DIN EN 15320:2008-02 (Eng lisch)

Identification card systems - Surface transport applications - Interoperable Public Transport Applications - Framework

Contents

Page

Foreword 6

Introduction 7

1 Scope 9

2 Normative references 10

3 Terms and definitions 10

4 Symbols and abbreviated terms 14

5 Basic structure of application components) 15

6 Data groups 17

7 The abstract interface 24

8 Application security 33

9 Profiles 40

Transport Application 143

Bibliography 149

Annex H (normative) Relationship between legacy systems and the Interoperable Public Annex A (normative) Data group definitions 44

Annex B (normative) Identification and mapping of data groups 48

Annex C (normative) EN 1545 data elements enumerated for use in the application 72

Annex D (normative) ASN.1 Tag allocations 86

Annex F (informative) Examples 103

Annex G (informative) Accessing the Interoperable Public Transport Application 140

Annex I (informative) Supporting Legacy Systems 146

Annex E (informative) General requirements 95

List of Figures Figure 1 -- Interoperable Fare Management system 8

Figure 2 -- Data element within a data object 15

Figure 3 -- Data structure 16

Figure 4 -- Data group 16

Figure 5 -- Relationships between the data groups 17

Figure 6 -- Data group contents 22

Figure 7 -- Product data group with fixed and variable parts 22

Figure 8 -- The application environment links the data groups together 23

Figure 9 -- Relationships between the logical interfaces, the SSS and the card and terminal 24

Figure 10 -- Logical interface 1: the card data interface 26

Figure 11 -- Logical interface 2: the data group interface 27

Figure 12 -- A representative application command flow 32

Figure 13 -- Application states 33

Figure 14 -- Data group Control Data Structure 39

Figure 15 -- A Control Data Structure entry 39

Figure 16 -- Profile ID structure 41

Figure 17 -- Profile derivation 43

Figure E.1 -- The Interopeable Public Transport Application 96

Figure E.2 -- Products within the Interoperable Public Transport Application 96

Figure E.3 -- Interoperable Public Transport Application product usage 97

Figure G.1 -- Card and application activation 140

Figure H.1 -- Application wrapper 144

Figure H.2 -- Inter-environment operation 144

Figure H.3 -- Interoperable Public Transport Application stub 145

Figure H.4 -- Hierarchy of access 145

Figure I.1 -- Interoperable Public Transport Compliant application 148

List of Tables Table 1 -- Card data interface functions 26

Table 2 -- Data group interface functions 27

Table 3 -- Application activities and use cases 29

Table 4 -- Access mode byte specification 40

Table A.1 -- Data Group Identification 44

Table A.2 -- Data structures within data groups 45

Table B.1 -- Application environment specific mandatory data structures 48

Table B.2 -- Event log specific mandatory data structures 50

Table B.3 -- General mandatory data structures 51

Table B.4 -- Type A optional data structures 55

Table B.5 -- Type L data structures 64

Table B.6 -- Cyclic event log data structure 70

Table C.1 -- Application data elements fully specified in EN 1545 72

Table C.2 -- Application data elements not fully specified in EN 1545 76

Table C.3 -- Application data elements not included in EN 1545 83

Table F.1 -- Example of a label 103

Table F.2 -- Example of an instance identifier 103

Table F.3 -- Example of a seal 103

Table F.4 -- Concession; creation of holder ID and entitlement 104

Table F.5 -- Concession: creation of validity 105

Table F.6 -- Concession: use of concession 106

Table F.7 -- Carnet: customer purchases the carnet 108

Table F.8 -- Carnet: a journey is made 109

Table F.9 -- Carnet: a further journey is made 110

Table F.10 -- Carnet: top-up of rides 111

Table F.11 -- Check in/ Check out: Stored Travel Rights availability 112

Table F.12 -- Check in / Check out: Check In 113

Table F.13 -- Check in/ Check out: Check out 114

Table F.14 -- Check in/ Check out: Stored Travel Rights usage 115

Table F.15 -- Check in/ Check out: the journey continues 115

Table F.16 -- Check in/ Check out: further Stored Travel Rights usage 117

Table F.17 -- Be in/ be out: entitlement to ride 118

Table F.18 -- Be in / be out: after boarding 118

Table F.19 -- Be in / be out: the journey continues 119

Table F.20 -- Streifenkarte: purchasing for cash 120

Table F.21 -- Streifenkarte: boarding the vehicle 121

Table F.22 -- Streifenkarte: further journeys 122

Table F.23 -- Rail travel: reservation 124

Table F.24 -- Rail travel: a journey is made 125

Table F.25 -- RET: a ticket is purchased 127

Table F.26 -- RET: Check in 129

Table F.27 -- RET: Check out 130

Table F.28 -- RET: Check in next leg 132

Table F.29 -- RET: Check out next leg 133

Table F.30 -- RET: Check in return journey 134

Table F.31 -- RET: Check out return journey 136

Table F.32 -- Zonal fare scheme: a ticket is purchased 138

Table F.33 -- Zonal fare scheme: the ticket is used 139

Table G.1 -- Responses of known cards types 141