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Digital Enhanced Cordless Telecommunications (DECT);
New Generation DECT; Light Data Services;
Software Update Over The Air (SUOTA);
Profile Test Specification (PTS) and Test Case Library (TCL)

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DTS/DECT-NG270

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Content

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document is the Test Specification for testing compliance with ETSI TS 102 527-4 [5]. "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 4: Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications".

The information in the present document is believed to be correct at the time of publication. However, DECT standardization is a rapidly changing area and it is possible that some of the information contained in the present document may become outdated or incomplete within relatively short time-scales.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document contains the Profile Test Specification (PTS) and the Test Case Library (TCL) for "New Generation DECT; Part 4"Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 4: Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications"

The present document covers both the Portable (PT) and the Fixed (FT) Radio terminations.

The Test Case Library (TCL) covers also some test cases for "DECT Digital Packet Radio Service" [i.4]. This is done because such test cases are mandatory or especially relevant for New Generation DECT Part 4 (see ETSI TS 102 527-4 [5]).

The objective of the present document is to provide a basis for approval tests of NG-DECT Part 4 [5] equipment giving a high probability of air interface inter-operability between different manufacturer's DECT equipment.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references,only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

[1] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[2] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[3] ETSI TS 102 527-1: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 1: Wideband speech".

[4] ETSI TS 102 527-3: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 3: Extended wideband speech services".

[5] ETSI TS 102 527-4: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 4: Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications".

[6] ETSI TS 102 527-5: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 5: Additional feature set nr. 1 for extended wideband speech services".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] World Wide Web Consortium Recommendation XHTML™ 1.1: "Module-based XHTML - Second Edition" - 23 November 2010.

NOTE: http://www.w3.org/TR/2010/REC-xhtml11-20101123/.

[i.2] ISO/IEC 9646-7:1995: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

[i.3] ETSI TS 102 841: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Extended wideband speech services; Profile Test Specification (PTS) and Test Case Library (TCL)".

[i.4] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TS 102 527-5 [6], ETSI TS 102 527-3 [4], ETSI TS 102 527-1 [3], ETSI EN 300 444 [2] and the following apply:

GAP (PP, FP, device or equipment): PP, FP or any of them compliant with ETSI EN 300 444 [2].

golden device: ideal example of a device used as reference device for compliance testing and against which later devices are tested and judged

NG-DECT Part 1 Golden Device: Golden Device, such as the one administered by the DECT Forum, used for compliance testing of NG-DECT Part 1 [3] equipment

NG-DECT Part 1 (PP, FP, device or equipment), also shortened as Part 1 (PP, FP, device or equipment): PP, FP or any of them compliant with ETSI TS 102 527-1 [3]

NG-DECT Part 3 (PP, FP, device or equipment), also shortened as Part 3 (PP, FP, device or equipment): PP, FP or any of them compliant with ETSI TS 102 527-3 [4]

NG-DECT Part 4 (PP, FP, device or equipment), also shortened as Part 4 (PP, FP, device or equipment): PP, FP or any of them compliant with ETSI TS 102 527-4 [5]

NG-DECT Part 5 (PP, FP, device or equipment), also shortened as Part 5 (PP, FP, device or equipment): PP, FP or any of them compliant with ETSI TS 102 527-5 [6]

provision mandatory, process mandatory: indicated feature service or procedure are implemented as described in the present document, and may be subject to testing

provision optional, process mandatory: indicated feature, service or procedure may be implemented, and if implemented, the feature, service or procedure are implemented as described in the present document, and may be subject to testing

NOTE: The notation used is based on the notation proposed in ISO/IEC 9646-7 [i.2].

3.2 Symbols

For the purposes of the present document, the following symbols apply:

C	conditional to support (process mandatory)
E	Test Parameter used in parameterized tests for an HTTP Error
I	out-of-scope (provision optional, process optional) not subject for testing
M	mandatory to support (provision mandatory, process mandatory)
MSO	Test Parameter used in parameterized tests for indicating the MS origin (manufacturer or 3rd party)
N/A	not applicable (in the given context the present document makes it impossible to use this capability)
O	optional to support (provision optional, process mandatory)
SUF	Test Parameter used in parameterized tests for the (variable) suffix of the software version
URLP	Test Parameter used in parameterized tests for an URL Parameter

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

BCD	Binary Content Download
CC	Call Control
CI	Common Interface
DECT	Digital Enhanced Cordless Telecommunications
DLC	Data Link Control
DS	Download Server
FP	Fixed Part
FT	Fixed radio Termination
GAP	Generic Access Profile
HTTP	HyperText Transfer Protocol
IE	Information Element
IUT	Implementation Under Test
IWU	InterWorking Unit
IXIT	Implementation eXtra Information for Testing
LDS	Light Data Services
MAC	Medium Access Control
MS	Management Server
NG	New Generation
NG-DECT	New Generation DECT
NWK	NetWorK
PHL	PHysical Layer
PP	Portable Part
PT	Portable radio Termination
PTS	Profile Test Specification
RF	Radio Frequency
TCL	Test Case Library
TS	Test System

4 Test method

This clause describes the test method used to test the NG DECT Part 4 devices.

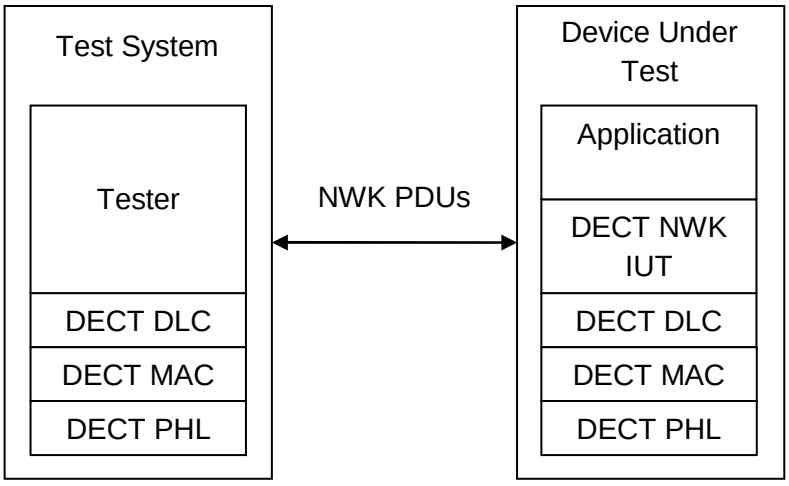

Figure 1: New Generation DECT remote test method

A tester (see figure 1) is located in a remote DECT test system. It controls and observes the behaviour of the Implementation Under Test (IUT). The Test System behaves as a FP (or a PP) when testing a PP (respectively a FP). Figure 1 illustrates the layered architecture of the test method.

4.1 Test platform

4.1.1 PP test platform

4.1.1.1 PP test platform main requirements

The PP test platform is outlined in figure 2.

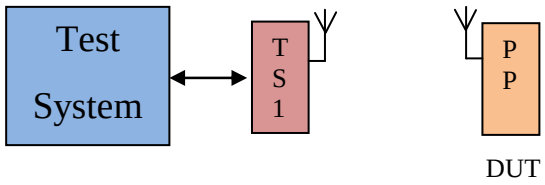

Figure 2: PP Test Platform

The first RF front-end of Test system "TS_1" plays the role of a LDS FP to which the PP under test is registered.

The DUT supplier shall also supply new software revision file/files for installation on the Test System.

4.1.1.2 Test content for HTTP-based applications, Simple profile

NOTE : This test content was designed for TC_PT_NGLDS.A3_BV_109 and is reused for test TC_FT_NGLDS.A.2_BV_105 on FT side.

4.1.1.2.1 Test url and index page: index.html

Test url1 = http:// ${SERVER_HOSTNAME}/http-based-application-1/

The SERVER_HOSTNAME variable value shall be provided by the 3rd party providing the server.

Home_page=Test url1 + 'index.html' shall target the following resource.

```
<html>
 <head><title>My service</title></head>
 <body>
   <p style="text-align:left;"><a href="pages/left.html">Left</a></p><br/>
   <p style="text-align:center;"><a href="pages/center.html">Center</a></p><br/>
   <p style="text-align:right;"><a href="pages/right.html">Right</a></p>
  </body>
</html>
```

4.1.1.2.2 Left page: pages/left.html

```
<html>
    <head><title>Left page</title></head>
    <body><p>Link for this page was on the left</p></body>
</html>
```

4.1.1.2.3 Center page: pages/center.html

```
<html>
    <head><title>Center page</title></head>
    <body><p>Link for this page was centered</p></body>
</html>
```

4.1.1.2.4 Right page: pages/right.html

```
<html>
    <head><title>Right page</title></head>
    <body><p>Link for this page was on the right</p></body>
</html>
```

4.1.1.3 Test content for HTTP-based applications, Baseline profile

4.1.1.3.1 Test url and index page: index.html

Test url2 = http:// ${SERVER_HOSTNAME}/http-based-application-2/

The SERVER_HOSTNAME variable value shall be provided by the 3rd party providing the server.

Home_page=Test url2 + 'index.html' shall target the following resource.

```
<html>
 <head><title>My service</title></head>
 <body>
  <ul>
    <li style="text-align:left;">
      <a href="pages/left.html">Left</a></p><br/>
    <li style="text-align:center;">
      <a href="pages/center.html">Center</a></p><br/>
    <li style="text-align:right;">
      <a href="pages/right.html">Right</a></p>
  </ul>
 </body>
</html>
```

4.1.1.3.2 Left page: pages/left.html

```
<html>
    <head><title>Left page</title></head>
    <body><p>Link for this page was on the left</p></body>
</html>
```

4.1.1.3.3 Center page: pages/center.html

```
<html>
    <head><title>Center page</title></head>
    <body><p>Link for this page was centered</p></body>
</html>
```

4.1.1.3.4 Right page: pages/right.html

```
<html>
    <head><title>Right page</title></head>
    <body><p>Link for this page was on the right</p></body>
</html>
```

4.1.2 FP test platform

4.1.2.1 FP test platform main requirements

The fixed part under test shall be connected to a network when running the tests suite. It shall be ready to support the SUOTA feature. An example of FP test platform is depicted in figure 3.

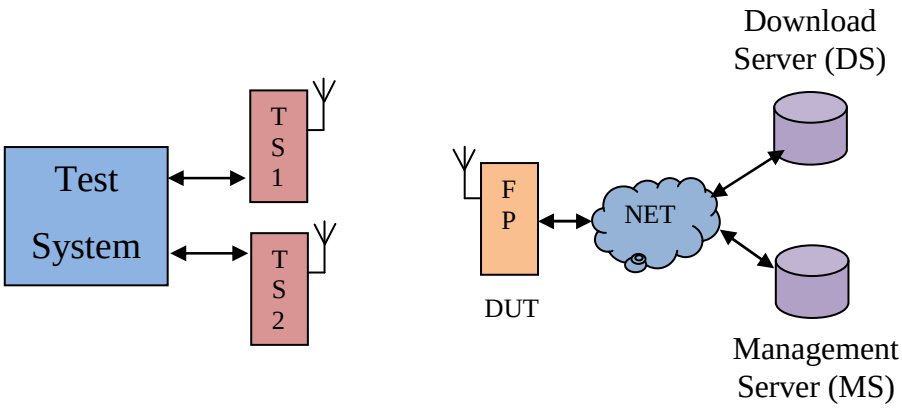

Figure 3: Example of FP Test platform

The Test System shall include 2 separate PP entities (TS_1 and TS_2).

Management server. The FP IUT may be presented for conformance testing with an IP addressable Management Server. In that case, every test involving a MS shall be performed twice. More specifically:

- The test shall at least be performed once with the 3rd party MS, that shall implement Basic SUOTA.
- If the FP manufacturer provides another MS, the test shall additionally be performed a second time with this MS. This MS implementation may be either basic or enhanced.

Both MSs shall be populated with the data provided in clause 4.1.2.2.

Download server. The FP manufacturer shall not provide any Downloading Server. Only the 3rd party DS shall be used.

Two mock firmware files (image.bin and checksum.bin) shall be provided by the 3rd party together with the Downloading Server, to be used for the upgrade of TS_1 and TS_2 (see clause 4.1.2.2).

Set of XHTML pages and server for HTTP based application tests. The third party shall provide a server for hosting the set of test pages (the download server could be reused for this purpose) and shall reuse the set of XHTML test pages described in clause 4.1.1.2 for PT test platform (see parameterized testTC_FT_NGLDS.A3_BV_104(URLP) and corresponding test instance TC_FT_NGLDS.A3_BV_105 for more details).

4.1.2.2 Test content for software upgrade (TS_1 + MS)

Table 1 describes the data to be used for populating TS_1 (PT), the Management Server (MS) or both when testing the FT (multiple file upgrade with two files is used).

The values listed below for populating the MS (or for populating both the MS and TS_1) shall apply whether the MS used for a given test is provided by a third party (3rd party Basic SUOTA MS), or by the FP manufacturer (either basic or enhanced SUOTA enabled).

As an exception and for convenience, the value of URL1 depends on the MS used (see below and FT_IXIT_2 and 3 in table A.4 of clause A.2.2).

The tester supplier shall supply the mock files image.bin and checksum.md5 as described in table 1 below.

Table 1: Test content for software upgrade

Description	Name	Value	Comment
Variables populating both TS_1 and MS at test start			
MS entry point	URL1	FT_IXIT_2 for 3rd party Basic SUOTA MS FT_IXIT_3 for Manufacturer MS	note 1
IUT hardware version	HWV	"YOU'RTALKINGTOME?"	17 IA5 characters (assumed to be stable over the whole test):

Description	Name	Value	Comment
Variables populating both TS_1 and MS at test start			
IUT EMC value at test start	EMC	'01ab'H	2 octets
IUT SW version installed at test start	SWV0	"SWV-BEFORE-TEST" " + number_str (note 3)	20 IA5 characters
Variables populating MS only at test start			
IUT SW version installed at test end	SWV1	"SWV-AFTER-TEST"	19 IA5 characters
Nb of files to be downloaded	Nf	2	
Url of 1st file	$URL2_1$	http://${DS_HOSTNAME}/download/image.bin (note 2)	'image.bin' file size shall be100010 octets
Url of 2nd file	$URL2_2$	http://${DS_HOSTNAME}/download/checksum.md5 (note 2)	'checksum.bin' file size shall be100010 octets
Variables populating TS_1 only at test start			
Number of file chunks used	M	101	Used for both files
HTTP range sizes	C_1, …, C_{M-1}	1000	Used for both files
Last HTTP range size	C_M	10	Used for both files
NOTE 1: If the test uses the 3rd party Basic SUOTA MS, then URL1=FT_IXIT_2; else if the test uses the MS provided by the manufacturer, URL1=FT_IXIT_3 (see Table A.1 of clause A.2.2). NOTE 2: DS_HOSTNAME is declared through FT_IXIT_4 (see table A.4 of clause A.2.2). NOTE 3: TS_1 shall use a different SWV0 value for each test, formed with "SWV-BEFORE-TEST" prefix immediately followed by a string representing a number between 1 and 1 000 in decimal. This avoids the case of a FP not requesting the MS in step 2 (see SUOTA upgrade description) because it already has the needed information in cache.			

4.2 Hypothesis

Protocol layers tested

Network and application features are only tested. DLC, MAC and PHY procedures used by new DECT generation standard are supposed to be tested when testing network features.

Speech services tested

The device under test is required to support only mandatory speech services. Optional codecs are out of the scope of the present document.

Length of a NWK layer message

The test equipment shall not send NWK layer messages longer than 63 bytes (see ETSI EN 300 444 [2], clause 6.9.3). In the other direction, the test equipment shall be capable of receiving and processing NWK layer messages of at least 63 octets long. A received NWK layer message longer than 63 bytes shall be discarded.

4.3 Test groups

4.3.1 Network features

Network features are described in clauses 5.2, 6.4 and 6.10 of ETSI TS 102 527-5 [6].

4.3.2 Application features

Application features are described in clauses 5.7, 6.9 and 6.13 of ETSI TS 102 527-5 [6].

5 Test Cases (TCs)

Each test case is allocated directly under a defined TC.

5.1 TC definition conventions

The TCs are defined following particular rules as shown in table 2.

Table 2: TC definition rules

TC Id according to the TC naming conventions	Test case objective
Main test purpose:	Optional detailed description of test case objective for complex test cases
Reference:	The reference should contain the references of the subject to be validated by the actual TC (specification reference, clause, paragraph, flow chart number, etc.).
Initial condition:	The condition defines in which initial state the IUT has to be to apply the actual TC.
Time sequence:	The time sequence is the description of the test case, including messages exchanged between IUT and tester and user actions. In other words, it defines the sequence of stimuli experienced by the IUT and its expected response(s).
Pass criteria:	Definition of the verifications that the tester shall perform on the responses expected from the IUT in order to ascertain conformance of the latter with the base specification.
Comments: (optional)	Additional information or comments on test case content.
Display_n	Optional list of tester display messages description

The device under test and the test equipment shall meet the features and procedures specified in "New Generation DECT; Part 4: Light Data Services; Software Updates Over The Air (SUOTA), content downloading and HTTP based applications" (see ETSI TS 102 527-4 [5]).

TC Id

The TC Id is a unique identifier; it shall be specified according to the TC naming conventions defined in the clause 5.2.

Reference

When a flowchart number is given in reference, this flowchart is only a recommendation to implement the test case. As a result, the TS shall be flexible enough to deal with several IUT implementations (dynamic behaviour).

Initial condition

It is stipulated when a test necessitates another registered PP (NG PP or legacy GAP PP).

By default (i.e. when no other PP is specified), the TS_1 and the IUT are involved together in the CC instance whose CC control state is stipulated in the initial condition.

A test case reference is given when this TC has to be run to reach the initial condition (for example: "Run TC_FT_NG1.N.16_BV_1802"). That means that this test case shall be run before the current one.

Pass criteria

- Criterion for checking "end-to-end U-plane connection": this is an operation to detect the state of the U−plane connection. The acoustical path will be checked in both directions. When testing a PP, Test system could perform an audio loopback and introduce a delay (e.g. 1 s) to create an echo. When testing a FP, Test system could use a tone generation. In both cases, Test system could also use a handset receiver plugged in the equipment.

- Some parameters used in TCs can be allocated by the IUT (e.g. call id, terminal identity number, session id, line id, etc.) or be network dependant (line type information for each line). As a consequence a generic notation is used in the TC description (respectively "call id A", "IA5 coding of terminal identity number in decimal of PP1", session id n, line 0, lt0, etc.).

5.1.1 Test equipment implementation requirements

This clause specifies the general requirements to be implemented by the test equipment. The requirements listed below can be valid either for several features on one side, or for one feature on both sides, PP and FP side. Specific requirements for a single feature are given in the related clause describing the sub tests suite for this feature.

Order of information elements in NWK layer messages

- The IUT shall send Information elements in the correct order within a NWK layer message (as defined in ETSI EN 300 175-5 [1], clause 7.5.1 "Coding rules"). This is valid for PT and FT sides.

NOTE 1: If this requirement is not respected, some test cases may fail on PT and FT side (as the test equipment will expect the correct order).

Segmentation of information in CC procedures

- The IUT shall not use segmentation of NWK messages (defined in ETSI EN 300 175-5 [1], clause 9.9 "Segmentation of information in CC procedures").

NOTE 2: If this requirement is not respected, some test cases may fail on PT and FT side (as the test equipment will expect only one segment).

NOTE 3: "Segmentation of information in CC procedures" is not mandatory for NG-DECT Part 3 [4] devices. So such implementations may face interoperability problems in case the peer party does not support the same mechanism.

Basic service used by the test equipment when initiating a call (external, internal, or list access service call)

- Within PT and FT test cases the test equipment shall behave as follows:

  Rule 1: When behaving as a NG DECT device, the test equipment shall use by default the "Wideband speech default setup attributes" basic service in IE <<BASIC-SERVICE>> at call setup (as required in ETSI TS 102 527-1 [3], ETSI TS 102 527-3 [4] and ETSI TS 102 527-5 [6]). This is the default behaviour for all test cases and especially in those where "TS_x is a NG PP" is mentioned. This basic service shall also be used even in the test cases where outgoing calls to narrow band phones are performed.

  Rule 2: When behaving as a GAP device the test equipment shall use by default the "Basic speech default setup attributes" basic service in IE <<BASIC-SERVICE>> at call setup (as required in ETSI EN 300 444 [2]). This is the default behaviour for all test cases where "TS_x is a GAP PP" is mentioned.

NOTE 4: The "automatic" rule 1 applies because in all the test cases of the current test specification, the test equipment initiates calls only in front of NG-DECT PART5 IUTs (PP or FP) but not in front of GAP IUTs. As a consequence the test equipment does not need to check the NG DECT capabilities of the remote party (IUT) to define the basic service to be used.

NOTE 5: When receiving a call on the test equipment (internal calls for example), it is the IUT that will use the correct basic service depending if the test equipment behaves as a NG DECT or GAP device.

5.1.2 Definitions of used MACROs (PT and FT sides)

The following Macros are used for the test body definition, for frequently re-used test chunks.

5.1.2.1 Basic service MACROs (request from PP to FP)

5.1.2.1.1 Suota C-plane

None.

5.1.2.1.2 Binary content download

The following values are defined binary content download in ETSI TS 102 527-4 [5], clause 7.6.1.4.

