

ETSI TS 128 669 V14.0.0 (2017-04)



**Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Radio Planning Tool Access (RPTA)
Integration Reference Point (IRP);
Solution Set (SS) definitions
(3GPP TS 28.669 version 14.0.0 Release 14)**



Reference

RTS/TSGS-0528669ve00

Keywords

LTE,UMTS

ETSI

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

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

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

Important notice

The present document can be downloaded from:

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

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

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

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

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

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

Copyright Notification

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

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

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

© European Telecommunications Standards Institute 2017.

All rights reserved.

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

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

oneM2M logo is protected for the benefit of its Members

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	5
Introduction	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	7
3.1 Definitions	7
3.2 Abbreviations	7
4 Solution Set Definitions	7
Annex A (normative): CORBA Solution Set	8
A.0 Introduction	8
Annex B (normative): XML definitions.....	9
B.0 Introduction	9
B.1 Architectural features	9
B.1.1 General	9
B.1.2 Description of the XML definitions	9
B.2 Mapping	9
B.3 Solution Set definitions	9
B.3.1 XML Schema "rptaIrpIOCs.xsd"	9
B.3.2 XML Schema "rptaIRPOpR.xsd"	11
Annex C (normative): HTTP Solution Set.....	13
C.0 Introduction	13
C.1 Architectural features	13
C.1.1 General	13
C.1.2 Supported Specifications.....	13
C.1.3 Introduction to HTTP-GET	13
C.1.4 Usage of HTTP-GET.....	14
C.1.5 Request-URI.....	14
C.1.6 Headers.....	14
C.2 Mapping	15
C.2.0 Introduction	15
C.2.1 Operation and Notification mapping	15
C.2.2 Operation parameter mapping	16
C.3 Solution Set definitions	17
C.3.1 XML Schema "rptaIRPHTTP.xsd"	17
C.3.2 JSON definition structure.....	17
Annex D (normative): SOAP Solution Set	19
D.0 Introduction	19
D.1 Architectural features	19
D.1.1 General	19

D.1.2	Supported W3C specifications	19
D.1.3	Filter language	19
D.2	Mapping	20
D.2.1	Operation and Notification mapping	20
D.2.2	Operation parameter mapping	21
D.2.2.1	Operation getPlannedData	21
D.2.2.1.1	Input parameters	21
D.2.2.1.2	Output parameters	21
D.2.2.1.3	Fault definition	21
D.3	Solution Set definitions	21
D.3.1	WSDL definition structure	21
D.3.2	Graphical Representation	22
D.3.3	WSDL specification "RPTAIRPSysm.wsdl"	23
Annex E (informative):	Change history	25
History		26

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

28.667: Radio Planning Tool Access (RPTA) Integration Reference Point (IRP); Requirements.

28.668: Radio Planning Tool Access (RPTA) Integration Reference Point (IRP); Information Service (IS).

**28.669: Radio Planning Tool Access (RPTA) Integration Reference Point (IRP); Solution Set (SS).
definitions**

1 Scope

The present document specifies the Solution Set definitions (SS) of the Radio Planning Tool Access (RPTA) Integration Reference Point (IRP). This IRP allows the NM to read planned site and antenna data from the RPT.

This Solution Set specification is related to 3GPP TS 28.668 V13.0.X [4].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
- [3] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [4] 3GPP TS 28.668: "Telecommunication management; Radio Planning Tool Access (RPTA) Integration Reference Point (IRP); Information Service (IS)".
- [5] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1" (<https://www.ietf.org/rfc/rfc2616.txt>)
- [6] IETF RFC 7159: "The JavaScript Object Notation (JSON) Data Interchange Format" (<https://www.ietf.org/rfc/rfc7159.txt>)
- [7] W3C SOAP 1.1 specification (<http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>)
- [8] W3C WSDL 1.1 specification (<http://www.w3.org/TR/2001/NOTE-wsdl-20010315>)
- [9] W3C XPath 1.0 specification (<http://www.w3.org/TR/1999/REC-xpath-19991116>)
- [10] W3C SOAP 1.2 specification (<http://www.w3.org/TR/soap12-part1/>)
- [11] IETF RFC 7230: "[HTTP/1.1: Message Syntax and Routing](https://www.ietf.org/rfc/rfc7230.txt)" (<https://www.ietf.org/rfc/rfc7230.txt>)
- [12] IETF RFC 7231: "[HTTP/1.1: Semantics and Content](https://www.ietf.org/rfc/rfc7231.txt)" (<https://www.ietf.org/rfc/rfc7231.txt>)
- [13] IETF RFC 7232: "[HTTP/1.1: Conditional Requests](https://www.ietf.org/rfc/rfc7232.txt)" (<https://www.ietf.org/rfc/rfc7232.txt>)
- [14] IETF RFC 7233: "[HTTP/1.1: Range Requests](https://www.ietf.org/rfc/rfc7233.txt)" (<https://www.ietf.org/rfc/rfc7233.txt>)
- [15] IETF RFC 7234: "[HTTP/1.1: Caching](https://www.ietf.org/rfc/rfc7234.txt)" (<https://www.ietf.org/rfc/rfc7234.txt>)
- [16] IETF RFC 7235: "[HTTP/1.1: Authentication](https://www.ietf.org/rfc/rfc7235.txt)" (<https://www.ietf.org/rfc/rfc7235.txt>)

