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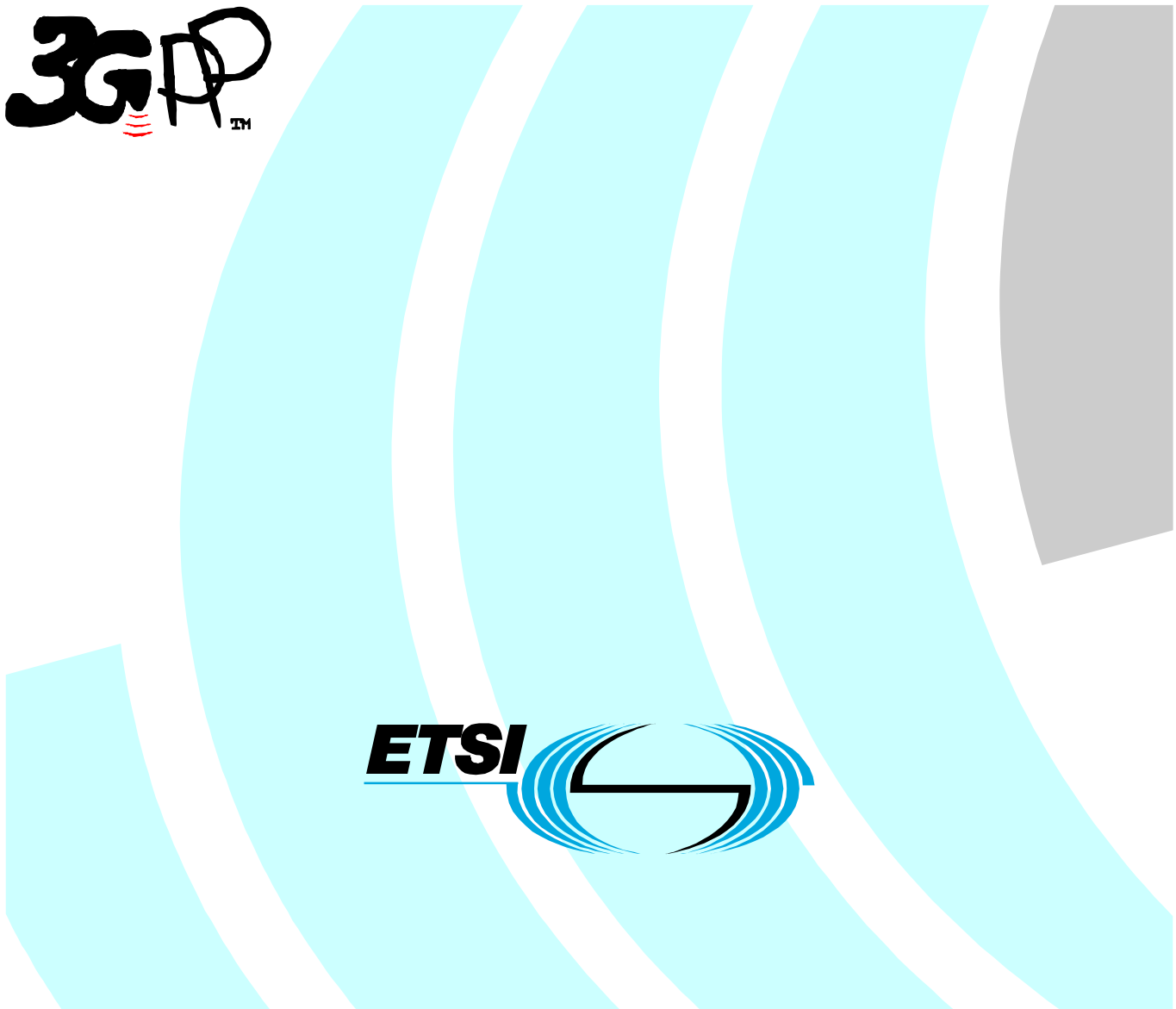
Technical Specification

Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Generic Integration Reference Point (IRP) management;
Common Management Information Protocol (CMIP)
Solution Set (SS)
(3GPP TS 32.314 version 6.0.0 Release 6)



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Foreword

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

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Contents

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; Configuration Management (CM), 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)";

32.314: "Generic Integration Reference Point (IRP) management; Common Management Information Protocol (CMIP) Solution Set (SS)";

1 Scope

The present document specifies the CMIP Solution Set (SS) for Generic Integration Reference Point (IRP) management whose capabilities are specified in Generic Integration Reference (IRP) management: Information Service (TS 32.312 [1]).