<<BASIC-SERVICE **BCD** >> =
<< Basic-Service <Call class = 'Normal call setup' = 8H>,
<Basic service = 'LDS: SUOTA, Class 4 DPRS management, default setup attributes' = 9H>

5.1.2.1 Handset version indication MACRO (request from PP to FP)

The 'Handset version indication' command is defined in ETSI TS 102 527-4 [5], clause 7.5.5.2.1.

hsv_ind(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV1, hwv=HWV1)=
local variables: n, N1(N1: fix integer value chosen by sender)
{**FACILITY**} message with IE <<IWU-to-IWU>> with:
- **Handset version indication** (0H):
- emc=EMC
- URL1 to follow=N1
- fileNumber=FN
- flags
- reason
- SW Version id=SWV1
- HW Version id=HWV1

(followed in the same direction, for $1 \leq n \leq N1$, by)
{**FACILITY**} message with IE <<IWU-to-IWU>> with:
- **URL indication** (2H):
- URL to follow=N1-n
- URL content= cu_n ('URL1 content chunk' number u)

such that $cu_1 + cu_2 + \ldots + cu_{N1}$ = URL1 (where '+' operator stands for string concatenation)

5.1.2.2 Handset version available MACRO (from FP to PP)

The 'Handset version available' command is defined in ETSI TS 102 527-4 [5], clause 7.5.5.2.2. This is the answer to command 'Handset version indication'.

hsv_avail(dm=DM, url2=URL2, u_inter=UI, swv=SWV)=
local variables: n, N2(N2: fix integer value chosen by sender)
{**FACILITY**} message with IE <<IWU-to-IWU>> with:
- **Handset version available** (1H):
- DelayMinutes=DM
- URL2 to follow=N2
- User interaction=UI
- SW Version id=SWV

(followed in the same direction, for $1 \leq n \leq N2$, by)
{**FACILITY**} message with IE <<IWU-to-IWU>> with:
- **URL indication** (2H):
- URL to follow= N2-n
- URL content= cu_n ('URL2 content chunk' number n)

such that $cu_1 + cu_2 + \ldots + cu_{N2}$ = URL2 (where '+' operator stands for string concatenation)

5.1.2.3 HTTP related MACROS

5.1.2.3.1 Submacros

filesize(url): size of the targeted resource (as a string)

request_uri(url): resource identifying part of the url (identification within the server)

EXAMPLE 1: request_uri("http://suota.example.com/Suota/suota1?test=2") = "/Suota/suota1?test=2"

hostname(url): server identifying part of the url

EXAMPLE 2: hostname("http://suota.example.com/Suota/suota1?test=2") = " suota.example.com"

5.1.2.3.2 range request MACRO (from PP to FP)

range request MACRO (from PP to FP)

range_http_req(target=URL2, r_low=RL, r_high=RH)=
GET request_uri(URL2) + " " + "HTTP1.1"\r\n
Host: hostname(URL2)\r\n
Accept: application/octet-stream\r\n
Range: bytes=RL-RH\r\n
\r\n

EXAMPLE: range_http_request("http://suota.example.com/Suota/suota1?test=2", 1000, 1999) =
GET /Suota/suota1?test=2 HTTP/1.1\r\n
Host: suota.example.com\r\n
Accept: application/octet-stream\r\n
Range: bytes=1000-1999\r\n
\r\n

5.1.2.3.3 HTTP range response MACRO (from FP to PP)

range_http_resp(target=URL2, r_low=RL, r_high= RH)=
HTTP/1.1 206 Partial Content
Content-Range: bytes=RL-RH/filesize(URL2) \r\n
Content-Length: *value_of*(RL-RH+1)\r\n
Content-Type: application/octet-stream\r\n
\r\n
<partial octet stream itself>

5.1.2.3.4 HTTP error MACRO (from FP to PP)

http_error(e=HTTP_ERROR, text=TEXT)=
"HTTP/1.1" + " " + HTTP_ERROR + \r\n
\r\n
<html><head><title>TEXT </title></head>

5.2 TC naming conventions

Each feature to be tested corresponds to a group of test cases identified by its standard feature number.

The identifier of the TC is built according to table 3.

Table 3: TC naming convention

TC_<rt>_<fn>_<tt>_<ppnn>		
<rt> = type of radio termination	FT PT	Fixed radio Termination Portable radio Termination
<fn> = feature number	NG1.N.x GAP.N.x NG1.A.x GAP.A.x	New generation Network feature GAP Network feature New generation Application feature GAP Application feature
<tt> = Type of testing	BV GC WC	Valid Behaviour Tests GAP backward compatibility Tests (see note 1) NG-DECT Part 1 [3] backward compatibility Tests (note 2)
<pp = procedure number	(1 to 99)	Procedure Number (see note 3)
nn> = sequential number	(01 to 99)	Test Purpose Number
NOTE 1: GAP backward compatibility tests concern only the FP. These tests check FP specific behaviours for NG features in front of GAP PPs. NOTE 2: These tests are to ensure interoperability in front of legacy NG-DECT Part 1 "Wideband speech" devices. NOTE 3: The procedure number refers to the number given to each procedure in Annex B. For example the procedure "NG1.N.1_3 Codec Negotiation during call establishment" is the procedure number '3' of NG1.N.1 Codec Negotiation feature. If several procedures are involved in the TS, the procedure number refers to the procedure mainly tested.		

NOTE: In order to limit the number of tests, invalid behaviour use cases are not tested.

5.3 Portable Part TC purposes

5.3.1 List of New Generation DECT Part 4 PT tests cases

Table 4 gives the list of NG-DECT Part 4 PT test cases related to the DECT "Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications" features (ETSI TS 102 527-4 [5]).

Table 4: NG-DECT Part 4 [5] PT Test Case Index

NG-DECT Part 4 [5] PT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
DPRS-M.25		**Long slot 640**	**M**
	No test case; see TC_PT_NGLDS.N1_BV_102		NA
DPRS-N.1		**PT initiated virtual call**	**M**
	No TC (see TC_PT_NGLDS.A1_BV_101)	PT initiated virtual call request (outgoing call)	NA
DPRS-N.8		**FT initiated virtual call**	**M**
	No TC (Not used in SUOTA)	FT initiated virtual call request (incoming call)	NA
DPRS-N.11		**Location registration**	**M**
	TC_PT_DPRS.N.11_ BV_101	Terminal capability indication during location registration	M
DPRS-N.18		**Subscription registration user procedure on-air**	**M**
	TC_PT_DPRS.N.18_ BV_101	Terminal capability indication when obtaining access rights	M
DPRS-N.34		**Service Negotiation at virtual call setup**	**M**
	No TC (see TC_PT_NGLDS.A1_BV_101)	Call Resources/Parameters negotiation	NA
	No TC (see TC_PT_NGLDS.A1_BV_101)	Service Negotiation specific rules	NA
DPRS-N.35		**In call service change**	**NA**
	No TC (O in SUOTA but not used in practice)	IWU-attributes change - General	NA
DPRS-N.36		**NWK layer management**	**O**
	No TC on PT side (FT only)	Management - Broadcast attributes	NA
DPRS-N.43		**Enhanced security**	**M**
	TC_PT_DPRS.N.43_BV_101	Encryption of SUOTA call	M
	TC_PT_DPRS.N.43_BV_102	Unexpected unencrypted SUOTA call in connect state	M
	TC_PT_DPRS.N.43_BV_103	Unexpected unencrypted SUOTA call in connect state despite of successful authentication	M
	TC_PT_DPRS.N.43_BV_104	Re-keying procedure for SUOTA call	C404
	TC_PT_DPRS.N.43_BV_105	Usage of early encryption during SUOTA call	C405
	TC_PT_DPRS.N.43_BV_106	PP releases SUOTA call in case FP rejects early encryption on MAC layer	C405
DPRS-N.44	*No TC*	**AES/DSAA2 authentication (GAP.N.36)**	**NA**
NGLDS-N.1		**General Light DataService Procedures**	**M**
	No TC	Service change rejection	NA
	TC_PT_NGLDS.N.1_BV_101	TC incoming voice call during preliminary exchanges of the SUOTA process	M
	TC_PT_NGLDS.N.1_BV_102	Test that PP can accept or ignore an incoming voice call while LDS call is active	M
NGLDS-N.2		**Software upgrade over the air, C-plane**	**M**
	TC_PT_NGLDS.N.2_BV_101	C-Plane SUOTA exchange - New version is available - User interaction	M
	TC_PT_NGLDS.N.2_BV_102	C-Plane SUOTA exchange - No new version available	M
	TC_PT_NGLDS.N;2_BV_103	C-Plane SUOTA exchange - DelayMinutes	M
	TC_PT_NGLDS.N;2_BV_105	C-Plane SUOTA exchange - Push Mode	C401
	No TC (already tested in DPRS-N.43)	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] data calls	NA
	No TC (already tested in DPRS-N.43)	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] information exchange over C-plane	NA

NG-DECT Part 4 [5] PT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
	TC_PT_NGLDS.N.2_BI_101	C-Plane SUOTA exchange - Unreachable URL1 (server error)	M
NGLDS-A.1		**Binary content download (BCD)**	**M**
	TC_PT_NGLDS.A1_BV_101	Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support	M
	No TC (Enhanced mechanism)	Enhanced BCD with Multi-context Interworking to an application proxy (DPRS/B.8.4.2)	NA
	No TC (Enhanced mechanism)	Generic Multiprotocol BCD with Generic Multiprotocol Interworking to external IP networks (DPRS/B.8.4.1)	NA
	No TC (Accept: application/octet-stream is already part of HTTP related macros and is tested when macro is used)	Binary content download media type	NA
	No TC (general presentation clause)	Binary content download sequence	NA
	No TC in this version	URI-based PP to FP confidentiality requirement	O
	No TC in this version	URI-based PP to FP authentication requirement	O
	No TC in this version	PP to FP enhanced interactivity	O
	No TC; see TCs for more specific functionality	Common HTTP profile	M
NGLDS-A.2		**Software Upgrade Over The Air**	**M**
	TC_PT_NGLDS.A.2_BV_101(SWV, UI)	Basic SUOTA - Single upgrade SUOTA with initial software version (SWV) - with or without user interaction (UI boolean) **(parameterized test)**	I
	TC_PT_NGLDS.A.2_BV_1011	TC_PT_NGLDS.A.2_BV_101(SWV=PT_IXIT_2.SWV 0, UI=NO) (note 1)	M
	TC_PT_NGLDS.A.2_BV_1012	TC_PT_NGLDS.A.2_BV_101(SWV=PT_IXIT_3.SWV 0, UI=YES) (note 1)	M
	TC_PT_NGLDS.A2_BI_101(E)	Software upgrade - Error E during BCD - Notification of failure. **Parameterized test**	I
	TC_PT_NGLDS.A.2_BI_1011	See test TC_PT_NGLDS.A2_BI_101(E=Incorrect DS host name)	M
	TC_PT_NGLDS.A.2_BI_1012	See test TC_PT_NGLDS.A2_BI_101(E=File not found)	M
	TC_PT_NGLDS.A2_BI_111	Software upgrade - DECT connection error during BCD - Notification of failure	M
	TC_PT_NGLDS.A2_BI_114	Handling lost link to Download Server during download	M
	TC_PT_NGLDS.A2_BI_115(E)	Software upgrade - BCD with redirection of type E. **Parameterized test**	I
	TC_PT_NGLDS.A.2_BV_1151	See test TC_PT_NGLDS.A.2_BV_115(E="301 Moved Permanently")	M
	TC_PT_NGLDS.A.2_BV_1152	See test TC_PT_NGLDS.A.2_BV_115(E="302 Found")	M
	TC_PT_NGLDS.A2_BI_1153	See test TC_PT_NGLDS.A.2_BV_115(E="307 Temporary Redirect")	M
NGLDS-A.3		**HTTP based Applications**	**C402**
	No TC; see TC_PT_NGLDS.A3_BV_102, 103	Support of additional HTTP header fields	NA
	No TC (Accept:application/xhtml+xml is already tested in TC_PT_NGLDS.A3_BV_108)	Support of additional media-types	NA
	No TC (Accept-Charset:UTF-8 is already tested in TC_PT_NGLDS.A3_BV_108) related to: Accept-Charset:UTF-8 may be related to: Accept	Support of character encodings	NA
	No TC; see TCs for more specific functionality	Extended HTTP profile	NA

NG-DECT Part 4 [5] PT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
	TC_PT_NGLDS.A3_BV_108(URLP)	HTTP based application - PP browses a test site (at url URLP) using a DECT specific XHTML profile. **Parameterized test**.	I
	TC_PT_NGLDS.A3_BV_1081	See test TC_PT_NGLDS.A3_BV_108(URLP=Test url of clause 4.1.1.2.1) (Simple XHTML profile)	C402
	TC_PT_NGLDS.A3_BV_1082	See test TC_PT_NGLDS.A3_BV_108(URLP=Test url of clause 4.1.1.3.1) (Baseline XHTML profile - XHTML list)	C403
		See note 2	
C401: IF IUT supports NGLDS-N.2_5 (SUOTA push mode) THEN M ELSE I. C402: IF IUT supports NGLDS-A.3 (HTTP based Applications) THEN M ELSE I. C403: IF IUT supports NGLDS-A.3 (HTTP based Applications) AND NGLDS-A.3_7 (Baseline XHTML profile) THEN M ELSE I. C404: IF IUT supports GAP.N.35_2 (Re keying during a call) THEN M ELSE I (see table A.11 in clause A.1.3). C405: IF IUT supports GAP.N.35_3 (Storing the Derived Cipher Key)THEN M ELSE I (see table A.11 in clause A.1.3).			
NOTE 1: The datasets PT_IXIT_2 and PT_IXIT_3 and their subfields are defined in clause A.1.2. When creating these datasets, the manufacturer may choose PT_IXIT_3.SWV0 equal to PT_IXIT_2.SWV1 (installed version in TC_PT_NGLDS.A.2_BV_1101) in order to perform with the same device a downgrade back to PT_IXIT_2.SWV0 in TC_PT_NGLDS.A.2_BV_1102. NOTE 2: We could add more test cases for the Baseline XHTML profile by adding subclauses to clause 4.1.1 and new tests here referring to these subclauses through the URLP value. However, no more TCs are defined in this release of the present document.			

5.4 Fixed Part TC purposes

5.4.1 List of New Generation DECT Part 4 FT tests cases

Table 5 gives the list of NG-DECT Part 4 FT test cases related to the DECT "Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications" features (ETSI TS 102 527-4 [5]).

Table 5: NG-DECT Part 4 FT Test Case Index

NG-DECT Part 4 FT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
DPRS-M.25		**Long slot 640**	**M**
	No TC		
DPRS-N.1		**PT initiated virtual call**	**M**
	No TC (see TC_FT_NGLDS.A1_BV_101)	PT initiated virtual call request (outgoing call)	NA
DPRS-N.8		**FT initiated virtual call**	**M**
	No TC (Not used in SUOTA)	FT initiated virtual call request (incoming call)	NA
DPRS-N.34		**Service Negotiation at virtual call setup**	**M**
	No TC (see TC_FT_NGLDS.A1_BV_101)	Call Resources/Parameters negotiation	NA
	No TC (see TC_FT_NGLDS.A1_BV_101)	Service Negotiation specific rules	NA
DPRS-N.35		**In call service change**	**NA**
	No TC (O in SUOTA but not used in practice)	IWU-attributes change - General	NA
DPRS-N.36		**NWK layer management**	**O**
	TC_FT_DPRS.N36_BV_101	Management - Broadcast attributes	M
DPRS-N.43		**Enhanced security**	**M**
	TC_FT_DPRS.N.43_BV_101	Verify that FT enables encryption for SUOTA call within timer < MM_encryption_check.1 >	M
	TC_FT_DPRS.N.43_BV_102	Release of unencrypted call in case of wrong answer to authentication request	M
	TC_FT_DPRS.N.43_BV_103	Release of unencrypted call in case of missing answer to authentication request	M

NG-DECT Part 4 FT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
	TC_FT_DPRS.N.43_BV_104	Release of unencrypted call in case of PP sending {AUTHENTICATION-REJECT} message	M
	TC_FT_DPRS.N.43_BV_105	Release of unencrypted call in case of cipher reject.	M
	TC_FT_DPRS.N.43_BV_106	Release of unencrypted call in case of missing encryption activation on MAC layer.	M
	TC_FT_DPRS.N.43_BV_107	Re-keying procedure for SUOTA call	C502
	TC_FT_DPRS.N.43_BV_108	Usage of early encryption during SUOTA call	C503
DPRS-N.44	*No TC*	**AES/DSAA2 authentication (GAP.N.36)**	**NA**
NGLDS-N.1		**General Light Data Service Procedures**	**M**
	No TC	PT initiated LDS connection when an established call is present. Service Change rejection.	NA
	TC_FT_NGLDS.N.1_BV_101	TC incoming voice call during preliminary exchanges of the SUOTA process	M
	TC_FT_NGLDS.N.1_BV_102	TC incoming voice call while LDS already established	M
NGLDS-N.2		**Software upgrade over the air, C-plane**	**M**
	TC_FT_NGLDS.N2_BV_101(MSO, SUF)	C Plane SUOTA exchange - New firmware is available. **(Parameterized test)** (see note)	I
	TC_FT_NGLDS.N2_BV_1011	See test TC_FT_NGLDS.N.2_BV_101(MSO="3rd party Basic SUOTA MS", SUF= "3135")	M
	TC_FT_NGLDS.N2_BV_1012	See test TC_FT_NGLDS.N.2_BV_101(MSO="Manufacturer MS", SUF="3135")	C501
	TC_FT_NGLDS.N2_BV_102(MSO, SUF)	C Plane SUOTA exchange - No new firmware available. **(Parameterized test)** (see note 1)	I
	TC_FT_NGLDS.N2_BV_1021	See test TC_FT_NGLDS.N.2_BV_102(MSO="3rd party Basic SUOTA MS", SUF= "39")	M
	TC_FT_NGLDS.N2_BV_1022	See test TC_FT_NGLDS.N.2_BV_102(MSO="Manufacturer MS", SUF="3130")	C501
	TC_FT_NGLDS.N2_BV_103(MSO, SUF)	C Plane SUOTA exchange - Invalid URL1 format **(Parameterized test)** (see note)	I
	TC_FT_NGLDS.N.2_BV_1031	See test TC_FT_NGLDS.N.2_BV_103(MSO="3rd party Basic SUOTA MS", SUF= "3131")	M
	TC_FT_NGLDS.N.2_BV_1032	See test TC_FT_NGLDS.N.2_BV_103(MSO="Manufacturer MS", SUF="3132")	C501
	TC_FT_NGLDS.N2_BV_104(MSO, SUF)	C Plane SUOTA exchange - Unreachable URL1 (server error) **(Parameterized test)** (see note)	I
	TC_FT_NGLDS.N.2_BV_1041	See test TC_FT_NGLDS.N.2_BV_104(MSO="3rd party Basic SUOTA MS", SUF= "3133")	M
	TC_FT_NGLDS.N.2_BV_1042	See test TC_FT_NGLDS.N.2_BV_104(MSO="Manufacturer MS", SUF="3134")	C501
	NO TC on FT side (PT side only) (Not defined for Basic SUOTA on FT side in the present document)	SUOTA push mode	NA
	No TC (already tested in DPRS-N.43)	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] data calls	NA
	No TC (already tested in DPRS-N.43)	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] information exchange over C-plane	NA
	No TC	User initiated SUOTA flag - Transmission to 3rd party MS	NA
NGLDS-A.1		**Binary content download**	**M**
	TC_FT_NGLDS.A1_BV_101	Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support	M
	No TC (Enhanced mechanism)	Enhanced BCD with Multi-context Interworking to an application proxy (DPRS/B.8.4.2)	NA
	No TC (Enhanced mechanism)	Generic Multiprotocol BCD with Generic Multiprotocol Interworking to external IP networks (DPRS/B.8.4.1)	NA
	No TC (Accept: application/octet-stream is already part of HTTP related macros and is tested when macro is used)	Binary content download media type	NA

NG-DECT Part 4 FT test case index			
Test Group Reference	**Test Case Id**	**Description**	**Status**
	No TC	Binary content download sequence	NA
	No TC in this version	URI-based PP to FP confidentiality requirement	NA
	No TC in this version	URI-based PP to FP authentication requirement	NA
	No TC in this version	PP to FP enhanced interactivity	NA
	No TC; see TCs for more specific functionality	Common HTTP profile	NA
NGLDS-A.2		**Software Upgrade Over The Air**	**M**
	TC_FT_NGLDS.A2_BV_102	PP security requirements in URL1 and URL2	O
	TC_FT_NGLDS.A.2_BV_103(MSO)	Basic or enhanced SUOTA with MS from MSO origin - Single upgrade SUOTA - Multiple file upgrade (parameterized test)	I
	TC_FT_NGLDS.A.2_BV_1031	TC_FT_NGLDS.A.2_BV_103(MSO=Tester supplier)	M
	TC_FT_NGLDS.A.2_BV_1032	TC_FT_NGLDS.A.2_BV_103(MSO=Manufacturer)	C501
	TC_FT_NGLDS.A2_BV_106(SUF 1, SUF2)	Software upgrade - Two PPs upgrading one after the other (**Parameterized test**) (see note)	I
	TC_FT_NGLDS.A2_BV_1061	See test TC_FT_NGLDS.A2_BV_106(SUF1="35", SUF2="36")	M
	TC_FT_NGLDS.A2_BV_107(SUF)	Software upgrade - PP2 trying a file download while PP1 is upgrading (**Parameterized test**) (see note)	I
	TC_FT_NGLDS.A2_BV_1071	See test TC_FT_NGLDS.A2_BV_107(SUF="37")	M
	TC_FT_NGLDS.A2_BV_108(SUF)	Software upgrade - Two PPs upgrading - Retry later negative acknowledgment (**Parameterized test**) (see note)	I
	TC_FT_NGLDS.A2_BV_1081	See test TC_FT_NGLDS.A2_BV_108(SUF="38")	M
	TC_FT_NGLDS.A2_BI_104(MSO, SUF)	Software upgrade - Notification of failure to MS originating from MSO with SUF used as SWV0 ending **Parameterized test**. (see note)	I
	TC_FT_NGLDS.A2_BI_1041	See test TC_FT_NGLDS.A.2_BV_104(MSO= 3rd party Basic SUOTA MS, SUF= "31")	M
	TC_FT_NGLDS.A2_BI_1042	See test TC_FT_NGLDS.A.2_BV_104(MSO= Manufacturer MS, SUF= "32")	C501
	TC_FT_NGLDS.A2_BI_105(MSO)	Software upgrade - Requesting an unexisting file nb with SUF used as SWV0 ending (see note) **Parameterized test**	I
	TC_FT_NGLDS.A2_BI_1051	See test TC_FT_NGLDS.A.2_BV_105(MSO= 3rd party Basic SUOTA MS, SUF= "33")	M
	TC_FT_NGLDS.A2_BI_1052	See test TC_FT_NGLDS.A.2_BV_105(MSO= Manufacturer MS, SUF= "34")	C501
	TC_FT_NGLDS.A.2_BV_115	Software upgrade - BCD with redirection	M
NGLDS-A.3		**HTTP based Applications**	**M**
	TC_FT_NGLDS.A3_BV_104 (URLP)	HTTP based application - TS_1 browses a test site (at url URLP) using a DECT specific XHTML profile	I
	TC_FT_NGLDS.A3_BV_1041	HTTP based application - 'Simple XHTML profile'	M
	No TC (see TC_FT_NGLDS.A3_BV_104)	Support of additional HTTP header fields	NA
	No TC (see TC_FT_NGLDS.A3_BV_104)	Support of additional media-types	NA
	No TC (see TC_FT_NGLDS.A3_BV_104)	Support of character encodings	NA
	No TC (see TC_FT_NGLDS.A3_BV_104)	Baseline XHTML profile	NA
	No TC; see TCs for more specific functionality	Extended HTTP profile	NA
C501: IF FT_IXIT_1 (Manufacturer MS is provided) THEN M ELSE I C502: IF IUT supports GAP.N.35_2 (Re-keying during a call) THEN M ELSE I (see table A.29 in clause A.2.3). C503: IF IUT supports GAP.N.35_3 (Storing the Derived Cipher Key) THEN M ELSE I (see table A.29 in clause A.2.3).			
NOTE: The SUF ending for SWV0 ensures that the "software version before upgrade" presented to IUT changes from one test to another, so that IUT does not rely on cache data and really contacts the MS in a1 below. SUF is the IA5 coding of a number in decimal.			

6 Portable Part Test specification

This clause includes lists of the test groups relevant for a NG-DECT portable part. Test cases are ordered with network features followed by application features (ETSI TS 102 527-5 [6], clauses 6.4 and 6.9).

Descriptions of new portable part tests specific to NG-DECT part 5 [6] start at clause 6.40. This leaves room for tests of features and procedures that may be designed in the future but which are not specific to Part 5 [6]. That is, the tests for new features that will apply to both Part 3 [4] and Part 5 [6], because they are considered important to both parts, will not be interleaved but will be in contiguous subclauses.

