

Mode: All Lines

Left file: C:\Documents and Settings\siggelko\Desktop\OMA-ETS-BCAST_ATS-V1_0-20081212-D\AtsBCast_ContentProtectionTests.ttcn

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1 //CR 2008-0067 change 1

<>

```

1 /**
2  *
3  * @author
4  *   ETSI CTI BCAST CON Project
5  * @version
6  *   $Id$
7  * @desc
8  *   This module specifies pilot tests for BCast conten
» t protection.
9  */
10 module AtsBCast_ContentProtectionTests {
11     import from LibBCast_Interface all;
12     import from AtsBCast_Main_Functions all;
13     import from LibBCast_ServiceGuide_Templates all;
14     import from AtsBCast_ServiceGuide_Functions all;
15     import from LibBCast_ServiceGuide_TypesAndValues
» all;
16     import from LibBCast_Common_TypesAndValues all;
17     import from LibCommon_BasicTypesAndValues all;
18     import from AtsBCast_ModuleParameters all;
19     import from LibBCast_ModuleParameters all;
20     import from AtsBCast_TestConfiguration_Functions
» all;
21     import from AtsBCast_TestSystem all;
22
23     group bcastConformanceTestCases {
24         group clientConformanceTestCases {
25
26             /**
27              *
28              * @desc
29              *   <p>Service protection with
» IPsec via broadcast channel (optional)</p>
30              *   <p>Test Case Description</p>
» >
31              *   <p>with a terminal having r
» eceived a service guide containing a service with purch
» ase information on the Service Guide Delivery Channel a
» nd listening for an IPsec encrypted data stream on the
» broadcast channel</p>

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(continued)

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32      *      <p>when the terminal subscri
» ibes to that service on the interactive channel using a
» Service Request/Response message exchange</p>
33      *      <p>then the terminal is able
» e to receive, decrypt, and display the data stream correctly.</p>
34      *      <p>Specification Reference<
» /p>
35      *      <p>[BCAST10-ServContProt] Section
» ection 6.8.1, 9.1.</p>
36      *      <p>Preconditions</p>
37      *      <p>Service guide cache of terminal
» erminial is erased</p>
38      *      <p>Terminal is configured to
» o listen to BCAST service guide announcements and deliver
» ery on the broadcast channel</p>
39      *      <p>Access point information
» for service guide entry point is configured in test to
» ol</p>
40      *      <p>This test cases uses the
» following SG fragment instantiations found in the Appendix:
» ndix:
41      *      <ul>
42      *      <li>Service fragment
» with Name="PayTvChannel "</li>
43      *      <li>Content fragment
» with Name="Programme", and StartTime and EndTime elements
» nts indicating values within the time of test</li>
44      *      <li>Schedule fragment
» t for content fragment with same values for startTime and
» nd endTime in the presentationWindow element</li>
45      *      <li>Access fragment
» for schedule fragment with KeyManagementSystem, Encryption
» onType set to IPsec, and a reference to the Session Description
» cription fragment </li>
46      *      <li>Session Description
» ion fragment containing SDP for "Programme" and the service
» vice protection information for IPsec</li>
47      *      <li>PurchaseItem fragment
» gment for service fragment with Description "IPsec" element
» ment</li>

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```

48      *      <li>PurchaseData fra
» gment for purchaseItem fragment with PriceInfo and Desc
» ription "Discount" elements</li>
49      *      <li>PurchaseChannel
» fragment for purchaseItem fragment with PurchaseURL poi
» nting to a subscription site</li>
50      *      </ul>
51      *      </p>
52      *      <p>Note: All the fragments
» are associated with the same Service fragment and are s
» ent in the same service guide delivery.</p>
53      *      <p>Test Procedure</p>
54      *      <p>
55      *      <ul>
56      *      <li>Set up the test
» tool to produce BCAST service guide announcement and de
» livery using broadcast channel.</li>
57      *      <li>Setup the test t
» ool to stream via IPSec encrypted audio and video for "
» Programme" as well as key stream on broadcast channel</
» li>
58      *      <li>Setup the SEK de
» livery to the terminal either via DRM 2.0 ROAP (DRM) or
» authentication and push delivery (Smartcard) </li>
59      *      <li>Activate the BCA
» ST application of the terminal</li>
60      *      <li>Request from BCA
» ST application on terminal to get the service guide (op
» tional)</li>
61      *      <li>Browse the SG in
» the terminal</li>
62      *      <li>Setup the test t
» ool to authenticate and accept subscription request for
» the Service "PayTvChannel" from the terminal via inter
» active channel</li>
63      *      <li>Purchase "TvChan
» nel" on terminal</li>
64      *      <li>Access "TvChanne
» l" on terminal</li>
65      *      </ul>
66      *      </p>

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(continued)