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1], 3GPP TS 32.101 [2], 3GPP TS 32.102 [3], 3GPP TS 28.668 [4] and the following apply.

A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

3.2 Abbreviations

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

IS	Information Service
SS	Solution Set
WSDL	Web Service Description Language

4 Solution Set Definitions

The present document defines the following RPTA IRP Solution Set Definitions:

Annex A provides the CORBA Solution Set.

Annex B provides the XML Definitions.

Annex C provides the HTTP Solution Set.

Annex D provides the SOAP Solution Set.

Annex A (normative): CORBA Solution Set

A.0 Introduction

This annex specifies the CORBA Solution Set for the IRP whose semantics are specified in 3GPP TS 28.668 [4].

This annex is not provided in the current version of the present document.

Annex B (normative): XML definitions

B.0 Introduction

This annex specifies the XML definitions for the IRP whose semantics are specified in 3GPP TS 28.668 [4].

B.1 Architectural features

B.1.1 General

The overall architectural feature of RPTA IRP is specified in 3GPP TS 28.668 [3]. This clause specifies features that are specific to the XML definitions.

B.1.2 Description of the XML definitions

This annex specifies the XML definitions for the Support IOCs of the RPTA IRP in `rptaIrpIOCs.xsd`. It provides also the XML type definitions used for constructing the `getPlannedData()` response in `rptaIRPOpR.xsd`.

B.2 Mapping

The mapping is not present in this version of the present document.

B.3 Solution Set definitions

B.3.1 XML Schema "rptaIrpIOCs.xsd"

```
<?xml version="1.1" encoding="UTF-8"?>

<!--
  3GPP TS 28.669 Radio Planning Tool Access (RPTA) IRP
  XML Schema definitions of the Support Object Classes
  rptaIrpIOCs.xsd
-->

<schema

  <!------->
  <!-- Name spaces -->
  <!------->

  targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIrpIOCs"

  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xrpi="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIrpIOCs"
  elementFormDefault="qualified">

  <!------->
  <!-- RPTA IRP information model attribute type related XML types -->
  <!------->

  <simpleType name="angleType">
    <restriction base="short">
      <minInclusive value="0"/>
      <maxInclusive value="3600"/>
    </restriction>
```

```

</simpleType>

<simpleType name="bearingType">
  <restriction base="short">
    <minInclusive value="0"/>
    <maxInclusive value="360"/>
  </restriction>
</simpleType>

<complexType name="idListType">
  <sequence minOccurs="0" maxOccurs="unbounded">
    <element name="id" type="string"/>
  </sequence>
</complexType>

<simpleType name="longitudeType">
  <restriction base="decimal">
    <fractionDigits value="4"/>
    <minInclusive value="-180.0000"/>
    <maxInclusive value="+180.0000"/>
  </restriction>
</simpleType>

<simpleType name="latitudeType">
  <restriction base="decimal">
    <fractionDigits value="4"/>
    <minInclusive value="-90.0000"/>
    <maxInclusive value="+90.0000"/>
  </restriction>
</simpleType>

<!------->
<!-- RPTA IRP information model class associated XML elements -->
<!------->

<element name="Antenna">
  <complexType>
    <element name="attributes" minOccurs="0">
      <complexType>
        <sequence>
          <element name="antennaId" type="string"/>
          <element name="antennaName" type="string"/>
          <element name="antennaPatternLabel" type="string"/>
          <element name="antennaType" type="string"/>
          <element name="antennaLongitude" type="xrpi:longitudeType"/>
          <element name="antennaLatitude" type="xrpi:latitudeType"/>
          <element name="antennaAltitude" type="short"/>
          <element name="antennaBearing" type="xrpi:bearingType"/>
          <element name="antennaMechanicalOffset" type="xrpi:angleType"/>
          <element name="theSupportedCells" type="xrpi:idListType"/>
        </sequence>
      </complexType>
    </element>
  </complexType>
</element>

<element name="Cell" abstract="true">
  <complexType>
    <element name="attributes" minOccurs="0">
      <complexType>
        <sequence>
          <element name="cellId" type="string"/>
          <element name="theSupportingAntennas" type="xrpi:idListType"/>
        </sequence>
      </complexType>
    </element>
  </complexType>
</element>

<element
  name="GSMCell"
  substitutionGroup="Cell">
</element>

<element
  name="UTRANCell"
  substitutionGroup="Cell">
</element>

