

# ISO/IEC 18056:2010-05 (E)

## Information technology - Telecommunications and information exchange between systems - XML proto col for Computer Supported Telecommunications Applications (CSTA) Phase III

---

<b>Contents</b>		<b>Page</b>
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Conformance .....</b>	<b>1</b>
<b>2.1</b>	<b>Static Requirements .....</b>	<b>1</b>
<b>2.2</b>	<b>Dynamic Requirements .....</b>	<b>1</b>
<b>2.3</b>	<b>PICS Requirement .....</b>	<b>1</b>
<b>2.4</b>	<b>XML Tag Options .....</b>	<b>1</b>
<b>2.4.3</b>	<b>Dynamic Transformations .....</b>	<b>2</b>
<b>2.5</b>	<b>CSTA Over SIP (uaCSTA) Transport Mechanism Option .....</b>	<b>2</b>
<b>3</b>	<b>Normative references .....</b>	<b>2</b>
<b>3.1</b>	<b>ISO Standards and Technical Reports .....</b>	<b>2</b>
<b>3.2</b>	<b>World Wide Web Consortium Specifications .....</b>	<b>2</b>
<b>4</b>	<b>Terms, definitions and abbreviations .....</b>	<b>3</b>
<b>5</b>	<b>CSTA Service Definition Model .....</b>	<b>3</b>
<b>5.1</b>	<b>Request/Response Interactions .....</b>	<b>3</b>
<b>5.2</b>	<b>Request/Response Protocol Requirements .....</b>	<b>3</b>
<b>5.3</b>	<b>Cross Referencing of Event Reports .....</b>	<b>3</b>
<b>5.4</b>	<b>Handling of Private Data .....</b>	<b>3</b>
<b>6</b>	<b>Interconnection service boundary .....</b>	<b>3</b>
<b>7</b>	<b>Association Management .....</b>	<b>4</b>
<b>7.1</b>	<b>Implicit association .....</b>	<b>4</b>
<b>7.2</b>	<b>Explicit association .....</b>	<b>4</b>
<b>8</b>	<b>XML Template Description .....</b>	<b>4</b>
<b>9</b>	<b>CSTA parameter types .....</b>	<b>5</b>
<b>9.1</b>	<b>Switching function objects .....</b>	<b>5</b>
<b>9.2</b>	<b>Device Identifiers .....</b>	<b>6</b>
<b>9.3</b>	<b>Call and connection identifiers .....</b>	<b>9</b>
<b>9.4</b>	<b>Connection states .....</b>	<b>10</b>
<b>9.5</b>	<b>Status reporting .....</b>	<b>11</b>
<b>9.6</b>	<b>Device and feature types and other parameters .....</b>	<b>16</b>
<b>9.7</b>	<b>Security .....</b>	<b>25</b>
<b>9.8</b>	<b>Common extensions .....</b>	<b>25</b>
<b>9.9</b>	<b>Call control .....</b>	<b>26</b>
<b>9.10</b>	<b>Capability Exchange .....</b>	<b>31</b>
<b>9.11</b>	<b>Call Detail Record .....</b>	<b>97</b>
<b>9.12</b>	<b>Charge information .....</b>	<b>99</b>
<b>9.13</b>	<b>Data call types .....</b>	<b>100</b>
<b>9.14</b>	<b>Escape types .....</b>	<b>101</b>
<b>9.15</b>	<b>Media services .....</b>	<b>101</b>
<b>9.16</b>	<b>Physical device features .....</b>	<b>104</b>
<b>9.17</b>	<b>Data Collection .....</b>	<b>106</b>
<b>9.18</b>	<b>Event Cause .....</b>	<b>107</b>