Clauses 1 to 3 provide background information. Clause 4 provides key architectural features supporting the SS. Clause 5 defines the mapping of operations, notifications, parameters and attributes defined in the IS onto their SS equivalents. Clause 6 describes the notification interface containing the push method. Annex A contains the GDMO/ ASN.1 specification.

This Solution Set specification is related to TS 32.312 V6.0.X.

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 32.312: " Telecommunication management; Generic Integration Reference Point (IRP) management: Information Service (IS)".

[2] 3GPP TS 32.311: "Telecommunication management; Generic Integration Reference Point (IRP) management; Requirements".

[3] 3GPP TS 32.111-2'Telecommunication management; Alarm Integration Reference Point (IRP); Information Service (IS)'.

[4] 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification 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 32.312 [1] apply.

IRP document version number string (or "IRPVersion"): See 3GPP TS 32.311 [2] subclause 3.1.

3.2 Abbreviations

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

ASN.1	Abstract Syntax Notation 1
CMIP	Common Management Information Protocol
GDMO	Guidelines for the Definition of Managed Objects

IRP Integration Reference Point
IOC Information Object Class
MOC Managed object Class

4 Architectural Features

The overall architectural feature of this IRP is specified in 3G TS 32.312 [1]. This clause specifies features that are specific to the CMIP SS.

4.1 Abstract IOC

The capabilities of the Generic IRP management: IS [1] is captured by the definition of an IOC called ManagedGenericIRP. This IOC is an abstract class, i.e. it is intended for inheritance by other IOCs specified in Interface IRPs such as AlarmIRP [3], NotificationIRP [4], etc.

5 Mapping

5.1 Mapping of Information Object Classes

For the Generic IRP Management IRP CMIP Solution Set the Information Object Classes (IOC) and the Interfaces defined in 3GPP TS 32.312 [1] are mapped onto Managed Object Classes (MOC) as given in Table 1. These MOC include all the Attributes, Actions and Notifications necessary to model the Generic IRP management as described in 3GPP TS 32.312 [7].

Table 1: Mapping of Information Object Classes

IS IOC	CMIP SS MOC
ManagedGenericIRP	managedGenericIRP

5.2 Mapping of Operations and Notifications

5.2.1 Mapping of Operations

Generic IRP management: IS [1] defines the semantics of operations visible across the Itf-N. Table 2 indicates mapping of these operations onto their equivalents defined in this SS.

Table 2 Mapping from IS Notification/Operation to SS equivalents

IS Interface	IS Operation	CMIP SS Method	Qualifier
GenericIRPVersionOperations	getIRPVersion	CMISE M-ACTION service, action type: getIRPVersion	M
GenericIRPProfileOperations	getNotificationProfile	CMISE M-ACTION service, action type: getNotificationProfile	O
	getOperationProfile	CMISE M-ACTION service, action type: getOperationProfile	O

5.3 Mapping of Operation Parameters

Generic IRP management: IS [1] defines semantics of parameters carried in operations across the Itf-N. The following set of tables indicates the mapping of these parameters, as per operation, to their equivalents defined in this SS.

Table 3: Parameter mapping of the operation `getIRPVersion`

IS Parameter	IN/OUT	CMIP SS Equivalent	Qualifier
versionNumberSet	OUT	M-ACTION parameter 'Action Reply': (GetIRPVersionReply): iRPVersions	M
status	OUT	M-ACTION parameter 'Action Reply: (GetIRPVersionReply): status	M

Table 4: Parameter mapping of the operation `getOperationProfile`

IS Parameter	IN/OUT	CMIP SS Equivalent	Qualifier
iRPVersion	IN	M-ACTION parameter 'Action information': (GetOperationProfileInfo = IRPVersion)	M
operationNameProfile	OUT	M-ACTION parameter 'Action Reply': (GetOperationProfileReply): operationProfile	M
operationParameterProfile	OUT	M-ACTION parameter 'Action Reply': (GetOperationProfileReply): operationProfile	M
status	OUT	M-ACTION parameter 'Action reply' (GetOperationProfileReply): status	M

Table 5: Parameter mapping of the operation `getNotificationProfile`

IS Parameter	IN/OUT	CMIP SS Equivalent	Qualifier
irpVersion	IN	M-ACTION parameter 'Action information': (GetNotificationProfileInfo = IRPVersion)	M
notificationNameProfile	OUT	M-ACTION parameter 'Action reply' (GetNotificationProfileReply): notificationProfile	M
notificationParameterProfile	OUT	M-ACTION parameter 'Action reply' (GetNotificationProfileReply): notificationProfile	M
status	OUT	M-ACTION parameter 'Action reply' (GetNotificationProfileReply): status	M

