INTERNATIONAL STANDARD

IEC 62455

First edition
2007-06

Internet protocol (IP) and transport stream (TS) based service access

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/7a6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007

Reference number
IEC 62455:2007(E)

THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2007 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub
The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub
Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Customer Service Centre: www.iec.ch/webstore/custserv
If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch
Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00

Withdrawn
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/7a6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007

INTERNATIONAL STANDARD

IEC 62455

First edition
2007-06

Internet protocol (IP) and transport stream (TS) based service access

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/7a6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE XH

For price, see current catalogue

CONTENTS

FOREWORD 13

1 Scope 15
2 Normative references 15
3 Terms, definitions and abbreviations 17
3.1 Terms and definitions 17
3.2 Symbols 22
3.3 Abbreviations 23
3.4 Identifiers assigned by external entities 27
4 General 27
4.1 General description of the system and elements 28
4.1.1 Selected technologies 28
4.1.2 Overview of four-layer model for service protection 30
4.2 End-to-end system 32
4.3 Supported systems and device types 32
4.4 Service protection versus content protection 34
5 General specifications 35
5.1 End-to-end architecture 35
5.2 Special cases 37
5.2.1 Free-to-air services 37
5.2.2 Free-to-view services 37
5.3 Service guide and purchase 37
5.4 Four-layer model – Key hierarchy 38
5.4.1 Keys on the traffic layer 39
5.4.2 Keys on the key stream layer 39
5.4.3 Keys on the rights management layer (interactive mode) 41
5.4.4 Keys on the rights management layer (broadcast mode) 42
5.4.5 Keys on the registration layer (interactive mode) 42
5.4.6 Keys on the registration layer (broadcast mode) 42
5.4.7 Authentication overview 45
5.5 Deployment for broadcast mode of operation 46
5.5.1 Concept of Domains –Interactive and broadcast domains 46
5.5.2 Addressing (group/subset/device/domain) 47
5.5.3 Zero message broadcast encryption scheme 49
6 Traffic layer 51
6.1 IPsec 52
6.1.1 General 52
6.1.2 Selectors 53
6.1.3 Encapsulation protocol and mode 53
6.1.4 Encryption algorithm 54
6.1.5 Authentication algorithm 54
6.1.6 Security association management 54
6.2 ISMACryp 54
6.2.1 Streamed content 54
6.2.2 Downloadable audio/visual content (stored in MP4 files) 55
6.2.3 Use of ISMACryp with the rights management and key stream layers 56

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/7a6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007

6.3 SRTP 56
6.3.1 Key management 58
6.3.2 Encryption algorithm 58
6.3.3 Authentication algorithm 59
6.4 MPEG2 TS crypt 59
6.4.1 General 59
6.4.2 Transport stream level scrambling 60
6.4.3 PES level scrambling 61
6.4.4 Descrambling MPEG2 content 61
6.4.5 Supported ciphers 62
6.4.6 Key management 63
7 Key stream layer 63
7.1 General 63
7.2 Format of the key stream message (KSM) 63
7.2.1 Descriptors for access_criteria_descriptor_loop 66
7.2.2 Constants 73
7.2.3 Coding and semantics of attributes 73
8 Rights management layer 81
8.1 General 81
8.1.1 Requirements for service ROs 82
8.1.2 Requirements for programme ROs 82
8.2 Format of rights objects 83
8.2.1 Format of an Interactivity channel rights object (ICRO) 83
8.2.2 Format of a broadcast rights object (BCRO) 83
9 Registration layer 98
9.1 RI context 98
9.2 Registration layer protocols and message specification 99
9.2.1 Interactivity channel registration layer specification 99
9.2.2 Broadcast channel registration layer specification 99
9.2.3 Domain joining and leaving 134
9.2.4 Token handling 149
9.2.5 Mixed-mode registration for interactive and broadcast modes of operation 156
10 Signalling and service guide 157
10.1 Signalling requirements 157
10.1.1 Requirements for signalling the KSM 158
10.1.2 Requirements for signalling of services 158
10.2 Service guide requirements 158
10.3 Service guide recommendations 158
11 Rights issuer services and rights issuer streams 159
11.1 General 159
11.1.1 Requirements for rights issuer services in IPDC over DVB-H systems 159
11.1.2 Requirements for rights issuer services in DVB-T/C/S systems 159
11.1.3 Requirements for the support of rights issuer services and streams in IPTV systems 160
11.2 Usage of rights issuer streams and services 160
11.2.1 Scheduled RI stream 161
11.2.2 *Ad hoc* RI stream 161
11.2.3 In-band RI streams within a media service 161