6.1 DPRS PT Procedures

TC_PT_DPRS.N.11_ BV_101 Terminal capability indication during location registration

TC_PT_DPRS.N.11_ BV_101	Terminal capability indication during location registration
Test purpose	-
Reference:	ETSI TS 102 527-4 [5], clause 7.5.7, ETSI EN 300 175-5 [1], clause 7.7.41
Initial condition:	T-00 IUT is registered to TS_1
Time sequence:	s1 [USR >> IUT] Switch IUT off and on again a1 [IUT >> TS_1] {**LOCATE-REQUEST**} message with an IE <<Terminal-capability>> with following capabilities declared: • "Support of Light Data services" capability in Profile indicator_9 octet (octet 4h) • "Support of Generic Media Encapsulation transport" capability in Profile indicator_4 octet (octet 4c) • "Support of Long slot;j=640 " in slot type capability field (octet 3c) • Support of "DPRS Class 4 management and A-Field procedures (DPRS-M.30)" (octet 4h)
Pass criteria:	Verify all answers
Comments:	in a1. DPRS ME.3 capability bit is intentionally not tested.

TC_PT_DPRS.N.18_ BV_101 Terminal capability indication when obtaining access rights

TC_PT_DPRS.N.18_BV_101	Terminal capability indication when obtaining access rights
Test purpose:	-
Reference:	ETSI TS 102 527-4 [5], clause 7.5.7, ETSI EN 300 175-5 [1], clause 7.7.41
Initial condition:	No access rights
Time sequence:	s1.1 [TS_1] set the following bits to 1 on TS_1 broadcast :- • Bit a44 of Higher Layer capabilities. • Bits a45 and a27 of Extended Higher Layer capabilities • Bit a45 of Extended Higher Layer capabilities (part 2) s1.2 [USR >> IUT] Start registration procedure a1 [IUT >> TS_1] {**ACCESS-RIGHTS-REQUEST**} message with an IE <<Terminal-capability>> with following capabilities declared: • "Support of Light Data services" capability in Profile indicator_9 octet (octet 4h) • "Support of Generic Media Encapsulation transport" capability in Profile indicator_4 octet (octet 4c) • "Support of Long slot;j=640 " in slot type capability field (octet 3c)

	• Support of "DPRS Class 4 management and A-Field procedures (DPRS-M.30)" (octet 4h)
Pass criteria:	Verify all answers
Comments:	in a1. DPRS ME.3 capability bit is intentionally not tested.

TC_PT_DPRS.N.43_BV_101 Encryption of SUOTA call

TC_PT_DPRS.N.43_BV_101	Encryption of SUOTA call		
Main test purpose:	Test SUOTA call is encrypted		
Reference:	ETSI EN 300 444 [2], clause 8.45.1		
Initial condition:	PP is registered to TS_1 (FT)		
Time sequence:			**1- C-plane Suota Exchange**
	s1	[USR >> IUT]	SUOTA started (*using a menu, or by changing the device clock time*)
	a1	[IUT >> TS_1]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset)
	s2	[TS_1 >> IUT]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
			2- Initiate the data call
	a2	[IUT >>TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00' H Application protocol identifier = '0437'H
	s3.1	[TS_1 >> IUT]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01' H Application protocol identifier = '0437'H
			3- Encrypt the data call
	s3.2	[TS_1 >> IUT]	**{AUTHENTICATION-REQUEST}** message
	a3	[IUT >> TS_1]	**{AUTHENTICATION-REPLY}** message
	s4	[TS_1 >> IUT]	**{CIPHER-REQUEST}** message
Pass criteria:	Verify that IUT activates encryption on MAC layer. Verify that encryption is activated Verify end-to-end U-plane connection.		
Comments:	This test is similar to TC_PT_GAP.N.35_BV_101 in ETSI TS 102 841 [i.3].		

TC_PT_DPRS.N.43_BV_102 Unexpected unencrypted SUOTA call in connect state

TC_PT_DPRS.N.43_BV_102	Unexpected unencrypted SUOTA call in connect state
Main test purpose:	Test that PP releases SUOTA call while in connect state if the call is not encrypted
Reference:	ETSI EN 300 444 [2], clause 8.45.5
Initial condition:	IUT (PP) has no access rights. TS_1 is in registration mode (bit a44 is set). TS_1 broadcasts that standard ciphering is supported (bit a37=1 in higher layer capabilities) and that 'Re-keying' and 'early encryption' in Extended higher layer capabilities part 2 (bit a42) is not supported.
Time sequence:	**1- Register IUT (PP)** s1.1 [USR >> IUT] Register IUT using easy pairing. Verify that IUT successfully registered. **2- C-plane Suota Exchange** s1.2 [USR >> IUT] SUOTA started (*using a menu, or by changing the device clock time*) a1 [IUT >> TS_1] **hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset) s2 [TS_1 >> IUT] **hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset) **3- Initiate the data call** a2 [IUT >>TS_1] {**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00' H Application protocol identifier = '0437'H s3.1 [TS_1 >> IUT] {**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01' H Application protocol identifier = '0437'H s3.2 [TS_1] TS_1 starts timer T.001 (60s). s3.3 [TS_1] TS_1 does NOT perform authentication of PP and FT initiated cipher switching. **4- Release the data call** a3 [IUT >> TS_1] {**CC-RELEASE-COM**} message with - IE <<**RELEASE-REASON**>> = <Security attack assumed> before T.001 expiry.
Pass criteria:	Verify that IUT releases the data call on encryption failure
Comments:	This test is similar to TC_PT_GAP.N.35_BV_502 in ETSI TS 102 841 [i.3].

TC_PT_DPRS.N.43_BV_103 Unexpected unencrypted SUOTA call in connect state despite of successful authentication

TC_PT_DPRS.N.43_BV_103	Unexpected unencrypted SUOTA call in connect state despite of successful authentication
Main test purpose:	Test that PP releases SUOTA call while in connect state if the call is not encrypted even after successful authentication
Reference:	ETSI EN 300 444 [2], clause 8.45.5
Initial condition:	IUT (PP) has no access rights. TS_1 is in registration mode (bit a44 is set). TS_1 broadcasts that standard ciphering is supported (bit a37=1 in higher layer capabilities) and that 'Re-keying' and 'early encryption' in Extended higher layer capabilities part 2 (bit a42) is not supported.
Time sequence:	**1- Register IUT (PP)** s1.1 [USR >> IUT] Register IUT using easy pairing. Verify that IUT successfully registered. **2- C-plane Suota Exchange** s1.2 [USR >> IUT] SUOTA started (*using a menu, or by changing the device clock time*) a1 [IUT >> TS_1] **hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset) s2 [TS_1 >> IUT] **hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset) **3- Initiate the data call** a2 [IUT >>TS_1] {**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00' H Application protocol identifier = '0437'H s3.1 [TS_1 >> IUT] {**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01' H Application protocol identifier = '0437'H s3.2 [TS_1] TS_1 starts timer T.001 (60s). **4- Authenticate the data call** s3.3 [TS_1 >> IUT] **{AUTHENTICATION-REQUEST}** message a3.1 [IUT >> TS_1] **{AUTHENTICATION-REPLY}** message s4 [TS_1] TS_1 does NOT perform FT initiated cipher switching **5- Release the data call** a4 [IUT >>TS_1] {**CC-RELEASE-COM**} message with - IE <<**RELEASE-REASON**>> = <Security attack assumed> before T.001 expiry.
Pass criteria:	Verify that IUT releases the data call on encryption failure
Comments:	This test is similar to TC_PT_GAP.N.35_BV_506 in ETSI TS 102 841 [i.3].

TC_PT_DPRS.N.43_BV_104 Re-keying procedure for SUOTA call

TC_PT_DPRS.N.43_BV_104	Re-keying procedure for SUOTA call		
Main test purpose:	Test that PT performs re-keying procedure successfully for the SUOTA call if the FT supports re-keying and early encryption feature.		
Reference: **Initial condition:**	ETSI EN 300 444 [2], clause 8.45.2 PP is registered to TS_1 (FT). TS_1 indicates the support of 'Re-keying' and 'early encryption' in extended higher layer capabilities part 2 (a42 bit).		
Time sequence:			**1 - C-plane Suota Exchange**
	s1	[USR >> IUT]	SUOTA started (*using a menu, or by changing the device clock time*)
	a1	[IUT >> TS_1]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset)
	s2	[TS_1 >> IUT]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
			2- Initiate the data call
	a2	[IUT >>TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'> - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	s3.1	[TS_1 >> IUT]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
			3- Encrypt the data call with key DCK_1
	s3.2	[TS_1 >> IUT]	**{AUTHENTICATION-REQUEST}** message TS_1 saves generated DCK as DCK_1
	a3	[IUT >> TS_1]	**{AUTHENTICATION-REPLY}** message
	s4.1	[TS_1 >> IUT]	**{CIPHER-REQUEST}** message
			4- Encrypt the data call with key DCK_2 after 60s
	s4.2	[TS_1 >> IUT]	**{AUTHENTICATION-REQUEST}** message TS_1 saves generated DCK as DCK_2
	a4	[IUT >> TS_1]	**{AUTHENTICATION-REPLY}** message
	s5	[TS_1 >> IUT]	**{CIPHER-REQUEST}** message
			5- Release the data call
	a5	[IUT >> TS_1]	**{CC-RELEASE}** message
	s6	[TS_1 >> IUT]	**{CC-RELEASE-COM}** message

Pass criteria:	At s4.1, verify that IUT activates encryption with DCK_1. Verify end-to-end U-plane connection. At s5, verify that IUT activates encryption with DCK_2 after 60s. Verify end-to-end U-plane connection.
Comments:	Before a5 and until the call is disconnected, a new cipher key is generated every 60s by TS_1 and used for encryption.

TC_PT_DPRS.N.43_BV_105 Usage of early encryption during SUOTA call

TC_PT_DPRS.N.43_BV_105	Usage of early encryption during SUOTA call	
Main test purpose:	Test that PT initiates encrypted SUOTA call using previously saved default cipher key	
Reference:	ETSI EN 300 444 [2], clause 8.45.2	
Initial condition:	PP is not registered / registered to TS_1 (FT).	
Time sequence:		**1 - (If not already registered) Register IUT**
	s1 [TS_1]	Registration mode activated
	a1 [IUT >> TS_1]	IUT attempts registration with TS_1
	s2 [TS_1 >> IUT]	**{AUTHENTICATION-REQUEST}** message indicating DEF-bit=1 and default cipher key index 0001 TS_1 saves DCK as Def_DCK_1
	a2.1 [IUT >> TS_1]	**{AUTHENTICATION-REPLY}** message
		2**- Initiate the data call**
	a2.2 [IUT >>TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'> - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	s3 [TS_1 >> IUT]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
Pass criteria:	At a1, verify successful IUT registration At a2.1, verify MAC connection is released. At a2.2, verify that IUT activates encryption using DCK index = 0001 At s3, verify end-to-end U-plane connection.	
Comments:		

TC_PT_DPRS.N.43_BV_106 PP releases SUOTA call in case FP rejects early encryption on MAC layer

TC_PT_DPRS.N.43_BV_106	PP releases SUOTA call in case FP rejects early encryption on MAC layer
Main test purpose:	Test that PT initiates encrypted SUOTA call and releases the call if FP rejects early encryption.
Reference:	ETSI EN 300 444 [2], clause 8.45.2
Initial condition:	PP is not registered / registered to TS_1 (FT).

Time sequence:		**1 - (If not already registered) Register IUT**
	s1 [TS_1]	(If not already registered)Registration mode activated
	a1 [IUT >> TS_1]	IUT attempts registration with TS_1
	s2 [TS_1 >> IUT]	**{AUTHENTICATION-REQUEST}** message indicating DEF-bit=1 and default cipher key index 0001 TS_1 saves DCK as Def_DCK_1
	a2.1 [IUT >> TS_1]	**{AUTHENTICATION-REPLY}** message
		3- Establish MAC connection for the data call
	a2.2 [IUT >>TS_1]	Establish MAC connection and initiate encryption activation using DCK with cipher key index ≠ 0001
	s3 [TS_1]	TS_1 rejects start of encryption with cipher key index ≠ 0001 on MAC layer.
	a3 [IUT]	Release MAC connection within 10 seconds
Pass criteria:	At a1, verify successful IUT registration At a2.1, verify MAC connection is released. At a2.2, verify that IUT activates encryption using DCK with cipher key index ≠ 0001 At a3, verify that IUT releases MAC connection within 10 seconds	
Comments:		

6.2 NGLDS-N.1 General Light Data Service Procedures

TC_PT_NGLDS.N.1_BV_101 TC incoming voice call during preliminary exchanges of the SUOTA process

TC_PT_NGLDS.N.1_BV_101	TC incoming voice call during preliminary exchanges of the SUOTA process	
Main test purpose:	Test that PP can accept or ignore an incoming voice call during SUOTA C-plane commands exchange	
Reference:	ETSI TS 102 527-4 [5], clause 7.5.4.2.1	
Initial condition:	PT initial state conforms with dataset PT_IXIT_2	
Time sequence:	s1 [USR >> IUT]	SUOTA started (*using a menu, or by changing the device clock time*)
	a1 [IUT >> TS_1]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset)
	s2.1 [PhA >> TS_1]	Incoming call on line 0 from Phone A
	s2.2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Normal call setup'> - IE <<**CALL-INFORMATION**>> specifying (line 0, line type information, call id a, CS call setup) = <(0,0,lid 0), (0, 5, lt0), (1,0,value a), (2,1,1)>
	s2.3 [TS_1 >> IUT]	**hsv_avail**(dm=DM, url2=URL2, u_inter=YES, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
	a2.1 [IUT >> TS_1]	**IF PT_IXIT_6=YES**: PP ignores the incoming voice call {**CC-RELEASE-COM**} message **End of test**
	a2.2 [IUT >> TS_1]	**IF PT_IXIT_6=NO**: PP "accepts" the incoming voice call {**CC-ALERTING**} message
		PP user picks up
	a2.3 [IUT >> TS_1]	{**CC-CONNECT**} message
	s3 [TS_1 >> IUT]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id a, CS call connect) = <(1,0,value a), (2,1,5)>
	a3 [TS_1 <> IUT]	End to end audio connection **End of test**

Pass criteria:	Verify all answers.
Comments:	At a2, PP may choose to ignore the call as in case 1 or accept the call as in case 2.

TC_PT_NGLDS.N.1_BV_102 TC incoming voice call while LDS already established

TC_PT_NGLDS.N.1_BV_102	TC incoming voice call while LDS already established	
Main test purpose:	Test that PP can accept or ignore an incoming voice call while LDS call is active.	
Reference:	ETSI TS 102 527-4 [5], clause 7.5.4.2.1	
Initial condition:	PT initial state conforms with dataset PT_IXIT_2 K = PT_IXIT_4 (Number of immediate retries in case of HTTP error)	
Time sequence:	s1 [USR >> IUT]	1- SUOTA started (*using a menu, or by changing the device clock time*)
	a1 [IUT >> TS_1]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset)
	s2 [TS_1 >> IUT]	**hsv_avail**(dm=DM, url2=URL2, u_inter=NO, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
	a2.1 [IUT >> USR]	2- Initiate the data call
	a2.2 [IUT>>TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'> - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	s3.1 [TS_1 >> IUT]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
	s3.2 [PhA >> TS_1]	Incoming call on line 0 from Phone A
	s3.3 [TS_1 >> IUT]	(*In one or several messages*) {**CC-INFO**} message(s) with: - (*Optional*) IE <<**SIGNAL**>> with value 07H indicating 'Call waiting tone on' - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (*Optional*) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<**CALL-INFORMATION**>> with (line 0, line type info, call id a, CS call setup) =<(0, 0, lid0), (0, 5, lt0), (1, 0, value a),(2, 1, 1)>
	a3 [IUT >> TS_1]	**IF PT_IXIT_6=YES**: PP rejects the waiting call {**CC-INFO**} with: -IE <<**MULTI-KEYPAD**>> set to '1C 36' H -IE <<**CALL-INOFRMATION**>> specifying call id a = <1,0,value a>
	s4 [TS_1 >> IUT]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id a, CS idle) = <(1,0,value a), (2,1,0)>
	a4 [IUT >> TS_1]	**range_http_req**(target=URL2, r_low=RL, r_high=RH)

	s5.1 [TS_1 >> IUT]	**range_http_resp**(target=URL2, r_low=RL, r_high= RH)
		IUT attempts to retrieve the second range $URL2_1$
	s5.2 [TS_1]	**for**(k=1; k≤K; k=k+1) (loop over IUT attempts)
	a5 [IUT >> TS_1]	**range_http_req**(target=$URL2_1$, r_low=RL_2, r_high=RH_2)
	s6.1 [TS_1 >> IUT]	**http_error**(e="404 Not found", text="File not found")
	s6.2 [TS_1]	**End of k *for* loop (goto** s5.2**)** **End of test** (when **PT_IXIT_6=YES)**
		IF PT_IXIT_6=NO: PP "accepts" the waiting call
	a6 [IUT >> TS_1]	{**CC-RELEASE**} message to release data call
		Re-present incoming external call as a first call
	s7.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Normal call setup'> - IE <<**CALL-INFORMATION**>> specifying (line 0, line type information, call id a, CS call setup) = <(0,0,lid 0), (0, 5, lt0), (1,0,value a), (2,1,1)>
	s7.2 [TS_1 >> IUT]	{**CC-INFO**} message with: - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (Optional) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<**CALL-INFORMATION**>> with (call id a) =<(1, 0, value a)>
	a7.1 [IUT >> TS_1]	{**CC-ALERTING**} message PP user picks up
	a7.2 [IUT >> TS_1]	{**CC-CONNECT**} message
	s8 [TS_1 >> IUT]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id a, CS call connect) = <(1,0,value a), (2,1,5)>
	a8 [TS_1 <> IUT]	End to end audio connection **End of test** (when **PT_IXIT_6=NO)**
Pass criteria:	Verify all answers. Data transmission could have started from before s3.2. HTTP error in s6.1 shall only be sent after IUT has correctly retrieved at least one range after the incoming call was received and rejected.	
Comments:	At a6, "accepting" the call here means releasing the data connection so that the FP can represent the voice call as a first call. The call is not presented to the user at this stage)	

6.3 NGLDS-N.2 Software upgrade over the air, C-plane

TC_PT_NGLDS.N.2_BV_101 C-Plane SUOTA exchange - new version is available-user interaction

TC_PT_NGLDS.N.2_BV_101	C-Plane SUOTA exchange - new version is available - user interaction	
Test purpose	Check C-plane exchange when a new software version **is** available. 1-User initiates the SUOTA connection 2-IUT sends Handset version indication (Step 1) 3-IUT sends URL indication(s) for URL1 (Step 1, continued) 4-TS_1 answers with Handset version available and URLs indications for URL2 (Step 3) 5-User interaction is used (value YES in s4) in order to stop the upgrade	
Reference:	ETSI TS 102 527-4 [5], clauses 7.6.2.2.1 (Step 1) & 7.6.2.2.3 (Step 3)	
Initial condition:	TS_1 (PP) should have access rights on the Test System's FP PT initial state conforms with dataset PT_IXIT_2 or PT_IXIT_3 The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value received in a1: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0 (see table A.1 in clause A.1.2) SWV1= PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) $URL2_1$ = PT_IXIT_{d}.URL2(1) N1 = number of URL Indication messages required for URL1 Local variable n, used to count URL Indication messages	
Time sequence:		
		1-User initiates the SUOTA connection
	s1 [USR >> IUT]	User enquires about a s/w Update via Menu or time-of-day adjustment.
		2-IUT sends Handset version indication
	a1 [IUT >> TS_1]	{**FACILITY**} message with: - IE <<**IWU-to-IWU**>> with: - <PD> =<06H> (Software upgrade) - <**Command**> = 0H (Handset version indication) - <**EMC**> = EMC (IXIT defined Manufacturer's code) - <**URL1 to follow**> = N1 (number of URL indications required to define the location of the MS.) - <**fileNumber**> = 1 (the 1st File) - <**reason**> = 0 (request for a new file) - <**flags**> = '000'B (if time_of_day adjustment used in s1) OR '001'B (if 'User initiated software upgrade' used in s1) - <**SWV**> = SWV0 (IXIT defined existing version) - <**HWV**> = HWV (IXIT defined HW version)
		3-IUT sends URL indication(s) for URL1
	s2 [TS_1]	**for**(n=N1-1; n ≥ 0; n=n-1)
	a2 [IUT >> TS_1]	**{FACILITY}** message with: - IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> = cu_n (partial content of URL1)
	s3 [TS_1]	**End of n *for* loop (goto s2)**
	a3 [TS_1]	cu_{N1-1} + cu_{N1-2} + + cu_0 is equal to URL1 (where '+' operator stands for string concatenation)
		4-TS_1 answers with Handset version available
	s4 [TS_1 >> IUT]	**hsv_avail**(dm=0, url2=$URL2_1$, u_inter=YES, swv=SWV1)

			5-User interaction is used to stop the upgrade
	a4	[IUT >> USR]	User is informed through MMI of the new S/W version that is available and is offered a way to accept or decline the upgrade
	s5	[USR >> IUT]	User to decline the upgrade.
Pass criteria:	Verify all answers At a1; the {FACILITY} message with <<IWU-to-IWU>> IE shall be correctly formatted.In addition: - The received < URL1 to follow> value (N1) shall be reused in s2 - The received <flags> value shall correspond to the user behavior in s1. - The received Software version shall match PT_IXIT_{d}.SWV0 declaration. - The received Hardware version shall match PT_IXIT_{d}.HWV declaration. At a2 URL indication(s) shall be correctly formatted. At a3 The computed URL1 value shall match PT_IXIT_{d}.URL1 declaration.		
Comments:			

