



Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Part 3: CA/DRM Container, Loader, Interfaces, Revocation

Disclaimer

The present document has been produced and approved by the Embedded Common Interface (ECI) for exchangeable CA/DRM solutions ETSI Industry Specification Group (ISG) and represents the views of those members who participated in this ISG. It does not necessarily represent the views of the entire ETSI membership.

Reference

DGS/ECI-001-3

Keywords

CA, DRM, swapping

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2017.
All rights reserved.

DECT™, PLUGTESTS™, UMTS™ and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and LTE™ are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	21
Foreword.....	21
Modal verbs terminology.....	21
Introduction	22
1 Scope.....	23
2 References	24
2.1 Normative references	24
2.2 Informative references.....	27
3 Definitions and abbreviations.....	27
3.1 Definitions.....	27
3.2 Abbreviations	31
4 Conceptual principles.....	33
5 ECI Certificate System.....	33
5.1 Introduction	33
5.1.1 Scope	33
5.1.2 Notation and conventions of fields	33
5.1.3 Extension Field	34
5.2 ECI Certificates	34
5.3 ECI Revocation List.....	37
5.4 Certificate Chains and Revocation List Trees.....	40
5.4.1 Data structure definitions.....	40
5.4.2 Processing rules for Certificate Chains.....	42
5.5 Revocation tree sets and revocation data files.....	43
5.6 Large data item signatures.....	45
5.7 Root Certificates.....	45
5.7.1 Definition of a Root Certificate	45
5.7.2 ECI Host Root Certificate Management.....	46
6 ECI Host Loader.....	46
6.1 Introduction.....	46
6.2 Storage, verification and activation.....	47
6.2.1 Principles of Operation	47
6.2.2 Credential definition	48
6.2.2.1 ECI Host Image related Certificates.....	48
6.2.2.2 ECI Host Image Signatures.....	50
6.2.2.3 ECI Host Credentials.....	51
6.2.3 Loading process of ECI Host Image file.....	52
6.3 ECI Host related file formats.....	53
6.4 ECI Host Image transport protocols.....	55
6.4.1 Introduction.....	55
6.4.2 ECI Host Broadcast Transport Protocol.....	56
6.4.2.1 General and Profiling	56
6.4.2.2 CPE Manufacturer to Operator handover.....	57
6.4.2.3 DVB SI Signalling	57
6.4.2.3.1 Download location signalling	57
6.4.2.3.2 Emergency Updates.....	57
6.4.2.4 PSI signalling	59
6.4.2.5 UNT option	60
6.4.2.6 Carousel structure	60
6.4.2.7 ECI Host downloading operation.....	61
6.4.2.8 Operator Carousel schedules.....	61
6.4.2.9 User Interface Aspects	61
6.4.3 ECI Host Internet Transport Protocol.....	62

6.4.3.1	IP Protocol.....	62
6.4.3.2	Online Loader Operation.....	62
6.4.4	Alternative transport protocols	62
7	ECI Client Loader	62
7.1	Introduction	62
7.2	Discovery of ECI Clients	63
7.2.1	Introduction.....	63
7.2.2	Transport stream based networks.....	64
7.2.2.1	Common signalling	64
7.2.2.2	ECI_platform_operation_descriptor.....	64
7.2.2.3	ECI_base_url_descriptor.....	65
7.2.2.4	Manual installation.....	66
7.2.2.5	Self-discovery installation.....	67
7.2.2.6	ECI service tag descriptor	67
7.2.2.7	ECI platform list descriptor.....	67
7.2.3	IP network based client discovery	68
7.2.3.1	Manual installation.....	68
7.2.3.2	Web-page based installation.....	68
7.3	Storage, Verification and Activation	68
7.3.1	General Update Policies.....	68
7.3.2	ECI Client Image download and storage	69
7.3.3	ECI Client Validation and Activation	69
7.4	ECI Client Chain structure formats	69
7.4.1	Introduction to ECI Client Chain structure formats	69
7.4.2	Security Vendor Certificate	70
7.4.3	ECI Client series Certificate and series target id	70
7.4.4	ECI Client Image signature.....	71
7.5	ECI Platform Operation Chain Formats	72
7.5.1	Overview	72
7.5.2	Operator Certificate	72
7.5.3	Platform Operation Certificate.....	73
7.5.4	Platform Operation client revocation List.....	73
7.5.5	Platform Operation client co-signature	73
7.6	File formats	75
7.6.1	ECI Client Image File Format	75
7.6.2	Platform Operation Chain Data	77
7.6.3	Revocation data files.....	78
7.7	ECI Client resources transport protocols.....	78
7.7.1	General and profiling	78
7.7.2	Broadcast transport protocol.....	78
7.7.2.1	Introduction	78
7.7.2.2	Credential and revocation data handover to Operator	79
7.7.2.3	Security Vendor to Operator handover	79
7.7.2.4	PSI signalling	79
7.7.2.5	SI signalling	80
7.7.2.5.1	Data Carousel location Signalling via Data Location Linkage Descriptor	80
7.7.2.5.2	ECI Client emergency download descriptor.....	81
7.7.2.6	Carousel compatibility descriptor	83
7.7.2.7	Carousel DSI.....	84
7.7.2.8	Carousel DDB	85
7.7.2.9	Dynamic carousel behaviour	85
7.7.3	Web transport protocols.....	85
7.7.3.1	Introduction	85
7.7.3.2	ECI Web API overview	85
7.7.3.3	Web API ECI Host related requests	86
7.7.3.4	Web API Platform Operation related requests	87
7.7.3.5	Web API client requests.....	88
7.7.3.6	Web API AS_setup requests	90
7.8	Platform Operation ECI Client installation	90
7.8.1	Scope and Profiling.....	90
7.8.2	ECI Client installation mode with unencrypted ECI Client Image file.....	91

