

ETSI TS 132 312 V7.0.0 (2007-06)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Generic Integration Reference Point (IRP) management;
Information Service (IS)
(3GPP TS 32.312 version 7.0.0 Release 7)**



Reference

RTS/TSGS-0532312v700

Keywords

GSM, 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

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the 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

<http://portal.etsi.org/tb/status/status.asp>

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

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2007.
All rights reserved.

DECTTM, **PLUGTESTS**TM and **UMTS**TM are Trade Marks of ETSI registered for the benefit of its Members.
TIPHONTM and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPPTM is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

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 (<http://webapp.etsi.org/IPR/home.asp>).

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>.

Contents

Intellectual Property Rights	2
Foreword.....	2
Foreword.....	5
Introduction	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	7
4 System Overview	8
System Context	8
5 Information Object Classes (IOCs)	9
5.1 Information entities imported and local labels	9
5.2 Class Diagram	9
5.2.1 Attributes and relationships	9
5.2.2 Inheritance	9
5.3 IOCs definition	10
5.3.1 ManagedGenericIRP	10
5.3.1.1 Definition	10
5.3.1.2 Attributes.....	10
5.3.1.3 Notification	10
5.4 Information relationships definition	10
5.5 Information attributes definition.....	10
5.5.1 Definitions and legal values.....	11
6 Interface Definition	11
6.1 Class diagram representing interfaces	11
6.2 Generic rules	12
6.3 genericIRPVersionOperations Interface (M).....	12
6.3.1 Operation getIRPVersion (M).....	12
6.3.1.1 Definition	12
6.3.1.2 Input parameters.....	12
6.3.1.3 Output parameters	12
6.3.1.4 Pre-condition.....	12
6.3.1.5 Post-condition	12
6.3.1.6 Exceptions	12
6.4 genericIRPProfileOperations Interface (O).....	13
6.4.1 Operation getOperationProfile (O).....	13
6.4.1.1 Definition	13
6.4.1.2 Input parameters.....	13
6.4.1.3 Output parameters	13
6.4.1.4 Pre-condition.....	13
6.4.1.5 Post-condition	13
6.4.1.6 Exceptions	13
6.4.2 Operation getNotificationProfile (O)	14
6.4.2.1 Definition	14
6.4.2.2 Input parameters.....	14
6.4.2.3 Output parameters	14
6.4.2.4 Pre-condition.....	14
6.4.2.5 Post-condition	14
6.4.2.6 Exceptions	14

Annex A (informative): **Change history**15
History16

Foreword

This Technical Specification (TS) 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:

- 32.311: Generic Integration Reference Point (IRP) management: Requirements
- 32.312: Generic Integration Reference Point (IRP) management: Information Service (IS)**
- 32.313: Generic Integration Reference Point (IRP) management: Common Object Request Broker Architecture (CORBA) Solution Set (SS)
- 32.317: "Generic Integration Reference Point (IRP) management; Simple Object Access Protocol (SOAP) Solution Set (SS)"

The Itf-N interface is built up by a number of IRPs and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in TS 32.101 [1] and TS 32.102 [2].

All IRPs support a set of generic features. Those features allow to retrieve IRP profile and IRP supported versions. The present document contains the specification of those generic features.

1 Scope

The purpose of the present document is to define a common service supported by all IRPs such as AlarmIRP. The present document is the "Information Service" part. It defines, for the purpose of supporting the common service, the information observable and controllable by management system's client (i.e. IRPManager) via the Itf-N. It also specifies the semantics of and the interactions used to carry this information.

With this common service supported by all IRPs, an IRPManager can retrieve the profile of operations and notifications supported by a given IRP name-contained by an IRPAgent. An IRPManager can also retrieve the IRPVersions supported by a given IRP.

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 TS 32.101: "Telecommunication management; Principles and high level requirements".

[2] 3GPP TS 32.102: "Telecommunication management; Architecture".

[3] 3GPP TS 32.301: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Requirements".

