Source:	**SA5 (Telecom Management)**
Title:	**New Rel-6 TS 32.172 v.100 (Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)) - for Information**
Document for:	**Information**
Agenda Item:	**7.5.3**

3GPP TSG-SA5 (Telecom Management) **S5-032744**
Meeting #36, Shanghai, China, 17-21 September 2003

Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #22**
Document for presentation:	**TS 32.172, Version 1.0.0** **Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)**
Presented for:	**Information**

Abstract of document:

The present document is a member of a TS-family consisting of:

3GPP TS 32.140: "Telecommunication management; Services operations management; Subscription Management Requirements".

3GPP TS 32.141: "Telecommunication management; Services operations management; Subscription Management Architecture".

3GPP TS 32.171: "Subscription Management Network Resource Model (NRM) Integration Reference Point **(IRP):** Requirements".

3GPP TS 32.172: "Telecommunication management; Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

3GPP TS 32.17x: "SM IRP xxx Solution Set".

- Work done against the WID contained in SP-020448 (Work Item ID: SM).

Purpose of These Specifications:
This TS defines the Network Resources Model for the Subscription Management Resources IRP.

Changes since last presentation to TSG-SA:
New.

Outstanding Issues:
Section to be updated with alignment to Basic, Kernel and Bulk CM IRP.
Class diagram to be updated with alignment to TS 32.102 Annex G.
Agreement on a set of use cases to drive the selection of information elements

Contentious Issues:
None.

3GPP TS 32.172 V1.0.0 (2003-12)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS) (Release 6)

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Postal address

3GPP support office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet
http://www.3gpp.org

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 interface Itf-N, defined in 3GPP TS 32.102 [2], is built up by a number of Integration Reference Points (IRPs) and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

The present document is a member of a TS-family consisting of:

3GPP TS 32.140: "Telecommunication management; Services operations management; Subscription Management Requirements".

3GPP TS 32.141: "Telecommunication management; Services operations management; Subscription Management Architecture".

3GPP TS 32.171: "Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Requirements".

3GPP TS 32.172: "Telecommunication management; Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

1 Scope

The present document defines the Network Resources Model (NRM) for the present IRP: Subscription Management Resources Integration Reference Point (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 32.140: "Telecommunication management; Service Operations Management; Subscription Management Requirements".

[4] 3GPP TS 32.141: "Telecommunication management; Service Operations Management; Subscription Management Architecture."

[5] 3GPP TS 32.171: "Telecommunication management; Service Operations Management; Subscription Management Resources Integration Reference Point (IRP); Requirements".

[6] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply. For terms and definitions not found here, please refer to 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.140 [3] and TS 32.141 [4].

Subscription Profile Component, See 3GPP TS 32.140 [3].

Subscription Profile Component Definition specifies a Subscription Profile Component.

3.2 Abbreviations

For the purposes of the present document the following and the abbreviations in 32.101 [1], 32.102 [2], 32.140 [3] and 32.141 [4] apply.

EM	Element Manager
IOC	Information Object Class
IRP	Integration Reference Point
MOC	Managed Object Class

NE	Network Element
SuM	Subscription Management
SOM	Service Operations Management

4 System overview

4.1 System context

Figures 3 and 4 identify system contexts of the IRP in terms of its implementation, called IRPAgent (3GPP TS 32.102 [2]), and the user of the IRPAgent, called IRPManager (3GPP TS 32.102 [2]).

The IRPAgent implements and supports this (SuM) IRP. The IRPAgent can reside in an Element Manager (EM) or a Network Element (NE) (see also 3GPP TS 32.102 [2] clause 8). In the former case, the interface (represented by a thick dotted line) between the EM and the NEs is not the subject of this IRP.

An IRPManager using this SuM-IRP shall choose one of the two System Contexts defined here, for each NE. For instance, if an EM is responsible for managing a number of NEs, the NM shall access this IRP through the EM and not directly to those NEs.