TC_PT_NGLDS.N.2_BV_102 C Plane SUOTA exchange - No new firmware is available

TC_PT_NGLDS.N.2_BV_102	C-Plane SUOTA exchange - No new version available		
Main test purpose:	Check handling when no new S/W version is available. 1- USR initiates the SUOTA connection 2- IUT supplies details of the existing SW (and HW) versions (Step 1) 3- Tester replies that no new SW version is available 4- User declines upgrade and initiates a 2nd upgrade to show that the existing versions remained 5- User declines the 2nd upgrade		
Reference:	ETSI TS 102 527-4 [5], clauses 7.6.2.2.1 (Step 1) & 7.6.2.2.3 (Step 3)		
Initial condition:	TS_1 (PP) should have access rights on the Test System's FP PT initial state conforms with dataset PT_IXIT_2 or PT_IXIT_3 The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value received in a1: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0 (see table A.1 in clause A.1.2) SWV1= PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) $URL2_1$ = PT_IXIT_{d}.URL2(1) N1 = number of URL Indication messages required for URL1 Local variable n, used to count URL Indication messages		
Time sequence:			1- USR initiates the SUOTA connection
	s1	[USR >> IUT]	User enquires about a S/W Update via Menu or time-of-day adjustment.
			2- IUT sends existing version details
	a1	a1	[IUT >> TS_1] {**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 0H (Handset version indication) - <**EMC**> = EMC (IXIT defined Manufacturers code) - <**URL1 to follow**> = N1 (number of URL indications required to define the location of the MS.) - <**fileNumber**> = 1 (the 1st File) - <**reason**> = 0 (request for a new file) - <**flags**> = '000'B (if time_of_day adjustment used in s1) OR '001'B (if 'User initiated software upgrade' used in s1) - <**SWV**> = SWV0 (IXIT defined existing version) - <**HWV**> = HWV (IXIT defined HW version)
	s2	[TS_1]	**for**(n=N1-1; n ≥ 0; n=n-1)

	a2 [IUT >> TS_1]	**{FACILITY}** message with IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> = cu_n (partial content of URL1)
	s3.1 [TS_1]	**End of n *for* loop (goto s2)**
		3- Tester replies that no new S/W version is available
	s4s3.2	[TS_1 >> IUT] {**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - **Handset version available** (1H): - DelayMinutes=0 - URL2 to follow=0 (No new version available) - User interaction=YES - SW Version id=<empty>
		4- User initiates a 2nd upgrade
	s3.3 [USR >> IUT]	User declines the upgrade and **again** enquires about a SW version Update via Menu or time-of-day adjustment.
	a3 a3	[IUT >> TS_1] {**FACILITY**} message with IE <<IWU-to-IWU>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 00 (Handset version indication) - <**EMC**> = EMC (IXIT defined Manufacturers code) - <**URL1 to follow**> = N1 (number of URL indications required to define the location of the MS.) - <**fileNumber**> = 1 (the 1st File) - <**reason**> = 0 (request for a new file) - <**flags**> = '000'B (if time_of_day adjustment used in s1) OR'001'B (if 'User initiated software upgrade' used in s1) - <**SWV**> = SWV0 (IXIT defined existing version) - <**HWV**> = HWV (IXIT defined HW version)
	s6s4[TS_1]	**for**(n=N1-1; n ≥ 0; n=n-1)
	a4 [IUT >> TS_1]	**{FACILITY}** message with IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> = cu_n (partial content of URL1)
	s7s5.1	[TS_1] **End of n *for* loop (goto s2)**
	s5.2 [TS_1 >> IUT]	{**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - **Handset version available** (1H): - DelayMinutes=0 - URL2 to follow=0 (No new version available) - User interaction=YES - SW Version id=<empty>
		5- User declines the 2nd upgrade
	s5.3 [USR >> IUT]	User declines the upgrade
Pass criteria:	Verify all answers At a1; the {FACILITY} message with <<IWU-to-IWU>> IE shall be correctly formatted.In addition: - The received < URL1 to follow> value (N1) shall be reused in s2. - The received <flags> value shall correspond to the user behavior in s1. - The received Software version shall match PT_IXIT_{d}.SWV0 declaration. - The received Hardware version shall match PT_IXIT_{d}.HWV declaration. At a2 URL indication(s) shall be correctly formatted. a3 (after the IUT has been informed in s3.2 that no new SW is available), verify that the received SW version has not changed (matches the one received at a1)	
Comments:		

TC_PT_NGLDS.N.2_BV_103 C-Plane SUOTA exchange - Delay Minutes

TC_PT_NGLDS.N.2_BV_103	C-Plane SUOTA exchange -Delay Minutes	
Main test purpose:	Check handling when the PT is instructed to delay its S/W update 1-USR initiates the SUOTA connection 2- Check the detail of the existing S/W and H/W versions(Step 1) 3- Tester supplies new S/W version details and defines a 1 minute delay 4- Tester uses a timer to verify that the IUT respects the defined delay 5- Tester releasesthe data connection	
Reference:	ETSI TS 102 527-4 [5], clause7.5.5.2.2 (Delay Minutes)	
Initial condition:	TS_1 (PP) should have access rights on the Test System's FP PT initial state conforms with dataset PT_IXIT_2 or PT_IXIT_3 The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value received in a1: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0 (see table A.1 in clause A.1.2) SWV1= PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) $URL2_1$ = PT_IXIT_{d}.URL2(1) N1 = number of URL Indication messages required for URL1 Local variable n, used to count URL Indication messages	
Time sequence:		
		1-USR initiates the SUOTA connection
	s1 [USR >> IUT]	User enquires about a S/W Update via Menu or time-of-day adjustment.
		2- IUT sends existing version details
	a1 [IUT>> TS_1]	{**FACILITY**} message withIE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 0H (Handset version indication) - <**EMC**> = EMC (IXIT defined Manufacturers code) - <**URL1 to follow**> = N1 (number of URL indications required to define the location of the MS.) - <**fileNumber**> = 1 (the 1st File) - <**reason**> = 0 (request for a new file) - <**flags**> = '000'B (if time_of_day adjustment used in s1) OR '001'B(if 'User initiated software upgrade' used in s1) - <**SWV**> = SWV0 (IXIT defined existing version) - <**HWV**> = HWV (IXIT defined HW version)
	s2 [TS_1]	**for**(n=N1-1; n ≥ 0; n=n-1)
	a2 [IUT >> TS_1]	**{FACILITY}** message withIE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> =cu_n(partial content of URL1)
	s3.1 [TS_1]	**End of n *for* loop (goto s2)**
		3- Tester sends new S/W version details and defines a 1 minute delay
	s3.2 [TS_1 >> IUT]	**hsv_avail**(dm=1, url2=$URL2_1$, u_inter=NO, swv=SWV1)
	s3.3 [TS_1]	Timer T1 started, with timeout = 1 min
		4- Tester uses a timer to verify that the IUT respects the defined delay
	a3 [IUT >> TS_1]	(*Not before T1 expiry*) {**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with: - <Call class = 'Normal call setup' = 8H>, - <Basic service = 'LDS: SUOTA, Class 4 DPRS management, default setup attributes' = 9H> - IE <<**IWU-ATTRIBUTES**>> with: - <Code std>='01'B,

		- <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = MaxSDUsize1 (14 bits) - <Maximum SDU size (FT to PT)> = MaxSDUsize2 (14 bits) - <Operation code>='01'B, <Optional groups>='00'B - <Chopping>='0'B, <Spare>='00'B - <seq>='0'B - <Generic Media context indicator (GMCI)>='0000000'B (PT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	s4 [TS_1 >> IUT]	**5-Tester releasesthe data connection** {**CC-RELEASE-COM**} -IE <<RELEASE-REASON>> with - Release reason = <32H> (Insufficient Resources)
Pass criteria:	Verify all answers At a1; the {FACILITY} message with<<IWU-to-IWU>> IEshall be correctly formatted. In addition: - The received < URL1 to follow> value (N1) shall be reused in s2. - The received <flags> value shall correspond to the user behavior in s1. - The received Software version shall match PT_IXIT_{d}.SWV0 declaration. - The received Hardware version shall match PT_IXIT_{d}.HWV declaration. At a2 URL indication(s)shall be correctly formatted. At a3 (after the IUT has been informed at s3.2 that a new S/W Versionis available at URL1, verify that the IUT waits for at least 1 min before starting the upgrade. After s4, test shall fail if IUT retries the setup of a data connection (as in a3) without first re-initiating a C-Plane exchange (as in a1). See clause 7.5.5.2.4, section 'Retry later - Connection refused '. After s4, if IUT sends a new 'Handset version indication' command (as in a1), TS_1 shall answer with a 'Handset version available' command with *user_interaction*=YES in order to allow the user to stop the upgrade.	
Comments:		

TC_PT_NGLDS.N.2_BV_105 C-Plane SUOTA exchange - Push Mode

TC_PT_NGLDS.N.2_BV_105	C-Plane SUOTA exchange - Push Mode
Main test purpose:	Check handling when the PT is informed about a new S/W Version with an event notification. 1- IUT is informed of a new version being available 2- IUT begins the SUOTA process (Step 1) 3- Tester provides new s/w details (Step 3) 4- User is informed of the available upgrade 5- User declines the upgrade
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.5.6 (SUOTA Push Mode) TS_1 (PP) should have access rights on the Test System's FP PT initial state conforms with dataset PT_IXIT_2 or PT_IXIT_3 The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value received in a1: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0 (see table A.1 in clause A.1.2) SWV1= PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) $URL2_1$ = PT_IXIT_{d}.URL2(1)
Time sequence:	s1 [TS_1 >> IUT] 1- IUT is informed of a new version being available {**FACILITY**} message with: - IE <<**Event Notification**>> with: -<Event type> =04H (Software upgrade notification) - <Event subtype> = 01H (Firmware upgrade) - <Event multiplicity> = 00H (not used) a1 [IUT >> TS_1] 2- IUT starts the upgrade process (Step 1) - A new file & not User initiated. **hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=0, reason=0, swv=SWV0, hwv=HWV) s2 [TS_1 >> IUT] 3- Tester replies with new s/w details (Step 3) **hsv_avail**(dm=0, url2=URL21, u_inter=YES, swv=SWV1) a2 [IUT >> USR] 4- User is informed of the available upgrade User is notified via its MMI and prompted to accept or decline s3 [USR >> IUT] 5- User declines the upgrade User declines the upgrade.
Pass criteria:	Verify all answers. Verify that IUT responds to Push event (s1) by starting the upgrade process (a1) with EMC, URL1, SWV0 and HWV details matching the defined IXIT properties and with flags='000'B (not user initiated).
Comments:	

TC_PT_NGLDS.N.2_BI_101 C-Plane SUOTA exchange - Unreachable URL1 (server error)

TC_PT_NGLDS.N2_BI_101	C-Plane SUOTA exchange - Unreachable URL1 (server error)
Main test purpose:	Check handling when the declared URL1 is unavailable. 1- USR initiates the SUOTA connection 2- IUT supplies details of the existing SW (and HW) versions (Step 1) 3- Tester replies that URL1 is unreachable (server was found, but URL1 does not exist on the server) 4- User is informed of the problem
Reference:	ETSI TS 102 527-4 [5], clause 7.5.5.2.4 (Negative acknowledgement)
Initial condition:	TS_1 (PP) should have access rights on the Test System's FP PT initial state conforms with dataset PT_IXIT_2 or PT_IXIT_3 The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value received in a1: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0 (see table A.1 in clause A.1.2) SWV1= PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) $URL2_1$ = PT_IXIT_{d}.URL2(1) N1 = number of URL Indication messages required for URL1 Local variable n, used to count URL Indication messages
Time sequence:	
	1- USR initiates the SUOTA connection
	s1 [USR >> IUT] User enquires about a S/W Update via Menu or time-of-day adjustment.
	2- IUT sends existing version details
	a1 [IUT >> TS_1] {**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 0H (Handset version indication) - <**EMC**> = EMC (IXIT defined Manufacturers code) - <**URL1 to follow**> = N1 (number of URL indications required to define the location of the MS.) - <**fileNumber**> = 1 (the 1st File) - <**reason**> = 0 (request for a new file) - <**flags**> = '000'B (if time_of_day adjustment used in s1) OR '001'B (if 'User initiated software upgrade' used in s1) - <**SWV**> = SWV0 (IXIT defined existing version) - <**HWV**> = HWV (IXIT defined HW version)
	s2 [TS_1] **for**(n=N1-1; n ≥ 0; n=n-1)
	a2 [IUT >> TS_1] **{FACILITY}** message with IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> = cu_n (partial content of URL1)
	s3.1 [TS_1] **End of n *for* loop (goto s2)**
	3- Tester replies that URL1 is unreachable
	s3.2 [TS_1 >> IUT] {**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - <PD> =<06H> (Software upgrade) - Command = Negative Acknowledgement (03H) - Reject reason = 'Unreachable URL1 (server error)' (05H)
	4- User is informed
	a3 [IUT >> USR] User is informed of the problem

Pass criteria:	Verify all answers At a1; the {FACILITY} message with <<IWU-to-IWU>> IE shall be correctly formatted.In addition: - The received < URL1 to follow> value (N1) shall be reused in s2 - The received <flags> value shall correspond to the user behavior in s1. - The received Software version shall match PT_IXIT_{d}.SWV0 declaration. - The received Hardware version shall match PT_IXIT_{d}.HWV declaration. At a2 URL indication(s) shall be correctly formatted. At a3 (after the IUT has been informed in s3.2 that URL1 was unreachable, verify that the User is notified of the problem.
Comments: (optional)	

6.4 NGLDS-A.1 Binary content download

TC_PT_NGLDS.A.1_BV_101 Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support

TC_PT_NGLDS.A.1_BV_101	Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support		
Test purpose	IUT initiates a software upgrade from its current initial version SWV0. **Hypotheses**: - Software version SWV0 is installed on IUT - A single new version SWV1 is available for IUT (multiple upgrade not tested). In other words, PT with version SWV1 installed is assumed to be up to date. - Multiple-file upgrade can be used (if Nf > 1), depending on dataset content.		
Reference:	ETSI TS 102 527-4 [5], clause 7.6.1.2.1 ("Simple binary content download")		
Initial condition:	MS originating data are given to the tester in advance through the use of MS data sets The used data set is called PT_IXIT_{d} below; its value depends on SWV0 value: - if SWV0= PT_IXIT_2.SWV0 THEN PT_IXIT_{d}= PT_IXIT_2 - if SWV0= PT_IXIT_3.SWV0 THEN PT_IXIT_{d}= PT_IXIT_3 In addition, the following shortcuts are defined for the test description below: EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV1=PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) HWV=PT_IXIT_{d}.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL2(1) (see table A.1 in clause A.1.2) $URL2_{1=}$ PT_IXIT_{d}.URL2(1) (see table A.1 in clause A.1.2) For the definitions of MACROs **hsv_ind**, **hsv_avail** used below, see clause 5.1.2.		
Time sequence:	s1	[USR >> IUT]	SUOTA (pull mode) initiated on IUT
			1 - C-plane Suota Exchange
	a1	[IUT >> TS_1]	**Step 1 - hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=F, reason=R, swv=SWV0, hwv=HWV)
	s2	[TS_1 >> IUT]	**Step 3 - hsv_avail**(dm=0, url2=$URL2_1$, u_inter=NO, swv=SWV1)
			2 - Binary Content Download (*Data channel establishment*, clause 7.6.1.4)
	a2	[IUT >> TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE** >> with: - <Call class = 'Normal call setup' = 8H>, - <Basic service = 'LDS: SUOTA, Class 4 DPRS management, default setup attributes' = 9H> - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B, - <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation)

		- <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = **MaxSDUsize1** (14 bits) - <Maximum SDU size (FT to PT)> = **MaxSDUsize2** (14 bits) - <Operation code>='01'B, <Optional groups>='00'B - <Chopping>='0'B, <Spare>='00'B - <seq>='0'B - <Generic Media context indicator (GMCI)>='0000000'B (PT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	s3.1 [TS_1 >> IUT]	{**CC-CONNECT**} message - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B, - <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = **752 octets** - <Maximum SDU size (FT to PT)> = **752 octets** - <Operation code>='01'B, <Optional groups>='00'B - <Chopping>='0'B, <Spare>='00'B - <seq>='0'B - <Generic Media context indicator (GMCI)>='0000001'B (FT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	s3.2 [TS_1 >> IUT] a3 [IUT >> TS_1]	(*after 2s*) {**CC-RELEASE**} {**CC-RELEASE-COM**}
Pass criteria:	Verify all answers At a2, verify that **MaxSDUsize1** and **MaxSDUsize2** are greater or equal to the minimum of 752 octets	
Comments:	The GMCI is defined by the FT and has to be '1'. It is therefore set to 1 by FT(TS_1) in s3, while value 0 (not yet defined GMCI) is used by the PT (IUT) in a2. At s3 we test that IUT supports a reduction of Max SDU size values by using the minimum 'Max SDU size' value possible. This test only works if IUT supports more than this minimum.	

6.5 NGLDS-A.2 Software upgrade over the air

TC_PT_NGLDS.A.2_BV_101(SWV, UI) Basic SUOTA - Single upgrade SUOTA - with or without user interaction (UI)

TC_PT_NGLDS.A.2_BV_101(SWV, UI)	Basic SUOTA - Single upgrade SUOTA with initial software version (SWV) - with or without user interaction (UI boolean) **(parameterized test)**
Test purpose	IUT performs a software upgrade from version SWV=SWV0 to SWV1. The data normally received by the FP from the MS are provided to the tester through a dataset referenced by the initial version SWV (parameter defined at test instantiation). See clause A.1.2 (including notes) and initial conditions below for more details. **Hypotheses**: - Software version SWV=SWV0 is installed on IUT - A single new version SWV1 is available for IUT SWV1. 'Multiple upgrade SUOTA' will NOT be tested here. In other words, PT with new version SWV1 installed will be up to date. - multiple-file upgrade can be used (if Nf > 1), depending on dataset content.
Reference:	ETSI TS 102 527-4 [5], clause 7.6.2.2 (Basic SUOTA)
Initial condition:	MS originating data are given to the tester in advance through the use of MS data sets The used data set is called PT_IXIT_{d} below; its value depends on parameter SWV: PT_IXIT_{d}= PT_IXIT_2 if (SWV= PT_IXIT_2.SWV0) ELSE PT_IXIT_{d}=PT_IXIT_3. In addition, the following shortcuts are defined for the test description below: HWV=PT_IXIT_1 (see table A.1 in clause A.1.2)

	EMC=PT_IXIT_{d}.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_{d}.SWV0=SWV (see table A.1 in clause A.1.2) SWV1=PT_IXIT_{d}.SWV1 (see table A.1 in clause A.1.2) URL1=PT_IXIT_{d}.URL1 (see table A.1 in clause A.1.2) Nf=PT_IXIT_{d}.Nf (see table A.1 in clause A.1.2) For n ∈ [1..Nf], $URL2_{n=}$ PT_IXIT_{d}.URL2n (see table A.1 in clause A.1.2) For the definitions of MACROs **hsv_ind**, **hsv_avail**, **range_http_req**, **range_http_resp** and **filesize** used below, see clause 5.1.2.	
Time sequence:	s1.1 [USR >> IUT]	SUOTA (pull mode) initiated on IUT
	s1.2 [TS_1]	**for**(n=1; ;n=n+1)
		1 - C-plane Suota Exchange
	a1.1 [IUT >> TS_1]	**Step 1 - hsv_ind**(emc=EMC, url1=PT_URL1, fileNumber=n, flags=F, reason=R, swv=PT_SWV, hwv=HWV)
	a1.2 [MS >> TS_1]	IF n=1, Nf is retrieved by TS_1 from MS
	a1.3 [TS_1]	IF n=1 then URL1=PT_URL1 AND SWV0=PT_SWV ELSE IF n > 1 then: - PT_URL1 has to be empty> - and PT_SWV has to be equal to SWV0
	s2 [TS_1 >> IUT]	**Step 3 - hsv_avail**(dm=DM, url2=$URL2_n$, u_inter=UI, swv=SWV1), with: - IF n=1 THEN DM=1 ELSE (n>1) DM=0
		2 - Binary Content Download (*Data channel establishment*, clause 7.6.1.4)
	a2 [IUT >> TS_1]	{**CC-SETUP**} message with : - IE <<BASIC-SERVICE **BCD** >> - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B, - <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = MaxSDUsize1 (14 bits) - <Maximum SDU size (FT to PT)> = MaxSDUsize2 (14 bits) - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = 00H (PT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	s3.1 [TS_1 >> IUT]	{**CC-CONNECT**} message with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8' H - Max. SDU size PT->FT = MaxSDUsize1 - Max. SDU size FT->PT = MaxSDUsize2 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = (0, '0000001'B) = 01H - Application protocol identifier = '0437'H
		Step 4 - Retrieval of $URL2_n$
	s3.2 [TS_1]	**for**(m=1; ;m=m+1) (upper bound M not yet known by TS_1)
	a3 [IUT >> TS_1]	**range_http_req**(target=$URL2_n$, r_low=RL_m, r_high= RH_m) with: IF m=1 then RL_1=0 IF m ≥ 2 then RL_m=RH_{m-1}+1
	s4.1 [TS_1 >> IUT]	**range_http_resp**(target=$URL2_n$, r_low=RL_m, r_high= RH_m) IF RH_m=**filesize**($URL2_n$) THEN M=m (**break m loop**)
	s4.2 [TS_1]	**End of m *for* loop (goto s3.2)**
	s4.3 [TS_1]	**End of n *for* loop (goto s1.2)**

		(*Data channel release*, clause 7.6.1.4)
	a4 [IUT >> TS_1]	{**CC-RELEASE**}
	s5 [TS_1 >> IUT]	{**CC-RELEASE-COM**}
		3 - Firmware installation
	a5.1 [IUT]	Firmware with version SWV1 is being installed
		4 - Final notification of success and multiple upgrade SUOTA
	a5.2 [IUT >> TS_1]	**Step 1 - hsv_ind**(emc=EMC, url1=PT_URL1, fileNumber=1, flags=F, reason=R, swv=SWV1, hwv=HWV), with: - PT_URL1 non empty - fileNumber with value 1 - swv=SWV1 different from SWV0
	s6 [TS_1 >> IUT]	**Step 3 - hsv_avail**(dm=don't care, url2="", u_inter=NO, swv="") - url2="" (No url) means PP is up to date (7.6.2.2.3, option 1). - swv="" indicates there is no new version available (7.5.5.2.2) - user interaction set to NO (no need to ask the user)
Pass criteria:	Verify all answers except a5.1 (verified automatically during Final notification of success and multiple upgrade SUOTA) At a2, verify that **MaxSDUsize1** and **MaxSDUsize2** are greater or equal to the minimum of 752 octets	
Comments:	The TC contains 2 loops: - the 1st loop for multiple-file upgrade, used Nf times. - the 2nd loop for multiple HTTP range requests for a given file retrieval, is included in the 1st loop (and used M(n) times). For each loop, the number of times it is used depends on the used dataset. In s1.1, a firmware upgrade is manually initiated (e.g. using a menu item) In s3.1, the Max. SDU sizes received from PT are reused. In a5.2, in the case IUT would try to download a 3rd file (with fileNumber=3) before sending a final notification, the tester shall answer with a negative acknowledgement, reason "File does not exist" (see ETSI TS 102 527-4 [5], clause 7.6.2.2.3, option 3) In s5, url2 empty ("No url" case) indicates that the required number of upgrades is reached and the PP is up to date. This is similar to the case of a firmware upgrade attempt when no new firmware is available.	

TC_PT_NGLDS.A.2_BV_1011 Basic SUOTA - Single upgrade SUOTA - with NO user interaction required.