7.8.3	ECI Client installation mode with encrypted ECI Client Image file.....	91
7.8.4	Transport Protocol	93
7.8.4.1	Broadcast protocol	93
7.8.4.2	Online protocol	94
7.8.5	Target ID presentation to user.....	94
8	Revocation.....	94
8.1	Introduction	94
8.2	CPE Revocation	95
8.3	Generic Revocation Process	95
8.4	Revocation Lists based ECI Host Revocation	96
8.5	ECI Platform Operation Revocation	96
8.6	ECI Client Revocation.....	96
9	ECI Client Interfaces	97
9.1	Introduction	97
9.1.1	Architecture of the ECI Client interfaces.....	97
9.1.2	Media Handle.....	98
9.2	ECI Virtual Machine Interface	98
9.2.1	Principles	98
9.2.2	Instructions and data (static resources)	98
9.2.3	Interaction with ECI Host.....	98
9.2.4	Dynamic Resources provided for ECI Client's	100
9.2.5	API version management.....	100
9.2.6	Responsiveness Monitoring	100
9.3	Mechanism for ECI Client APIs.....	101
9.3.1	Asynchronous message syntax	101
9.3.2	Asynchronous message layout definition convention	102
9.3.2.1	Syntax of message definitions.....	102
9.3.2.2	Basic message parameter types	102
9.3.2.3	Message payload to message parameter mapping	102
9.3.2.4	Naming convention for asynchronous messages.....	103
9.3.3	Synchronous messages	104
9.3.4	Error codes in Return.....	105
9.3.5	Secure Authenticated Channel (SAC).....	105
9.3.6	Message Verification by ECI Host	105
9.3.7	Message Processing by ECI Clients.....	106
9.4	APIs for general ECI Host resources.....	106
9.4.1	List of APIs defined in clause 9.4.....	106
9.4.2	API for the access to the ECI Host interface discovery resource.....	107
9.4.2.1	Introduction.....	107
9.4.2.2	getApis Message	108
9.4.2.3	getApiVersions() Message	108
9.4.2.4	setApiVersion() Message	108
9.4.3	API for the access to the ECI Host user interface resource	109
9.4.3.1	Introduction.....	109
9.4.3.2	User Interface environment.....	109
9.4.3.2.1	Browser Profile.....	109
9.4.3.2.2	Constraints.....	110
9.4.3.2.3	Browser Capabilities	110
9.4.3.2.3.1	Display Model.....	110
9.4.3.2.3.2	Text and Fonts	111
9.4.3.2.3.3	Graphic Formats	111
9.4.3.2.3.4	User Input	111
9.4.3.2.3.5	Persistence	111
9.4.3.2.3.6	ECI Application access to static HTML resources	111
9.4.3.2.3.7	Communication between the ECI Client and ECI Applications	111
9.4.3.3	Application Lifecycle.....	112
9.4.3.3.1	Launch of an ECI Application.....	112
9.4.3.3.2	Termination of an ECI Application	113
9.4.3.4	APIs related to the User communication.....	113
9.4.3.4.1	List of User communication API messages.....	113

