ETSI TS 132 313 V6.4.0 (2007-03)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Generic Integration Reference Point (IRP) management;
Common Object Request Broker Architecture (CORBA)
Solution Set (SS)
(3GPP TS 32.313 version 6.4.0 Release 6)**

**GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS**

Reference

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Keywords

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Foreword

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Contents

Foreword

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

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y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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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)

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

1 Scope

The present document specifies the CORBA Solution Set for Generic Integration Reference Point (IRP) management whose capabilities are specified in 3GPP TS 32.312 [1], the Generic IRP management: Information Service.

This Solution Set specification is related to TS 32.312 V6.3.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:

CORBA	Common Object Request Broker Architecture
IDL	Interface Definition Language
IRP	Integration Reference Point
IOC	Information Object Class
OMG	Object Management Group
SS	Solution Set

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 CORBA SS.

Abstract IOC

The capabilities of the Generic IRP management: IS [1] are captured by the definition of an IOC called ManagedGenericIRP. This IOC is an abstract class and is mapped to a MOC of the same name. The MOC is intended for inheritance by other MOCs specified in Interface IRPs such as AlarmIRP [3], NotificationIRP [4], etc.

5. Mapping

5.1 Operation mapping

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

Table 5.1: Mapping from IS Notification/Operation to SS equivalents

IS Operation TS 32.312 [1]	SS Method	Qualifier
getIRPVersion	get_irp_versions	M
getOperationProfile	get_interface_irp_operation_profile	O
getNotificationProfile	get_interface_irp_notification_profile	O

5.2 Operation parameter mapping

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 5.2 Mapping from IS `getIRPVersion` parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
versionNumberSet	Return value of type GenericIRPManagementConstDefs::VersionNumberSet	M
status	Exceptions: GenericIRPManagementSystem::GetIRPVersions	M

Table 5.3 Mapping from IS `getOperationProfile` parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
iRPVersion	GenericIRPManagementConstDefs::VersionNumber this_irp_version	M
operationNameProfile, operationParameterProfile	Return value of type GenericIRPManagementConstDefs::MethodList	M
status	Exceptions: GenericIRPManagementSystem::GetInterfaceIRPOperationsProfile, GenericIRPManagementSystem::OperationNotSupported, GenericIRPManagementSystem::InvalidParameter, GenericIRPManagementSystem::ValueNotSupported	M

Table 5.4 Mapping from IS `getNotificationProfile` parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
iRPVersion	GenericIRPManagementConstDefs::VersionNumber this_irp_version	M
notificationNameProfile, notificationParameterProfile	Return value of type GenericIRPManagementConstDefs::NotificationList	M
status	Exceptions: GenericIRPManagementSystem::GetInterfaceIRPNotificationProfile, GenericIRPManagementSystem::OperationNotSupported, GenericIRPManagementSystem::InvalidParameter, GenericIRPManagementSystem::ValueNotSupported	M