Editor note. To be updated with alignment to basic, kernel and bulk CM IRP.

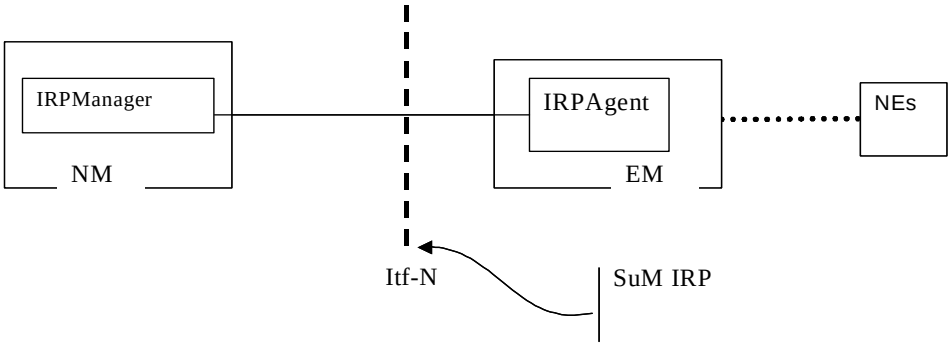


Figure 1: System Context A

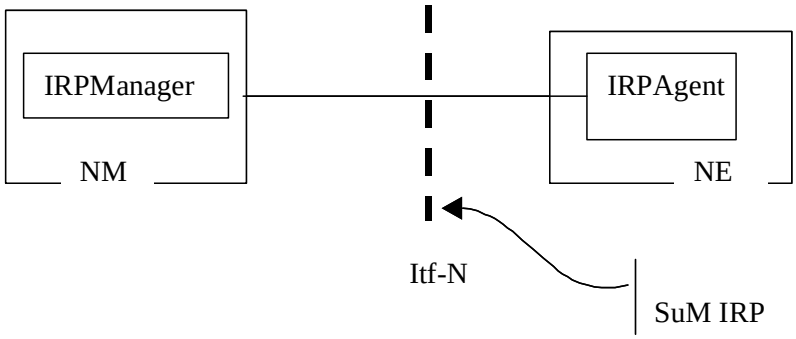


Figure 2: System Context B

4.2 Compliance rules

For general definitions of compliance rules related to qualifiers (Mandatory/Optional/Conditional) for *operations, notifications and parameters* (of operations and notifications) please refer to 3GPP TS 32.102 [2].

Editor's note: This section may be change due to current work on mandatory/optional qualifiers.

The following defines the meaning of Mandatory and Optional IOC attributes and associations between IOCs, in Solution Sets to the IRP defined by the present document.

Solution Sets to the SuM IRP:

- The IRPManager shall support all mandatory attributes/associations. The IRPManager shall be prepared to receive information related to Mandatory as well as Optional attributes/associations without failure; however the IRPManager does not have to support handling of the Optional attributes/associations.
- The IRPAgent shall support all Mandatory attributes/associations. It may support Optional attributes/associations.

An IRPAgent that incorporates vendor-specific extensions shall support normal communication with a 3GPP SA5-compliant IRPManager with respect to all Mandatory and Optional Managed Object Classes (MOCs), attributes, associations, operations, parameters and notifications without requiring the IRPManager to have any knowledge of the extensions.