TC_PT_NGLDS.A.2_BV_1011	Basic SUOTA - Single upgrade SUOTA with initial software version PT_IXIT_2.SWV0 (see clause A.1.2) - with NO user interaction required.
Test purpose and body	See test TC_PT_NGLDS.A.2_BV_101(SWV= PT_IXIT_2.SWV0, UI=NO)

TC_PT_NGLDS.A.2_BV_1012 Basic SUOTA - Single upgrade SUOTA - with user interaction required

TC_PT_NGLDS.A.2_BV_1012	Basic SUOTA - Single upgrade SUOTA with initial software version PT_IXIT_3.SWV0 (see clause A.1.2) - with user interaction required.
Test purpose and body	See test TC_PT_NGLDS.A.2_BV_101(SWV= PT_IXIT_3.SWV0, UI=YES)

TC_PT_NGLDS.A.2_BI_101(E) Software upgrade - Error E during BCD - Notification of failure

TC_PT_NGLDS.A.2_BI_101(E)	Software upgrade - Error E during BCD - Notification of failure
Test purpose	Test that IUT sends a notification of failure after unsuccessfully trying to download file 1. PT recovery from error is tested if PT_IXIT_4 ≥ 1, but the upgrade is nevertheless interrupted. The following steps are used: 1 - User initiated SUOTA 2 - C-plane Suota Exchange 3 - Binary Content Download with error E for the 1st range of the 1st file. Only HTTP errors are currently tested. 4 - Notification of failure (IUT gave up) sent immediately 5 - IUT is still usable

Reference:	ETSI TS 102 527-4 [5], clause 7.6.2.2.4 ('Error handling' section) and 7.6.2.6 (Notification of failure).
Initial condition:	PT initial state conforms with dataset PT_IXIT_2. The following shortcuts are defined for the test description below: EMC=PT_IXIT_2.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_2.SWV0 (see table A.1 in clause A.1.2) HWV=PT_IXIT_2.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_2.URL1 (see table A.1 in clause A.1.2) $URL2_{1=}$ PT_IXIT_2.$URL2_1$ (see table A.1 in clause A.1.2) K = PT_IXIT_4 (Number of immediate retries in case of HTTP error) IF E="Incorrect DS host name" THEN HTTP_ERROR="502 Bad Gateway" ELSE IF E="File not found" THEN HTTP_ERROR="404 Not found"
Time sequence:	**1 - User initiated SUOTA** s1 [USR >> IUT] User starts SUOTA using a menu, or by changing the device clock time (if time based) **2 - C-plane Suota Exchange** a1 [IUT >> TS_1] **Step 1 - handset_version_indication** s2 [TS_1 >> IUT] **Step 3 - handset_version_available**, with: - user interaction=NO **3 - Binary Content Download with error E** (*Data channel establishment*, clause 7.6.1.4) a2 [IUT >> TS_1] {**CC-SETUP**} message with IE <<BASIC-SERVICE **BCD** >> s3.1 [TS_1 >> IUT] {**CC-CONNECT**} message **Step 4 -** Attempts to retrieve $URL2_1$ s3.2 [TS_1] **for**(k=1; k≤K+1; k=k+1) (loop over IUT attempts) a3 [IUT >> TS_1] **range_http_req**(target=$URL2_1$, r_low=RL_1, r_high=RH_1) s4.1 [TS_1 >> IUT] **http_error**(e=HTTP_ERROR, text=E) s4.2 [TS_1] **End of k *for* loop (goto** s3.2**)** **4 - Notification of failure (IUT gave up)** a4 [IUT >> TS_1] **Step 1 - Handset version indication** with: - emc=EMC, - url1=URL1, fileNumber=1, - flags= don't care - reason='Download of file with indicated fileNumber failed' - swv=SWV0, hwv=HWV s5.1 [TS_1 >> IUT] **Step 3 - Handset version available** with: - dm= don't care, - url2="" (No url) means here that the MS takes into account the failure (see clause 7.6.2.6), - user interaction=NO, - swv="" (because url2 is empty) **5 - IUT is still usable** s5.1 [USR >> IUT] User initiates outgoing call with Phone A and hangs up a5 [IUT <> Ph A] End to end connection
Pass criteria:	Verify all answers. At a3, r_low=RL_1 and r_high=RH_1,may differ from one attempt to another. However, at a3, r_low should be always 0 if the PP did not already download a part of the file prior to test start.
Comments:	At s3.2 we loop over K+1 attempts until PP gives up downloading the file. These K+1 attempts include K retries.

TC_PT_NGLDS.A.2_BI_1011 Software upgrade - Incorrect DS host name during BCD - Notification of failure

TC_PT_NGLDS.A.2_BI_1011	Software upgrade - Incorrect DS host name during BCD - Notification of failure
Test purpose and body	See test TC_PT_NGLDS.A.2_BI_101(E=Incorrect DS host name)

TC_PT_NGLDS.A.2_BI_1012 Software upgrade - File not found on server during BCD - Notification of failure

TC_PT_NGLDS.A.2_BI_1012	Software upgrade - File not found on server during BCD - Notification of failure
Test purpose and body	See test TC_PT_NGLDS.A.2_BI_101(E= File not found)

TC_PT_NGLDS.A.2_BI_111 Software upgrade - DECT connection error during BCD - Notification of failure

TC_PT_NGLDS.A.2_BI_111	Software upgrade - DECT connection error during BCD - Notification of failure
Main test purpose:	A DECT connection error is simulated by TS_1 during the second range retrieval of the first file. PT recovery from error is tested if PT_IXIT_5 ≥ 1, but the upgrade is nevertheless interrupted. The following steps are used: 1 - User initiated SUOTA 2 - C-plane Suota Exchange 3 - Connection error simulated by TS_1 through a {CC-RELEASE} during the second range of the first file 4 - IUT additional attempts (retries) through a new data connection 5 - Notification of failure (IUT gave up) 6 - IUT is still usable
Reference:	ETSI TS 102 527-4 [5], clauses 7.6.2.2.4 (Error Handling section) and A.1.7.3.3 (Use case 3: Download with interruption in-between)
Initial condition:	PT initial state conforms with dataset PT_IXIT_2. The following shortcuts are defined for the test description below: EMC=PT_IXIT_2.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_2.SWV0 (see table A.1 in clause A.1.2) HWV=PT_IXIT_2.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_2.URL1 (see table A.1 in clause A.1.2) $URL2_{1=}$ PT_IXIT_2.$URL2_1$ (see table A.1 in clause A.1.2) K = PT_IXIT_5 (Number of immediate retries in case of DECT connection error)
Time sequence:	**1 - User initiated SUOTA** s1 [USR >> IUT] User starts SUOTA using a menu, or by changing the device clock time (if time based) **2 - C-plane Suota Exchange** a1 [IUT >> TS_1] **Step 1 - handset_version_indication** s2 [TS_1 >> IUT] **Step 3 - handset_version_available**, with: - user interaction=NO **2 - Binary Content Download** (*Data channel establishment*, clause 7.6.1.4) a2 [IUT >> TS_1] {**CC-SETUP**} message with IE <<BASIC-SERVICE **BCD** >> s3 [TS_1 >> IUT] {**CC-CONNECT**} message **Step 4 -** First attempt to retrieve $URL2_1$ First chunk retrieval (chunk number m=1) a3 [IUT >> TS_1] **range_http_req**(target=$URL2_1$, r_low=RL_1, r_high=RH_1) s4 [TS_1 >> IUT] **range_http_resp**(target=$URL2_1$, r_low=RL_1, r_high= RH_1) 2^{nd} chunk retrieval (chunk number m=2) a4 [IUT >> TS_1] **range_http_req**(target=$URL2_1$, r_low=RL_2, r_high=RH_2) **3 - Connection error simulated by TS_1** s5.1 [TS_1] **for**(k=1; k≤K; k=k+1) (loop over IUT additional attempts) s5.2 [TS_1 >> IUT] **{CC-RELEASE}** a5.1 [IUT >> TS_1] **{CC-RELEASE-COM}** **4 - IUT additional attempts (retries)** a5.2 [IUT >> TS_1] {**CC-SETUP**} message with IE <<BASIC-SERVICE **BCD** >> s6 [TS_1 >> IUT] {**CC-CONNECT**} message **Restart of Step 4 -** Retrieval of $URL2_1$ a6 [IUT >> TS_1] **range_http_req**(target=$URL2_1$, r_low=RL_2, r_high=RH_2) s7 [TS_1] **End of k *for* loop (goto** s5.1**)**

		5 - Notification of failure (IUT gave up)
	a7 [IUT >> TS_1]	**Step 1 - Handset version indication** with: - emc=EMC, - url1=URL1, fileNumber=1, - flags= don't care - reason=r (with r ≠ 0) - swv=SWV0, hwv=HWV
	s8.1 [TS_1 >> IUT]	**Step 3 - Handset version available** with: - dm= don't care, - url2="" (No url) means here that the MS takes into account the failure (see clause 7.6.2.6), - user interaction=NO, - swv="" (because url2 is empty)
		6 - IUT is still usable
	s8.2 [USR >> IUT]	User initiates outgoing call with Phone A and hangs up
	a8 [IUT <> Ph A]	End to end connection
Pass criteria:	Verify all answers. At a3, r_low=RL_1 should be (but is not required to) be equal to 0. At a3, r_low=RL_2 should be (but is not required to) be equal to RH_1+1. At a6, r_low and r_high should (but are not required to) be equal to RL_2 and RH_2 used by IUT in a4. Furthermore, they should be equal (but may differ) from one attempt to another.	
Comments: (optional)	At a1/s2, the exchange HVI/HVA is not tested here because already done in TC_PT_NGLDS.N2_BV_101.	

TC_PT_NGLDS.A.2_BI_115 Software upgrade -BCD with redirection

TC_PT_NGLDS.A.2_BI_115(E)	Software upgrade -BCD with redirection of type E.	
Test purpose	Test that IUT supports redirections. The following steps are used: 1 - User initiated SUOTA 2 - C-plane Suota Exchange 3 - Binary Content Download with redirection 4 - "File not found" HTTP error for the 2nd range in order to stop the test. 5 - Notification of failure (IUT gave up) sent immediately	
Reference:	ETSI TS 102 527-4 [5], clause 7.6.2.2.4 ('Error handling' section) and 7.6.2.6 (Notification of failure).	
Initial condition:	PT initial state conforms with dataset PT_IXIT_2. The following shortcuts are defined for the test description below: EMC=PT_IXIT_2.EMC (see table A.1 in clause A.1.2) SWV0=PT_IXIT_2.SWV0 (see table A.1 in clause A.1.2) HWV=PT_IXIT_2.HWV (see table A.1 in clause A.1.2) URL1=PT_IXIT_2.URL1 (see table A.1 in clause A.1.2) $URL2_{tmp=}$ http://suota.example.com/download/image.bin K = PT_IXIT_4 (Number of immediate retries in case of HTTP error) URL2 = PT_IXIT_2.$URL2_1$ (see table A.1 in clause A.1.2)	
Time sequence:		**1 - User initiated SUOTA**
	s1 [USR >> IUT]	SUOTA started (*using a menu, or by changing the device clock time*)
		2 - C-plane Suota Exchange
	a1 [IUT >> TS_1]	**Step 1 - handset_version_indication**
	s2 [TS_1 >> IUT]	**Step 3 - handset_version_available**, with: - URL2 = $URL2_{tmp}$; - user interaction=NO
		3 - Binary Content Download
	a2 [IUT >> TS_1]	{**CC-SETUP**} message with IE <<BASIC-SERVICE **BCD** >>
	s3 [TS_1 >> IUT]	{**CC-CONNECT**} message
		Step 4 - Attempts to retrieve $URL2_1$
	a3 [IUT >> TS_1]	**range_http_req**(target=$URL2_{tmp}$, r_low= RL_1, r_high= RH_1)
	s4 [TS_1 >> IUT]	**http_redir**(E, Location= URL2)

	a4 [IUT >> TS_1]	**range_http_req**(target=URL2, r_low= RL_1, r_high= RH_1)
	s5.1 [TS_1 >> IUT]	**range_http_resp**(target=URL2, r_low= RL_1, r_high= RH_1)
		IUT attempts to retrieve the second range $URL2_1$
	s5.2 [TS_1]	**for**(k=1; k ≤ K+1; k=k+1) (loop over IUT attempts)
	a5 [IUT >> TS_1]	**range_http_req**(target=URL2, r_low=RL_2, r_high=RH_2)
	s6.1 [TS_1 >> IUT]	**http_error**(e="404 Not found", text="File not found")
	s6.2 [TS_1]	**End of k *for* loop (goto** s5.2**)**
		4 - Notification of failure (IUT gave up)
	a6 [IUT >> TS_1]	**Step 1 - Handset version indication** with: - reason='Download of file with indicated fileNumber failed'
	s7 [TS_1 >> IUT]	**Step 3 - Handset version available** with: - url2="" (No url) - user interaction=NO, - swv="" (because url2 is empty)
Pass criteria:	Verify all answers. At a3, r_low should be always 0 if the PP did not already download a part of the file prior to test start. At a5, r_low=RL_2 and r_high=RH_2,may differ from one attempt to another.	
Comments:	At s5.2 we loop over K+1 attempts until PP gives up downloading the file. These K+1 attempts include K retries.	

TC_PT_NGLDS.A.2_BV_1151 Software upgrade - BCD with redirection 301 Moved Permanently - Notification of failure

TC_PT_NGLDS.A.2_BV_1151	Software upgrade - BCD with redirection 301 Moved Permanently - Notification of failure
Test purpose and body	See test TC_PT_NGLDS.A.2_BV_115 (E="301 Moved Permanently")

TC_PT_NGLDS.A.2_BV_1152 Software upgrade - BCD with redirection 302 Found - Notification of failure

TC_PT_NGLDS.A.2_BV_1152	Software upgrade - BCD with redirection 302 Found- Notification of failure
Test purpose and body	See test TC_PT_NGLDS.A.2_BV_115(E="302 Found")

TC_PT_NGLDS.A.2_BV_1153 Software upgrade - BCD with redirection 307 Temporary Redirect - Notification of failure

TC_PT_NGLDS.A.2_BV_1153	Software upgrade - BCD with redirection 307 Temporary Redirect - Notification of failure
Test purpose and body	See test TC_PT_NGLDS.A.2_BV_115(E="307 Temporary Redirect")

6.6 NGLDS-A.3 HTTP based applications

TC_PT_NGLDS.A.3_BV_108 (URLP) PP browses a simple test site using the Simple XHTML profile

TC_PT_NGLDS.A.3_BV_108 (URLP)	HTTP based application - PP browses a test site (at url **URLP**) using a DECT specific XHTML profile
Main test purpose:	Check IUT ability to access and display a XHTML site. Depending on the site pointed to by URLP, the tested site may follow: - the 'Simple XHTML profile' (see ETSI TS 102 527-4 [5], clause 7.6.3.5) - the 'Baseline XHTML profile' (see ETSI TS 102 527-4 [5], clause 7.6.3.6)
Reference:	ETSI TS 102 527-4 [5], clauses 7.6.3.5 and 7.6.3.6.
Initial condition:	The PP should have access rights on the Test System's FP. Test System supplies a test XHTML page. Z ≥ 2 is defined such that URLP is the test url defined in 4.1.1.Z.1 (4.1.1.Z is the subclause of PT test platform dedicated to the present test). Home_page= URLP + 'index.html' Left_link = URLP + 'pages/left.html' Center_link = URLP + 'pages/center.html' Right_link = URLP + 'pages/right.html' The PP user has introduced Home_page url (e.g. through a menu) in the PP browser. B=Upper bound of the range requested by IUT.

Time sequence:	s1 [USR >> IUT] Home_page is selected
	a1 [IUT >> TS_1] `GET request_uri(`Home_page`)+" HTTP/1.1"\r\n`
	`Host: hostname(`URLP`)\r\n`
	`Accept:application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	s2 [TS_1 >> IUT] Requested resource sent back (see 4.1.1.Z.1)
	a2 [IUT >> USR] PP correctly displays the 'home' page (left, center and right links are correctly placed)
	s3 [USR >> IUT] Left_link selected on the displayed 'home' page.
	a3 [IUT >> TS_1] `GET request_uri(`Left_link`) + " HTTP/1.1"\r\n`
	`Host: hostname(`URLP`)\r\n`
	`Accept:application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	s4 [TS_1 >> IUT] Requested resource sent back (see 4.1.1.Z.2).
	a4 [IUT >> USR] PP correctly displays the left page.
	
	s5 [USR >> IUT] 'Home' page selected again (e.g. through back function) and Center_link selected on the displayed 'home' page.
	a5 [IUT >> TS_1] `GET request_uri(`Center_link`) + " HTTP/1.1"\r\n`
	`Host: hostname(`URLP`)\r\n`
	`Accept:application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	s6 [TS_1 >> IUT] Requested resource sent back (see 4.1.1.Z.3).
	a6 [IUT >> USR] PP correctly displays the center page.
	
	s7 [USR >> IUT] 'Home' page selected again (e.g. through back function) and Right_link selected on the displayed 'home' page.
	a7 [IUT >> TS_1] `GET request_uri(`Right_link`) + " HTTP/1.1"\r\n`
	`Host: hostname(`URLP`)\r\n`
	`Accept:application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	s8 [TS_1 >> IUT] Requested resource sent back (see 4.1.1.Z.4).
	a8 [IUT >> USR] PP correctly displays the right page.

Pass criteria:	Verify all answers. At a1, a3, a5, a7, headers may be in any order. Furthermore: • if present, the 'Accept' header, shall at least contain the value `application/xhtml+xml`. If absent, support of this value is anyway implied (see ETSI TS 102 527-4 [5], clause 7.6.3.3). • if present, 'Accept-Charset' header shall at least contain 'UTF-8'. If absent, support of this value is anyway implied (see ETSI TS 102 527-4 [5], clause 7.6.3.4). • in the 'Range' header, the requested range 0-B is supposed to be large enough for requesting the page with one request. However IUT could use several requests for downloading the page.
Comments: (optional)	A PP implementing NGLDS-A.3 mandatorily implements NGLDS-A.3_7 (Simple XHTML profile, clause 7.6.3.5). The PP may apply some styling on the received pages; however no support of CSS styling is mandated.

TC_PT_NGLDS.A.3_BV_1081 PP browses a simple test site using the Simple XHTML profile

TC_PT_NGLDS.A.3_BV_1081	HTTP based application - 'Simple XHTML profile'.
Test purpose and body	See test TC_PT_NGLDS.A3_BV_108(URLP=Test url of clause 4.1.1.2.1) (Simple XHTML profile)

TC_PT_NGLDS.A.3_BV_1082 PP browses a simple test site using the Baseline XHTML profile

TC_PT_NGLDS.A.3_BV_1082	HTTP based application - 'Baseline XHTML profile' - XHTML list.
Test purpose and body	See test TC_PT_NGLDS.A3_BV_108(URLP=Test url clause 4.1.1.3.1) (Baseline XHTML profile - XHTML list)

7 Fixed Part Test specification

This clause includes lists of the test groups relevant for a NG-DECT fixed part. Test cases are ordered so that network features are followed by application features (ETSI TS 102 527-5 [6], clauses 6.4 and 6.9).

The NG-DECT fixed part under test shall be connected to a network when running the tests suite.

Descriptions of new fixed part tests specific to NG-DECT part 5 [6] start at clause 7.40. This leaves room for tests of features and procedures that may be designed in the future but which are not specific to Part 5 [6]. That is, the tests for new features that will apply to both Part 3 [4] and Part 5 [6], because they are considered important to both parts, will not be interleaved but will be in contiguous subclauses.

7.1 DPRS FT Procedures

TC_FT_DPRS.N.36_BV_101 Management - Broadcast attributes

TC_FT_DPRS.N36_ BV_101	Management - Broadcast attributes
Test purpose	Verify mandatory capability bits set on the IUT
Reference:	ETSI TS 102 527-4 [5], clause 7.5.10 ETSI EN 300 175-5 [1], clause F.3
Initial condition:	F-00
Time sequence:	s1 [USR >> IUT] Open IUT for registrations. s2 [TS_1 >> IUT] Perform an access rights request a1 [IUT >> TS_1] Check for the following capability bits. • " Light Data services " Extended higher layer capabilities (part 2) bit a45 = 1 • Generic Media Encapsulation (a27) and DPRS Class 3 or 4 (a45) = 1 in Extended higher layer capabilities.
Pass criteria:	Verify all answers
Comments:	in a1. a21 capability bit is intentionally not tested.

TC_FT_DPRS.N.43_BV_101 Verify that FT enables encryption for SUOTA call within timer <MM_encryption_check.1>

TC_FT_DPRS.N.43_BV_101	Verify that FT enables encryption for SUOTA call within timer <MM_encryption_check.1>	
Main test purpose:	Test that FT encrypts the SUOTA call within the stipulated encryption time	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H
	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H - Application protocol identifier = '0437'H

		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message before timer T.001 expires
	s3 [TS_1 >> IUT]	**{AUTHENTICATION-REPLY}** message
	a3 [IUT >> TS_1]	**{CIPHER-REQUEST}** message before timer T.001 expires
Pass criteria:	Verify that IUT activates encryption on MAC layer before timer T001 expires Verify end-to-end U-plane connection.	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_102 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_102 Release of unencrypted call in case of wrong answer to authentication request

TC_FT_DPRS.N.43_BV_102	Release of unencrypted call in case of wrong answer to authentication request	
Main test purpose:	Test that FT releases the SUOTA call on authentication failure	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H
	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H - Application protocol identifier = '0437'H
		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message before timer T.001 expires
	s3 [TS_1 >> IUT]	**{AUTHENTICATION-REPLY}** message with incorrect values
		4- Release the data call
	a3 [IUT >> TS_1]	**{CC-RELEASE_COM}** message with -IE <<**RELEASE-REASON**>> = <Encryption activation failed> **OR** <Authentication failed>
Pass criteria:	Verify that IUT releases the data call on authentication failure	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_105 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_103 Release of unencrypted call in case of missing answer to authentication request

TC_FT_DPRS.N.43_BV_103	Release of unencrypted call in case of missing answer to authentication request	
Main test purpose:	Test that FT releases the SUOTA call on no reply to authentication request	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H
	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H - Application protocol identifier = '0437'H
		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message before timer T.001 expires
		4- No response from TS_1. Release data call
	a2.3 [IUT >> TS_1]	**{CC-RELEASE_COM}** message with -IE <<**RELEASE-REASON**>> = <Encryption activation failed> **OR** <Authentication failed>
Pass criteria:	Verify that IUT releases the data call on no response for authentication request	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_106 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_104 Release of unencrypted call in case of PP sending {AUTHENTICATION-REJECT} message

TC_FT_DPRS.N.43_BV_104	Release of unencrypted call in case of PP sending {AUTHENTICATION-REJECT} message	
Main test purpose:	Test that FT releases the SUOTA call on authentication reject	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)

		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H
	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H - Application protocol identifier = '0437'H
		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	{**AUTHENTICATION-REQUEST**} message before timer T.001 expires
	s3 [TS_1 >> IUT]	{**AUTHENTICATION-REJECT**} message
		4- Release data call
	a3 [IUT >> TS_1]	{**CC-RELEASE_COM**} message with -IE <<**RELEASE-REASON**>> = <Encryption activation failed> **OR** <Authentication failed> before expiry of T.001
Pass criteria:	Verify that IUT releases the data call on authentication reject	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_107 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_105 Release of un-encrypted call in case of cipher reject

TC_FT_DPRS.N.43_BV_105	Release of un-encrypted call in case of cipher reject	
Main test purpose:	Test that FT releases the SUOTA call on cipher reject	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H

	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H - Application protocol identifier = '0437'H
		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	{**AUTHENTICATION-REQUEST**} message before timer T.001 expires
	s3 [TS_1 >> IUT]	{**AUTHENTICATION-REPLY**} message
	a3 [IUT >> TS_1]	{**CIPHER-REQUEST**} message before timer T.001 expires
	s4 [TS_1 >> IUT]	{**CIPHER-REJECT**} message
		4- Release data call
	a4 [IUT >> TS_1]	{**CC-RELEASE_COM**} message with: -IE <<**RELEASE-REASON**>>=<Encryption activation failed>
Pass criteria:	Verify that IUT releases the data call on cipher reject	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_108 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_106 Release of unencrypted call in case of missing encryption activation on MAC layer

TC_FT_DPRS.N.43_BV_106	Release of unencrypted call in case of missing encryption activation on MAC layer	
Main test purpose:	Test that FT releases the SUOTA call if the call is not encrypted	
Reference:	ETSI EN 300 444 [2], clause 8.45.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		**1- SUOTA C-plane exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2.1 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE BCD**>> - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0'H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = 1000 octets - Max. SDU size FT->PT = 1000 octets - Octet 6 = 'A0'H - Octet 7 = (seq, GMCI) = ('0'B, '0000000'B) = '00'H Application protocol identifier = '0437'H
	s2.2 [TS_1]	TS_1 starts timer T.001 (MM_encryption_check.1 + 10 %)
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8'H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01'H

		- Application protocol identifier = '0437'H
		3- Authenticate the data call
	a2.2 [IUT >> TS_1]	{**AUTHENTICATION-REQUEST**} message before timer T.001 expires
	s3 [TS_1 >> IUT]	{**AUTHENTICATION-REPLY**} message
	a3 [IUT >> TS_1]	{**CIPHER-REQUEST**} message before timer T.001 expires
		4- Failure to encrypt SUOTA call. Release the call.
	a4 [IUT >> TS_1]	{**CC-RELEASE_COM**} message with -IE <<**RELEASE-REASON**>>=<Encryption activation failed>
Pass criteria:	Verify that IUT releases the data call on encryption failure.	
Comments:	This test is similar to TC_FT_GAP.N.35_BV_109 in ETSI TS 102 841 [i.3].	