```

67      *      <p>Pass-Criteria</p>
68      *      <p>The following should be
» visible to the end user after the delivery of the SG
69      *      <ul>
70      *      <li>The service "Pay
» TvChannel" is displayed with "Programme" schedule from
» start to end time, available as "Discount" purchase, an
» d price information.</li>
71      *      <li>"Programme" can
» be viewed by the end user.</li>
72      *      </ul>
73      *      </p>
74      *      <p>The following should be
» observable for the test tool
75      *      <ul>
76      *      <li>The test tool re
» ceives HTTP request from the end user to subscribe to s
» ervice "TvChannel".</li>
77      *      </ul>
78      *      </p>
79      * @verdict
80      *      pass in case the client pas
» s the conformance test.
81      * @verdict
82      *      fail in case the client doe
» s not pass the conformance test.
83      * @verdict
84      *      inconc in case a guard time
» r expires.
85      */
86      testcase TC_BCAST_CONTPROT_CONF_1
» 01() runs on BCastMainComponent system BCastPlatformCom
» ponent {
87      // init components and po
» rts
88      f_createComponents();
89      f_cf_Broadcast_up();
90      f_cf_Interaction_up();
91      f_cf_UpperTester_up();
92
93      // preamble

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```

94         f_startCommonUtPreamble()
95     » ;
96
97         // TODO: Omitted here is
98     » starting of streaming server to broadcast the encrypted
99     » TV Channel program since handling of SEK delivery is o
100     » pen issue
101
102         // test behavior
103     » nit v_SGDU := {};
104
105         var UInt32 v_FragmentVers
106     » ion := 1;
107
108         f_main_ctrl_InitStartEndT
109     » ime(c_one_hour,c_one_hour); // change 01 (
110     » WK 6): global time definition
111
112         var DateTime v_DateTime_S
113     » tartTime := f_getDateTime(v_startTime); // change 01 (
114     » WK 6): global time definition
115
116         var DateTime v_DateTime_E
117     » ndTime := f_getDateTime(v_endTime); // change 01 (
118     » WK 6): global time definition
119
120         var SdpFragment v_Sdp :=
121     » valueof(m_def_SdpFragment(
122
123         PX_SDP_VIDEO_PROG
124     » _1_REF_ID,
125
126         PX_SDP_SERVICE_PR
127     » OTECTION_IPSEC
128
129         ));
130
131         // TODO: Omitted here is
132     » setting of KMS value - see open issues
133         var AccessTypeType v_Acce
134     » ssType := valueof(m_def_AccessType_bc_sdp(
135         f_getAccessType(P
136     » X_BROADCAST_NETWORK_BEARER),
137
138         PX_SDP_VIDEO_PROG
139     » _1_REF_ID
140
141         ));

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```

116
117                                     var PriceInfoType v_Price
» Info := valueof(m_PriceInfo(
118                                     1,
119                                     PX_MONETARY_PRICE
» ,
120                                     PX_CURRENCY
121                                     ));
122
123                                     var ServiceType v_Service
» := valueof(m_def_Service(
124                                     PX_SGDU_SERVICE_I
» D,
125                                     v_FragmentVersion
» ,
126                                     "PayTvChannel",
127                                     c_basicTv_Service
» Type
128                                     ));
129
130                                     var ContentType v_Content
» := valueof(m_def_Content(
131                                     PX_SGDU_CONTENT_I
» D_PROG_1,
132                                     v_FragmentVersion
» ,
133                                     "Programme",
134                                     PX_SGDU_SERVICE_I
» D,
135                                     v_DateTime_StartT
» ime,
136                                     v_DateTime_EndTim
» e
137                                     ));
138
139                                     var ScheduleType v_Schedu
» le := valueof(m_def_Schedule(
140                                     PX_SGDU_SCHEDULE_
» ID_PROG_1,
141                                     v_FragmentVersion
» ,