[4] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

[5] 3GPP TS 32.311: "Telecommunication management; Generic Integration Reference Point (IRP) management; Requirements".

[6] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[7] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 32.101 [1], TS 32.102 [2], TS 32.301 [3] and the following apply:

IRP: see TS 32.102 [2].

IRPAgent: see TS 32.102 [2].

IRPManager: see TS 32.102 [2].

IRP document version number string (or "IRPVersion"): see TS 32.311 [5].

Iff-N: see TS 32.102 [2].

3.2 Abbreviations

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

CM	Configuration Management
DN	Distinguished Name
EM	Element Manager
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
ITU-T	International Telecommunication Union Telecommunication standardisation sector
NE	Network Element
NM	Network Manager
NR	Network Resource
NRM	Network Resource Model
OMG	Object Management Group
SS	Solution Set
UML	Unified Modelling Language (OMG)

4 System Overview

System Context

The general definition of the System Context for the present IRP is found in TS 32.150 [6] clause 4.7.

In addition, the set of related IRP(s) relevant to the present IRP is shown in the two diagrams below.

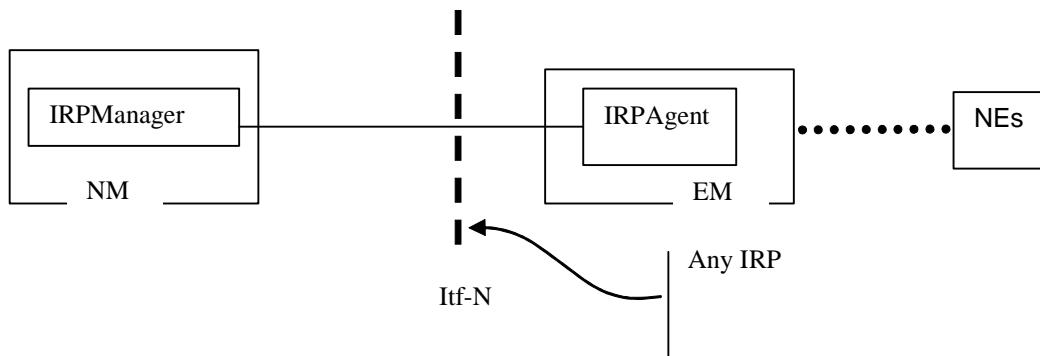


Figure 4.1: System Context A

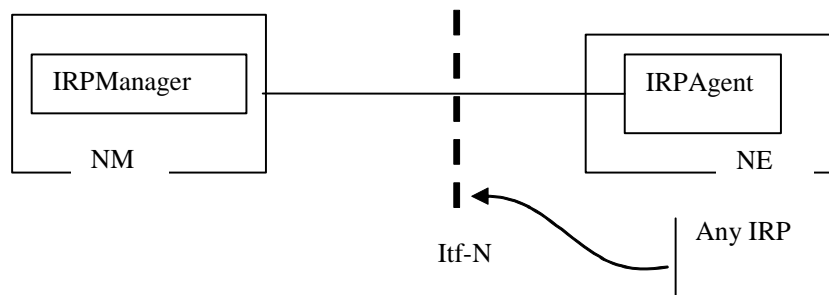


Figure 4.2: System Context B

5 Information Object Classes (IOCs)

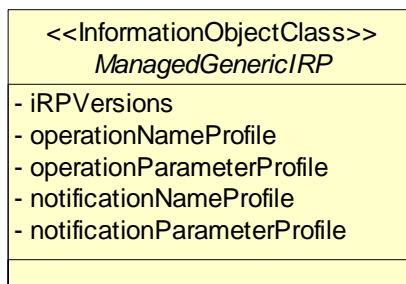
5.1 Information entities imported and local labels

Label reference	Local label
3GPP TS 32.622 [4], information object class, GenericIRP	GenericIRP
3GPP TS 32.111-2 [7], notification, notifyNewAlarm	notifyNewAlarm
3GPP TS 32.111-2 [7], notification, notifyChangedAlarm	notifyChangedAlarm
3GPP TS 32.111-2 [7], notification, notifyClearedAlarm	notifyClearedAlarm
3GPP TS 32.111-2 [7], notification, notifyAckStateChanged	notifyAckStateChanged