Withdrawn
IECNORM.COM : Click to view the full PDF of IEC 62455:2007
Withdrawn
IEC Standards Preview
(https://standards.iteh.ai)
https://standards.iteh.ai/catalog/standards/iec/62455-2007

12 Service subscription and purchase 162
12.1 Purchase over an interactivity channel 163
12.1.1 Typical purchase sequences 164
12.1.2 Protocol 187
12.1.3 XML schemas for request and response messages 187
12.1.4 XML schema definition for request and response related XML elements 202
12.2 Purchase for mixed-mode devices 207
12.3 Out-of-band purchase 207
12.3.1 Means of purchase – Introduction 207
12.3.2 Out-of-band purchase from service guide data 208
12.4 Required service guide Information 209
12.4.1 Service operation centre (including service distribution management) 210
12.4.2 Customer operation centre (including service subscription management) 210
12.4.3 Service 211
12.4.4 ScheduleItem 212
12.4.5 ContentItem 212
12.4.6 Purchase item 213
12.4.7 Purchase data 213
13 Protection of IPDC over DVB-H systems 213
13.1 Delivery of traffic layer data in IPDC over DVB-H systems 214
13.2 Delivery of key stream data in IPDC over DVB-H systems 214
13.3 Delivery of rights management data in IPDC over DVB-H systems 214
13.3.1 Delivery of ICROs in IPDC over DVB-H systems over interactivity channel 214
13.3.2 Delivery of BCROs in IPDC over DVB-H systems over broadcast channel 214
13.4 Delivery of registration data in IPDC over DVB-H systems 214
13.4.1 Delivery of registration data in IPDC over DVB-H systems over an interactivity channel 214
13.4.2 Delivery of registration data in IPDC over DVB-H systems over a broadcast channel 215
13.5 Signalling and service guides in IPDC over DVB-H systems 215
13.5.1 Signalling of KSM in IPDC over DVB-H systems 215
13.5.2 The service guide for IPDC over DVB-H systems 215
13.6 Format and use of RI streams over IPDC over DVB-H systems 216
13.6.1 IP characteristics 216
13.6.2 RI stream packet format 217
13.6.3 Implementation notes 218
13.6.4 Mapping of messages to RI services and streams 219
13.6.5 Discovery of RI services, streams and schedule Information 220
13.6.6 Certificate chain updates 220
13.6.7 Resending of BCROs 221
13.6.8 Summary of requirements for rights issuers 222
13.6.9 Summary of requirements for devices 222
13.6.10 Mapping of messages to DVB-H time sliced bursts 223
14 Protection of DVB T/C/S systems 223
14.1 Delivery of traffic layer data in DVB T/C/S systems 223
14.2 Delivery of key stream data in DVB T/C/S systems 224

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/sist/...ef7fdd636475/iec-62455-2007

14.3 Delivery of rights management data in DVB T/C/S systems 224
14.3.1 Delivery of ICROs in DVB T/C/S systems over interactivity channel 225
14.3.2 Delivery of BCROs in DVB T/C/S systems over broadcast channel 225
14.4 Delivery of registration data in DVB T/C/S systems 226
14.4.1 Delivery of registration data in DVB T/C/S systems over an interactivity channel 226
14.4.2 Delivery of registration data in DVB T/C/S systems over a broadcast channel 226
14.4.3 Registration message table 227
14.5 Signalling and service guide in DVB T/C/S systems 228
14.5.1 Signalling of encrypted services in DVB T/C/S systems 229
14.5.2 SI tables 237
14.5.3 SI descriptors 246
14.6 User-defined identifiers used in DVB-SI tables 260
14.7 Scope of identifiers used in DVB-SI tables 260
14.8 Format of RI services over DVB-T/C/S systems 261
14.8.1 RI stream packet format 261
14.8.2 Addressing of objects 261
14.8.3 Mapping of messages to RI services and streams 261
15 Protection of MPEG2 TS-based IP systems 261
15.1 Encapsulation of an MPEG2 TS in IP 262
15.2 Delivery of traffic layer data in MPEG2 TS-based IP systems 262
15.3 Delivery of key stream data in MPEG2 TS-based IP systems 262
15.4 Delivery of rights management data in MPEG2 TS-based IP systems 262
15.5 Delivery of registration data in MPEG2 TS-based IP systems 262
15.6 Signalling and service guides in MPEG2 TS-based IP systems 262
15.6.1 Signalling and the service guide in DVB-IPI systems 262
15.6.2 Signalling and service guides in non-DVB-IPI systems 265
15.7 Format of RI services over MPEG2 TS-based IP systems 265
15.8 Content-on-demand support 265
15.8.1 General 265
15.8.2 Content-on-demand trick play support 266
15.9 Use of server-side purchase interfaces 266
15.9.1 Example showing registration via a web interface 267
15.9.2 Example showing purchase via a web interface 267
16 Protection of non-MPEG2 TS-based IP systems 267
16.1 Delivery of traffic layer data in non-MPEG2 TS-based IP systems 267
16.2 Delivery of key stream data in non-MPEG2 TS-based IP systems 268
16.3 Delivery of rights management data in non-MPEG2 TS-based IP systems 268
16.4 Delivery of registration data in non-MPEG2 TS-based IP systems 268
16.5 Signalling and service guides in non-MPEG2 TS-based IP systems 268
16.6 Format of RI services over non-MPEG2 TS-based IP systems 268
16.7 Content-on-demand support 268