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```

142                                     PX_SGDU_SERVICE_I
» D,
143                                     PX_SGDU_CONTENT_I
» D_PROG_1,
144                                     v_startTime,
»                                     // change 01 (WK 6): glob
» al time definition
145                                     v_endTime
»                                     // change 01 (WK 6): glob
» al time definition
146                                     ));
147
148                                     var AccessType v_Access :
» = valueof(m_def_Access(
149                                     PX_SGDU_ACCESS_ID
» _PROG_1,
150                                     v_FragmentVersion
» ,
151                                     v_AccessType,
152                                     PX_SGDU_SERVICE_I
» D,
153                                     PX_SGDU_SCHEDULE_
» ID_PROG_1,
154                                     c_class_SG
155                                     ));
156
157                                     var PurchaseItemType v_Pu
» rchaseItem := valueof(m_def_PurchaseItem(
158                                     PX_SGDU_PURCHASE_
» ITEM_ID,
159                                     v_FragmentVersion
» ,
160                                     PX_SGDU_PURCHASE_
» DATA_ID,
161                                     PX_SGDU_SERVICE_I
» D,
162                                     "PurchaseItem1"
163                                     ));
164                                     v_PurchaseItem.Descriptio
» ns := {{lang := omit, text_ := "IPsec"}};
165

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```

166         var PurchaseChannelType v
167     » _PurchaseChannel := valueof(m_def_PurchaseChannel(
168                                     PX_SGDU_PURCHASE_
169     » CHANNEL_ID,
170                                     v_FragmentVersion
171     » ,
172                                     "PurchaseChannel"
173     » ,
174                                     PX_PURCHASE_URL
175     » ));
176
177     var PurchaseDataType v_Pu
178     » rchaseData := valueof(m_def_PurchaseData(
179                                     PX_SGDU_PURCHASE_
180     » DATA_ID,
181                                     v_FragmentVersion
182     » ,
183                                     {{omit,"Discount"
184     » }},
185                                     PX_SGDU_PURCHASE_
186     » ITEM_ID,
187                                     PX_SGDU_PURCHASE_
188     » CHANNEL_ID,
189                                     v_PriceInfo
190     » ));
191
192     // CR 26/8: generic funct
193     » ion for adding XML fragments
194     » f_addXMLFragment(v_SGDU,
195     » {Service := v_Service});
196     » f_addXMLFragment(v_SGDU,
197     » {Content := v_Content});
198     » f_addXMLFragment(v_SGDU,
199     » {Schedule := v_Schedule});
200     » f_addXMLFragment(v_SGDU,
201     » {Access := v_Access});
202     » f_addXMLFragment(v_SGDU,
203     » {PurchaseItem := v_PurchaseItem});
204     » f_addXMLFragment(v_SGDU,
205     » {PurchaseChannel := v_PurchaseChannel});
206     » f_addXMLFragment(v_SGDU,

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```

190 » {PurchaseData := v_PurchaseData});
191 » f_addSdpFragment(v_SGDU,
192 » v_FragmentVersion, v_Sdp);
193 » f_main_ctrl_broadcastServ
194 » iceGuide(v_SGDU, omit, vc_FluteUpdateID); // CR (W
195 » K 34/2008): Flute Update Signalling
196 » f_main_ut_RunBCastApplica
197 » tion();
198 » if (PX_GET_SG_DISPLAY_MAN
199 » UALLY) {
200 » f_main_ut_GetServ
201 » iceGuide(PX_SGDD_ID);
202 » }
203 » f_main_ut_CheckService("P
204 » ayTvChannel");
205 » f_main_ut_PurchaseService
206 » ("PayTvChannel");
207 » f_main_ctrl_awaitingSubsc
208 » ription("PayTvChannel"); // TODO: This function current
209 » ly does not include any checking and handling of authen
210 » tication - see open issues
211 » // TODO: Omitted here is
212 » generation of proper acceptance of terminal purchase re
213 » quest - see open issues
214 » f_main_ut_SelectService("
215 » PayTvChannel");
216 » f_main_ut_UseService("Pay
217 » TvChannel");
218 » f_main_ut_CheckVideo("Pro
219 » gramme");
220 » // postamble
221 » // TODO: Omitted here is
222 » stopping the streaming server to broadcast the encrypte
223 » d TV Channel program since handling of SEK delivery is
224 » open issue
225 » f_main_ut_PowerOff();
226 »

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```

211         f_cf_Broadcast_down();
212         f_cf_Interaction_down();
213         f_cf_UpperTester_down();
214     } // end test case TC_BCAST_CONTPR
» OT_CONF_101
215         with {extension "Description: 5.9
» .1.1 Registration"} // change 37 (WK18): testcase descr
» iption extension
216
217
218         /**
219         *
220         * @desc
221         * <p>Service protection with
» SRTP via broadcast channel (optional)</p>
222         * <p>Test Case Description</p>
» >
223         * <p>with a terminal having r
» eceived a service guide containing a service with purch
» ase information on the Service Guide Delivery Channel a
» nd listening for an SRTP encrypted data stream on the b
» roadcast channel</p>
224         * <p>when the terminal subscri
» bes to that service on the interactive channel Service
» Request/Response message exchange</p>
225         * <p>then the terminal is abl
» e to receive, decrypt, and display the data stream corr
» ectly</p>
226         * <p>Specification Reference<
» /p>
227         * <p>[BCAST10-ServContProt] S
» ection 6.8.1, 9.2.</p>
228         * <p>Preconditions</p>
229         * <p>Service guide cache of t
» erminal is erased</p>
230         * <p>Terminal is configured t
» o listen to BCAST service guide announcements and deliv
» ery on the broadcast channel</p>
231         * <p>Access point information
» for service guide entry point is configured in test to
» ol</p>