5.2 Class Diagram

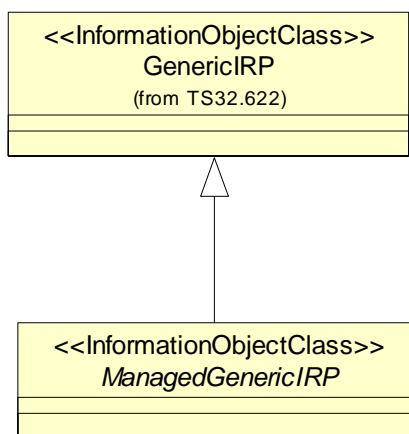
5.2.1 Attributes and relationships

This clause depicts the set of IOCs that encapsulate information relevant for this service. This clause provides the overview of all IOCs in UML. Subsequent clauses provide more detailed specification of various aspects of these IOCs.



5.2.2 Inheritance

This clause depicts the inheritance relationships that exist between IOCs.



5.3 IOCs definition

5.3.1 ManagedGenericIRP

5.3.1.1 Definition

This information object represents a generic IRP which supports generic management capabilities. It inherits from IOC `GenericIRP`.

5.3.1.2 Attributes

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
<code>iRPVersions</code>	-	M	-	-
<code>operationNameProfile</code>	-	O	-	-
<code>operationParameterProfile</code>	-	O	-	-
<code>notificationNameProfile</code>	-	O	-	-
<code>notificationParameterProfile</code>	-	O	-	-

5.3.1.3 Notification

Name	Qualifier	Notes
<code>notifyNewAlarm</code>	O	See Alarm IRP (3GPP TS 32.111-2 [7])
<code>notifyChangedAlarm</code>	O	See Alarm IRP (3GPP TS 32.111-2 [7])
<code>notifyClearedAlarm</code>	O	See Alarm IRP (3GPP TS 32.111-2 [7])
<code>notifyComments</code>	O	See Alarm IRP (3GPP TS 32.111-2 [7])
<code>notifyAckStateChanged</code>	O	See Alarm IRP (3GPP TS 32.111-2 [7])

5.4 Information relationships definition

None

5.5 Information attributes definition

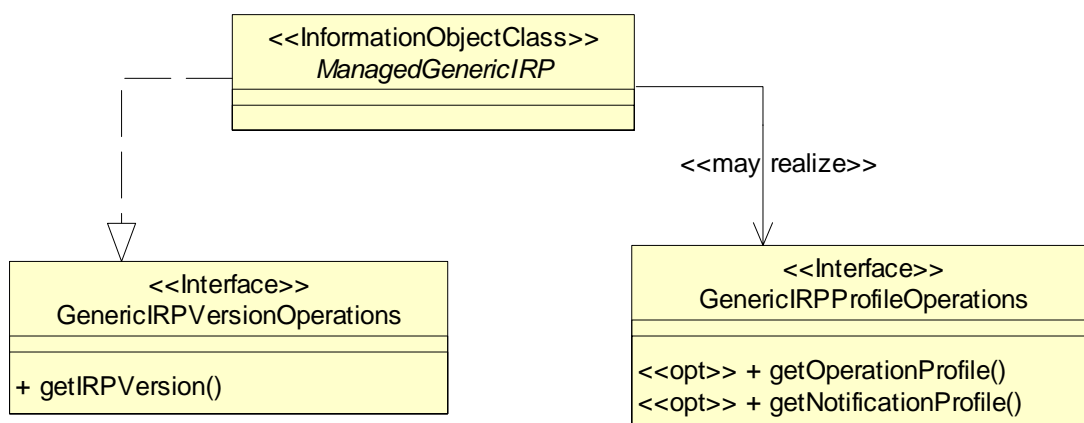
This clause defines the semantics of the attributes used in IOCs.