9.19	Error Value .....	109
9.20	Empty (null element) .....	114
10	Top level schema .....	114
11	Capability exchange services .....	120
11.1	Services .....	120
11.1.1	Get csta features .....	120
11.1.2	Get logical device information .....	121
11.1.3	Get physical device information .....	122
11.1.4	Get switching function capabilities .....	123
11.1.5	Get switching function devices .....	127
11.1.6	Switching function devices .....	128
12	System services .....	129
12.1	Registration services .....	129
12.1.1	Change system status filter .....	129
12.1.2	System register .....	130
12.1.3	System register abort .....	130
12.1.4	System register cancel .....	131
12.2	Services .....	132
12.2.1	Request system status .....	132
12.2.2	System status .....	132
12.2.3	Switching function capabilities changed .....	133
12.2.4	Switching function devices changed .....	133
12.2.5	Get registrations .....	133
12.2.6	Registration info .....	134
13	Monitoring services .....	135
13.1	Services .....	135
13.1.1	Change monitor filter .....	135
13.1.2	Monitor start .....	135
13.1.3	Monitor stop .....	136
13.1.4	Get monitors .....	136
13.1.5	Monitor info .....	137
14	Snapshot services .....	138
14.1	Services .....	138
14.1.1	Snapshot call .....	138
14.1.2	Snapshot device .....	139
14.1.3	Snapshot calldata .....	139
14.1.4	Snapshot devicedata .....	140
15	Call control services and events .....	140
15.1	Services .....	140
15.1.1	Accept call .....	141
15.1.2	Alternate call .....	141
15.1.3	Answer call .....	142
15.1.4	Call back call-related .....	142
15.1.5	Call back message call-related .....	143
15.1.6	Camp on call .....	143
15.1.7	Clear call .....	144
15.1.8	Clear Connection .....	144
15.1.9	Conference call .....	145
15.1.10	Consultation call .....	146
15.1.11	Deflect call .....	146
15.1.12	Dial digits .....	147
15.1.13	Directed pickup call .....	148
15.1.14	Group pickup call .....	148
15.1.15	Hold call .....	149
15.1.16	Intrude call .....	150
15.1.17	Join call .....	150

15.1.18	Make call .....	151
15.1.19	Make connection .....	152
15.1.20	Make predictive call .....	153
15.1.21	Park call .....	154
15.1.22	Reconnect call .....	155
15.1.23	Retrieve call .....	155
15.1.24	Send Message .....	156
15.1.25	Single step conference call .....	157
15.1.26	Single step transfer call .....	157
15.1.27	Transfer call .....	158
15.2	Events .....	159
15.2.1	Bridged .....	159
15.2.2	Call cleared .....	160
15.2.3	Conferenced .....	160
15.2.4	Connection cleared .....	161
15.2.5	Delivered .....	162
15.2.6	Digits dialed .....	163
15.2.7	Diverted .....	163
15.2.8	Established .....	164
15.2.9	Failed .....	165
15.2.10	Held .....	166
15.2.11	Network capabilities changed .....	167
15.2.12	Network reached .....	167
15.2.13	Offered .....	168
15.2.14	Originated .....	169
15.2.15	Queued .....	170
15.2.16	Retrieved .....	171
15.2.17	Service initiated .....	172
15.2.18	Transferred .....	172
16	Call associated features .....	173
16.1	Services .....	173
16.1.1	Associate data .....	173
16.1.2	Cancel telephony tones .....	174
16.1.3	Change connection information .....	175
16.1.4	Generate digits .....	175
16.1.5	Generate telephony tones .....	176
16.1.6	Send user information .....	176
16.2	Events .....	177
16.2.1	Call information .....	177
16.2.2	Charging .....	178
16.2.3	Digits generated .....	178
16.2.4	Telephony tones generated .....	179
16.2.5	Service completion failure .....	179
17	Media attachment services and events .....	181
17.1	Services .....	181
17.1.1	Attach media service .....	181
17.1.2	Detach media service .....	181
17.2	Events .....	182
17.2.1	Media attached .....	182
17.2.2	Media detached .....	183
18	Routeing services .....	183
18.1	Registration services .....	183
18.1.1	Route register .....	183
18.1.2	Route register abort .....	184
18.1.3	Route register cancel .....	184
18.2	Services .....	185
18.2.1	Re-Route .....	185
18.2.2	Route end .....	186
18.2.3	Route reject .....	186