```

```

<element
  name="EUTRANCell"
  substitutionGroup="Cell">
</element>

<element name="Site">
  <complexType>
    <sequence>
      <element name="attributes" minOccurs="0">
        <complexType>
          <all>
            <element name="siteId" type="string"/>
            <element name="siteAddress" type="string"/>
            <element name="siteName" type="string"/>
            <element name="siteLongitude" type="xrpi:longitudeType"/>
            <element name="siteLatitude" type="xrpi:latitudeType"/>
            <element name="siteAltitude" type="short" use="optional"/>
          </all>
        </complexType>
      <choice minOccurs="0" maxOccurs="unbounded">
        <element ref="xrpi:Antenna"/>
        <element ref="xrpi:Cell"/>
      </choice>
    </sequence>
  </complexType>
</element>

<element name="SiteList">
  <complexType>
    <sequence>
      <element name="attributes" minOccurs="0">
        <complexType>
          <all>
            </all>
        </complexType>
      </element>
      <choice minOccurs="0" maxOccurs="unbounded">
        <element ref="xrpi:Site"/>
      </choice>
    </sequence>
  </complexType>
</element>
</schema>

```

B.3.2 XML Schema "rptaIRPOpR.xsd"

```

<?xml version="1.1" encoding="UTF-8"?>
<!--
  3GPP TS 28.669 Radio Planning Tool Access (RPTA) IRP
  RPTA IRP XML Schema definitions for the operation response
  rptaIRPOpR.xsd
-->
<schema
  <!------->
  <!-- Name spaces -->
  <!------->

  targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR"

  elementFormDefault="qualified">

  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xrpi="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPIOCs"
  xmlns:xrpo="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR"

  <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/28.669#rptaIRPIOCs"/>

  <!------->
  <!-- Type definitions -->
  <!------->

  <complexType name="plannedDataOutType">

```

```
<sequence>
  <element name="header">
    <complexType>
      <attribute name="dataFormatVersion" type="string" use="required"/>
      <attribute name="senderName" type="string" use="optional"/>
      <attribute name="vendorName" type="string" use="optional"/>
    </complexType>
  </element>
  <element name="plannedData" maxOccurs="unbounded">
    <complexType>
      <element ref="xrpi:SiteList"/>
    </complexType>
  </element>
  <element name="footer">
    <complexType>
      <attribute name="dateTime" type="dateTime" use="required"/>
    </complexType>
  </element>
</sequence>
</complexType>

<simpleType name="operationStatusType">
  <restriction base="string">
    <enumeration value="operationSucceeded"/>
    <enumeration value="operationFailed"/>
  </restriction>
</simpleType>

</schema>
```

Annex C (normative): HTTP Solution Set

C.0 Introduction

This annex specifies the HTTP Solution Set for the IRP whose semantics are specified in 3GPP TS 28.668 [4]. The HTTP Solution Set is specific for this IRP, and not applicable to any other IRP.

C.1 Architectural features

C.1.1 General

The overall architectural feature of RPTA IRP is specified in 3GPP TS 28.668 [4]. This clause specifies features that are specific to the HTTP SS.

C.1.2 Supported Specifications

HTTP 1.1 [5] is supported.