5.5.1 Definitions and legal values

Attribute Name	Definition	Legal Values
iRPVersions	This attribute contains a set of IRPVersions. The set contains at least one element.	See definition "IRP document version number string" in clause 3.1.
operationNameProfile	This attribute contains a set of elements. The n-th element of this set contains the set of operation names supported for the IRPVersion identified in the n-th element of iRPVersions attribute.	
notificationNameProfile	This attribute contains a set of elements. The n-th element of this set contains the set of notification names supported for the IRPVersion identified in the n-th element of iRPVersions attribute.	
operationParameterProfile	This attribute contains a set of elements. The n-th element of this set contains the set of set of notification parameters supported by the operations identified in the n-th element of operationNameProfile attribute. The set of operation parameters are placed in the set in the same order as the order followed by the operation names in their set.	
notificationParameterProfile	This attribute contains a set of elements. The n-th element of this set contains the set of set of notification parameters supported by the notifications identified in the n-th element of notificationNameProfile attribute. The set of notification parameters are placed in the set in the same order as the order followed by the notification names in their set.	

6 Interface Definition

6.1 Class diagram representing interfaces



6.2 Generic rules

- **Rule 1:** each operation with at least one input parameter supports a pre-condition `valid_input_parameter` which indicates that all input parameters shall be valid with regards to their information type. Additionally, each such operation supports an exception `operation_failed_invalid_input_parameter` which is raised when pre-condition `valid_input_parameter` is false. The exception has the same entry and exit state.
- **Rule 2:** Each operation with at least one optional input parameter supports a set of pre-conditions `supported_optional_input_parameter_xxx` where "xxx" is the name of the optional input parameter and the pre-condition indicates that the operation supports the named optional input parameter. Additionally, each such operation supports an exception `operation_failed_unsupported_optional_input_parameter_xxx` which is raised when (a) the pre-condition `supported_optional_input_parameter_xxx` is false and (b) the named optional input parameter is carrying information. The exception has the same entry and exit state.
- **Rule 3:** each operation shall support a generic exception `operation_failed_internal_problem` which is raised when an internal problem occurs and that the operation cannot be completed. The exception has the same entry and exit state.

6.3 genericIRPVersionOperations Interface (M)

6.3.1 Operation `getIRPVersion` (M)

6.3.1.1 Definition

IRPManager wishes to find out the IRP SS versions supported by an IRP. The IRP shall respond with a set of supported IRP SS version(s). The list of returned IRP versions is such that the IRPManager can use any of these versions without having to specify an IRPVersion to the IRPAgent.

6.3.1.2 Input parameters

None

6.3.1.3 Output parameters

Parameter Name	Qualifier	Matching Information	Comment
<code>versionNumberSet</code>	M	<code>ManagedGenericIRP.iRPVersions</code> .	It indicates one or more SS version numbers (<code>IRPVersion</code> , as defined by "IRP document version number string" in clause 3.1) supported by the IRP.
<code>status</code>	M	ENUM (Operation succeeded, Operation failed)	If <code>operation_failed_internal_problem</code> status = <code>OperationFailed</code> .

6.3.1.4 Pre-condition

None specific

6.3.1.5 Post-condition

None specific

6.3.1.6 Exceptions

None specific

6.4 genericIRPProfileOperations Interface (O)

6.4.1 Operation getOperationProfile (O)

6.4.1.1 Definition

IRPManager invokes this operation to query the detailed profile of an IRP (supported operations and supported parameters) for a specific supported version. The notification profile will provide details about notifications that are specifically defined by this IRP.

6.4.1.2 Input parameters

Parameter Name	Qualifier	Information Type	Comment
iRPVersion	M	Element of ManagedGenericIRP.iRPVersions.	It contains a version number.