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(continued)

```

232      *      <p>This test cases uses the
>> following SG fragment instantiations found in the Appe
>> ndix:
233      *      <ul>
234      *      <li>Service fragment
>> with Name="PayTvChannel "</li>
235      *      <li>Content fragment
>> with Name="Programme", and StartTime and EndTime eleme
>> nts indicating values within the time of test</li>
236      *      <li>Schedule fragmen
>> t for content fragment with same values for startTime a
>> nd endTime in the presentationWindow element</li>
237      *      <li>Access fragment
>> for schedule fragment with KeyManagmentSystem, Encrypti
>> onType set to SRTP, and a reference to the Session Desc
>> ription fragment</li>
238      *      <li>Session Descript
>> ion fragment containing SDP for "Programme" and the ser
>> vice protection information for SRTP</li>
239      *      <li>PurchaseItem fra
>> gment for service fragment with Description "SRTP" elem
>> ent</li>
240      *      <li>PurchaseData fra
>> gment for purchaseItem fragment with PriceInfo and Desc
>> ription "Discount" elements</li>
241      *      <li>PurchaseChannel
>> fragment for purchaseItem fragment with PurchaseURL poi
>> nting to a subscription site</li>
242      *      </ul>
243      *      </p>
244      *      <p>Note: All the fragments
>> are associated with the same Service fragment and are s
>> ent in the same service guide delivery.</p>
245      *      <p>Test Procedure</p>
246      *      <p>
247      *      <ul>
248      *      <li>Set up the test
>> tool to produce BCAST service guide announcement and de
>> livery using broadcast channel.</li>
249      *      <li>Setup the test t
>> ool to stream via SRTP encrypted audio and video for "P

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» programme" as well as key stream on broadcast channel</li>
» i>
250          *          <li>Setup the SEK de
» livery to the terminal either via DRM 2.0 ROAP (DRM) or
» authentication and push delivery (Smartcard)</li>
251          *          <li>Activate the BCA
» ST application of the terminal</li>
252          *          <li>Request from BCA
» ST application on terminal to get the service guide (op
» tional)</li>
253          *          <li>Browse the SG in
» the terminal</li>
254          *          <li>Setup the test t
» ool to authenticate and accept subscription request fo
» r the Service "PayTvChannel" from the terminal via inte
» ractive channel</li>
255          *          <li>Purchase "TvChan
» nel" on terminal</li>
256          *          <li>Access "TvChanne
» l" on terminal</li>
257          *          </ul>
258          *          </p>
259          *          <p>Pass-Criteria</p>
260          *          <p>The following should be
» visible to the end user after the delivery of the SG
261          *          <ul>
262          *          <li>The service "Pay
» TvChannel" is displayed with "Programme" schedule from
» start to end time, available as "Discount" purchase, an
» d price information.</li>
263          *          <li>"Programme" can
» be viewed by the end user.</li>
264          *          </ul>
265          *          </p>
266          *          <p>The following should be
» observable for the test tool
267          *          <ul>
268          *          <li>The test tool re
» ceives HTTP request from the end user to subscribe to s
» ervice "TvChannel".</li>
269          *          </ul>

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270      *      </p>
271      * @verdict
272      *      pass in case the client pas
» s the conformance test.
273      * @verdict
274      *      fail in case the client doe
» s not pass the conformance test.
275      * @verdict
276      *      inconc in case a guard time
» r expires.
277      */
278      testcase TC_BCAST_CONTPROT_CONF_1
» 02() runs on BCastMainComponent system BCastPlatformCom
» ponent {
279          // init components and po
» rts
280          f_createComponents();
281          f_cf_Broadcast_up();
282          f_cf_Interaction_up();
283          f_cf_UpperTester_up();
284
285          // preamble
286          f_startCommonUtPreamble()
» ;
287          // TODO: Omitted here is
» starting of streaming server to broadcast the encrypted
» TV Channel program since handling of SEK delivery is o
» pen issue
288
289          // test behavior
290          var ServiceGuideDeliveryU
» nit v_SGDU := {};
291          var UInt32 v_FragmentVers
» ion := 1;
292
293          f_main_ctrl_InitStartEndT
» ime(c_one_hour,c_one_hour);
» // change 01 (WK 6): global time definition
294
295          var DateTime v_DateTime_S
» tartTime := f_getDateTime(v_startTime);

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```

296 » // change 01 (WK 6): global time definition
    var DateTime v_DateTime_E
297 » ndTime := f_getDateTime(v_endTime);
    » // change 01 (WK 6): global time definition
298 » valueof(m_def_SdpFragment(
    var SdpFragment v_Sdp :=
299 » _1_REF_ID,
    PX_SDP_VIDEO_PROG
300 » OTECTION_SRTP
    PX_SDP_SERVICE_PR
301 » ));
302
303 » var AccessTypeType v_Acce
304 » ssType := valueof(m_def_AccessType_bc_sdp(
    f_getAccessType(P
305 » X_BROADCAST_NETWORK_BEARER),
    PX_SDP_VIDEO_PROG
306 » _1_REF_ID
    ));
307
308 » var PriceInfoType v_Price
309 » Info := valueof(m_PriceInfo(
    1,
310 » ,
    PX_MONETARY_PRICE
311 » ,
    PX_CURRENCY
312 » ));
313
314 » var ServiceType v_Service
315 » := valueof(m_def_Service(
    PX_SGDU_SERVICE_I
316 » D,
    v_FragmentVersion
317 » ,
    "PayTvChannel",
318 » c_basicTv_Service
    » Type
319 » ));
320
321 » var ContentType v_Content

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```

322 » := valueof(m_def_Content(
323 » D_PROG_1,
324 » ,
325 » D,
326 » ime,
327 » e
328 » ));
329
330 var ScheduleType v_Schedu
331 » le := valueof(m_def_Schedule(
332 » ID_PROG_1,
333 » ,
334 » D,
335 » D_PROG_1,
336 » v_startTime,
337 » // change
338 » 01 (WK 6): global time definition
339 » v_endTime
340 » // change
341 » 01 (WK 6): global time definition
342 » ));
343
344 // TODO: Omitted here is
345 » setting of KMS value - see open issues
346 var AccessType v_Access :
347 » = valueof(m_def_Access(
348 » _PROG_1,
349 » v_FragmentVersion
350 » ,
351 » v_AccessType,