9.4.3.4.2	reqUiContainerMount Message	113
9.4.3.4.3	setUiClientAttention Message	115
9.4.3.4.4	reqUiSessionCommence Message	115
9.4.3.4.5	reqUiSessionOpen Message	116
9.4.3.4.6	reqUiSessionClose Message	117
9.4.3.4.7	reqUiSessionCancel Message	118
9.4.3.4.8	reqUiClientQuery Message	118
9.4.3.4.9	Error codes for the User communication API	119
9.4.4	API for the access to the ECI Host IP stack resource	119
9.4.4.1	Introduction	119
9.4.4.2	Basic Specifications	120
9.4.4.3	ECI IP Sockets	120
9.4.4.3.1	General	120
9.4.4.3.2	reqIpSocket Message	121
9.4.4.3.3	reqIpClose Message	122
9.4.4.3.4	reqIpAddrInfo Message	122
9.4.4.4	ECI UDP/IP	123
9.4.4.4.1	General	123
9.4.4.4.2	reqIpUdpSendMsg Message	124
9.4.4.4.3	reqIpUdpRecvMsg Message	124
9.4.4.5	ECI TCP/IP	125
9.4.4.5.1	General	125
9.4.4.5.2	reqIpTcpConnect Message	125
9.4.4.5.3	reqIpTCPSend Message	126
9.4.4.5.4	reqIpTCPRecv Message	127
9.4.4.5.5	reqIpTCPAccept Message	127
9.4.4.6	API for HTTP(S) get services	128
9.4.4.6.1	General	128
9.4.4.6.2	Applicable Specifications	129
9.4.4.6.3	The reqHttpGetFile and reqHttpGetData Message	130
9.4.4.6.4	Error Codes for the HTTP Get API	131
9.4.4.7	Error Codes for the IP Socket API	132
9.4.5	API for access to the file system	132
9.4.5.1	Introduction	132
9.4.5.2	File Opening and Closing	133
9.4.5.2.1	General	133
9.4.5.2.2	reqFileOpen Message	133
9.4.5.2.3	reqFileClose Message	134
9.4.5.3	File Access	134
9.4.5.3.1	General	134
9.4.5.3.2	reqFileWrite Message	135
9.4.5.3.3	reqFileRead Message	135
9.4.5.3.4	reqFileSeek Message	136
9.4.5.3.5	reqFileRemoveData Message	137
9.4.5.3.6	callFileDataLog Message	138
9.4.5.4	Directory services	138
9.4.5.4.1	General	138
9.4.5.4.2	reqFileStat Message	139
9.4.5.4.3	reqFileCreate Message	139
9.4.5.4.4	reqFileDelete Message	140
9.4.5.4.5	reqFileDir Message	140
9.4.5.5	Error Codes for the File System API	141
9.4.6	API for access to the Time/Clock resource	141
9.4.6.1	Introduction	141
9.4.6.2	Timer API	141
9.4.6.2.1	General	141
9.4.6.2.2	reqTimerEvent Message	142
9.4.6.2.3	reqTimerCancel Message	142
9.4.6.3	Clock API	142
9.4.6.3.1	General	142
9.4.6.3.2	getTime Message	143
9.4.6.3.3	callLocaltime Message	143