18.2.4	Route request .....	187
18.2.5	Route select .....	188
18.2.6	Route used .....	188
19	Physical device features .....	189
19.1	Services .....	189
19.1.1	Button press .....	189
19.1.2	Get auditory apparatus information .....	189
19.1.3	Get button information .....	190
19.1.4	Get display .....	191
19.1.5	Get hookswitch status .....	192
19.1.6	Get lamp information .....	193
19.1.7	Get lamp mode .....	193
19.1.8	Get message waiting indicator .....	194
19.1.9	Get microphone gain .....	195
19.1.10	Get microphone mute .....	196
19.1.11	Get ringer status .....	196
19.1.12	Get speaker mute .....	197
19.1.13	Get speaker volume .....	198
19.1.14	Set button information .....	199
19.1.15	Set display .....	200
19.1.16	Set hookswitch status .....	200
19.1.17	Set lamp mode .....	201
19.1.18	Set message waiting indicator .....	201
19.1.19	Set microphone gain .....	202
19.1.20	Set microphone mute .....	203
19.1.21	Set ringer status .....	203
19.1.22	Set speaker mute .....	204
19.1.23	Set speaker volume .....	204
19.2	Events .....	205
19.2.1	Button information .....	205
19.2.2	Button press .....	206
19.2.3	Display updated .....	206
19.2.4	Hookswitch .....	207
19.2.5	Lamp mode .....	207
19.2.6	Message waiting .....	208
19.2.7	Microphone gain .....	208
19.2.8	Microphone mute .....	209
19.2.9	Ringer status .....	209
19.2.10	Speaker mute .....	210
19.2.11	Speaker volume .....	210
20	Logical device features .....	211
20.1	Services .....	211
20.1.1	Call back non-call-related .....	211
20.1.2	Call back message non-call-related .....	211
20.1.3	Cancel call back .....	212
20.1.4	Cancel call back message .....	213
20.1.5	Get agent state .....	213
20.1.6	Get auto answer .....	214
20.1.7	Get auto work mode .....	215
20.1.8	Get call back .....	215
20.1.9	Get caller id status .....	216
20.1.10	Get do not disturb .....	217
20.1.11	Get forwarding .....	217
20.1.12	Get last number dialed .....	218
20.1.13	Get routeing mode .....	218
20.1.14	Set agent state .....	219
20.1.15	Set auto answer .....	220
20.1.16	Set auto work mode .....	220
20.1.17	Set caller id status .....	221
20.1.18	Set do not disturb .....	221

20.1.19	Set forwarding .....	222
20.1.20	Set routeing mode .....	223
20.2	Events .....	223
20.2.1	Agent busy .....	223
20.2.2	Agent logged off .....	224
20.2.3	Agent logged on .....	224
20.2.4	Agent not ready .....	225
20.2.5	Agent ready .....	225
20.2.6	Agent working after call .....	226
20.2.7	Auto answer .....	227
20.2.8	Auto work mode .....	227
20.2.9	Call back .....	227
20.2.10	Call back message .....	228
20.2.11	Caller id status .....	228
20.2.12	Do not disturb .....	229
20.2.13	Forwarding .....	229
20.2.14	Routeing mode .....	230
21	Device maintenance events .....	231
21.1	Events .....	231
21.1.1	Back in service .....	231
21.1.2	Device capabilities changed .....	231
21.1.3	Out of service .....	232
21.1.4	Partially In service .....	232
22	I/O services .....	233
22.1	Registration services .....	233
22.1.1	I/O register .....	233
22.1.2	I/O register abort .....	233
22.1.3	I/O register cancel .....	234
22.2	Services .....	234
22.2.1	Data path resumed .....	234
22.2.2	Data path suspended .....	235
22.2.3	Fast data .....	235
22.2.4	Resume data path .....	236
22.2.5	Send broadcast data .....	237
22.2.6	Send data .....	237
22.2.7	Send multicast data .....	238
22.2.8	Start data path .....	239
22.2.9	Stop data path .....	240
22.2.10	Suspend data path .....	240
23	Data Collection Services .....	241
23.1	Services .....	241
23.1.1	Data Collected .....	241
23.1.2	Data Collection Resumed .....	243
23.1.3	Data Collection Suspended .....	243
23.1.4	Resume Data Collection .....	244
23.1.5	Start Data Collection .....	244
23.1.6	Stop Data Collection .....	245
23.1.7	Suspend Data Collection .....	246
24	Voice services and events .....	246
24.1	Services .....	246
24.1.1	Activate .....	246
24.1.2	Clear .....	247
24.1.3	Concatenate message .....	247
24.1.4	Deactivate .....	248
24.1.5	Delete message .....	249
24.1.6	Play message .....	249
24.1.7	Query voice attribute .....	250
24.1.8	Queue service .....	251