```

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(continued)

```

344                                     PX_SGDU_SERVICE_I
» D,
345                                     PX_SGDU_SCHEDULE_
» ID_PROG_1,
346                                     c_class_SG
347                                     ));
348
349                                     var PurchaseItemType v_Pu
» rchaseItem := valueof(m_def_PurchaseItem(
350                                     PX_SGDU_PURCHASE_
» ITEM_ID,
351                                     v_FragmentVersion
» ,
352                                     PX_SGDU_PURCHASE_
» DATA_ID,
353                                     PX_SGDU_SERVICE_I
» D,
354                                     "PurchaseItem1"
355                                     ));
356                                     v_PurchaseItem.Descriptio
» ns := {{lang := omit, text_ := "SRTP"}};
357
358                                     var PurchaseChannelType v
» _PurchaseChannel := valueof(m_def_PurchaseChannel(
359                                     PX_SGDU_PURCHASE_
» CHANNEL_ID,
360                                     v_FragmentVersion
» ,
361                                     "PurchaseChannel"
» ,
362                                     PX_PURCHASE_URL
363                                     ));
364
365                                     var PurchaseDataType v_Pu
» rchaseData := valueof(m_def_PurchaseData(
366                                     PX_SGDU_PURCHASE_
» DATA_ID,
367                                     v_FragmentVersion
» ,
368                                     {{omit, "Discount"
» }},

```


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(continued)

```

369                                     PX_SGDU_PURCHASE_
» ITEM_ID,
370                                     PX_SGDU_PURCHASE_
» CHANNEL_ID,
371                                     v_PriceInfo
372                                     ));
373
374                                     // CR 26/8: generic funct
» ion for adding XML fragments
375                                     f_addXMLFragment(v_SGDU,
» {Service := v_Service});
376                                     f_addXMLFragment(v_SGDU,
» {Content := v_Content});
377                                     f_addXMLFragment(v_SGDU,
» {Schedule := v_Schedule});
378                                     f_addXMLFragment(v_SGDU,
» {Access := v_Access});
379                                     f_addXMLFragment(v_SGDU,
» {PurchaseItem := v_PurchaseItem});
380                                     f_addXMLFragment(v_SGDU,
» {PurchaseChannel := v_PurchaseChannel});
381                                     f_addXMLFragment(v_SGDU,
» {PurchaseData := v_PurchaseData});
382                                     f_addSdpFragment(v_SGDU,
» v_FragmentVersion, v_Sdp);
383
384                                     f_main_ctrl_broadcastServ
» iceGuide(v_SGDU, omit, vc_FluteUpdateID); // CR (W
» K 34/2008): Flute Update Signalling
385
386                                     f_main_ut_RunBCastApplica
» tion();
387                                     if (PX_GET_SG_DISPLAY_MAN
» UALLY) {
388                                     f_main_ut_GetServ
» iceGuide(PX_SGDD_ID);
389                                     }
390                                     f_main_ut_CheckService("P
» ayTvChannel");
391                                     f_main_ut_PurchaseService
» ("PayTvChannel");