Annex A (normative) 269
Annex B (informative) 350

Bibliography 401

Withdrawn
IECNORM.COM : Click to view the full PDF of IEC 62455:2007
https://standards.iteh.ai/catalog/standards/sist/c39-f6fb-4bdb-8d78-ef7fdd636475/iec-62455-2007

Figure 1 – System overview 28
Figure 2 – Service protection via four-layer model 30
Figure 3 – Highly simplified view of the end-to-end system 32
Figure 4 – Service protection versus content protection 34
Figure 5 – Service protection and purchase entities and names (broadcast rchitecture) 35
Figure 6 – Public key infrastructure 36
Figure 7 – Overview of service guide and purchase 38
Figure 8 – 4-layer key hierarchy – Use of SEK only 40
Figure 9 – 4-layer key hierarchy – Use of PEK and SEK 41
Figure 10 – Authentication hierarchy 45
Figure 11 – Explaining the concept of addressing 47
Figure 12 – (Oversimplified) group BCRO 48
Figure 13 – (Oversimplified) subscriber group BCRO 48
Figure 14 – (Oversimplified) unique device BCRO 49
Figure 15 – (Oversimplified) broadcast domain BCRO 49
Figure 16 – Example of a zero message tree with 3 nodes (keys) 50
Figure 17 – IPsec security association elements 53
Figure 18 – ISMACryp key management 56
Figure 19 – SRTP cryptographic context management 57
Figure 20 – MPEG2 transport stream cryptographic context management 59
Figure 21 – Single-key versus dual-key TS over time 62
Figure 22 – Registration for broadcast mode of operation with one ROT 99
Figure 23 – Offline NDD protocol 101
Figure 24 – Samples of notification displays 101
Figure 25 – Offline NSD protocol 102
Figure 26 – Action request code (ARC) 102
Figure 27 – Samples of notification displays showing an ARC message 103
Figure 28 – Sample of token consumption reporting notification display 104
Figure 29 – Sample of TAA report display 106
Figure 30 – 1-pass PDR protocol – (First) device registration 106
Figure 31 – 1-pass IRD protocol – RI initiated message to device (here re-registration). 107
Figure 32 – Unique device number 109
Figure 33 – Device_registration_response() message 120
Figure 34 – Structure of device_registration_response() message. 121
Figure 35 – Domain_registration_response() message 140
Figure 36 – Structure of domain_registration_response() message. 141
Figure 37 – Registration for mixed-mode operation with one ROT 157
Figure 38 – Relationship between RI service and RI streams, and other services and RI streams 160
Figure 39 – Message flows for service subscription and purchase for the connected mode of operation 162
Figure 40 – Message flows for service subscription and purchase for the unconnected mode of operation 163