6.4.1.3 Output parameters

Parameter Name	Qualifier	Matching Information	Comment
operationNameProfile	M	Elements of ManagedGenericIRP.operationNameProfile corresponding to the iRPVersion parameter.	If this parameter contains no information, it implies that the IRP does not support any operation.
operationParameterProfile	M	Elements of ManagedGenericIRP.operationParameterProfile corresponding to the iRPVersion parameter.	
status	M	ENUM (Operation succeeded, Operation failed)	If operation_failed_invalid_version status = OperationFailed.

6.4.1.4 Pre-condition

validIRPVersion.

Assertion Name	Definition
validIRPVersion	The iRPVersion input parameter identifies a supported version contained in attribute iRPVersions of ManagedGenericIRP.

6.4.1.5 Post-condition

None specific

6.4.1.6 Exceptions

Name	Definition
Operation_failed_invalid_version	Condition: validIRPVersion is false Returned Information: The output parameter status Exit state: Entry State

6.4.2 Operation `getNotificationProfile` (O)

6.4.2.1 Definition

`IRPManager` invokes this operation to query the detailed notification profile of an IRP (supported notifications and supported parameters) for a specific supported version. The notification profile will provide details about notifications that are specifically defined by this IRP. For example, if this IRP is notification IRP R4, then `getNotificationProfile` will not return any information since no notification is defined in notification IRP R4.

6.4.2.2 Input parameters

Parameter Name	Qualifier	Information Type	Comment
<code>iRPVersion</code>	M	Element of <code>ManagedGenericIRP.iRPVersion</code>	It contains a version number.

6.4.2.3 Output parameters

Parameter Name	Qualifier	Matching Information	Comment
<code>notificationNameProfile</code>	M	Element of <code>ManagedGenericIRP.notificationNameProfile</code> corresponding to the <code>iRPVersion</code> parameter.	If this parameter contains no information, it implies that the IRP does not support any notification.
<code>notificationParameterProfile</code>	M	Element of <code>ManagedGenericIRP.notificationParameterProfile</code> corresponding to the <code>iRPVersion</code> parameter.	
<code>status</code>	M	ENUM (Operation succeeded, Operation failed)	If <code>operation_failed_invalid_version status = OperationFailed</code> .

6.4.2.4 Pre-condition

`validIRPVersion`.

Assertion Name	Definition
<code>validIRPVersion</code>	The <code>iRPVersion</code> input parameter identifies a supported version contained in attribute <code>iRPVersions</code> of <code>ManagedGenericIRP</code> .

6.4.2.5 Post-condition

None specific

6.4.2.6 Exceptions

Name	Definition
<code>Operation_failed_invalid_version</code>	Condition: <code>validIRPVersion</code> is false Returned Information: The output parameter <code>status</code> Exit state: Entry State

Annex A (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
Jun 2001	SA_12	SP-010285	--	--	Approved at TSG SA #12 and placed under Change Control	--	2.0.0	4.0.0
Mar 2002	SA_15	--	--	--	Automatic upgrade to Rel-5 (no Rel-5 CR)	--	4.0.0	5.0.0
Dec 2002	--	--	--	--	Cosmetics	--	5.0.0	5.0.1
Dec 2003	SA_22	SP-030640	0002	--	Align with 32.102 and 32.311	A	5.0.1	5.1.0
Mar 2004	SA_23	SP-040105	--	--	Automatic upgrade to Rel-6 (no CR)	--	5.1.0	6.0.0
Dec 2004	SA_26	SP-040794	0003	--	Update UML diagrams, Add reference to its CORBA/CMIP SSs	F	6.0.0	6.1.0
Jun 2005	SA_28	SP-050329	0004	--	Apply Generic System Context – Align with TS 32.150	F	6.1.0	6.2.0
Dec 2006	SA_34	SP-060708	0005	--	Add missing Notification Table for ManagedGenericIRP	F	6.2.0	6.3.0
Jun 2007	SA_36	--	--	--	Automatic upgrade to Rel-7 (no CR) at freeze of Rel-7. Deleted reference to CMIP SS, discontinued from R7 onwards.	--	6.3.0	7.0.0

History

Document history		
V7.0.0	June 2007	Publication