24.1.9	Record message .....	251
24.1.10	Reposition .....	252
24.1.11	Resume .....	253
24.1.12	Review .....	253
24.1.13	Set voice attribute .....	254
24.1.14	Start .....	256
24.1.15	Stop .....	256
24.1.16	Suspend .....	257
24.1.17	Synthesize message .....	257
24.2	Events .....	258
24.2.1	Bookmark reached .....	258
24.2.2	Completed .....	258
24.2.3	DTMF detected .....	259
24.2.4	Emptied .....	260
24.2.5	Interruption detected .....	260
24.2.6	Not recognized .....	261
24.2.7	Play .....	261
24.2.8	Recognized .....	262
24.2.9	Record .....	262
24.2.10	Review .....	263
24.2.11	Silence timeout expired .....	263
24.2.12	Speech detected .....	264
24.2.13	Started .....	264
24.2.14	Stop .....	265
24.2.15	Suspend play .....	266
24.2.16	Suspend record .....	266
24.2.17	Voice attribute changed .....	267
24.2.18	Voice error occurred .....	268
25	Call detail record services .....	269
25.1	Services .....	269
25.1.1	Call detail records notification .....	269
25.1.2	Call detail records report .....	269
25.1.3	Send stored call detail records .....	270
25.1.4	Start call detail records transmission .....	270
25.1.5	Stop call detail records transmission .....	271
26	Location services .....	272
26.1	Services .....	272
26.1.1	Get location information .....	272
26.1.2	Set location information .....	272
26.1.3	Location tracking session resumed .....	273
26.1.4	Location tracking session suspended .....	273
26.1.5	Resume location tracking session .....	274
26.1.6	Location information report .....	275
26.1.7	Start location tracking session .....	275
26.1.8	Stop location tracking session .....	276
26.1.9	Suspend location tracking session .....	277
26.1.10	Get location tracking capabilities .....	277
26.1.11	Get location tracking sessions .....	279
26.1.12	Location Session Info .....	279
27	Vendor specific extensions services and events .....	280
27.1	Registration services .....	280
27.1.1	Escape register .....	280
27.1.2	Escape register abort .....	280
27.1.3	Escape register cancel .....	281
27.2	Services .....	281
27.2.1	Escape .....	281
27.2.2	Private data version selection .....	282
27.3	Events .....	283
27.3.1	Private event .....	283

<b>Annex A (normative) Protocol Implementation Conformance Statement (PICS) Proforma .....</b>	<b>284</b>
<b>Annex B (normative) Registration Template for application/CSTA+XML MIME Media Type .....</b>	<b>399</b>
<b>Annex C (normative) CSTA Over SIP (uaCSTA) Transport Mechanism .....</b>	<b>400</b>
<b>Annex E (informative) Examples of Device Identifier Element Encodings .....</b>	<b>477</b>
<b>Annex F (informative) Examples of Connection ID Encodings .....</b>	<b>479</b>
<b>Annex G (informative) Examples of CSTA-specific XML .....</b>	<b>480</b>
<b>Annex H (informative) CSTA XML with SOAP .....</b>	<b>482</b>
<b>Annex I (informative) CSTA XML with SOAP with HTTP .....</b>	<b>485</b>
<b>Annex J (informative) CSTA XML over TCP .....</b>	<b>488</b>
<b>Annex K (informative) CSTA Data Type Schema for Encapsulation .....</b>	<b>490</b>
<b>Annex L (informative) Registration Template for application/CSTAdata+XML MIME Media Type .....</b>	<b>491</b>
<b>Annex M (informative) Summary of changes in this edition .....</b>	<b>492</b>
<b>Bibliography .....</b>	<b>494</b>