Withdrawn
IECNORM.COM : Click to view the full PDF of IEC 62455:2007
Withdrawn

Figure 41 – Interactions for bulk download of service and programme keys 165
Figure 42 – Interactions for bulk download of purchase information 166
Figure 43 – Interactions for announcement of purchase items in service guide 167
Figure 44 – Interactions for pricing inquiry 169
Figure 45 – Interactions for unsuccessful purchase 173
Figure 46 – Interactions for successful purchase 177
Figure 47 – Interactions for subscription RO renewal and asynchronous charging 182
Figure 48 – Interactions for asynchronous charging and cancellation of open-ended subscriptions 183
Figure 49 – Interactions for acquisition and charging of tokens 186
Figure 50 – Samples of out-of-band purchase information displays for a registered device 209
Figure 51 – Sample of out-of-band purchase information displays for an unregistered device 209
Figure 52 – Example mapping of objects to RI stream packets 217
Figure 53 – Signalling of encrypted services and their associated key streams 230
Figure 54 – Signalling of encrypted services in the SDT 231
Figure 55 – Signalling of the rights issuer service in the SDT 232
Figure 56 – Addressing of a rights issuer service 232
Figure 57 – Signalling of purchase information via the SDT 233
Figure 58 – Signalling of purchase information via the CA_descriptor in the CAT 234
Figure 59 – Signalling of purchase information via the private data block of the CA_descriptor in the CAT 235
Figure 60 – Relationship between PCT, PIT, SBT and SDT 236
Figure 61 – Alternative usage of the purchase_item_descriptor in the SDT and EIT 237
Figure A.1 – Sample notification display 270
Figure A.2 – Conversion routes between modified Julian date (MJD) and coordinated universal time (UTC) 273
Figure A.3 – Node numbering 278
Figure A.4 – AES for key derivation 279
Figure A.5 – Sample tree with correct node and device numbering. 281
Figure A.6 – Computation of the TAA_report_code 286
Figure A.7 – Node numbering 291
Figure A.8 – Computation of the report_authentication_code 297
Figure A.9 – Relationship between DVB-T/C/S PSI/SI tables 309
Figure A.10 – Relationships between the defined types 311
Figure A.11 – XML fragment for SOC identifier 313
Figure A.12 – XML fragment for service base CID 313
Figure A.13 – Definition of UniversalPurchaseItemType 314
Figure A.14 – Definition of the ServiceBundleType 314
Figure A.15 – Definition of UniversalServiceInformationType 315
Figure A.16 – Definition of UniversalOnDemandServiceType 315
Figure A.17 – Definition of UniversalPurchaseType 315
Figure A.18 – Recording and super-distributing the recorded asset 325
Figure A.19 – Format of the OMADRMRecordingTimestamp. 328

IECNORM.COM : Click to view the full PDF of IEC 62455:2007
Withdrawn

Figure A.20 – Format of the OMADRMRecordingInformationBlock 329
Figure A.21 – 18Crypt namespace declaration 330
Figure B.1 – Rights Issuer communication with various types of devices in IPDC over DVB-H systems 352
Figure B.2 – Rights Issuer communication with various types of devices in DVB-T/C/S systems 355
Figure B.3 – Rights Issuer communication with various types of devices in IP systems 357
Figure B.4 – Purchase steps in case of an Interactive device 358
Figure B.5 – Purchase steps in case of a broadcast device 360
Figure B.6 – Consumption steps from the broadcaster point of view 362
Figure B.7 – Consumption steps from the device point of view 363
Figure B.8 – Function blocks of service protection head-end 372
Figure B.9 – Systems and network elements of service protection head-end 373
Figure B.10 – IEC T/C/S components integrated into DVB SimulCrypt head-end 375
Figure B.11 – Locating 18Crypt KSM & BCRO as well as EMM & ECM 377
Figure B.12 – Carrying messages over the network 378
Figure B.13 – Sample network set-ups using the location descriptors 379
Figure B.14 – Expanding the IEC T/C/S head-end components 379
Figure B.15 – Deployment option A (combining DIST Mgmt and RI in SOC) – Local scenario 384
Figure B.16 – Deployment option A (combining DIST Mgmt and RI in SOC) – Roaming scenario 386
Figure B.17 – Deployment option B (combining SUB Mgmt and RI in COC) – Local scenario 388
Figure B.18 – Deployment option B (combining SUB Mgmt and RI in COC) – Roaming scenario 389
Figure B.19 – Scenarios 1 and 2 for bosb_masks 393
Figure B.20 – Scenarios 3 and 4 for bosb_masks 395
Figure B.21 – Scenarios 5 and 6 for bosb_masks 396
Figure B.22 – Scenarios 7 and 8 for bosb_masks 397
Figure B.23 – Scenarios 9 and 10 for bosb_masks (precedence) 398