```

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(continued)

```

392                                     f_main_ctrl_awaitingSubsc
» rption("PayTvChannel"); // TODO: This function current
» ly does not include any checking and handling of authen
» tication - see open issues
393                                     // TODO: Omitted here is
» generation of proper acceptance of terminal purchase re
» quest - see open issues
394
395                                     f_main_ut_SelectService("
» PayTvChannel");
396                                     f_main_ut_UseService("Pay
» TvChannel");
397                                     f_main_ut_CheckVideo("Pro
» gramme");
398
399                                     // postamble
400                                     // TODO: Omitted here is
» stopping the streaming server to broadcast the encrypte
» d TV Channel program since handling of SEK delivery is
» open issue
401                                     f_main_ut_PowerOff();
402
403                                     f_cf_Broadcast_down();
404                                     f_cf_Interaction_down();
405                                     f_cf_UpperTester_down();
406                                     }// end test case TC_BCAST_CONTPR
» OT_CONF_102
407                                     with {extension "Description: 5.9
» .1.2 GBA-U Bootstrapping USIM"} // change 39 (WK18): te
» stcase description extension
408
409                                     /**
410                                     *
411                                     * @desc
412                                     * <p>Service protection with
» ISMACrypt via broadcast channel (optional)</p>
413                                     * <p>Test Case Description</p>
» >
414                                     * <p>with a terminal having r
» eceived a service guide containing a service with purch
» ase information on the Service Guide Delivery Channel a

```

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(continued)

```

415  » nd listening for an ISMACrypt encrypted data stream on
    » the broadcast channel</p>
    *      <p>when the terminal subscri
416  » ibes to that service on the interactive channel Service
    » Request/Response message exchange</p>
    *      <p>then the terminal is abl
417  » e to receive, decrypt, and display the data stream corr
    » ectly</p>
    *      <p>Specification Reference<
418  » /p>
    *      <p>[BCAST10-ServContProt] S
419  » ection 6.8.1, 9.3.</p>
    *      <p>Preconditions</p>
420  »
    *      <p>Service guide cache of t
421  » erminal is erased</p>
    *      <p>Terminal is configured t
422  » o listen to BCAST service guide announcements and deliv
    » ery on the broadcast channel</p>
    *      <p>Access point information
423  » for service guide entry point is configured in test to
    » ol</p>
    *      <p>This test cases uses the
424  » following SG fragment instantiations found in the Appe
    » ndix:
425  *      <ul>
426  *          <li>Service fragment
    » with Name="PayTvChannel "</li>
427  *          <li>Content fragment
    » with Name="Programme", and StartTime and EndTime eleme
    » nts indicating values within the time of test</li>
428  *          <li>Schedule fragmen
    » t for content fragment with same values for startTime a
    » nd endTime in the presentationWindow element</li>
429  *          <li>Access fragment
    » for schedule fragment with KeyManagmentSystem, Encrypti
    » onType set to ISMACrypt, and a reference to the Session
    » Description fragment</li>
430  *          <li>Session Descript
    » ion fragment containing SDP for "Programme" and the ser
    » vice protection information for ISMACrypt</li>
    *          <li>PurchaseItem fra