JSON [6] is supported.

NOTE: IETF RFC 2616 [5] is superseded by RFC 7230 [11] RFC 7231 [12], RFC 7232 [13], RFC 7233 [14], RFC 7234 [15], and RFC 7235 [16]. These specifications are function wise identical to RFC 2616.

C.1.3 Introduction to HTTP-GET

IETF RFC 2616 [5] specifies the Hypertext Transfer Protocol (HTTP) Version 1.1 (HTTP/1.1). Chapter 1.4 of this document describes the overall operation:

“The HTTP protocol is a request/response protocol. A client sends a request to the server in the form of a request method, URI, and protocol version, followed by a MIME-like message containing request modifiers, client information, and possible body content over a connection with a server. The server responds with a status line, including the message’s protocol version and a success or error code, followed by a MIME-like message containing server information, entity metainformation, and possible entity-body content.”

Chapter 5 of [5] specifies the HTTP request message and chapter 6 the HTTP response message. The definitions are repeated below for convenience:

```
Request = Request-Line           ;
          *(( general-header      ;
             | request-header    ;
             | entity-header ) CRLF) ;
          CRLF
          [ message-body ]       ;
```

```
Request-Line = Method SP Request-URI SP HTTP-Version CRLF
```

```
Response = Status-Line          ;
          *(( general-header      ;
             | response-header   ;
             | entity-header ) CRLF) ;
          CRLF
          [ message-body ]       ;
```

```
Status-Line = HTTP-Version SP Status-Code SP Reason-Phrase CRLF
```

C.1.4 Usage of HTTP-GET

The operation `getPlannedData` is mapped to the HTTP method `GET`. The RPT data to be retrieved is identified by the `Request-URI`. The data is returned in the `message-body` of the `Response` message.

The `message-body` carries a:

- XML instance document (XML option);

or a

- JSON instance document (JSON option).

The syntax of the message body is described by:

- the XML Schema definition of `rptaIRPHTTP.xsd` given in Chapter C.3.1 (XML option);
- the JSON syntax provided in Chapter C.3.2 (JSON option).

C.1.5 Request-URI

The `Request-URI` can be configured or can be discovered by means that are outside the scope of the present document.

C.1.6 Headers

The present document does not make any recommendations on the use of headers.

C.2 Mapping

C.2.0 Introduction

The RPTA IRP: IS 3GPP TS 28.668 [4] defines semantics of operations and notifications visible across the Type-7 interface. Table C.2.1-1 indicates mapping of these operations and notifications to their equivalents defined in this SS.

C.2.1 Operation and Notification mapping

Table C.2.1-1: Mapping from IS Operation to SS equivalents

IS Operation (3GPP TS 28.668 [4])	SS Method	Qualifier
getPlannedData	HTTP method GET	M

C.2.2 Operation parameter mapping

Reference 3GPP TS 28.668 [4] defines semantics of parameters carried in operations across the Type-7 interface. The following tables indicate the mapping of these parameters to their equivalents defined in this SS.

Table C.2.2-1: Mapping from IS `getPlannedData` parameters to SS equivalents (XML option)

IS Operation parameter	SS Method parameter	Qualifier
scope	Request-URI in the Request-Line (Request message)	M
plannedData	message-body (Response message): plannedDataOut	M
status	message-body (Response message): status	M

Table C.2.2-2: Mapping from IS `getPlannedData` parameters to SS equivalents (JSON option)

IS Operation parameter	SS Method parameter	Qualifier
scope	Request-URI in the Request-Line (Request message)	M
plannedData	message-body (Response message): siteList	M
status	Status-Line (Response message)	M

C.3 Solution Set definitions

C.3.1 XML Schema "rptaIRPHTTP.xsd"

```
<?xml version="1.1" encoding="UTF-8"?>

<!--
  3GPP TS 28.669 Radio Planning Tool Access (RPTA) IRP
  XML Schema for the HTTP Solution Set
  rptaIRPHTTP.xsd
-->

<schema

  targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPHTTP"

  elementFormDefault="qualified">

  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xrph="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPHTTP"
  xmlns:xrpi="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPIOCs"
  xmlns:xrpo="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR"

  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPIOCs" />
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR" />

  <element name="getPlannedDataResponse">
    <complexType>
      <sequence>
        <element name="plannedDataOut" type="xrpo:plannedDataOutType"/>
        <element name="status" type="xrpo:operationStatusType"/>
      </sequence>
    </complexType>
  </element>

</schema>
```