5 Modelling approach

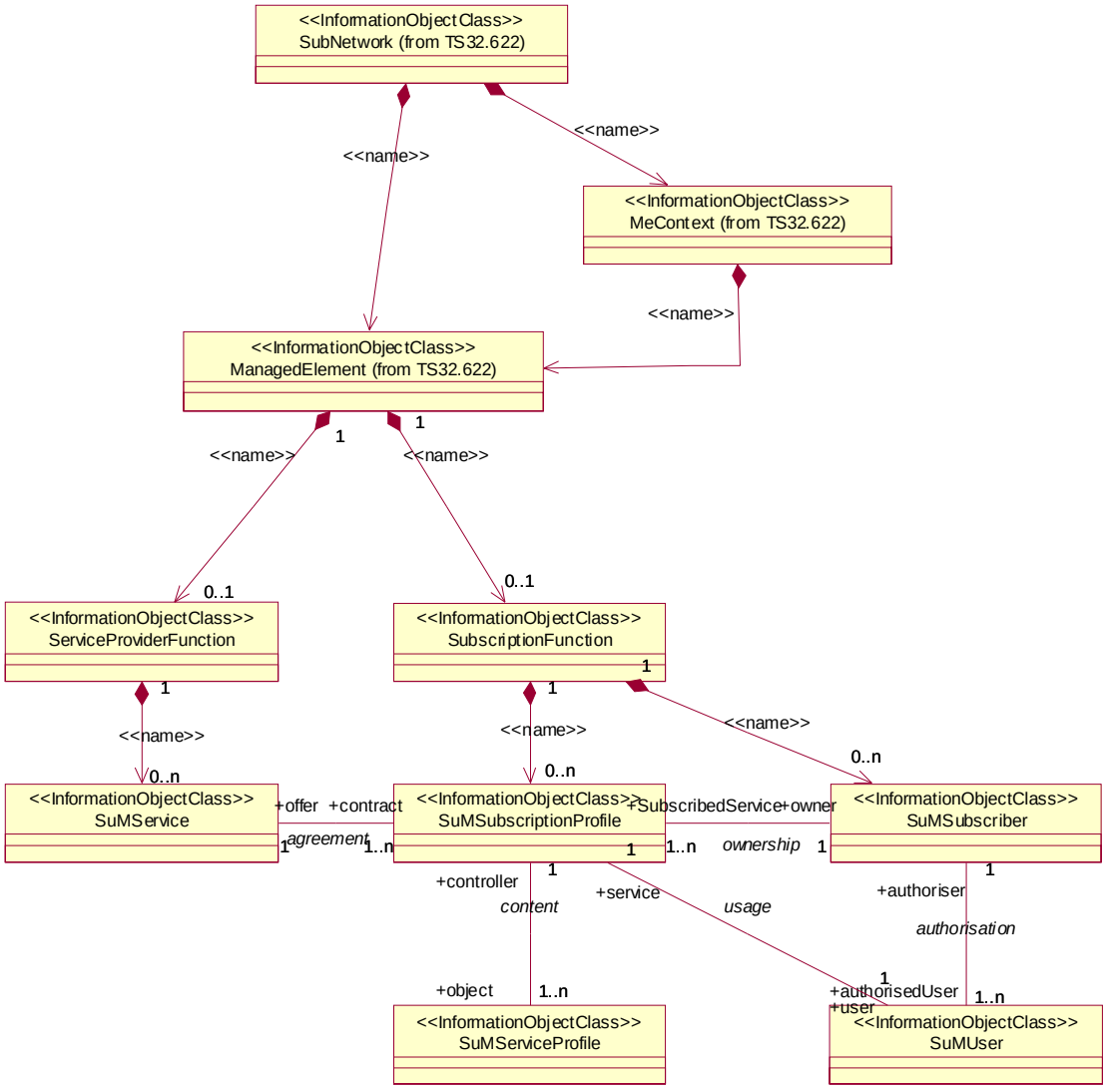
The modelling approach adopted and used in this IRP is described in 3GPP TS 32.622 [6].

6 Information Object Class (IOC) definitions

6.1 Information object classes

6.1.1 Information entities imported and local labels

6.1.2 Class diagram



Editor note. To be updated with alignment to TS 32.102 Annex G.

Figure 3: SuM NRM Containment/Naming and Association diagram

Editor's Note: This class diagram is not following the latest version of UML-notation. It shall also be associated to the generic network resources IRP: NRM.

6.1.2.1 Attributes and relationships

This subclause depicts the set of IOCs that encapsulate information relevant for this service. This sub-clause provides the overview of all information object classes in UML. Subsequent subclauses provide more detailed specification of various aspects of these Information Object Classes (IOCs).