TC_FT_DPRS.N.43_BV_107 Re-keying procedure for SUOTA call

TC_FT_DPRS.N.43_BV_107	Re-keying procedure for SUOTA call	
Main test purpose:	Test that when PT performs re-keying procedure for the SUOTA call, the FT generates new cipher key every 60s if it supports re-keying procedure	
Reference:	ETSI EN 300 444 [2], clause 8.45.2	
Initial condition:	TS_1 is registered to IUT (FT). IUT indicates the support of 'Re-keying' and 'early encryption' in extended higher layer capabilities part 2 (a42 bit).	
Time sequence:		**1 - C-plane Suota Exchange**
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F,reason=R, swv=SWV0, hwv=HWV1) complying with declaration about IUT initial state (PT_IXIT_2 dataset)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
		2- Initiate the data call
	s2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'> - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	a2.1 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
		3- Encrypt the data call with key DCK_1
	a2.2 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message IUT saves generated DCK as DCK_1
	s3 [TS_1 >> IUT]	**{AUTHENTICATION-REPLY}** message
	a3.1 [IUT >> TS_1]	**{CIPHER-REQUEST}** message

		4- Encrypt the data call with key DCK_2 after 60s
	a3.2 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message TS_1 saves generated DCK as DCK_2
	s4 [TS_1 >> IUT]	**{AUTHENTICATION-REPLY}** message
	a4 [IUT >> TS_1]	**{CIPHER-REQUEST}** message
		5- Release the data call
	s5 [TS_1 >> IUT]	**{CC-RELEASE}** message
	a5 [IUT >> TS_1]	**{CC-RELEASE-COM}** message
Pass criteria:	At a3.1, verify that IUT activates encryption with DCK_1. Verify end-to-end U-plane connection. At a4, verify that IUT activates encryption with DCK_2 after 60s. Verify end-to-end U-plane connection.	
Comments:	Before s5 and until the call is disconnected, a new cipher key is generated every 60s by IUT and used for encryption.	

TC_FT_DPRS.N.43_BV_108 Usage of early encryption during SUOTA call

TC_FT_DPRS.N.43_BV_108	Usage of early encryption during SUOTA call	
Main test purpose:	Test that FT accepts encrypted SUOTA call initiated by PT	
Reference:	ETSI EN 300 444 [2], clause 8.45.2	
Initial condition:	TS_1 is registered to IUT (FT).	
Time sequence:		**1 - (If not already registered) Register TS_1**
	s1 [TS_1 >> IUT]	TS_1 performs subscription registration with IUT, indicating the support of 'Re-keying' and 'early encryption' in the terminal capability.
	a1 [IUT >> TS_1]	**{AUTHENTICATION-REQUEST}** message indicating DEF-bit=1 and default cipher key index 0001 IUT saves DCK as Def_DCK_1.
	s2.1 [TS_1 >> IUT]	**{AUTHENTICATION-REPLY}** message. TS_1 saves DCK as Def_DCK_1.
		2- Initiate the data call
	s2.2 [IUT >>TS_1]	Establish MAC connection and initiate encryption activation using Def_DCK_1
	s2.3[IUT >>TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'> - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 such that 752 ≤ x1 Max. SDU size FT->PT = y1 such that 752 ≤ y1 Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	a2 [TS_1 >> IUT]	**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x1 Max. SDU size FT->PT = y1 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
Pass criteria:	At s1, verify successful IUT registration At a2, verify that IUT sends encrypted CC-CONNECT message	
Comments:		

7.2 NGLDS-N.1 General Light Data Service Procedures

TC_FT_NGLDS.N.1_BV_101 TC incoming voice call during preliminary exchanges of the SUOTA process

TC_FT_NGLDS.N.1_BV_101	TC incoming voice call during preliminary exchanges of the SUOTA process	
Main test purpose:	Test that FP can present an incoming voice call to PP during SUOTA C-plane commands exchange 1- TS_1 initiates SUOTA C-plane exchange 2- Incoming call on line 0 from Phone A 3- TS_1 accepts the call (i.e. does NOT release it in order to setup a data call.)	
Reference:	ETSI TS 102 527-4 [5], clause 7.5.4.2.1	
Initial condition:	TS_1 (PP) registered to IUT (FP).	
Time sequence:		1- TS_1 initiates SUOTA C-plane exchange
	s1.1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	s1.2 [PhA >> IUT]	2- Incoming call on line 0 from Phone A
	a1.1 [IUT >> TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Normal call setup'> - IE <<**CALL-INFORMATION**>> specifying (line 0, line type information, call id a, CS call setup) = <(0,0,lid 0), (0, 5, lt0), (1,0,value a), (2,1,1)>
	a1.2 [IUT >> TS_1]	{**CC-INFO**} message with: - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (Optional) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<**CALL-INFORMATION**>> with (call id a) =<(1, 0, value a)>
	a1.3 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV) complying with declaration about IUT upgrade target SWV1 (PT_IXIT_2 dataset)
		3- TS_1 accepts the call
	s2.1 [TS_1 >> IUT]	{**CC-ALERTING**} message
	s2.2 [TS_1 >> IUT]	{**CC-CONNECT**} message
	a2.1 [IUT >> TS_1]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id a, CS call connect) = <(1,0,value a), (2,1,5)>
	a2.2 [IUT >> TS_1]	End to end audio connection
Pass criteria:	Verify all answers. a1.3 may be sent by IUT from after s1.1	
Comments:		

TC_FT_NGLDS.N.1_BV_102 TC incoming voice call while LDS already established

TC_FT_NGLDS.N.1_BV_102	TC incoming voice call while LDS already established
Main test purpose:	Test that FP can present an incoming voice call to a PP which is involved in a LDS call. 1- TS_1 initiates SUOTA (C-plane exchange) 2- TS_1 initiates data call 3- Incoming call on line 0 from Phone A 4- TS_1 rejects the waiting call 5- Proceed with (limited) data transfer 6- Incoming call again on line 0 from Phone A 7- TS_1 accepts the waiting call (i.e. releases the data call) 8- ITU re-presents the incoming external call as a first call End to end audio connection
Reference:	ETSI TS 102 527-4 [5], clause 7.5.4.2.1
Initial condition:	TS_1 (PP) registered to IUT (FP).

Time sequence:		1- TS_1 initiates SUOTA
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=FN, flags=F, reason=R, swv=SWV0, hwv=HWV1)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2=URL2, u_inter=UI, swv=SWV)
		2- TS_1 initiates data call
	s2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	a2 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
	s3 [PhA >> TS_1]	3- Incoming call on line 0 from Phone A
	a3 [IUT >> TS_1]	(*In one or several messages*) {CC-INFO} message(s) with: - (Optional) IE <<**SIGNAL**>> with value 07H indicating 'Call waiting tone on' - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (Optional) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<**CALL-INFORMATION**>> with (line 0, line type info, call id a, CS call setup) =<(0, 0, lid0), (0, 5, lt0), (1, 0, value a),(2, 1, 1)>
		4- TS_1 rejects the waiting call
	s4 [TS_1 >> IUT]	{**CC-INFO**} with: -IE <<**MULTI-KEYPAD**>> set to '1C 36' H -IE <<**CALL-INOFRMATION**>> specifying call id a = <1,0,value a>
	a4 [IUT >> TS_1]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id b, CS idle) = <(1,0,value a), (2,1,0)>
		5- Proceed with (limited) data transfer
	s5 [TS_1 >> IUT]	**range_http_req**(target=URL2, r_low=0, r_high=700)
	a5 [IUT >> TS_1]	**range_http_resp**(target=URL2, r_low=0, r_high= RH ≤700)
	s6 [PhA >> TS_1]	6- Incoming call again on line 0 from Phone A
	a6 [IUT >> TS_1]	(*In one or several messages*) {**CC-INFO**} message(s) with: - (Optional) IE <<**SIGNAL**>> with value 07H indicating 'Call waiting tone on' - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (Optional) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<**CALL-INFORMATION**>> with (line 0, line type info, call id a, CS call setup) =<(0, 0, lid0), (0, 5, lt0), (1, 0, value a),(2, 1, 1)>
		7- TS_1 accepts the waiting call
	s7 [TS_1 >> IUT]	{**CC-RELEASE**} message to release data call
		8-IUT re-presents the incoming external call as a first call
	a7.1 [IUT >> TS_1]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Normal call setup'> - IE <<**CALL-INFORMATION**>> specifying (line 0, line type

		information, call id a, CS call setup) = <(0,0,lid 0), (0, 5, lt0), (1,0,value a), (2,1,1)>
	a7.2 [IUT >> TS_1]	{**CC-INFO**} message with: - IE <<**CALLING PARTY NUMBER** <CLIP_A number> >> - (Optional) IE <<**CALLING_PARTY NAME** <CNIP_A> >> - IE <<CALL-INFORMATION>> with (call id a) = <(1, 0, value a)>
	s8 [TS_1 >> IUT]	{**CC-CONNECT**} message
	a8.1 [IUT >> TS_1]	{**CC-INFO**} message with: -IE <<**CALL-INFORMATION**>> specifying (call id a, CS call connect) = <(1,0,value a), (2,1,5)>
	a8.2 [IUT >> TS_1]	End to end audio connection
Pass criteria:	Verify all answers. At a5, verify that data transfer is ok.	
Comments:	At s2 and a2, values for 'Mas SDU size' are coded on two octets with extension bits: - 1000 is coded 1000/8='7D'H (resulting code is '00000000 11111101'B = '00FD'H - 752 is coded 752/8=94='5E'H (resulting code is '00000000 11011110'B = '00DE'H	

7.3 NGLDS-N.2 Software upgrade over the air, C-plane

TC_FT_NGLDS.N2_BV_101(MSO, SUF) C Plane SUOTA exchange - New firmware is available

TC_FT_NGLDS.N2_BV_101(MSO, SUF)	C Plane SUOTA exchange - New firmware is available	
Test purpose	Test that existing and new Handset versions are transmitted correctly. Test may be used either with tester supplier MS, or manufacturer MS, depending on MSO parameter (either '3rd party MS' or 'Manufacturer MS'). 1- TS_1 sends a Handset Version indication including the declared URL for the MS 2- IUT replies with correctly formatted URL2 and new Handset Version information. 3- No binary content download is attempted	
Reference: **Initial condition:**	ETSI TS 102 527-4[5], clause 7.6.2.2.3, Option 2. TS_1 (PP) registered to IUT (FP). TS_1 and MS populated with test content from 4.1.2.2. IF MSO='3rd party Basic SUOTA MS'. THEN URL1 = FT_IXIT_2 ELSE IF MSO= 'Manufacturer MS' THEN URL1 = FT_IXIT_3 N2 = number of URL Indication messages required for URL2 Local variable n, used to count "URL indication" messages	
Time sequence:		1- TS_1 initiates SUOTA
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=001, reason=0, swv=SWV0, hwv=HWV0)
		2- IUT replies with details of a new version
	a1 [IUT >> TS_1]	{**FACILITY**} message with IE <<IWU-to-IWU>> with: - **Handset version available** (1H): - DelayMinutes=don't care value - URL2 to follow=N2 - User interaction=No - SW Version id=SWV1
		3-IUT sends URL indication(s) for URL2
	s2 [TS_1]	**for**(n=N2-1; n ≥ 0; n=n-1)
	a2 [IUT >> TS_1]	**{FACILITY}** message with: - IE <<**IWU-to-IWU**>> with: - <**PD**> =<06H> (Software upgrade) - <**Command**> = 2H (URL indication) - <**URL to follow**> = n (countdown to 0) - <**URL content**> = cu_n (partial content of URL2)
	s3 [TS_1]	**End of n *for* loop (goto s2)**

	a3 [TS_1]	cu_{N2-1} + cu_{N2-2} + + cu_0 is equal to URL2 (where '+' operator stands for string concatenation)
Pass criteria:	Verify all answers At a3, verify in particular that the returned URL2 and SWV1 match the values defined in clause 4.1.2.2.	

TC_FT_NGLDS.N.2_BV_1011 C Plane SUOTA exchange - New firmware is available - 3rd Basic SUOTA Party MS

TC_FT_NGLDS.N.2_BV_1011	C Plane SUOTA exchange - New firmware is available - 3rd Party Basic SUOTA MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_101(MSO="3rd Party Basic SUOTA MS", SUF= "3135")

TC_FT_NGLDS.N.2_BV_1012 C Plane SUOTA exchange - New firmware is available - Manufacturer MS

TC_FT_NGLDS.N.2_BV_1012	C Plane SUOTA exchange - New firmware is available - Manufacturer MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_101(MSO="Manufacturer MS", SUF="3136")

TC_FT_NGLDS.N.2_BV_102(MSO, SUF) C-Plane SUOTA exchange - No new version available

TC_FT_NGLDS.N2_BV_102(MSO, SUF)	C Plane SUOTA exchange - No new firmware is available	
Test purpose	Test that existing and new Handset versions are transmitted correctly. Test may be used either with 3rd party MS, or manufacturer MS, depending on MSO parameter (either '3rd Party' or 'manufacturer MS'). 1) TS_1 sends a "Handset Version indication" including URL1 defined in FP test platform 2) The IUT is expected to reply reporting no new "Handset Version is available"	
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.6.2.2.3, Option 1 TS_1 (PP) registered to IUT (FP). TS_1 and MS populated with test content from 4.1.2.2 but with the following modification: - MS (of whatever origin) is configured such that there is no new S/W version available IF MSO='3rd party Basic SUOTA MS'. THEN URL1 = FT_IXIT_2 ELSE IF MSO= 'Manufacturer MS' THEN URL1 = FT_IXIT_3	
Time sequence:	s1 [TS_1 >> IUT]	1- TS_1 initiates SUOTA **hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=001, reason=0, swv=SWV0, hwv=HWV0)
	a1 [IUT >> TS_1]	2- IUT replies reporting no new version available {**FACILITY**} message with IE <<**IWU-to-IWU**>> with: - Handset version available (1H): - DelayMinutes=0 - URL2 to follow=0 (No new version available) - User interaction=No - SW Version id=<empty>
Pass criteria:	Verify a1 Verify in particular that the returned URL2 is empty ('URL2 to follow' field is 0) and the SW Version id is empty.	

TC_FT_NGLDS.N.2_BV_1021 C Plane SUOTA exchange - No new firmware is available - 3rd Party MS

TC_FT_NGLDS.N.2_BV_1021	C Plane SUOTA exchange - No new firmware is available - 3rd Party MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_102(MSO="3rd party Basic SUOTA MS", SUF= "39")

TC_FT_NGLDS.N.2_BV_1022 C Plane SUOTA exchange - Notification of failure - FP/MS interface NOT tested

TC_FT_NGLDS.N.2_BV_1022	C Plane SUOTA exchange - No new firmware is available - Manufacturer MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_102(MSO="Manufacturer MS", SUF="3130")

TC_FT_NGLDS.N.2_BV_103(MSO, SUF) C Plane SUOTA exchange - Invalid URL format

TC_FT_NGLDS.N.2_BV_103(MSO, SUF)	C Plane SUOTA exchange - Invalid URL1 format
Test purpose	Test that existing and new Handset versions are transmitted correctly. Test may be used either with 3rd party MS, or manufacturer MS, depending on MSO parameter (either '3rd Party' or 'manufacturer MS'). 1- TS_1 TS_1 initiates SUOTA with invalid URL1 (different from URL1 hostname defined in FP test platform) 2- The IUT is expected to reply with a negative acknowledgement 'Invalid URL1'
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.5.5.2.4 TS_1 (PP) registered to IUT (FP). TS_1 populated with test content from 4.1.2.2 but with the following modification: - TS_1 uses the following invalid URL1 format: URL1_Invalid = guff:/www.exa@mple.com/file[/].html
Time sequence:	1- TS_1 initiates SUOTA with invalid URL1 s1 [TS_1 >> IUT] **hsv_ind**(emc=EMC, url1=URL1_Invalid, fileNumber=1, flags=001, reason=0, swv=SWV0, hwv=HWV0) 2- IUT replies reporting an error a1 [IUT >> TS_1] {**FACILITY**} message with IE <<IWU-to-IWU>> with: - **Negative Acknowledgement** (3H): - Reject reason = 4H (invalid URL1)
Pass criteria:	Verify a1 Verify in particular that IUT returns a valid Negative Acknowledgement message with reject reason '4H' (Invalid URL1)

TC_FT_NGLDS.N.2_BV_1031 C Plane SUOTA exchange - Invalid URL1 format - 3rd Party MS

TC_FT_NGLDS.N.2_BV_1031	C Plane SUOTA exchange - Invalid URL1 format - 3rd Party MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_103(MSO="3rd Party MS", SUF= "3131")

TC_FT_NGLDS.N.2_BV_1032 C Plane SUOTA exchange - Invalid URL1 format - Manufacturer MS

TC_FT_NGLDS.N.2_BV_1032	C Plane SUOTA exchange - Invalid URL1 format - Manufacturer MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_103(MSO="Manufacturer MS", SUF="3132")

TC_FT_NGLDS.N.2_BV_104(MSO, SUF) C Plane SUOTA exchange - Unreachable URL1 (server error)

TC_FT_NGLDS.N.2_BV_104(MSO, SUF)	C Plane SUOTA exchange - Unreachable URL1 (server error)
Test purpose	Test that existing and new Handset versions are transmitted correctly. Test may be used either with 3rd party MS, or manufacturer MS, depending on MSO parameter (either '3rd Party' or 'manufacturer MS'). 1- TS_1 sends a "Handset Version indication" including URL1 pointing to the right MS but to an unexisting resource. The IUT is expected to reply with a Negative Acknowledgment 'Unreachable URL1'
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.5.5.2.4 TS_1 (PP) registered to IUT (FP). TS_1 populated with test content from 4.1.2.2 but with the following modification: - TS_1 uses the following unreachable URL1 within the correct MS: URL1_Unreachable=https://**hostname**(URL1)/unexisting/path/ For the definition of the **hostname** macro, see clause 5.1.2.3.1. IF MSO='3rd party Basic SUOTA MS'. THEN URL1 = FT_IXIT_2 ELSE IF MSO= 'Manufacturer MS' THEN URL1 = FT_IXIT_3

Time sequence:			1- TS_1 initiates SUOTA
	s1	[TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1= URL1_Unreachable, fileNumber=1, flags=001, reason=0, swv=SWV0, hwv=HWV0)
			2- IUT replies reporting an error
	a1	[IUT >> TS_1]	{**FACILITY**} message with IE <<IWU-to-IWU>> with: - **Negative Acknowledgement** (3H): - Reject reason = 5H (Unreachable URL1)
Pass criteria:	Verify a1 Verify in particular that IUT returns a valid Negative Acknowledge message with reject reason 'Unreachable URL1'		
Comments:	In this test case, the server is reached, but unable to retrieve URL1 which has a valid format but points to an unexisting resource.		

TC_FT_NGLDS.N.2_BV_1041 C Plane SUOTA exchange - Unreachable URL1 (server error) - 3rd Party MS

TC_FT_NGLDS.N.2_BV_1041	C Plane SUOTA exchange - Unreachable URL1 (server error) - 3rd Party MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_104(MSO="3rd Party MS", SUF= "3133")

TC_FT_NGLDS.N.2_BV_1042 C Plane SUOTA exchange - Unreachable URL1 (server error) - Manufacturer MS

TC_FT_NGLDS.N.2_BV_1042	C Plane SUOTA exchange - Unreachable URL1 (server error) - Manufacturer MS
Test purpose and body	See test TC_FT_NGLDS.N.2_BV_104(MSO="Manufacturer MS", SUF="3134")

7.4 NGLDS-A.1 Binary content download

TC_FT_NGLDS.A.1_BV_101 Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support

TC_FT_NGLDS.A.1_BV_101	Simple BCD with Simplified single-context Interworking procedure (DPRS/B.8.4.3) - Connection setup with limited N.34 support		
Test purpose	Test the presence of the << IWU-ATTRIBUTES >> IEs with correct field values. Test that the received max SDU size is lower or equal to the sent one. We use here the maximum value of 131 040 in order to always see a reduction of the value by IUT.		
Reference:	ETSI TS 102 527-4 [5], clause 7.6.1.2.1 ("Simple binary content download")		
Initial condition:	**MaxSDUsize1** = 131 040 octets **MaxSDUsize2** = 131 040 octets		
Time sequence:			**2 - Binary Content Download**
	s1	[TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE** >> with: - <Call class = 'Normal call setup' = 8H>, - <Basic service = 'LDS: SUOTA, Class 4 DPRS management, default setup attributes' = 9H> - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B, - <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = **MaxSDUsize1** (14 bits) - <Maximum SDU size (FT to PT)> = **MaxSDUsize2** (14 bits) - <Operation code>='01'B, <Optional groups>='00'B - <Chopping>='0'B, <Spare>='00'B - <seq>='0'B - <Generic Media context indicator (GMCI)>='0000000'B (PT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	a1	[IUT >> TS_1]	{**CC-CONNECT**} message with: - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B,

		- <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = **MaxSDUsize3** (14 bits) - <Maximum SDU size (FT to PT)> = **MaxSDUsize4** (14 bits) - <Operation code>='01'B, <Optional groups>='00'B - <Chopping>='0'B, <Spare>='00'B - <seq>='0'B - <Generic Media context indicator (GMCI)>='0000001'B (FT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	s2 [TS_1 >> IUT] a2 [IUT >> TS_1]	{**CC-RELEASE**} {**CC-RELEASE-COM**}
Pass criteria:	Verify all answers At a1, verify that **MaxSDUsize3** ≤ **MaxSDUsize1** and **MaxSDUsize4** ≤ **MaxSDUsize2.**	
Comments:	The GMCI is defined by the FT and has to be '1'. It is therefore set to 1 by FT(IUT) in a1, while value 0 (not yet defined GMCI) is used by the PT (TS_1) in s1. We use the maximum possible value of the Max SDU size for **MaxSDUsize1** and **MaxSDUsize2** in order to always observe a reduction of the Max SDU size by IUT.	