C.3.2 JSON definition structure

There is no schema language available for JSON. An example for a JSON instance document is provided below. This example provides the general structure and syntax of a standard compliant JSON instance. This example shall be extended only with additional site, antenna and cell elements. No other modifications are standard compliant.

```
{
  "sitelist":
  [
    {
      "siteId": "123",
      "siteAddress": "Xstreet",
      "siteName": "bla",
      "siteLongitude": "+148.3429",
      "siteLatitude": "-37.4507",
      "siteAltitude": "257",

      "antenna":
      [
        {
          "antennaId": "12",
          "antennaName": "Peter",
          "antennaPatternLabel": "abc",
          "antennaType": "abc",
          "antennaLongitude": "+148.3429",
          "antennaLatitude": "-37.4507",
          "antennaAltitude": "257",
          "antennaBearing": "309",
          "antennaMechanicalOffset": "28",
          "theSupportedCells": [5,6]},

        {
          "antennaId": "23",
          [...]
          "theSupportedCells": [7]}
      ],

      "cell":
      [
```

```
        {"cellId":"5",
         "theSupportingAntennas":[12]},
        {"cellId":"6",
         "theSupportingAntennas":[12]},
        {"cellId":"7",
         "theSupportingAntennas":[23]}
      ]
    },
    {"siteId": "456",
     [ ... ]
     "siteAltitude":"278",

     "antenna":
     [
       {"antennaId":"45",
        [ ... ]
        "theSupportedCells":[5,6]}
     ],

     "cell":
     [
       {"cellId":"5", "theSupportingAntennas":[45]},
       {"cellId":"6", "theSupportingAntennas":[45]}
     ]
   }
 ]
 }
```

Annex D (normative): SOAP Solution Set

D.0 Introduction

This annex specifies the SOAP Solution Set for the IRP whose semantics are specified in 3GPP TS 28.668 [4].

D.1 Architectural features

D.1.1 General

The overall architectural feature of RPTA IRP is specified in 3GPP TS 28.668 [4]. This clause specifies features that are specific to the SOAP SS.

D.1.2 Supported W3C specifications

The SOAP 1.1 specification [7] and WSDL 1.1 specification [8] are supported.

The SOAP 1.2 specification [10] is supported optionally.

The present document uses "document" style in the WSDL description.

The present document uses "literal" encoding style in the WSDL description.

D.1.3 Filter language

The filter language used in the SS is the XPath Language (see W3C XPath 1.0 specification [9]). Service Provider may throw a FilterComplexityLimit fault when a given filter is too complex.

D.2 Mapping

D.2.1 Operation and Notification mapping

Table D.2.1-1: Mapping from IS Operation to SS equivalents

IS Operation	SS Operation	Qualifier
getPlannedData	getPlannedData	M

D.2.2 Operation parameter mapping

D.2.2.1 Operation getPlannedData

D.2.2.1.1 Input parameters

Table D.2.2.1.1-1: Mapping from IS getPlannedData input parameters to SS equivalents

IS Operation parameter	SS Operation parameter	Qualifier
scope	queryXPathExp	M

Here is the XML schema fragment of the getPlannedData request:

```
<element name="getPlannedDataRequest">
  <complexType>
    <sequence>
      <element name="queryXPathExp" type="string"/>
    </sequence>
  </complexType>
</element>
```

NOTE: In Rel-12 only all planned data can be selected. The semantics of all is conveyed by an empty string.

D.2.2.1.2 Output parameters

Table D.2.2.1.2-1: Mapping from IS getPlannedData output parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
plannedData	RPTAIRPData:plannedDataOut	M
status	RPTAIRPData:status	M

Here is the XML schema fragment of the getPlannedData response:

```
<element name="getPlannedDataResponse">
  <complexType>
    <sequence>
      <element name="plannedDataOut" type="xrpo:plannedDataOutType"/>
      <element name="status" type="xrpo:operationStatusType"/>
    </sequence>
  </complexType>
</element>
```

D.2.2.1.3 Fault definition

```
<element name="getPlannedDataFault">
  <simpleType>
    <restriction base="string">
      <enumeration value="operationFailed"/>
    </restriction>
  </simpleType>
</element>
```

D.3 Solution Set definitions

D.3.1 WSDL definition structure

Clause D.3.2 provides a graphical representation of the RPTA IRP service.

