

3GPP TS 32.314 V6.0.0 (2004-12)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects
Telecommunication management;
Generic Integration Reference Point (IRP) management;
Common Management Information Protocol (CMIP)
Solution Set (SS)
(Release 6)**



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Keywords

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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
 TS32-314TypeModule.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 |
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