```

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(continued)

```

» gment for service fragment with Description "ISMACrypt"
» element</li>
431          *          <li>PurchaseData fra
» gment for purchaseItem fragment with PriceInfo and Desc
» ription "Discount" elements</li>
432          *          <li>PurchaseChannel
» fragment for purchaseItem fragment with PurchaseURL poi
» nting to a subscription site</li>
433          *          </ul>
434          *          </p>
435          *          <p>Note: All the fragments
» are associated with the same Service fragment and are s
» ent in the same service guide delivery.</p>
436          *          <p>Test Procedure</p>
437          *          <p>
438          *          <ul>
439          *          <li>Set up the test
» tool to produce BCAST service guide announcement and de
» livery using broadcast channel.</li>
440          *          <li>Setup the test t
» ool to stream via ISMACrypt encrypted audio and video f
» or "Programme" as well as key stream on broadcast chann
» el</li>
441          *          <li>Setup the SEK de
» livery to the terminal either via DRM 2.0 ROAP (DRM) or
» authentication and push delivery (Smartcard)</li>
442          *          <li>Activate the BCA
» ST application of the terminal</li>
443          *          <li>Request from BCA
» ST application on terminal to get the service guide (op
» tional)</li>
444          *          <li>Browse the SG in
» the terminal</li>
445          *          <li>Setup the test t
» ool to authenticate and accept subscription request fo
» r the Service "PayTvChannel" from the terminal via inte
» ractive channel</li>
446          *          <li>Purchase "TvChan
» nel" on terminal</li>
447          *          <li>Access "TvChanne
» l" on terminal</li>

```

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(continued)

```

448         *      </ul>
449         *      </p>
450         *      <p>Pass-Criteria</p>
451         *      <p>The following should be
» visible to the end user after the delivery of the SG
452         *      <ul>
453         *      <li>The service "Pay
» TvChannel" is displayed with "Programme" schedule from
» start to end time, available as "Discount" purchase, an
» d price information.</li>
454         *      <li>"Programme" can
» be viewed by the end user.</li>
455         *      </ul>
456         *      </p>
457         *      <p>The following should be
» observable for the test tool
458         *      <ul>
459         *      <li>The test tool re
» ceives HTTP request from the end user to subscribe to s
» ervice "TvChannel".</li>
460         *      </ul>
461         *      </p>
462         *      @verdict
463         *      pass in case the client pas
» s the conformance test.
464         *      @verdict
465         *      fail in case the client doe
» s not pass the conformance test.
466         *      @verdict
467         *      inconc in case a guard time
» r expires.
468         */
469         testcase TC_BCAST_CONTPROT_CONF_1
» 03() runs on BCastMainComponent system BCastPlatformCom
» ponent {
470                                     // init components and po
» rts
471                                     f_createComponents();
472                                     f_cf_Broadcast_up();
473                                     f_cf_Interaction_up();
474                                     f_cf_UpperTester_up();

```

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(continued)

```

475
476                                     // preamble
477                                     f_startCommonUtPreamble()
478
479                                     // TODO: Omitted here is
480                                     » starting of streaming server to broadcast the encrypted
481                                     » TV Channel program since handling of SEK delivery is o
482                                     » pen issue
483
484                                     // test behavior
485                                     var ServiceGuideDeliveryU
486                                     » nit v_SGDU := {};
487                                     var UInt32 v_FragmentVers
488                                     » ion := 1;
489                                     f_main_ctrl_InitStartEndT
490                                     » ime(c_one_hour,c_one_hour); //
491                                     » change 01 (WK 6): global time definition
492
493                                     var DateTime v_DateTime_S
494                                     » tartTime := f_getDateTime(v_startTime); //
495                                     » change 01 (WK 6): global time definition
496                                     var DateTime v_DateTime_E
497                                     » ndTime := f_getDateTime(v_endTime); //
498                                     » change 01 (WK 6): global time definition
499
500                                     var SdpFragment v_Sdp :=
501                                     » valueof(m_def_SdpFragment(
502                                     »                                     PX_SDP_VIDEO_PROG
503                                     » _1_REF_ID,
504                                     »                                     PX_SDP_SERVICE_PR
505                                     » OTECTION_ISMA
506                                     » ));
507
508                                     var AccessTypeType v_Acce
509                                     » ssType := valueof(m_def_AccessType_bc_sdp(
510                                     »                                     f_getAccessType(P
511                                     » X_BROADCAST_NETWORK_BEARER),
512                                     »                                     PX_SDP_VIDEO_PROG
513                                     » _1_REF_ID
514                                     » ));

```

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(continued)

```

498
499                                     var PriceInfoType v_Price
» Info := valueof(m_PriceInfo(
500                                     1,
501                                     PX_MONETARY_PRICE
» ,
502                                     PX_CURRENCY
503                                     ));
504
505                                     var ServiceType v_Service
» := valueof(m_def_Service(
506                                     PX_SGDU_SERVICE_I
» D,
507                                     v_FragmentVersion
» ,
508                                     "PayTvChannel",
509                                     c_basicTv_Service
» Type
510                                     ));
511
512                                     var ContentType v_Content
» := valueof(m_def_Content(
513                                     PX_SGDU_CONTENT_I
» D_PROG_1,
514                                     v_FragmentVersion
» ,
515                                     "Programme",
516                                     PX_SGDU_SERVICE_I
» D,
517                                     v_DateTime_StartT
» ime,
518                                     v_DateTime_EndTim
» e
519                                     ));
520
521                                     var ScheduleType v_Schedu
» le := valueof(m_def_Schedule(
522                                     PX_SGDU_SCHEDULE_
» ID_PROG_1,
523                                     v_FragmentVersion
» ,