Clause D.3.3 defines the services which are supported the RPTA IRP client.

D.3.2 Graphical Representation

A graphical representation is not provided in the current version of the present document.

D.3.3 WSDL specification "RPTAIRPSystem.wsdl"

```

<?xml version="1.0" encoding="UTF-8"?>

<!--
  3GPP TS 28.669 Radio Planning Tool Access (RPTA) IRP
  wsdl definition of the RPTA IRP
  rptaIRPSystem.wsdl
-->

<definitions

  targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#RPTAIRPSystem">

  xmlns="http://schemas.xmlsoap.org/wsdl/"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"

  xmlns:RPTAIRPSystem="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#RPTAIRPSystem"
  xmlns:RPTAIRPData="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#RPTAIRPData"

  <!------->
  <!-- Type and element definitions -->
  <!------->

  <types>
    <schema

      <!------->
      <!-- Name spaces -->
      <!------->

      targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#RPTAIRPData"

      xmlns="http://www.w3.org/2001/XMLSchema">
      xmlns:xrpi="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPIOCs"
      xmlns:xrpo="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR"

      <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPIOCs"/>
      <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#rptaIRPOpR"/>

      <!------->
      <!-- Element definitions -->
      <!------->

      <element name="getPlannedDataRequest">
        <complexType>
          <sequence>
            <element name="queryXPathExp" type="string"/>
          </sequence>
        </complexType>
      </element>

      <element name="getPlannedDataResponse">
        <complexType>
          <sequence>
            <element name="plannedDataOut" type="xrpo:plannedDataOutType"/>
            <element name="status" type="xrpo:operationStatusType"/>
          </sequence>
        </complexType>
      </element>

      <element name="getPlannedDataFault">
        <simpleType>
          <restriction base="string">
            <enumeration value="operationFailed"/>
          </restriction>
        </simpleType>
      </element>

    </schema>
  </types>

  <!------->
  <!-- Operation data elements definition -->
  <!------->

```



```

<message name="getPlannedDataRequest">
  <part name="parameter" element="RPTAIRPData:getPlannedDataRequest"/>
</message>

<message name="getPlannedDataResponse">
  <part name="parameter" element="RPTAIRPData:getPlannedDataResponse"/>
</message>

<message name="getPlannedDataFault">
  <part name="parameter" element="RPTAIRPData:getPlannedDataFault"/>
</message>

<!------->
<!-- Operations definition -->
<!------->

<portType name="RptaOperations1PortType">

  <operation name="getPlannedData">
    <input message="RPTAIRPSystem:getPlannedDataRequest"/>
    <output message="RPTAIRPSystem:getPlannedDataResponse"/>
    <fault name="getPlannedDataFault" message="RPTAIRPSystem:getPlannedDataFault"/>
  </operation>

</portType>

<!------->
<!-- Message format and protocol details -->
<!------->

<binding name="RptaOperations1Binding" type="RPTAIRPSystem:RptaOperations1PortType">

  <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>

  <operation name="getPlannedData">
    <soap:operation
soapAction="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#getPlannedData"/>
    <input>
      <soap:body use="literal"/>
    </input>
    <output>
      <soap:body use="literal"/>
    </output>
    <fault name="getPlannedDataFault">
      <soap:fault name="getPlannedDataFault" use="literal"/>
    </fault>
  </operation>

</binding>

<!------->
<!-- Web Service definition -->
<!------->

<service name="RPTAIRPService">
  <port name="RptaOperationalPort" binding="RPTAIRPSystem:RptOperation1Binding">
    <soap:address location="http://www.3gpp.org/ftp/specs/archive/28_series/28.669#RPTAIRP"/>
  </port>
</service>

</definitions>

```

Annex E (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
						Version after approval	12.0.0
2016-01	SA#70					Upgrade to Rel-13 (MCC)	13.0.0
2016-06	SA#72	SP-160407	001 1	-	F	Update the link from IRP Solution Set to IRP Information Service	13.1.0
2017-03	SA#75	-	-	-		Promotion to Release 14 without technical change	14.0.0

History

Document history		
V14.0.0	April 2017	Publication