Annex A (normative):
IDL specifications

A.1 IDL specification (file name 'GenericIRPManagementConstDefs.idl')

```
//File: GenericIRPManagementConstDefs.idl
#ifndef _GENERIC_IRP_MANAGEMENT_CONST_DEFS_IDL_
#define _GENERIC_IRP_MANAGEMENT_CONST_DEFS_IDL_
#include <TimeBase.idl>
// This statement must appear after all include statements
#pragma prefix "3gppsa5.org"
/* ## Module: GenericIRPManagementConstDefs
This module contains definitions commonly used among all IRPs.
===============================================================
*/
module GenericIRPManagementConstDefs
{
    /*
     * Definition imported from CosTime.
     * The time refers to time in Greenwich Time Zone.
     * It also consists of a time displacement factor in the form of minutes of
     * displacement from the Greenwich Meridian.
     */
    typedef TimeBase::UtcT IRPTime;
    typedef string DN;
    typedef sequence <DN> DNList;

    enum Signal {OK, FULL_FAILURE, PARTIAL_FAILURE};
    enum Result {SUCCESS, FAILURE};
    /*
     * This holds a list of notification Ids
     */
    typedef sequence <long> NotifIdSet;

    /*
     * This holds identifiers of notifications that are correlated.
     */
    struct CorrelatedNotification
    {
        DN source;// Contains DN of MO that emitted the set of notifications
                  // DN string format in compliance with Name Convention for
                  // Managed Object.
                  // This may be a zero-length string. In this case, the MO
                  // is identified by the value of the MOI attribute
                  // of the Structured Event, i.e., the notification.
        NotifIdSet notif_id_set;  // Set of related notification ids
    };
    /*
     * The VersionNumber is a string that identifies the IRP specification name
     * and its version number. See definition "IRP document version number
     * string" or "IRPVersion".
     * The VersionNumberSet is a sequence of such VersionNumber. It is returned
     * by get_XXX_IRP_versions(). The sequence order has no significance.
     */
    typedef string VersionNumber;
    typedef sequence <VersionNumber> VersionNumberSet;
    typedef string MethodName;
    typedef string ParameterName;
    typedef sequence <ParameterName> ParameterList;
    /*
     * The Method defines the structure to be returned as part of
     * get_supported_operations_profile(). The name shall be the actual method
     * name (ex. "attach_push", "change_subscription_filter", etc.)
     * The parameter_list contains a list of strings. Each string shall be
     * the actual parameter name (ex. "manager_reference", "filter", etc.)
     */
    struct Method
    {
        MethodName name;
```

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```
            ParameterList parameter_list;
        };
    /*
     * List of all methods and their associated parameters.
     */
     typedef sequence <Method> MethodList;
     typedef string NotificationName;
     struct Notification
     {
         NotificationName name;
         ParameterList parameter_list;
     };
     typedef sequence <Notification> NotificationList;
    /*
     * Defines the name of an attribute of a Managed Object
     */
     typedef string MOAttributeName;
    /*
     * Defines the value of an attribute of a Managed Object in form of a CORBA
     * Any. Apart from basic datatypes already defined in CORBA, the allowed
     * attribute value types are defined in the AttributeTypes module.
     */
     typedef any MOAttributeValue;
    /*
     * Represents an attribute: "name" is the attribute name
     * and "value" is the attribute value.
     */
     struct MOAttribute
     {
         MOAttributeName name;
         MOAttributeValue value;
     };
     typedef sequence <MOAttribute> MOAttributeSet;

     typedef string ManagerIdentifier;
    /*
     * The following are types carrying an optional parameter.
     * If the boolean is TRUE, then the value is present.
     * Otherwise the value is absent.
     */
     union StringOpt switch (boolean)
     {
         case TRUE: string value;
     };
     union ShortOpt switch (boolean)
     {
         case TRUE: short value;
     };
     union UnsignedShortOpt switch (boolean)
     {
         case TRUE: unsigned short value;
     };
     union LongOpt switch (boolean)
     {
         case TRUE: long value;
     };
     union UnsignedLongOpt switch (boolean)
     {
         case TRUE: unsigned long value;
     };
     union IRPTimeOpt switch (boolean)
     {
        case TRUE: GenericIRPManagementConstDefs::IRPTime value;
     };};
#endif // _GENERIC_IRP_MANAGEMENT_CONST_DEFS_IDL_
```

A.2 IDL specification (file name 'GenericIRPManagementSystem.idl')

```
//File: GenericIRPManagementSystem.idl
#ifndef _GENERIC_IRP_MANAGEMENT_SYSTEM_IDL_
#define _GENERIC_IRP_MANAGEMENT_SYSTEM_IDL_

#include <GenericIRPManagementConstDefs.idl>

// This statement must appear after all include statements
#pragma prefix "3gppsa5.org"

module GenericIRPManagementSystem
{
    exception GetInterfaceIRPNotificationProfile { string reason; };
    exception GetInterfaceIRPOperationProfile { string reason; };
    exception GetIRPVersions { string reason; };