7.5 NGLDS-A.2 Software upgrade over the air

TC_FT_NGLDS.A.2_BV_103 Basic or enhanced SUOTA - Single upgrade SUOTA - Multiple file upgrade

TC_FT_NGLDS.A.2_BV_103(MSO)	Basic or enhanced SUOTA with MS from MSO origin - Single upgrade SUOTA - Multiple file upgrade **(parameterized test)**	
Test purpose	Hypotheses: TS_1 simulates a single software upgrade (with no multiple upgrade SUOTA needed), but this only upgrade requiring 2 files. - There is an available new version SWV1 for TS_1 that has SWV0 installed - SWV1 is the only new available version - during this only upgrade Nf files (Nf=2) are needed. Depending on MSO parameter, the MS used for the test is either the 3rd Party Basic SUOTA MS, or the IUT Manufacturer MS (either basic or enhanced SUOTA MS).	
Reference:	ETSI TS 102 527-4 [5], clause 7.6.2.2 (Basic SUOTA)	
Initial condition:	For the definitions of MACROs **hsv_ind**, **hsv_avail**, **range_http_req**, **range_http_resp** and **filesize** used below, see clause 5.1.2. The TS_1 and the MS shall be fed with the values defined in clause 4.1.2.1 (Test content for software upgrade).	
Time sequence:	s1.1 [TS_1]	**for**(n=1; n ≤ Nf; n=n+1) (see s7.1 below)
		1 - C-plane Suota Exchange
	s1.2 [TS_1]	IF n=1 then FT_URL1=URL1 ELSE FT_URL1= ""(empty string)
	s1.3 [TS_1 >> IUT]	**Step 1 - hsv_ind**(emc=EMC, url1=FT_URL1, fileNumber=n, flags='001'B, reason=0, swv=SWV0, hwv=HWV)
	a1 [IUT >> TS_1]	**Step 3 - hsv_avail**(dm=0, url2=$URL2_n$, u_inter=NO, swv=SWV1)
		2 - Binary Content Download
	s2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<BASIC-SERVICE **BCD** >> - IE << **IWU-ATTRIBUTES** >> with: - <Code std>='01'B, - <Profile>='00000'B (DPRS: Frame Relay services) - <Negotiation indicator>='010'B (Peer attribute negotiation) - <Profile subtype>='1000'B (DECT Generic Media Encapsulation) - <Maximum SDU size (PT to FT)> = 1000 octets - <Maximum SDU size (FT to PT)> = 1000 octets

			- Octet 6 = 'A0'H - <seq> = '0'B - <Generic Media context indicator (GMCI)>='0000000'B (PT) - <Application protocol identifier>= '0437'H ('Common HTTP profile')
	a2	[IUT >> TS_1]	{**CC-CONNECT**} message with: : - IE <<**IWU-ATTRIBUTES**>> with: - Octet 3 = (ext3, Code std, Profile) = 'A0' H - Octet 4 = (ext4, Negotiation indicator, profile subtype) = 'A8' H - Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 octets - Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 octets - Octet 6 = 'A0' H - Octet 7 = (seq, GMCI) = ('0'B, '0000001'B) = '01' H - Application protocol identifier = '0437'H
	s3.1	[TS_1]	**for**(m=1; ;m=m+1) (see s6.1 below) **Step 4 -** Retrieval of $URL2_n$ target if m=1 then RL_1=0, RH_1=C_1 -1 if 2 ≤ m ≤ M then RL_m=RH_{m-1}+1, RH_m=RL_m + C_m -1 with C_1+…+C_{M-1}+C_M=filesize($URL2_n$)
	s3.2	[TS_1 >> IUT]	**range_http_req**(target=$URL2_n$, r_low=RL_m, r_high= RH_m)
	a3	[IUT >> TS_1]	**range_http_resp**(target= $URL2_n$, r_low=RL_m, r_high= RH_m)
	s4.1	[TS_1]	**End of m *for* loop (goto s3.1)**
	s4.2	[TS_1]	**End of n *for* loop (goto s1.1)**
	s4.3	[TS_1 >> IUT]	{**CC-RELEASE**}
	a4	[IUT >> TS_1]	{**CC-RELEASE-COM**}
			3 - Firmware installation
	s5.1	[TS_1]	TS_1 mimics firmware with version SWV1 being installed
			4 - Final notification of success and multiple upgrade SUOTA
	s5.2	[TS_1 >> IUT]	**Step 1 - hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags='001'B, reason=0, swv=SWV1, hwv=HWV)
	a5	[IUT >> TS_1]	**Step 3 - hsv_avail**(dm=0, url2="", u_inter=NO, swv="")
Pass criteria:	Verify all answers		
Comments:	In the general case, the TC contains 2 loops: - the first loop used Nf=2 times for multiple file upgrade, - the 2nd one included in the 1st one (and used M times) for file retrieval. In s1.3 and s4.5, the 'User initiated software upgrade' bit is set to 1 so that the MS should return a DelayMinutes value of 0 see ETSI TS 102 527-4 [5], clause 7.6.2.7. In a6, URL2 is empty ("No url" case) as it is an attempt to upgrade an already up to date terminal (i.e. with SWV1 as starting point). This attempt is mandatory and is called the "Final notification of success and multiple upgrade SUOTA". It allows to report possible upgrade failure and also to check whether an addition upgrade is necessary or not.		

TC_FT_NGLDS.A.2_BV_1031 Basic SUOTA with 3rd party Basic SUOTA MS - Single upgrade SUOTA - Multiple file upgrade

TC_FT_NGLDS.A.2_BV_1031	Basic SUOTA with 3rd party Basic SUOTA MS - Single upgrade SUOTA - Multiple file upgrade
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_a21(MSO= 3rd party Basic SUOTA MS)

TC_FT_NGLDS.A.2_BV_1032 Basic or enhanced SUOTA with Manufacturer MS- Single upgrade SUOTA - Multiple file upgrade

TC_FT_NGLDS.A.2_BV_1032	Basic or enhanced SUOTA with Manufacturer MS- Single upgrade SUOTA - Multiple file upgrade
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_a21(MSO= Manufacturer MS)

TC_FT_NGLDS.A.2_BV_106 Software upgrade - Two PPs upgrading one after the other

TC_FT_NGLDS.A.2_BV_106(SUF1, SUF2)	Software upgrade - Two PPs upgrading one after the other	
Test purpose	Test that FP can support upgrade by 2 PPs one after the other 1 - TS_1 initiates SUOTA C-plane exchange 2 - TS_1 initiates data call 3 - TS_1 proceeds with (limited) data transfer 4 - TS_1 ends data call after complete first range download 5 - TS_1 simulates final notification of success (see ETSI TS 102 527-4 [5], clause 7.6.2.5) 6 - TS_2 initiates SUOTA C-plane exchange 7 -TS_2 initiates data call 8 - TS_2 proceeds with (limited) data transfer 9 - TS_2 ends data call after complete first range download 10 - TS_2 simulates final notification of success	
Reference:	ETSI TS 102 527-4 [5], clause 7.6.2	
Initial condition:	TS_1 (PP) and TS_2 (PP) registered to IUT (FP). TS_1, TS_2 and MS are populated with test content from 4.1.2.2. SWV0_1 ="SWV-BEFORE-TEST" + SUF1, as described in clause 4.1.2.2. SWV0_2 ="SWV-BEFORE-TEST" + SUF2, as described in clause 4.1.2.2.	
Time sequence:		1- TS_1 initiates SUOTA C-plane exchange
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags='001'B, reason=0, swv=SWV0_1, hwv=HWV0)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=0, url2=URL2, u_inter=NO, swv=SWV1)
		2- TS_1 initiates data call
	s2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0'H GMCI = '00' H App. Protocol ID = '04 37'H
	a2 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 Max. SDU size FT->PT = y such that 752 ≤ y ≤1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
		3- TS_1 proceeds with (limited) data transfer
	s3 [TS_1 >> IUT]	**range_http_req**(target=URL2, r_low=0, r_high=700)
	a3 [IUT >> TS_1]	**range_http_resp**(target=URL2, r_low=0, r_high= RH ≤ 700) If RH < 700, repeat s3 with r_low = RH +1, r_high= 700 until data download is complete
		4- TS_1 ends data call after complete first range download
	s5 [TS_1 >> IUT]	{**CC-RELEASE**} message to release data call
	a5 [IUT >> TS_1]	{**CC-RELEASE-COM**} message
		5- TS_1 simulates final notification of success
	s6 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=F, reason=R, swv=SWV1_2, hwv=HWV0)
	a6 [IUT >> TS_1]	**hsv_avail**(dm=DM, url2='no url', u_inter=NO, swv="")
		6- TS_2 initiates SUOTA C-plane exchange
	s4 [TS_2 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags='001'B, reason=0, swv=SWV0, hwv=HWV0)
	a4 [IUT >> TS_2]	**hsv_avail**(dm=0, url2=URL2, u_inter=NO, swv=SWV1)

		7- TS_2 initiates data call after DM minutes
	s7 [TS_2 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	a7 [IUT >> TS_2]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
		8- TS_2 proceeds with (limited) data transfer
	s8 [TS_2 >> IUT]	**range_http_req**(target=URL2, r_low=0, r_high=700)
	a8 [IUT >> TS_2]	**range_http_resp**(target=URL2, r_low=0, r_high= RH ≤ 700) If RH < 700, repeat s8 with r_low = RH +1, r_high= 700 until data download is complete
		9- TS_2 ends data call after complete first range download
	s9 [TS_2 >> IUT]	{**CC-RELEASE**} message to release data call
	a9 [IUT >> TS_2]	{**CC-RELEASE-COM**} message
		10- TS_2 simulates final notification of success
	s10 [TS_2 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=F, reason=0, swv=SWV1, hwv=HWV0)
	a10 [IUT >> TS_2]	**hsv_avail**(dm=0, url2='no url', u_inter=NO, swv="")
Pass criteria:	Verify all answers	
Comments:	At s2 and a2, s8 and a8 values for 'Max SDU size' are coded on two octets with extension bits:- 1000 is coded 1000/8='7D'H (resulting code is '00000000 11111101'B = '00FD'H - 752 is coded 752/8=94='5E'H (resulting code is '00000000 11011110'B = '00DE'H	

TC_FT_NGLDS.A.2_BV_1061 Software upgrade - Two PPs upgrading one after the other

TC_FT_NGLDS.A.2_BV_1061	Software upgrade - Two PPs upgrading one after the other
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_106(SUF1="35", SUF2="36")

TC_FT_NGLDS.A.2_BV_107 (Only used if FT_IXIT_5=NO) Software upgrade - PP2 trying a file download while PP1 is upgrading

TC_FT_NGLDS.A.2_BV_107(SUF)	(Only used if FT_IXIT_5=NO) Software upgrade - PP2 trying a file download while PP1 is upgrading -
Test purpose	Test IUT's reaction in front of two simultaneous data calls. Test that FP rejects data call from PP2 while PP1 software download in progress 1- TS_1 initiates SUOTA C-plane exchange 2- TS_1 initiates data call 3- TS_1 proceeds with (limited) data transfer 4- TS_2 initiates data call without prior C-plane message exchange 5- IUT releases data call to TS_2 with {**CC-RELEASE-COM**} 6- TS_1 ends data call after complete first range download
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.6.2 TS_1 (PP) and TS_2 (PP) registered to IUT (FP). TS_1, TS_2 and MS are populated with test content from 4.1.2.2, but with the following modification: - TS_2 does not use C-plane exchange. SWV0 ="SWV-BEFORE-TEST" + SUF, as described in clause 4.1.2.2.
Time sequence:	1 - TS_1 initiates SUOTA s1 [TS_1 >> IUT] **hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags=F, reason=R, swv=SWV0, hwv=HWV0) a1 [IUT >> TS_1] **hsv_avail**(dm=DM, url2=URL2, u_inter=NO, swv=SWV1) 2 - TS_1 initiates data call s2 [TS_1 >> IUT] {**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H a2 [IUT >> TS_1] {**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x such that 752≤ x ≤ 1000 Max. SDU size FT->PT = y such that 752≤ y ≤ 1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H 3 - TS-1 proceeds with (limited) data transfer s3 [TS_1 >> IUT] **range_http_req**(target=URL2, r_low=0, r_high=700) a3 [IUT >> TS_1] **range_http_resp**(target=URL2, r_low=0, r_high= RH≤ 700) If RH < 700, repeat s3 with r_low = RH +1, r_high= 700 until data download is complete 4 - Meanwhile, TS_2 initiates data call without prior C-plane message exchange s4 [TS_2 >> IUT] {**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H

		5 - IUT releases data call to TS_2
	a4 [IUT >> TS_2]	{**CC-RELEASE-COM**} message with - IE <<RELEASE-REASON>> with - Release reason = <32H> (Insufficient Resources)
		6 - TS_1 ends data call after complete first range download
	s5 [TS_1 >> IUT]	{**CC-RELEASE**} message to release data call
	a5 [IUT >> TS_1]	{**CC-RELEASE-COM**} message
Pass criteria:	Verify all answers	
Comments:	At s3 and a3 Values for 'Max SDU size' are coded on two octets with extension bits:- 1000 is coded 1000/8='7D'H (resulting code is '00000000 11111101'B = '00FD'H - 752 is coded 752/8=94='5E'H (resulting code is '00000000 11011110'B = '00DE'H	

TC_FT_NGLDS.A.2_BV_1071 (Only used if FT_IXIT_5=NO) Software upgrade - PP2 trying a file download while PP1 is upgrading

TC_FT_NGLDS.A.2_BV_1071	(Only used if FT_IXIT_5=NO) Software upgrade - PP2 trying a file download while PP1 is upgrading
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_107(SUF="33")

TC_FT_NGLDS.A.2_BV_108 (Only used if FT_IXIT_5=NO) Software upgrade - Two PPs upgrading one after the other

TC_FT_NGLDS.A.2_BV_108(SUF)	(Only used if FT_IXIT_5=NO) Software upgrade - Two PPs upgrading - Retry later negative acknowledgment.	
Test purpose	Test that FP rejects handset version indication from PP2 while PP1 software download in progress 1 - TS_1 initiates SUOTA C-plane exchange 2 - TS_1 initiates data call 3 - TS_1 proceeds with (limited) data transfer 4 - TS_2 initiates SUOTA C-plane exchange and receives a negative acknowledgement 5 - TS_1 ends data call after complete first range download	
Reference: **Initial condition:**	ETSI TS 102 527-4 [5], clause 7.6.2 TS_1 (PP) and TS_2 (PP) registered to IUT (FP). TS_1, TS_2 and MS are populated with test content from 4.1.2.2. SWV0 ="SWV-BEFORE-TEST" + SUF, as described in clause 4.1.2.2.	
Time sequence:		1- TS_1 initiates SUOTA C-plane exchange
	s1 [TS_1 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags='001'B, reason=0, swv=SWV0, hwv=HWV0)
	a1 [IUT >> TS_1]	**hsv_avail**(dm=0, url2=URL2, u_inter=NO, swv=SWV1)
		2- TS_1 initiates data call
	s2 [TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8'H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0'H GMCI = '00' H App. Protocol ID = '04 37'H
	a2 [IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8'H Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000

		Max. SDU size FT->PT = y such that 752 ≤ y ≤1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
		3- TS_1 proceeds with (limited) data transfer
	s3 [TS_1 >> IUT]	**range_http_req**(target=URL2, r_low=0, r_high=700)
	a3 [IUT >> TS_1]	**range_http_resp**(target=URL2, r_low=0, r_high= RH ≤ 700) If RH < 700, repeat s3 with r_low = RH +1, r_high= 700 until data download is complete
		4- Meanwhile, TS_2 initiates SUOTA C-plane exchange
	s4 [TS_2 >> IUT]	**hsv_ind**(emc=EMC, url1=URL1, fileNumber=1, flags='001'B, reason=0, swv=SWV0, hwv=HWV0)
	a4 [IUT >> TS_2]	{**FACILITY**} message with IE <<IWU-to-IWU>> with: - **Negative acknowledgement** (3H): - Reject reason='Retry later - Connection refused'
		5- TS_1 ends data call after complete first range download
	s5 [TS_1 >> IUT]	{**CC-RELEASE**} message to release data call
	a5 [IUT >> TS_1]	{**CC-RELEASE-COM**} message
Pass criteria:	Verify all answers	
Comments:	At s2 and a2, values for 'Max SDU size' are coded on two octets with extension bits:- 1000 is coded 1000/8='7D'H (resulting code is '00000000 11111101'B = '00FD'H - 752 is coded 752/8=94='5E'H (resulting code is '00000000 11011110'B = '00DE'H	

TC_FT_NGLDS.A.2_BV_1081 (Only used if FT_IXIT_5=NO) Software upgrade - Two PPs upgrading - Retry later negative acknowledgment

TC_FT_NGLDS.A.2_BV_1081	(Only used if FT_IXIT_5=NO) Software upgrade - Two PPs upgrading - Retry later negative acknowledgment
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_108(SUF="33")

TC_FT_NGLDS.A.2_BI_104(MSO, SUF) Software upgrade - Notification of failure to MS originating from MSO

TC_FT_NGLDS.A.2_BI_104(MSO, SUF)	Software upgrade - Notification of failure to MS originating from MSO with SUF used for SWV0 ending	
Test purpose	Test that IUT correctly handles a handset version indication that is used in order to report a failure to the MS (has to forward it correctly to the MS) This test has to be used at least with MSO='3rd party Basic SUOTA MS'. If MSO= 'Manufacturer MS', correct forwarding is only tested indirectly (through a correct 'Handset version available' command). The SUF ending for SWV0 ensures that the "software version before upgrade" presented to IUT changes from one test to another, so that IUT does not rely on cache data and really contacts the MS in a1 below. SUF is the IA5 coding of a number in decimal.	
Reference:	ETSI TS 102 527-4 [5] clauses 7.6.2.6 and 7.6.2.2.3, option 4.	
Initial condition:	TS_1 and MS populated with test content from 4.1.2.2 but with the following modification: - TS_1 will simulate a file retrieval failure (reason field value of 2 in s1) - MS (of whatever origin) will use a DelayMinutes of 60 minutes IF MSO='3rd party Basic SUOTA MS'. THEN URL1 = FT_IXIT_2 ELSE IF MSO= 'Manufacturer MS' THEN URL1 = FT_IXIT_3 DS_HOSTNAME = value of FT_IXIT_4	
Time sequence:		**1 - C-plane Suota Exchange**
	s1 [TS_1 >> IUT]	**Step 1 - Handset version indication** with: - emc=EMC, - url1=URL1, fileNumber=1, - flags='001'B, (User initiated software upgrade) - reason='0010'B (Application of file with indicated fileNumber failed)

		- swv=SWV0, hwv=HWV
	a1 [IUT >> MS]	(If MSO=3rd party Basic SUOTA MS) IUT forwards failure to MS with the same reason field, using following url: URL1? EMC=01ab &SWVid=5357562d4245464f52452d54455354 + SUF &HWVid=594f55275254414c4b494e47544f4d453f &reason=2 &fileNumber=1 (Note: hexadecimal number '1'B)
	s2 [MS >> IUT]	(If MSO=3rd party Basic SUOTA MS) (MS resends download info with updated DelayMinutes valueof 1 hour) <?xml version="1.0" encoding="utf-8"?> <SUOTA> <SoftwareTotalSize>200020</SoftwareTotalSize> <SoftwareVersionId> 5357562d4245464f52452d54455354 + SUF </SoftwareVersionId> <UserInteraction>no</UserInteraction> <DelayMinutes>60</DelayMinutes> <FileList> <File>http://${DS_HOSTNAME}/download/image.bin</File> <File>http://${DS_HOSTNAME}/download/checksum.md5</File> </FileList> </SUOTA>
	a2 [IUT >> TS_1]	**Step 3 - Handset version available** with: - dm=60, - url2=URL2$_1$, - user interaction=NO, - swv=SWV1
Pass criteria:	Verify all answers	
Comments:	If the MS origin is 'Manufacturer MS', FP/MS interaction (a1/s2) is not tested, but a2 has to contain the correct values (Manufacturer MS has to be correctly populated) At a1, the values of SWVid and HWVid correspond to the values SWV0 and HWV of clause 4.1.2.1 encoded in hexadecimal. At s2, *SoftwareVersionId* XML element content corresponds to the value of SWV0 in clause 4.1.2.1 encoded in hexadecimal.	

TC_FT_NGLDS.A.2_BI_1041 Software upgrade - Notification of failure -Basic SUOTA FP/MS interface tested

TC_FT_NGLDS.A.2_BI_1041	Software upgrade - Notification of failure -Basic SUOTA FP/MS interface tested
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_104(MSO=3rd party Basic SUOTA MS, SUF= "31")

TC_FT_NGLDS.A.2_BI_1042 Software upgrade - Notification of failure - FP/MS interface NOT tested

TC_FT_NGLDS.A.2_BI_1042	Software upgrade - Notification of failure - FP/MS interface NOT tested
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_104(MSO= Manufacturer MS, SUF="32")

TC_FT_NGLDS.A.2_BI_105(MSO, SUF) Software upgrade - Requesting an unexisiting file number

TC_FT_NGLDS.A.2_BI_105(MSO, SUF)	Software upgrade - Requesting an unexisting file number with SUF used for SWV0 ending		
Test purpose	Test that IUT (FT) correctly reacts to an initial request with **existing fileNumber ≠ 1** (allowed), but reacts to a request for a non existing file number with a negative ack. In step 2, IUT receives the data that allows it (at least for basic SUOTA case (MSO=3rd part Basic SUOTA MS) to correctly answer in step 3 without contacting again the MS. 1 - C-plane Suota Exchange with existing fileNumber ≠ 1 2 - (If MSO=3rd party Basic SUOTA MS) Contact MS even if fileNumber ≠ 1 3 - C-plane Suota Exchange with non-existing fileNumber The SUF ending for SWV0 ensures that the "software version before upgrade" presented to IUT changes from one test to another, so that IUT does not rely on cache data and really contacts the MS in a1 below. SUF is the IA5 coding of a number in decimal.		
Reference: **Initial condition:**	ETSI TS 102 527-4 [5] clause 7.6.2.2.3 (step 3), Option 3 TS_1 and MS populated with test content from 4.1.2.2 but with the following modification: - TS_1 will first simulate retrieval of a file Number different from 1 and then of a non exisiting file number IF MSO='3rd party Basic SUOTA MS'. THEN URL1 = FT_IXIT_2 ELSE IF MSO= 'Manufacturer MS' THEN URL1 = FT_IXIT_3 DS_HOSTNAME = value of FT_IXIT_4		
Time sequence:			**1 - C-plane Suota Exchange with existing fileNumber ≠ 1**
	s1	[TS_1 >> IUT]	**Step 1 - Handset version indication** with: - emc=EMC, - url1=URL1, fileNumber=2 (exists although not the 1st) - flags='001'B, (User initiated software upgrade) - reason='0000'B - swv=SWV0, hwv=HWV
			2 - (If MSO=3rd party Basic SUOTA MS) **Contact MS even if fileNumber ≠ 1**
	a1	[IUT >> MS]	using following url: URL1? EMC=01ab &SWVid=5357562d4245464f52452d54455354 + SUF &HWVid=594f55275254414c4b494e47544f4d453f
	s2	[MS >> IUT]	(If MSO=3rd party Basic SUOTA MS) MS sends data as if fileNumber=1 <?xml version="1.0" encoding="utf-8"?> <SUOTA> <SoftwareTotalSize>200020</SoftwareTotalSize> <SoftwareVersionId> 5357562d4245464f52452d54455354 + SUF </SoftwareVersionId> <UserInteraction>no</UserInteraction> <DelayMinutes>0</DelayMinutes> <FileList> <File>http://DS_HOSTNAME/download/image.bin</File> <File>http://DS_HOSTNAME/download/checksum.md5</File> </FileList> </SUOTA>
			3 - C-plane Suota Exchange with non-existing fileNumber
	s1	[TS_1 >> IUT]	**Step 1 - Handset version indication** with: - emc=EMC, - url1=URL1, fileNumber=3 (does not exist) - flags='001'B, (User initiated software upgrade) - reason='0000'B - swv=SWV0, hwv=HWV
	a2	[IUT >> TS_1]	**Step 3 - Negative acknowledgement** with: - reason='File does not exist',

Pass criteria:	Verify all answers
Comments:	In step 1, TS_1 simulates a recover from a previous error, while IUT (FT) does not have the needed data (so that IUT has to contact the MS although fileNumber is not equal to 1; this is however only tested if MSO=3rd party Basic SUOTA MS).