9.4.6.4	Error Codes for the Time and Clock API.....	143
9.4.7	API for access to the Power management.....	144
9.4.7.1	Introduction.....	144
9.4.7.2	Power Transition API messages definition.....	145
9.4.7.2.1	General.....	145
9.4.7.2.2	getPwrStatus Message.....	145
9.4.7.2.3	setPwrInfo Message.....	145
9.4.7.2.4	reqPwrChange Message.....	146
9.4.7.3	Wakeup from Standby Messages definition.....	146
9.4.7.3.1	General.....	146
9.4.7.3.2	setPwrWakeup Message.....	147
9.4.7.3.3	reqPwrWakeupEvent Message.....	147
9.4.7.4	Error codes for the Power Transitions API.....	147
9.4.8	API for access to the Country/Language setting resource.....	148
9.4.8.1	Introduction.....	148
9.4.8.2	Country/Language API Message Definitions.....	148
9.4.8.2.1	reqHCountry setting Message.....	148
9.4.8.2.2	reqCCountry setting Message.....	148
9.4.8.2.3	reqHLanguage setting Message.....	149
9.4.8.2.4	reqCLanguage setting Message.....	149
9.4.8.2.5	Error codes for the Country/Language setting API.....	149
9.5	APIs for ECI specific ECI Host resources.....	150
9.5.1	List of APIs for ECI specific ECI Host resources.....	150
9.5.2	Advanced Security API.....	151
9.5.2.1	Introduction.....	151
9.5.2.2	Advanced Security General API Message Definitions.....	152
9.5.2.2.1	General.....	152
9.5.2.2.2	reqAsInitSlot Message.....	152
9.5.2.2.3	callAsNextKeySession Message.....	153
9.5.2.2.4	reqAsStopSession Message.....	153
9.5.2.2.5	reqAsLoadSlotLk Message.....	153
9.5.2.2.6	reqAsComputeAkClient Message.....	154
9.5.2.2.7	reqAsClientChalResp Message.....	154
9.5.2.2.8	getAsSlotRk Message.....	155
9.5.2.2.9	getAsSessionRk Message.....	155
9.5.2.2.10	getAsSessionLimitCounter Message.....	155
9.5.2.2.11	setAsSessionLimitEvent Message.....	155
9.5.2.2.12	reqAsEventSessionLimit Message.....	156
9.5.2.2.13	getAsClientRnd Message.....	156
9.5.2.2.14	getAsSC Message.....	156
9.5.2.2.15	reqAsEventSC Message.....	156
9.5.2.3	Advanced Security Decryption API Message Definitions.....	157
9.5.2.3.1	General.....	157
9.5.2.3.2	reqAsStartDecryptSession Message.....	157
9.5.2.3.3	reqAsComputeDecrCw Message.....	158
9.5.2.3.4	reqAsAuthDecrSlotConfig Message.....	159
9.5.2.4	Advanced Security Export API.....	160
9.5.2.4.1	General.....	160
9.5.2.4.2	reqAsExportConnSetup Message.....	160
9.5.2.4.3	reqAsExportConnEnd Message.....	160
9.5.2.5	Advanced Security Encryption API.....	161
9.5.2.5.1	General.....	161
9.5.2.5.2	Target Client Chain Definition.....	161
9.5.2.5.3	reqAsStartEncryptSession Message.....	162
9.5.2.5.4	reqAsComputeEncrCw Message.....	162
9.5.2.5.5	reqAsAuthEncrSlotConfig Message.....	163
9.5.2.5.6	eqAsLdUssk Message.....	163
9.5.2.5.7	reqAsMInikLk1 Message.....	164
9.5.2.5.8	reqAsEventCpChange Message.....	164
9.5.2.5.9	setAsPermitCPChange Message.....	165
9.5.2.5.10	setAsSC Message.....	165
9.5.2.5.11	Error Codes for the Advanced Security (AS) API.....	165