    /*
    Exception thrown when an unsupported optional parameter
    is passed with information.
    The parameter shall be the actual unsupported parameter name.
    */
    exception ParameterNotSupported {
        GenericIRPManagementConstDefs::ParameterName parameter; };

    /*
    Exception thrown when an invalid parameter value is passed.
    The parameter shall be the actual parameter name.
    */
    exception InvalidParameter {
        GenericIRPManagementConstDefs::ParameterName parameter; };

    /*
    Exception thrown when a valid but unsupported parameter value is passed.
    The parameter shall be the actual parameter name.
    */
    exception ValueNotSupported {
        GenericIRPManagementConstDefs::ParameterName parameter; };

    /*
    Exception thrown when an unsupported optional method is called.
    */
    exception OperationNotSupported {};

    interface GenericIRPManagement
    {
        /*
        Return the list of all supported Interface IRP versions
        Each IRPVersion is defined by the rule in the definition
        "IRP document version number string" or "IRPVersion"
        (see subclause 3.1).
        */
        GenericIRPManagementConstDefs::VersionNumberSet get_irp_versions
        (
        )
        raises (GetIRPVersions);

        /*
        Return the list of all supported methods and their supported
        parameters for this Interface IRPVersion.
        */
        GenericIRPManagementConstDefs::MethodList
           get_interface_irp_operation_profile
        (
            in GenericIRPManagementConstDefs::VersionNumber this_irp_version
        )
        raises (GetInterfaceIRPOperationProfile,
                OperationNotSupported,
                InvalidParameter,
                ValueNotSupported);

        /*
        Return the list of all supported notifications and their supported
```

```
        parameters for this Interface IRPVersion.
        */
        typedef GenericIRPManagementConstDefs::NotificationList NotificationList;

        NotificationList get_interface_irp_notification_profile
        (
            in GenericIRPManagementConstDefs::VersionNumber this_irp_version
        )
        raises (GetInterfaceIRPNotificationProfile,
                OperationNotSupported,
                InvalidParameter,
                ValueNotSupported);
    };

};

#endif // _GENERIC_IRP_MANAGEMENT_SYSTEM_IDL_
```

Annex B (informative): Change history

<table>
<tr><td colspan="9" align="center">Change history</td></tr>
<tr><td>Date</td><td>TSG #</td><td>TSG Doc.</td><td>CR</td><td>Rev</td><td>Subject/Comment</td><td>Cat</td><td>Old</td><td>New</td></tr>
<tr><td>Dec 2004</td><td>S_26</td><td>SP-040795</td><td>--</td><td>--</td><td>Submitted to SA#26 for Approval</td><td>--</td><td>1.0.0</td><td>6.0.0</td></tr>
<tr><td>Jun 2005</td><td>S_28</td><td>SP-050288</td><td>0001</td><td>--</td><td>Correction of IDL syntax errors in GenericIRPManagement{ConstDefs|System}.idl</td><td>F</td><td>6.0.0</td><td>6.1.0</td></tr>
<tr><td>Sep 2005</td><td>SA_29</td><td>SP-050461</td><td>0002</td><td>--</td><td>Align the CORBA SS IDL with TS 32.150 Style Guide</td><td>F</td><td>6.1.0</td><td>6.2.0</td></tr>
<tr><td>Sep 2006</td><td>SA_33</td><td>SP-060529</td><td>0003</td><td>--</td><td>Capture all CORBA common types in 32.313</td><td>F</td><td>6.2.0</td><td>6.3.0</td></tr>
<tr><td>Mar 2007</td><td>SA_35</td><td>SP-070035</td><td>0004</td><td>--</td><td>Correct the compiling errors in the CORBA IDL</td><td>F</td><td>6.3.0</td><td>6.4.0</td></tr>
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History

Document history		
V6.0.0	December 2004	Publication
V6.1.0	June 2005	Publication
V6.2.0	September 2005	Publication
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