```

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(continued)

```

524                                     PX_SGDU_SERVICE_I
» D,
525                                     PX_SGDU_CONTENT_I
» D_PROG_1,
526                                     v_startTime,
»                                     // change 01
» (WK 6): global time definition
527                                     v_endTime
»                                     // change 01
» (WK 6): global time definition
528                                     ));
529
530                                     // TODO: Omitted here is
» setting of KMS value - see open issues
531                                     var AccessType v_Access :
» = valueof(m_def_Access(
532                                     PX_SGDU_ACCESS_ID
» _PROG_1,
533                                     v_FragmentVersion
» ,
534                                     v_AccessType,
535                                     PX_SGDU_SERVICE_I
» D,
536                                     PX_SGDU_SCHEDULE_
» ID_PROG_1,
537                                     c_class_SG
538                                     ));
539
540                                     var PurchaseItemType v_Pu
» rchaseItem := valueof(m_def_PurchaseItem(
541                                     PX_SGDU_PURCHASE_
» ITEM_ID,
542                                     v_FragmentVersion
» ,
543                                     PX_SGDU_PURCHASE_
» DATA_ID,
544                                     PX_SGDU_SERVICE_I
» D,
545                                     "PurchaseItem1"
546                                     ));
»

```


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(continued)

```

547         v_PurchaseItem.Descriptio
» ns := {{lang := omit, text_:= "ISMACrypt"}};
548
549         var PurchaseChannelType v
» _PurchaseChannel := valueof(m_def_PurchaseChannel(
550             PX_SGDU_PURCHASE_
» CHANNEL_ID,
551             v_FragmentVersion
» ,
552             "PurchaseChannel"
» ,
553             PX_PURCHASE_URL
554         ));
555
556         var PurchaseDataType v_Pu
» rchaseData := valueof(m_def_PurchaseData(
557             PX_SGDU_PURCHASE_
» DATA_ID,
558             v_FragmentVersion
» ,
559             {{omit, "Discount"
» }},
560             PX_SGDU_PURCHASE_
» ITEM_ID,
561             PX_SGDU_PURCHASE_
» CHANNEL_ID,
562             v_PriceInfo
563         ));
564
565         // CR 26/8: generic funct
» ion for adding XML fragments
566         f_addXMLFragment(v_SGDU,
» {Service := v_Service});
567         f_addXMLFragment(v_SGDU,
» {Content := v_Content});
568         f_addXMLFragment(v_SGDU,
» {Schedule := v_Schedule});
569         f_addXMLFragment(v_SGDU,
» {Access := v_Access});
570         f_addXMLFragment(v_SGDU,
» {PurchaseItem := v_PurchaseItem});

```

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```

571         f_addXMLFragment(v_SGDU,
» {PurchaseChannel := v_PurchaseChannel});
572         f_addXMLFragment(v_SGDU,
» {PurchaseData := v_PurchaseData});
573         f_addSdpFragment(v_SGDU,
» v_FragmentVersion, v_Sdp);
574
575         f_main_ctrl_broadcastServ
» iceGuide(v_SGDU, omit, vc_FluteUpdateID); // CR (W
» K 34/2008): Flute Update Signalling
576
577         f_main_ut_RunBCastApplica
» tion();
578         if (PX_GET_SG_DISPLAY_MAN
» UALLY) {
579             f_main_ut_GetServ
» iceGuide(PX_SGDD_ID);
580         }
581         f_main_ut_CheckService("P
» ayTvChannel");
582         f_main_ut_PurchaseService
» ("PayTvChannel");
583         f_main_ctrl_awaitingSubsc
» ription("PayTvChannel"); // TODO: This function current
» ly does not include any checking and handling of authen
» tication - see open issues
584         // TODO: Omitted here is
» generation of proper acceptance of terminal purchase re
» quest - see open issues
585
586         f_main_ut_SelectService("
» PayTvChannel");
587         f_main_ut_UseService("Pay
» TvChannel");
588         f_main_ut_CheckVideo("Pro
» gramme");
589
590         // postamble
591         // TODO: Omitted here is
» stopping the streaming server to broadcast the encrypte
» d TV Channel program since handling of SEK delivery is

```