9.5.3	Smart Card API.....	165
9.5.3.1	Introduction.....	165
9.5.3.2	Base specifications.....	166
9.5.3.3	Smart Card access management.....	166
9.5.3.4	Smart Card reader contention management.....	167
9.5.3.5	Smart Card session management API.....	167
9.5.3.5.1	General.....	167
9.5.3.5.2	setCardMatch Message.....	168
9.5.3.5.3	callCardSessionPrio Message.....	169
9.5.3.5.4	getCardConnStatus Message.....	170
9.5.3.5.5	reqCCardConOpen Message.....	170
9.5.3.5.6	reqCCardConClose Message.....	170
9.5.3.5.7	reqHCardConClose Message.....	170
9.5.3.6	Smart Card Communication API Message Definitions.....	171
9.5.3.6.1	General.....	171
9.5.3.6.2	reqCardCmdRes Message.....	171
9.5.3.6.3	reqCardReInit Message.....	172
9.5.3.6.4	callCardSetProp Message.....	172
9.5.3.6.5	callCardGetProp Message.....	173
9.5.3.7	Error codes for the Smart Card API.....	174
9.5.4	Data Carousel Acquisition API.....	175
9.5.4.1	General.....	175
9.5.4.2	reqDCAcqGroupInfo Message.....	175
9.5.4.3	reqDCAcqModule Message.....	176
9.5.4.4	Error Codes for the Data Carousel Acquisition API.....	177
9.6	APIs for access to the ECI Host decryption resource.....	178
9.6.1	ECI Host decryption API.....	178
9.6.2	Definition of the ECI Host decryption API.....	178
9.6.2.1	Introduction.....	178
9.6.2.2	Media Session API.....	179
9.6.2.2.1	General.....	179
9.6.2.2.2	setDcrMhMatch API Message.....	179
9.6.2.2.3	reqDcrMhOpen Message.....	181
9.6.2.2.4	reqDcrMhClose Message.....	182
9.6.2.2.5	reqDcrMhBcAlloc Message.....	182
9.6.2.2.6	reqDcrMhCancel Message.....	183
9.6.2.2.7	Error codes for the Media Session API.....	184
9.6.2.3	Descrambling Transport Stream Data.....	185
9.6.2.3.1	Introduction.....	185
9.6.2.3.2	Transport Stream format and session versions.....	185
9.6.2.3.3	ECI Host Processing Requirements.....	185
9.6.2.3.4	Starting and stopping Transport Stream decryption.....	186
9.6.2.3.5	ECI Client Decryption data acquisition in TS.....	189
9.6.2.3.6	ECI Client Source Control.....	193
9.6.2.3.7	Error Codes for the Media Session API for TS media.....	196
9.6.2.4	Decrypting file and stream based content.....	197
9.6.2.4.1	Introduction.....	197
9.6.2.4.2	Applicable specifications.....	198
9.6.2.4.3	ECI Host Processing Requirements.....	198
9.6.2.4.4	Media Session API for File-based and streamed media.....	199
9.6.2.4.5	ECI Client Specific Security Data Acquisition.....	201
9.6.2.4.6	File descrambling control word API.....	204
9.6.2.4.7	Error Codes for the Decrypting file and stream based content API.....	205
9.7	APIs for access to the ECI Host re-encryption resources.....	206
9.7.1	Introduction to the re-encryption APIS.....	206
9.7.1.1	List of APIs defined in clause 9.7.....	206
9.7.1.2	General concept of re-encryption.....	207
9.7.1.3	Re-encryption API structure overview.....	207
9.7.2	ECI Export Control API.....	210
9.7.2.1	Introduction.....	210
9.7.2.2	Export Certificate Structures.....	210
9.7.2.2.1	Overall structure.....	210

9.7.2.2.2	Export Certificate definitions	213
9.7.2.2.3	Validation of Export Certificate Chains	216
9.7.2.2.4	Transport protocols for export credentials	217
9.7.2.3	Export Connection API	221
9.7.2.3.1	General	221
9.7.2.3.2	reqExpConnNodes Message	221
9.7.2.3.3	reqExpConnSetup Message	222
9.7.2.3.4	reqExpConnDrop Message	223
9.7.2.3.5	reqExpConnCancel Message	224
9.7.2.3.6	reqExpMhOpen Message	224
9.7.2.3.7	reqExpMhClose Message	225
9.7.2.3.8	reqExpMhCancel Message	225
9.7.2.3.9	Error Codes for the Export Connection API	226
9.7.2.4	Import Connection API	226
9.7.2.4.1	General	226
9.7.2.4.2	reqImpConnNodes Message	227
9.7.2.4.3	reqImpConnChain and reqImpConnChainRenew Messages	227
9.7.2.4.4	reqImpConnSetup Message	228
9.7.2.4.5	reqImpConnDrop Message	229
9.7.2.4.6	reqImpConnCancel Message	229
9.7.2.4.7	Error Codes for the Export Connection API	229
9.7.2.5	Re-encryption API	230
9.7.2.5.1	General	230
9.7.2.5.2	setEncrModes Message	232
9.7.2.5.3	reqEncrTargets Message	233
9.7.2.5.4	reqEncrConnSetup Message	234
9.7.2.5.5	reqEncrConnDrop Message	234
9.7.2.5.6	reqEncrConnCancel Message	235
9.7.2.5.7	reqEncrMhOpen Message	235
9.7.2.5.8	reqEncrMhClose Message	236
9.7.2.5.9	reqEncrMhCancel Message	237
9.7.2.5.10	reqEncrMhStart Message	237
9.7.2.5.11	reqEncrMhStop Message	238
9.7.2.5.12	reqEncrMhQuit Message	239
9.7.2.5.13	reqEncrIpServer Message	239
9.7.2.5.14	reqEncrMsgSend Message	240
9.7.2.5.15	reqEncrMsgRecv Message	240
9.7.2.5.16	reqEncrTsData Message	241
9.7.2.5.17	reqEncrTsEcm Message	242
9.7.2.5.18	reqEncrFileData Message	243
9.7.2.5.19	Error Codes for the Re-encryption API	244
9.7.2.6	Micro Client De-encryption API	244
9.7.2.6.1	General	244
9.7.2.6.2	setDcrModes Message	245
9.7.2.6.3	reqDcrTargets Message	245
9.7.2.6.4	reqDcrTargetCred Message	246
9.7.2.6.5	reqDcrIpServer Message	246
9.7.2.6.6	reqDcrMsgSend Message	247
9.7.2.6.7	reqDcrMsgRecv Message	247
9.7.2.6.8	reqDcrTsData Message	248
9.7.2.6.9	reqDcrFileData Message	248
9.7.2.6.10	Error Codes for the Micro Client De-encryption API	249
9.8	APIs for content property related resources	250
9.8.1	List of APIs defined in clause 9.8	250
9.8.2	APIs for access to the usage rights and parental control resource	251
9.8.2.1	Introduction	251
9.8.2.2	Security Aspects & synchronization	253
9.8.2.3	Standard URI message API	253
9.8.2.3.1	setDcrStdUri Message	253
9.8.2.3.2	getEncrStdUri Message	254
9.8.2.4	Customer URI API	254
9.8.2.4.1	setDcrCustUri Message	254

