BY THE PROFILE	118
11.3	FURTHER PROFILE RESTRICTIONS ON USED TRANSACTIONS	118
11.3.1	EXCEPTIONLIST restrictions	118
11.3.2	EFCCONTEXTDATA restrictions	118
11.3.3	BILLINGDETAILS_TSP restrictions	119
11.3.4	REPORTABNORMALLOBE restrictions	120
11.4	SPECIFIC PROFILE TRANSACTIONS	121
11.4.1	TOLLDECLARATIONS_AREA	121
	ANNEX A (NORMATIVE) FORMAL RESTRICTIONS ON DATA TYPES	127
	ANNEX B (NORMATIVE) ICS PROFORMA	129
	ANNEX C (NORMATIVE) INTEROPERABILITY STATEMENT PROFORMA	213
	ANNEX D (NORMATIVE) WEB SERVICE DEFINITION (WSDL)	222
	ANNEX E (INFORMATIVE) USE OF THIS DOCUMENT FOR THE EETS	223
	BIBLIOGRAPHY	224