Table 1 – Supported systems and device types 33
Table 2 – Keyset in the registration data 42
Table 3 – Definition of transport_scrambling_control bits 60
Table 4 – Definition of pes_scrambling_control field bits 61
Table 5 – Descrambling possibility matrix 62
Table 6 – Supported ciphers for MPEG2 TS crypt 62
Table 7 – Format of key stream message 64
Table 8 – Descriptors for access_criteria_descriptor_loop 66
Table 9 – Access_criteria_descriptors 66
Table 10 – Parental_rating access criteria descriptor 66
Table 11 – Parental rating values for each parental rating type 67
Table 12 – Copy_control_information access criteria descriptor 68
Table 13 – Bit assignments of copy_control_information_byte 68

Withdrawn
IECNORM.COM : Click to view the full PDF of IEC 62455:2007

Table 14 – CCI bit assignments 69
Table 15 – EMI values and content 69
Table 16 – APS value definitions 69
Table 17 – CIT values and application 70
Table 18 – RCT values and application 70
Table 19 – Blackout_spotbeam access criteria descriptor 71
Table 20 – Operator field values and their meaning 71
Table 21 – Constants in key stream message 73
Table 22 – Content_key_index options 75
Table 23 – cipher_mode options 76
Table 24 – Obtaining the content key 77
Table 25 – Traffic key lifetime 78
Table 26 – Values of permissions_category and their meaning 79
Table 27 – Format of BCRO 83
Table 28 – Address_mode 85
Table 29 – Asset format 87
Table 30 – Asset_type 88
Table 31 – Mapping of address_mode to keys 88
Table 32 – Mapping of address_mode to keys 89
Table 33 – Mapping of address_mode to keys 89
Table 34 – Permission format 90
Table 35 – Action format 91
Table 36 – Action_type 91
Table 37 – Constraint format 92
Table 38 – Format of constraint_descriptor 92
Table 39 – Constraint_tag 93
Table 40 – Format of count_constraint_descriptor 93
Table 41 – Format of timed_count_constraint_descriptor 93
Table 42 – Format of datetime_constraint_descriptor 94
Table 43 – Format of interval_constraint_descriptor 95
Table 44 – Format of accumulated_constraint_descriptor 95
Table 45 – Format of individual_constraint_descriptor 96
Table 46 – Id_type 96
Table 47 – Format of system_constraint_descriptor 96
Table 48 – Format of metering_constraint_descriptor 97
Table 49 – Registration types 98
Table 50 – NSD action request code fields 102
Table 51 – NSD action types 103
Table 52 – Token consumption data 104
Table 53 – TAA report data 106
Table 54 – Messages of the 1-pass IRD protocol 107
Table 55 – UDN explanation 110
Table 56 – Major industry identifier 110

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/7b6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007

Table 57 – longform_udn 111
Table 58 – Notify device data message parameters 111
Table 59 – Device data 112
Table 60 – Message fields 113
Table 61 – Status values 114
Table 62 – Fields of certificate_version parameter 114
Table 63 – Allowed values for ri_certificate_counter 115
Table 64 – Allowed values for ocsp_response_counter 116
Table 65 – Values for flags signalling data absent / data present 116
Table 66 – Allowed values for subscriber_group_key_flag 117
Table 67 – Values and their meaning for signature_type_flag 117
Table 68 – Message syntax 122
Table 69 – Message fields 124
Table 70 – Status values 125
Table 71 – Fields of certificate_version parameter 125
Table 72 – Message syntax 127
Table 73 – Message fields 128
Table 74 – Status values 128
Table 75 – Message syntax 129
Table 76 – Message fields 130
Table 77 – Status values 130
Table 78 – Fields of certificate_version parameter 131
Table 79 – Message syntax 132
Table 80 – Format of contact object 133
Table 81 – Contact_type 133
Table 82 – Encoding rules for contactdata 134
Table 83 – Offline protocols (from device to RI) 135
Table 84 – 1-pass protocols (from RI to device) 135
Table 85 – Protocol interrelation 135
Table 86 – Message fields 136
Table 87 – Status values 137
Table 88 – Fields of certificate_version parameter 137
Table 89 – Message syntax 142
Table 90 – Message fields 143
Table 91 – Status values 144
Table 92 – Fields of certificate_version parameter 144
Table 93 – Message syntax 146
Table 94 – Message syntax 148
Table 95 – Offline protocols (from device to RI) 149
Table 96 – 1-pass protocols (from RI to device) 149
Table 97 – Protocol interrelation 149
Table 98 – Fields of token delivery response message 150
Table 99 – Address_mode for token delivery response message 151