9.8.2.4.2	getEncrCustUri Message	255
9.8.2.5	Basic URI API	255
9.8.2.5.1	setDcrBasicUri Message	255
9.8.2.5.2	getEncrBasicUri Message	256
9.8.2.6	Output control API	257
9.8.2.6.1	setDcrOutputCtl Message	257
9.8.2.6.2	getEncrOutputCtrl Message	258
9.8.2.7	Watermarking API	259
9.8.2.7.1	General	259
9.8.2.7.2	getDcrMarkSyst Message	259
9.8.2.7.3	setDcrMarkMeta Message	260
9.8.2.7.4	getDcrMarkMeta Message	260
9.8.2.7.5	SetDcrMarkBasic Message	260
9.8.2.7.6	SetDcrMarkExt Message	260
9.8.2.8	Parental Control API	261
9.8.2.8.1	setDcrParCtl Message	261
9.8.2.8.2	getEncrParCtrl Message	262
9.8.2.9	Control Property Sync API	262
9.8.2.9.1	setCpSync Message	262
9.8.2.9.2	reqCpChange Message	262
9.8.2.10	Parental Authentication API	263
9.8.2.10.1	General	263
9.8.2.10.2	Standard Parental Authentication Function	263
9.8.2.10.3	reqParAuthChk Message	264
9.8.2.10.4	reqParAuthChkCan Message	264
9.8.2.10.5	reqParAuthCid Message	265
9.8.2.11	Parental Authentication delegation API	265
9.8.2.11.1	General	265
9.8.2.11.2	reqParAuthDel Message	266
9.8.2.11.3	setParAuthDelCan Message	266
9.9	APIs for ECI Client and Application communication	267
9.9.1	List of APIs defined in the this clause	267
9.9.2	Inter client communication API	267
9.9.2.1	General	267
9.9.2.2	getIccMaxClients Message	267
9.9.2.3	reqIccSystemReady Message	268
9.9.2.4	getIccClientInfo Message	268
9.9.2.5	reqIccPipeOpen Message	269
9.9.2.6	reqIccPipeOpenReq Message	269
9.9.2.7	reqIccPipeCancel Message	270
9.9.2.8	reqIccPipeClose Message	270
9.9.2.9	reqIccPipeMsgSend Message	271
9.9.2.10	reqIccPipeMsgRecv Message	271
9.9.2.11	Error Codes for the Inter client communication	272
10	Mandatory and optional ECI Host functionalities	272
10.1	Introduction	272
10.2	List of mandatory and optional ECI functionalities for different types of CPE devices	272
Annex A (normative): Cryptographical Functions of the ECI Host		274
A.1	Hash Function	274
A.2	Asymmetrical Cryptography	274
A.3	Symmetrical Cryptography	274
A.4	Random Number Generation	274
Annex B (normative): Interoperability Parameters		275
B.1	Introduction	275
B.2	Revocation List length	275