6.1.2.2 Inheritance

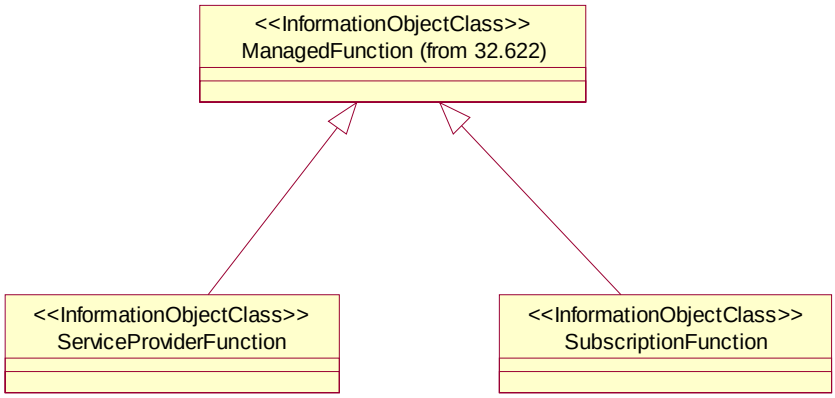


Figure 4: SuM NRM Inheritance Hierarchy

6.1.3 Information Object Class definitions

6.1.3.1 SuMService

6.1.3.1.1 Definition

In this management context:

a) This class represents a service provided by a service provider

b) This class contains the valid parameters that define the provided service from subscription point of view. These parameters may be composed of one to several Subscription Profile Component Definitions.

6.1.3.1.2 Attributes

Table 1: Attributes of SuMService

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
suMServiceId	+	M	M	-
suMServiceInfo	+	M	M	O

6.1.3.2 SuMSubscriptionProfile

6.1.3.2.1 Definition

In this management context:

a) This class represents subscription to a service for a subscriber.

b) This class contains the agreed (between the Subscriber and the Service Provider) parameter settings for a service that a Subscriber subscribes to.

6.1.3.2.2 Attributes

Table 2: Attributes of SuMSubscriptionProfile

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
suMSubscriptionProfileId	+	M	M	-
suMSubscriptionProfileInfo	+	M	M	O

6.1.3.3 SuMSubscriber

6.1.3.3.1 Definition

In this management context:

a) This class represents the Subscriber.

b) This class carries the key to the Subscription Profile for the Subscriber

c) This class holds for the Subscriber references to the Users.

6.1.3.3.2 Attributes

Table 3: Attributes of SuMSubscriber

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
suMSubscriberId	+	M	M	-
suMSubscriberInfo	+	M	M	O

6.1.3.4 SuMUser

6.1.3.4.1 Definition

In this management context:

a) This class represents a user of the services contracted by a Subscriber.

b) This class holds references to one or several Service Preferences assigned to a User .

6.1.3.4.2 Attributes

Table 4: Attributes of SuMUser

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
suMUserId	+	M	M	-
suMUserInfo	+	M	M	O

6.1.3.5 SuMServiceProfile

6.1.3.5.1 Definition

In this management context:

a) This class represents the service preferences chosen for a user.

b) This class contains these service preferences

c) Each user has own service preferences configured for a particular subscribed service.

6.1.3.5.2 Attributes

Table 5: Attributes of SuMServiceProfile

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
suMUserId	+	M	M	-
suMSubscriptionProfileId	+	M	M	O
suMServiceProfileId	+	M	M	O
suMServiceProfileInfo	+	M	M	-

6.1.3.6 ServiceProviderFunction

6.1.3.6.1 Definition

In this management context:

a) This class represents service provider functionality.

b) All managed elements related with providing services have this functionality.

c) It carries references to all services to be provided.

d) It inherits from ManagedFunction (defined in 32.622 [6]).