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/3a6d2c39-f6fb-46db-8d78-ef7fdd636475/iec-62455-2007
Withdrawn

Table 100 – Message error codes 152
Table 101 – Mapping of address_mode to keys for the token delivery response message 153
Table 102 – Mapping of address_mode to keys for the token delivery response message 154
Table 103 – Syntax of token delivery response message 154
Table 104 – Requirements for the support of RI services and streams by IPDC over DVB-H Devices 159
Table 105 – Requirements for the support of RI services and streams by service providers in IPDC over DVB-H systems 159
Table 106 – Definition of mandatory SOC attributes in request/response messages 190
Table 107 – Occurrence of error codes in response messages 191
Table 108 – Data to be provided to the customer operation centre 208
Table 109 – Traffic layer options for transmission over IPDC over DVB-H 214
Table 110 – Format of the RI stream 218
Table 111 – Traffic layer options for transmission over MPEG2 TS-based networks 223
Table 112 – KSM table 224
Table 113 – BCRO table 225
Table 114 – Carrying registration layer messages via MPEG sections in T/C/S system 226
Table 115 – Syntax of registration message table (RMT) 227
Table 116 – Purchase channel table 238
Table 117 – Service bundle table 242
Table 118 – Purchase item table 245
Table 119 – Private descriptor tags used for 18Crypt 246
Table 120 – Possible locations of descriptors 247
Table 121 – Service_ID_descriptor 247
Table 122 – Right Issuer ID descriptor 248
Table 123 – Purchase info location descriptor 249
Table 124 – Purchase item descriptor 250
Table 125 – Subscription_type values 252
Table 126 – Example price with different decimal point location values 253
Table 127 – Provider name descriptor 254
Table 128 – Eurocrypt addressing descriptor 254
Table 129 – Address_mode 255
Table 130 – Info URL descriptor 256
Table 131 – Key URL descriptor 256
Table 132 – Linkage descriptor 257
Table 133 – Linkage type coding 258
Table 134 – IP linkage descriptor 258
Table 135 – User defined IDs 260
Table 136 – Additions to the broadcast discovery record 263
Table 137 – Additions to the content-ondemand discovery record 263
Table 138 – Sequence of events for purchase and supply of a content-on-emand item 266
Table 139 – Traffic lyer options for transmission over non-MPEG2 TS-ased IP networks 267

iTeh Standards
(https://standards.iteh.ai)
Document Preview
Withdrawn

Table A.1 – Status/error codes 271
Table A.2 – Local time offset coding 275
Table A.3 – Standard keyset with RSA block size 1024 276
Table A.4 – Standard keyset with other RSA block sizes 277
Table A.5 – Extended keyset with RSA block size 1024 277
Table A.6 – Extended keyset with other RSA block sizes 278
Table A.7 – Error likelihood in human communication 286
Table A.8 – Defined tag values 290
Table A.9 – Defined length values 292
Table A.10 – Correct usage of length values 292
Table A.11 – TAA descriptor syntax 294
Table A.12 – TAA algorithm values 294
Table A.13 – Message_tag overview 295
Table A.14 – Table ID overview 295
Table A.15 – Multilingual text structure 296
Table A.16 – Mapping of required service guide data to the IPDC ESG 306
Table A.17 – Mapping of required service guide data to DVB PSI/SI tables 308
Table A.18 – Mapping of required service guide data to IPI BCG/TV anytime 311
Table A.19 – Updated permission element 323
Table A.20 – Access element 324
Table A.21 – Semantics of the save element 326
Table A.22 – Use of programme and service keys 326
Table A.23 – Fields in the GroupID box 327
Table A.24 – CommonHeaders box fields 327
Table A.25 – Conformance table for IPDC over DVB-H systems 339
Table A.26 – Conformance table for DVB-T/C/S systems 343
Table A.27 – Conformance table for IPTV systems 346
Table B.1 – Messages involved in IEC T/C/S systems 374
Table B.2 – Reference overview information 378
Table B.3 – Example 1: CGF with cities and regions 392
Table B.4 – Example 2: CGF with sports and regions (independent) 392
Table B.5 – Example 3: CGF with sports and regions (overlapping) 394

IECNORM.COM : Click to view the full PDF of IEC 62455:2007
Withdrawn
(https://standards.iteh.ai)
Document Preview
IEC 62455:2007
https://standards.iteh.ai/catalog/standards/iec/...-8d78-ef7fdd636475/iec-62455-2007