TC_FT_NGLDS.A.2_BI_1051 Software upgrade - Notification of failure -Basic SUOTA FP/MS interface tested

TC_FT_NGLDS.A.2_BI_1051	Software upgrade - Requesting an unexisting file number -Basic SUOTA FP/MS interface tested
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_105(MSO=3rd party Basic SUOTA MS, SUF="33")

TC_FT_NGLDS.A.2_BI_1052 Software upgrade - Notification of failure - FP/MS interface NOT tested

TC_FT_NGLDS.A.2_BI_1052	Software upgrade - Requesting an unexisting file number - FP/MS interface NOT tested
Test purpose and body	See test TC_FT_NGLDS.A.2_BV_105(MSO= Manufacturer MS, SUF="34")

TC_FT_NGLDS.A.2_BV_115 Software upgrade - BCD with redirection.

TC_FT_NGLDS.A.2_BV_115	Software upgrade -BCD with redirection.		
Test purpose	We test the FP with only one type of redirection (as the FP does not manage the redirection itself). The usual $URL2_1$ value of clause 4.2.2.2 is used as redirection target, while the DS has to be parameterized so that a temporary url redirects to $URL2_1$.		
Reference:	ETSI TS 102 527-4 [5], clauses 7.6.2.6 and 7.6.2.2.3, option 4.		
Initial condition:	TS_1 populated with test content from 4.1.2.2 but with the following modification: - TS_1 uses a $URL2_1$ value of $URL2_{tmp}$ defined below 3rd Party DS is parameterized, so that url $URL2_{tmp}$ redirects to $URL2_1$ of clause 4.1.2.2. $URL2_{tmp}$ = value of FT_IXIT_6 (has to be different from . $URL2_1$).		
Time sequence:			1- TS_1 initiates data call
	s1	[TS_1 >> IUT]	{**CC-SETUP**} message with: - IE <<**BASIC-SERVICE**>> with <Call class = 'Light data service with ME class 4'>: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = 1000 octets Max. SDU size FT->PT = 1000 octets Operation Field = 'A0' H GMCI = '00' H App. Protocol ID = '04 37' H
	a1	[IUT >> TS_1]	{**CC-CONNECT**} message with: - IE <<**IWU-ATTRIBUTES**>> with: Profile = 'A0' H Negotiation indicator & profile subtype = 'A8' H Max. SDU size PT->FT = x such that 752 ≤ x ≤ 1000 Max. SDU size FT->PT = y such that 752 ≤ y ≤ 1000 Operation Field = 'A0' H GMCI = '01' H App. Protocol ID = '04 37' H
			5- Proceed with data transfer with redirection
	s2	[TS_1 >> IUT]	**range_http_req**(target=$URL2_{tmp}$, r_low= RL_1, r_high= RH_1)
	a2	[IUT >> TS_1]	**http_redir**(E="302 Found", Location= URL2)
	s3	[TS_1 >> IUT]	**range_http_req**(target=URL2, r_low= RL_1, r_high= RH_1)
	a3	[IUT >> TS_1]	**range_http_resp**(target=URL2, r_low= RL_1, r_high= RH_1)
Pass criteria:	Verify all answers		

Comments:	We do not need the C-plane exchange for this test, but we keep the test in NGLDS.A2, because on PT side the test for redirection is done within the context of that feature.

7.6 NGLDS-A.3 HTTP based applications

TC_FT_NGLDS.A.3_BV_104(URLP) HTTP based application - TS_1 browses a test site (at url URLP) using a DECT specific XHTML profile

TC_FT_NGLDS.A.3_BV_104 (URLP)	HTTP based application - TS_1 browses a test site (at url **URLP**) using a DECT specific XHTML profile
Main test purpose:	Check IUT ability to forward requests to the server (DS) and responses to the client (TS_1). Depending on the site pointed to by URLP, the tested site may follow: - the 'Simple XHTML profile' (see ETSI TS 102 527-4 [5], clause 7.6.3.5) - the 'Baseline XHTML profile' (see ETSI TS 102 527-4 [5], clause 7.6.3.6)
Reference:	ETSI TS 102 527-4 [5],clause 7.6.3.5 and 7.6.3.6.
Initial condition:	PP test platform data are reused for testing the FP. Z ≥ 2 is defined such that URLP is the test url defined in 4.1.1.Z.1 (4.1.1.Z is the subclause of PT test platform reused for the present test). Home_page= URLP + 'index.html'. Left_link = URLP + 'pages/left.html' Center_link = URLP + 'pages/center.html' Right_link = URLP + 'pages/right.html' B=Upper bound of the range requested by TS_1. B shall be chosen so that every page length size is smaller or equal to B+1 (so that only one range request is needed in order to get the whole page).

Time sequence:	s1 [TS_1 >> IUT] `GET request_uri(Home_page)+" HTTP/1.1"\r\n`
	`Host: hostname(URLP)\r\n`
	`Accept: application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	a1 [IUT >> S] Forwarding of the request in s1.
	s2 [S >> IUT] `HTTP/1.1 206 Partial Content\r\n`
	`Content-Range: bytes=0-<L-1>/len\r\n`
	`Content-Length: <L>\r\n`
	`Content-Type: application/xhtml+xml\r\n`
	`\r\n`
	`<content of 4.1.1.Z.1 of size L>`
	
	a2.1 [IUT >> TS_1] Forwarding of the response in s2.
	a2.2 [TS_1] Page content compared with original.
	
	s3 [TS_1 >> IUT] `GET request_uri(Left_link) + " HTTP/1.1"\r\n`
	`Host: hostname(URLP)\r\n`
	`Accept: application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`
	`Range: bytes=0-B\r\n`
	`\r\n`
	a3 [IUT >> S] Forwarding of the request in s3
	s4 [S >> IUT] `HTTP/1.1 206 Partial Content\r\n`
	`Content-Range: bytes=0-<L-1>/len\r\n`
	`Content-Length: <L>\r\n`
	`Content-Type: application/xhtml+xml\r\n`
	`\r\n`
	`<content of 4.1.1.Z.2 of size L>.`
	
	a4.1 [IUT >> TS_1] Forwarding of the response in s4.
	a4.2 [TS_1] Page content compared with original.
	
	s5 [TS_1 >> IUT] `GET request_uri(Center_link) + " HTTP/1.1"\r\n`
	`Host: hostname(URLP)\r\n`
	`Accept: application/xhtml+xml\r\n`
	`Accept-Charset:UTF-8\r\n`

		`Range: bytes=0-B\r\n` `\r\n`
	a5 [IUT >> S]	Forwarding of the request in s5.

	s6 [S >> IUT]	`HTTP/1.1 206 Partial Content\r\n`
		`Content-Range: bytes=0-<L-1>/len\r\n`
		`Content-Length: <L>\r\n`
		`Content-Type: application/xhtml+xml\r\n`
		`\r\n`
		`<content of 4.1.1.Z.3 of size L>`

	a6.1 [TS_1 >> IUT]	Forwarding of the response in s6.
	s6.2 [TS_1]	Page content compared with original.

	s7 [TS_1 >> IUT]	`GET request_uri(`Right_link`) + " HTTP/1.1"\r\n`
		`Host: hostname(`URLP`)\r\n`
		`Accept: application/xhtml+xml\r\n`
		`Accept-Charset:UTF-8\r\n`
		`Range: bytes=0-B\r\n`
		`\r\n`

	a7 [IUT >> S]	Forwarding of the request in s7.

	s8 [S >> IUT]	`HTTP/1.1 206 Partial Content\r\n`
		`Content-Range: bytes=0-<L-1>/len\r\n`
		`Content-Length: <L>\r\n`
		`Content-Type: application/xhtml+xml\r\n`
		`\r\n`
		`<content of 4.1.1.Z.4 of size L>`.

	a8.1 [IUT >> TS_1]	Forwarding of the response in s8.
	a8.2 [TS_1]	Page content compared with original.
Pass criteria:	Verify all answers.	
Comments: (optional)	S is the server hosting the test pages A FP necessarily implements NGLDS-A.3 and the Simple and Baseline XHTML profiles. However, the FP is only required to correctly forward requests to the server and responses to the client. Therefore testing the FP correct behavior should be done once with a single set of pages (the content of the pages is somehow irrelevant in this test). At s1, s3, s5, s7, headers may be in any order.	

TC_FT_NGLDS.A.3_BV_1041 PP browses a simple test site using the Simple XHTML profile

TC_FT_NGLDS.A.3_BV_1041	HTTP based application - 'Simple XHTML profile'.
Test purpose and body	See test TC_FT_NGLDS.A3_BV_104(URLP=Test url of clause 4.1.1.2.1) (Simple XHTML profile)

Annex A (normative): Declarations on features and procedures supported

The information contained within the following tables is required for parameterization of the test cases referred to in the present document. They shall be taken into account to run an appropriate test suite against the IUT.

For each procedure noted in the following tables, the manufacturer shall declare if it is supported or not. When supported, the corresponding tests case(s) listed in "TC reference" column shall be tested.

Optional procedures are identified by a status "O".

Conditional procedures are identified by a status "C[status number]". A procedure can be conditional to a feature support and/or a procedure support and/or a requirement support.

A.1 Declarations for portable part

A.1.1 Optional PT features

This clause contains the optional features (see table A.1) which can be declared by the manufacturer on the PT side and lists all optional, mandatory or conditional tests associated to these features.

Table A.1: Optional PT features supported

Feature no	Feature name	Reference to ETSI TS 102 527-4 [5]	Status	TC reference
NGLDS-A.3	HTTP based Applications		O	TC_PT_NGLDS.A3_BV_1081 TC_PT_NGLDS.A3_BV_1082

A.1.2 Extra information for PT testing

In addition to the optional features supported, the supplier shall declare additional information related to the PT implementation. See table A.2.

Table A.2: Implementation extra information for PT testing

Item no	Implementation extra information	Reference to ETSI TS 102 527-4 [5]	Possible values to be declared
PT_IXIT_1	IUT hardware version (HWV)	7.5.5.2	IA5 string (20 oct max.)
PT_IXIT_2	**Dataset 1** for PT upgrade (note 1, 2)	7.5.5.2	Set of data below:
PT_IXIT_2.EMC	Equipment Manufacturer's Code	7.5.5.2	2 octets
PT_IXIT_2.SWV0	software version before upgrade	7.5.5.2	IA5 string (20 oct max.)
PT_IXIT_2.SWV1	upgrade target	7.5.5.2	IA5 string (20 oct max.)
PT_IXIT_2.URL1	Management server URL for the upgrade	7.5.5.2	URL value (note 3)
PT_IXIT_2.Nf	Number of files needed for the upgrade	7.5.5.2	Number in [1..15]
PT_IXIT_2.URL2n	Set of URL2 values for n in [1.. PT_IXIT_2.Nf]	7.5.5.2	Sequence of URL values
PT_IXIT_3	**Dataset 2** for PT upgrade (note 1, 2)	7.5.5.2	Set of data below:
PT_IXIT_3.EMC	Equipment Manufacturer's Code	7.5.5.2	2 octets
PT_IXIT_3.SWV0	software version before upgrade	7.5.5.2	IA5 string (20 oct max.)
PT_IXIT_3.SWV1	upgrade target	7.5.5.2	IA5 string (20 oct max.)
PT_IXIT_3.URL1	Management server URL for the upgrade	7.5.5.2	URL value (note 3)
PT_IXIT_3.Nf	Number of files needed for the upgrade	7.5.5.2	Number in [1..15]
PT_IXIT_3.URL2n	Set of URL2 values for n in [1.. PT_IXIT_3.Nf]	7.5.5.2	Sequence of URL values
PT_IXIT_4	Number of immediate HTTP range retrieval retries in case of HTTP error during BCD of a file.		Number in [0 .. 10]
PT_IXIT_5	Number of immediate HTTP range retrieval retries in case of DECT connection error during BCD of a file.		Number in [0 .. 10]
PT_IXIT_6	If YES, PT ignores the incoming voice call in case of already connected data call	7.5.4.2.1	YES/NO

NOTE 1: The definition of two datasets allows the manufacturer to alternate upgrades and downgrades to and fro the same two versions (so that manufacturer only needs to supply a PT implementation with only two valid firmwares. In that case, the following shall hold: PT_IXIT_3.SWV0= PT_IXIT_2.SWV1 AND PT_IXIT_3.SWV1= PT_IXIT_2.SWV0.
NOTE 2: Alternatively, the manufacturer is allowed to use two equal datasets (i.e. with equal dataset fields values). In that case the manufacturer shall be able to reset the device to its initial version after an upgrade.
NOTE 3: An URL value is IA5 encoded and of any length.
NOTE 4: The maximum value of 10 seems reasonable but is not requirement of ETSI TS 102 527-4 [5].

A.1.3 Optional or conditional PT procedures

This clause contains the optional or conditional procedures which can be declared by the manufacturer on the PT side. See table A.3.

Table A.3: Enhanced security procedures supported

Procedure no GAP.N.35 (DPRS.N.43)	Procedure name	Reference to ETSI EN 300 444 [2]	Status	TC reference
GAP.N.35_2	Re-keying during a call	8.45.2	O	TC_PT_DPRS.N.43_BV_104
GAP.N.35_3	Storing the Derived Cipher Key (DCK)	8.45.3	O	TC_PT_DPRS.N.43_BV_105 TC_PT_DPRS.N.43_BV_106

A.2 Declarations for fixed part

A.2.1 Optional FT features

None.

A.2.2 Extra information for FT testing

In addition to the optional features supported, the supplier shall declare additional information related to the FT implementation. See table A.4.

Table A.4: Implementation extra information for FT testing

Item no	Implementation extra information	Reference to ETSI TS 102 527-4 [5]	Possible values to be declared
FT_IXIT_1	Manufacturer MS is provided (note 1)		YES
			NO
FT_IXIT_2	URL1 for 3rd party Basic SUOTA MS (notes 2 and 3)		String
FT_IXIT_3	URL1 for Manufacturer MS (notes 2 and 3)		String
FT_IXIT_4	3rd party DS hostname		String
FT_IXIT_5	IUT supports more than one upgrade at a time		YES
			NO
FT_IXIT_6	3rd party temporary $URL2_{tmp}$ redirecting to $URL2_1$= http://${FT_IXIT_4}/download/image.bin, defined in clause 4.1.2.2. Used for redirection tests.		String
NOTE 1: This indicates whether the manufacturer provides a MS in addition to the 3rd Party Basic SUOTA. If YES, the manufacturer MS may be either basic or enhanced.			
NOTE 2: A given test uses either the 3rd Party Basic SUOTA MS, or the Manufacturer MS. In the first case, FT_IXIT_2 is used for the test; in the second case, FT_IXIT_3 is used instead			
NOTE 3: Whatever MS is used for a test, it shall be populated with the values needed for that test (see TC description and clause 4.1.2.2). Except for URL1 above, these values do not depend on the MS used.			

A.2.3 Optional or conditional FT procedures

This clause contains the optional or conditional procedures which can be declared by the manufacturer on the FT side. See table A.5 below.

Table A.5: Enhanced security procedures supported

Procedure no GAP.N.35 (DPRS.N.43)	Procedure name	Reference to ETSI EN 300 444 [2]	Status	TC reference
GAP.N.35_2	Re-keying during a call	8.45.2	O	TC_FT_DPRS.N.43_BV_107
GAP.N.35_3	Storing the Derived Cipher Key (DCK)	8.45.3	O	TC_FT_DPRS.N.43_BV_108

Annex B (informative): List of NG-DECT Part 4 procedures

Table B.1 gives the list of NG-DECT Part 4 procedures. The reference document is ETSI TS 102 527-4 [5]. The status of each feature and procedure is given in ETSI TS 102 527-4 [5].

Table B.1: List of NG-DECT Part 4 procedures

1.1 New Generation DECT Speech Services support status		**Reference**
1.2 NWK features support status		
NGLDS-N.1	**General Light Data Service Procedures**	5.1.4
NGLDS-N.1_1	Service change rejection	7.5.4.1
NGLDS-N.1_2	Interactions with telephony services - Switching procedure when a LDS call is already established and there is an incoming voice call	7.5.4.2.1
NGLDS-N.1_3	Interactions with telephony services - Simultaneous handling of LDS and voice calls	7.5.4.2.2
NGLDS-N.1_4	Interactions with telephony services - Using a LDS when a voice call is already established	7.5.4.2.3
NGLDS-N.1_5	Interactions with telephony services - Handling of other interactions	7.5.4.2.4
NGLDS-N.2	**Software upgrade over the air, C-plane**	
NGLDS-N.2_1	Information exchange in the C-Plane - Handset version indication	7.5.5.2.1
NGLDS-N.2_2	Information exchange in the C-Plane - Handset version available	7.5.5.2.2
NGLDS-N.2_3	Information exchange in the C-Plane - URL indication	7.5.5.2.3
NGLDS-N.2_4	Information exchange in the C-Plane - Negative acknowledgement	7.5.5.2.4
NGLDS-N.2_5	SUOTA push mode	7.5.6
NGLDS-N.2_6	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] data calls	7.5.4.3.1
NGLDS-N.2_7	Enforcement of encryption - Encryption of NG-DECT Part 4 [5] information exchange over C-plane	7.5.4.3.2
1.3 Data Link Control (DLC) services support status		
1.4 Medium Access Control (MAC) services support status		
1.5 Physical layer (PHL) services support status		
1.6 Speech coding and audio features support status		
1.7 Application features support status		
NGLDS-A.1	**Binary content download**	5.1.5
NGLDS-A.1_1	General Light Data Services [NGLDS-N.1]	5.1.4
NGLDS-A.1_2	Binary content download general requirements	7.6.1.1
NGLDS-A.1_3	LU10 Interworking conventions and HTTP profile for simple binary content download	7.6.1.2.1
NGLDS-A.1_4	LU10 Interworking conventions and HTTP profile for enhanced binary content download	7.6.1.2.2
NGLDS-A.1_5	LU10 Interworking conventions and HTTP profile for Generic multiprotocol binary content download	7.6.1.2.3
NGLDS-A.1_6	Binary content download media type	7.6.1.3
NGLDS-A.1_7	Binary content download sequence	7.6.1.4
NGLDS-A.1_8	URI-based PP to FP confidentiality requirement	7.6.1.5.1
NGLDS-A.1_9	URI-based PP to FP authentication requirement	7.6.1.5.2
NGLDS-A.1_10	PP to FP enhanced interactivity	7.6.1.6
NGLDS-A.1_11	Common HTTP profile	A.1
NGLDS-A.2	**Software Upgrade Over The Air**	5.1.5
NGLDS-A.2_1	Binary content download [NGLDS-A.1]	5.1.5
NGLDS-A.2_2	Software upgrade over the air, C-plane [NGLDS-N.2]	5.1.4
NGLDS-A.2_3	Software upgrade over the air general requirements	7.6.2.1
NGLDS-A.2_4	Basic SUOTA protocol steps	7.6.2.2
NGLDS-A.2_5	Enhanced SUOTA protocol steps	7.6.2.3
NGLDS-A.2_6	PP security requirements in URL1 and URL2	7.6.2.4
NGLDS-A.2_7	Final notification of success and multiple step SUOTA	7.6.2.5

1.7 Application features support status		
NGLDS-A.2_8	Notification of failure	7.6.2.6
NGLDS-A.2_9	User initiated SUOTA	7.6.2.7
NGLDS-A.2_10	SUOTA interface to the management server	B
NGLDS-A.3	**HTTP based Applications**	5.1.5
NGLDS-A.3_1	Binary content download [NGLDS-A.1]	5.1.5
NGLDS-A.3_2	HTTP based applications general requirements	7.6.3.1
NGLDS-A.3_3	Support of additional HTTP header fields	7.6.3.2
NGLDS-A.3_4	Support of additional media-types	7.6.3.3
NGLDS-A.3_5	Support of character encodings	7.6.3.4
NGLDS-A.3_6	Simple XHTML profile	7.6.3.5
NGLDS-A.3_7	Baseline XHTML profile	7.6.3.6
NGLDS-A.3_8	Extended HTTP profile	A.2

Annex C (normative): Configuration for testing

The information contained within the following tables is required for configuration of the test equipment referred to in the present document. The label of each item does not explicitly appear in the test cases, nevertheless the related information are used either within stimulus or pass criteria to avoid human intervention when running some test cases.

C.1 Portable part configuration to be declared by supplier

None.

C.2 Fixed part internal configuration to be declared by supplier

None.

C.3 Test environment configuration to be declared by test house or supplier

None.

Annex D (normative): Amendments to other DECT specifications

None.

Annex E (informative): Bibliography

ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".

ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

ETSI TR 101 178: "Digital Enhanced Cordless Telecommunications (DECT); A high Level Guide to the DECT Standardization".

ETSI TBR 006: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".

ETSI EN 301 469-8 : "Digital Enhanced Cordless Telecommunications (DECT);DECT Packet Radio Service (DPRS) Test Case Library (TCL);Part 8: Abstract Test Suite (ATS) - Network (NWK) layer - Portable radio Termination (PT)".

ETSI EN 301 469-9 : "Digital Enhanced Cordless Telecommunications (DECT);DECT Packet Radio Service (DPRS) Test Case Library (TCL);Part 9: Abstract Test Suite (ATS) - Network (NWK) layer - Fixed radio Termination (FT)".

IETF RFC 791 (1981): "Internet Protocol" (STD 51).

IETF RFC 768 (1980): "User Datagram Protocol" (STD 6).

IETF RFC 793 (1981): "Transmission Control Protocol" (STD 7).

IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".

IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax" (STD 66).

IETF RFC 2817: "Upgrading to TLS within HTTP/1.1".

IETF RFC 1034: "Domain Names - Concepts and Facilities" (STD 13).

IETF RFC 1035: "Domain Names - Implementation and Specification" (STD 13).

History

Document history		
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