-- 6 GDMO definitions

-- 6.1 Managed Object Classes

-- 6.1.1 ManagedGenericIRP

```
managedGenericIRP MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.624" : genericIRP;
   CHARACTERIZED BY
      managedGenericIRPVersionPackage;
   CONDITIONAL PACKAGES
      managedGenericIRPProfilePackage PRESENT IF "an instance supports it";
REGISTERED AS {ts32-314ObjectClass 10600};
```

--6.2 Packages

-- 6.2.1 managedGenericIRPVersionPackage

```
managedGenericIRPVersionPackage PACKAGE
   BEHAVIOUR
      managedGenericIRPVersionPackageBehaviour;
   ACTIONS
      getIRPVersion;
REGISTERED AS {ts32-314Package 10600};

managedGenericIRPVersionPackageBehaviour BEHAVIOUR
DEFINED AS
   "This package has been defined to allow the IRPManager to find out the IRP versions
    supported by an IRP.";
```

-- 6.2.2 managedGenericIRPProfilePackage

```
managedGenericIRPProfilePackage PACKAGE
   BEHAVIOUR
      managedGenericIRPProfilePackageBehaviour;
   ACTIONS
      getOperationProfile,
      getNotificationProfile;
REGISTERED AS {ts32-314Package 20600};

managedGenericIRPProfilePackageBehaviour BEHAVIOUR
DEFINED AS
   "This package has been defined to allow the IRPManager to get detailed information
    about the profile of an IRP.
    The action 'getOperationProfile' is invoked by the IRPManager to get detailed information
    about the operations supported by an IRP.
    The action 'getNotificationProfile' is invoked by the IRPManager to get detailed information
    about the notifications supported by an IRP.";
```

-- 6.3 Actions

-- 6.3.1 getIRPVersion (M)

```
getIRPVersion ACTION
   BEHAVIOUR
      getIRPVersionBehaviour;
   MODE
      CONFIRMED;
   WITH REPLY SYNTAX
      TS32-314TypeModule.getIRPVersionReply;
REGISTERED AS {ts32-314Action 10600};

getIRPVersionBehaviour BEHAVIOUR
```

```
DEFINED AS
   "The behaviour of this functionality is defined within 32.312. The text below provides an
    overview and CMIP specific semantics.
    The IRPManager invokes this action to get information about the IRP versions supported
    by an IRP.
    The M-ACTION request parameter 'Action information' contains no data. The M-ACTION response
    parameter 'Action reply' is composed of the following data:
       - iRPVersions
       - status
    The parameter irpVersions carries the IRP versions supported by an IRP. The parameter
    status provides information about the result of the operation invocation, possible values:
    noError (0), error (the value indicates the reason of the error).";
```

-- 6.3.2 getNotificationProfile (O)

```
getNotificationProfile ACTION
   BEHAVIOUR
      getPNotificationProfileBehaviour;
   MODE
      CONFIRMED;
   WITH INFORMATION SYNTAX
      TS32-314TypeModule.GetNotificationProfileInfo;
   WITH REPLY SYNTAX
      TS32-314TypeModule.GetNotificationProfileReply;
REGISTERED AS {ts32-314Action 20600};

getNotificationProfileBehaviour BEHAVIOUR
DEFINED AS
   "The behaviour of this functionality is defined within 32.312. The text below provides an
    overview and CMIP specific semantics.
    The IRPManager invokes this action to get information about the notification profile,
    i.e. supported notifications and supported notification parameters.
    The 'Action information' contains the following data:
       - irpVersion
    This mandatory parameter identifies the IRP version.
    The 'Action response' is composed of the following data:
       - notificationProfile
       - status
    The parameter notificationProfile is a set of elements. Each element contains the name of a
    supported notification and a list of the parameter names this notification is supporting.
    A NULL list means that the IRP doesn't support any notification. The parameter status provides
    information about the result of the operation invocation, possible values:
    noError (0), error (the value indicates the reason of the error).';
```

-- 6.3.3 getOperationProfile (O)

```
getOperationProfile ACTION
   BEHAVIOUR
      getOperationProfileBehaviour;
   MODE
      CONFIRMED;
   WITH INFORMATION SYNTAX
      TS32-314TypeModule.GetOperationProfileInfo;
   WITH REPLY SYNTAX
      TS32-314ypeModule.GetOperationProfileReply;
REGISTERED AS {ts32-314Actions 30600};

getOperationProfileBehaviour BEHAVIOUR
DEFINED AS
   "The behaviour of this functionality is defined within 32.312. The text below provides an
    overview and CMIP specific semantics.
    The IRPManager invokes this action to get information about the operation profile,
    i.e. supported operations and supported operation parameters.
    The 'Action information' contains the following data:
       - irpVersion
    This mandatory parameter identifies the IRP version.
    The 'Action response' is composed of the following data:
       - operationProfile
       - status
    The parameter operationProfile is a set of elements. Each element contains the name of a
    supported operation and a list of the parameter names this operation is supporting.
    A NULL list means that the IRP doesn't support any operation. The parameter status provides
    information about the result of the operation invocation, possible values:
    noError (0), error (the value indicates the reason of the error).";
```