B.3	ECI Client Image size.....	275
B.4	Broadcast Carousel Configuration Parameters.....	275
Annex C (normative):	ECI Host API overview	276
Annex D (informative):	List of all available API Messages in alphabetic order.....	277
Annex E (normative):	Forward Compatibility of Content Property Definitions.....	284
Annex F (informative):	Authors & contributors.....	285
Annex G (informative):	Bibliography.....	286
History		287

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/5021b404-9ac3-4e89-802f-b866e422d02a/etsi-gs-eci-001-3-v1.1.1-2017-07>

List of Figures

Figure 5.2-1: ECI Certificate format version 1.....	34
Figure 5.3-1: Revocation List structure.....	38
Figure 5.4.1-1: Host Certificate Chain example.....	41
Figure 6.2.1-1: Example of ECI Host Loading Process	47
Figure 6.2.2.1-1: ECI Host Image certification structure	49
Figure 6.4.2.1-1: Host Image signalling and carousel structure overview (no UNT variant).....	56
Figure 7.4.1-1: Client Authentication Chain	70
Figure 7.5.1-1: Authentication chain for the platform client chain	72
Figure 9.1.1-1: Structure of the APIs defined in clause 9	97
Figure 9.2.3-1: Message exchanges between Client and Host	99
Figure 9.4.1-1: Block diagram of the APIs defined in clause 9.4.....	106
Figure 9.4.3.1-1: Block diagram of the User Interface API	109
Figure 9.4.7.1-1: ECI Host power states and main interaction with a managed Client.....	144
Figure 9.5.1-1: Block diagram of the APIs defined in clause 9.5.....	150
Figure 9.6.1-1: Block diagram of the APIs defined in clause 9.6.....	178
Figure 9.7.1-1: Block diagram of the APIs defined in clause 9.7.....	206
Figure 9.7.1.2-1: Micro DRM system diagram	207
Figure 9.7.1.3-1: Architecture of the decryption and re-encryption functionalities	208
Figure 9.7.1.3-2: En-/Decryption and Import/Export API overview.....	209
Figure 9.7.2.2.1-1: ECI Certificate distribution structure.....	211
Figure 9.7.2.2.1-2: Third party group export Certificate structure	212
Figure 9.7.2.5.1-1: Encryption modes for micro DRM sessions	231

List of Tables

Table 5.1.3-1: Extension field definition.....	34
Table 5.2-1: ECI Certificate definition.....	35
Table 5.2-2: ID assignment and Fathers for signed items	36
Table 5.3-1: Revocation List definition.....	39
Table 5.4.1-1: Certificate Chain and Revocation List Tree definitions.....	41
Table 5.5-1: Revocation List Tree set definition.....	44
Table 5.5-2: Revocation data file	44
Table 5.6-1: Definition of the signature of large data elements	45
Table 5.7-1: Definition of the ECI Root_ID field	46
Table 6.2.2.1-1: ECI Host related Certificate parameter overview	49
Table 6.2.2.1-2: ID field definition of Host related Certificates.....	50
Table 6.2.2.2-1: Host Image ID and Host Series image ID definitions.....	51
Table 6.2.2.3-1: ECI Host credential structure definition	52
Table 6.3-1: ECI Host Image file definition.....	53
Table 6.3-2: ECI Host Image Series file definition.....	54
Table 6.3-3: ECI Host Image credential file definition.....	55
Table 6.4.2.3.2-1: ECI_host_emergency_download_descriptor	58
Table 6.4.2.3.2-2: ECI_host_emergency_download_descriptor emergency_indicator field values.....	59
Table 7.2.2.2-1: ECI_platform_operation_descriptor.....	64
Table 7.2.2.3-1: ECI_base_url_descriptor.....	65
Table 7.2.2.4-1: Installation string parameters (in number of bits)	66
Table 7.2.2.4-2: Network type value representation.....	66
Table 7.2.2.4-3: Network ID representation.....	66
Table 7.2.2.6-1: ECI service tag descriptor	67
Table 7.2.2.7-1: ECI_platform_list_descriptor.....	68
Table 7.4.2-1: Security Vendor ID definition.....	70
Table 7.4.3-1: Client series ID definition.....	71
Table 7.4.4-1: Client ID definition	71
Table 7.5.2-1: Operator ID definition.....	72
Table 7.5.3-1: Platform Operation ID definition.....	73
Table 7.5.5-1: Platform Operation Client cosignature definition	74
Table 7.6.1-1: Client credentials definition	76
Table 7.6.1-2: ECI Client Image file definition.....	76