-- 7 ASN.1 definitions for the Managed Generic IRP

```
TS32-314TypeModule {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Operation-
Maintenance(3) ts-32-314(314) informationModel(0) asn1Module(2) version10600(10600)}

DEFINITIONS IMPLICIT TAGS ::=
BEGIN

--EXPORTS everything

--IMPORTS nothing

-- 3GPP TS 32.314 related Object Identifiers

baseNodeUMTS           OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4)
                                              etsi(0) mobileDomain(0)
                                              umts-Operation-Maintenance(3)}

ts32-314               OBJECT IDENTIFIER ::= {baseNodeUMTS ts32-314(314)}
ts32-314InfoModel      OBJECT IDENTIFIER ::= {ts32-314 informationModel(0)}

ts32-314ObjectClass    OBJECT IDENTIFIER ::= {ts32-314InfoModel managedObjectClass(3)}
ts32-314Package        OBJECT IDENTIFIER ::= {ts32-314InfoModel package(4)}
ts32-314Parameter      OBJECT IDENTIFIER ::= {ts32-314InfoModel parameter(5)}
ts32-314NameBinding    OBJECT IDENTIFIER ::= {ts32-314InfoModel nameBinding(6)}
ts32-314Attribute      OBJECT IDENTIFIER ::= {ts32-314InfoModel attribute(7)}
ts32-314Action         OBJECT IDENTIFIER ::= {ts32-314InfoModel action(9)}
ts32-314Notification   OBJECT IDENTIFIER ::= {ts32-314InfoModel notification(10)}


-- Start of 3GPP SA5 own definitions

ErrorCauses ::= ENUMERATED
   {
   success      (0),     -- operation successfully performed
   failure    (255)      -- operation failed, specific error unknown
   }

GetNotificationProfileInfo ::=  IRPVersion

GetNotificationProfileReply ::=  SEQUENCE
   {
   notificationProfile      NotificationProfile,
   status                   ErrorCauses
   }

GetOperationProfileInfo ::=  IRPVersion

GetOperationProfileReply ::= SEQUENCE
   {
    operationProfile      OperationProfile,
    status                ErrorCauses
   }

GetIRPVersionReply ::= SEQUENCE
   {
    iRPVersions      IRPVersions,
    status           ErrorCauses
   }

IRPVersion ::=  GraphicString

IRPVersions ::= SEQUENCE OF IRPVersion

NotificationName ::=  GraphicString

NotificationProfile ::= SEQUENCE OF SingleNotificationProfile

OperationName ::= GraphicString

OperationProfile ::= SEQUENCE OF SingleOperationProfile

ParameterName ::=  GraphicString

ParameterNameList ::= SEQUENCE OF ParameterName
```

```
SingleNotificationProfile ::= SEQUENCE
   {
    notificationName       NotificationName,
    parameterNameList      ParameterNameList
   }

SingleOperationProfile ::= SEQUENCE
   {
    operationName          OperationName,
    parameterNameList      ParameterNameList
   }

END -- of module TS32-314TypeModule
```

Annex A (informative): List of assigned Object Identifiers

This annex provides a list with all object identifiers that have been assigned in TS 32.314. These object identifiers shall not be assigned to new objects (also not in new versions of this document).

Basic Name	Name and OID of the current TS Version	Name and OIDs of previous TS Versions
Managed Object Classes		
managedGenericIRP	Name: managedGenericIRP OID: ts32-314ObjectClass 10600	--
Packages		
managedGenericIRPVersionPackage	Name: managedGenericIRPVersionPackage OID: ts32-314Package 10600	--
managedGenericIRPProfilePackage	Name: managedGenericIRPProfilePackage OID: ts32-314Package 20600	--
Actions		
getIRPVersion	Name: getIRPVersion OID: ts32-314Action 10600	--
getNotificationProfile	Name: getNotificationProfile OID: ts32-314Action 20600	--
getOperationProfile	Name: getOperationProfile OID: ts32-314Action 30600	--
Notifications		
--	--	--
Attributes		
--	--	--
Parameters		
--	--	--
Name Bindings		
--	--	--

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Dec 2004	S_26	SP-040796	--	--	Submitted to SA#26 for Approval	1.0.0	6.0.0

History

Document history		
V6.0.0	December 2004	Publication