6.1.3.6.2 Attributes

Table 6: Attributes of ServiceProviderFunction

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
serviceProviderFunctionId	+	M	M	-
userLabel	+	M	M	M

6.1.3.7 SubscriptionFunction

6.1.3.7.1 Definition

In this management context:

a) This class represents subscription functionality.

b) All managed elements related with the subscription of services have this functionality.

c) It carries references to all subscription profile data.

d) It carries references to all Subscriber data

e) It inherits from ManagedFunction (defined in 32.622 [6]).

6.1.3.7.2 Attributes

Table 7: Attributes of SubscriptionFunction

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
subscriptionFunctionId	+	M	M	-
userLabel	+	M	M	M

6.1.4 Information relationship definitions

6.1.4.1 SuMService - SuMSubscriptionProfile

6.1.4.1.1 Definition

This represents the agreement relationship between SuMService and SuMSubscriptionProfile.

6.1.4.1.2 Roles

Name	Definition
contract	The SuMSubscriptionProfile represents an agreed contract for a SuMService.
offer	The SuMService represents an offer of an agreement to a SuMSubscriptionProfile

6.1.4.1.3 Constraints

6.1.4.2 SuMSubscriptionProfile - SuMServiceProfile

6.1.4.2.1 Definition

This represents the content relationship between SuMSubscriptionProfile and SuMServiceProfile.

6.1.4.2.2 Roles

Name	Definition
controller	SuMSubscriptionProfile is a controller for the content of SuMServiceProfile
object	SuMServiceProfile is the object for the content

6.1.4.2.3 Constraints

6.1.4.3 SuMUser – SuMSubscriptionProfile

6.1.4.3.1 Definition

This represents the usage relationship between SuMUser and SuMSubscriptionProfile.

6.1.4.3.2 Roles

Name	Definition
user	SuMUser is a user of SuMSubscriptionProfile
service	SuMSubscriptionProfile represents a service for a SuMUser

6.1.4.3.3 Constraints

6.1.4.4 SuMSubscriber- SuMUser

6.1.4.4.1 Definition

This represents the authorisation relationship between SuMSubscriber and SuMUser.

6.1.4.4.2 Roles

Name	Definition
authoriser	SuMSubscriber authorises SuMUser for service usage
authorisedUser	SuMUser is an authorised user of services through an authorisation

6.1.4.4.3 Constraints

6.1.4.5 SuMSubscriber- SuMSubscriptionProfile

6.1.4.5.1 Definition

This represents the ownership relationship between SuMSubscriber and SuMSubscriptionProfile.

6.1.4.5.2 Roles

Name	Definition
owner	SuMSubscriber owns one or several SuMSubscriptionProfiles
subscribedService	SuMSubscriptionProfile represents a subscribed Service owned by a SuMSubscriber

6.1.4.5.3 Constraints

6.1.5 Information attribute definitions

6.1.5.1 Definitions and legal values

Table 8 defines the attributes that are present in several IOCs of the present document.

Table 8: Attributes

Attribute Name	Definition	Legal Values
suMServiceId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SuMService object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
suMServiceProfileId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SuMServiceProfile object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
suMServiceInfo	Definition of the service provided in the form of attribute name and attribute value pairs. What attributes could be defined is a service specific issue. This could include Subscription Profile Component definitions for HSS, MMS, etc., etc.,...	
suMServiceProfileInfo	Definition of the service preferences chosen for a user in the form of attribute name and attribute value pairs. What attributes could be defined is a service specific issue but it should at least contain the subscription identity that owns this service preferences.	
suMSubscriberId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SumSubscriber object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
suMSubscriberInfo	Definition of the properties of a subscriber in the form of attribute name and attribute value pairs. What attributes could be defined is a Subscriber identification specific issue. This could include for example subscriber Name, MSISDN or IMSI.	
suMSubscriptionProfileId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SuMSubscriptionProfile object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
suMSubscriptionProfileInfo	Definition of the provided service that has been agreed between the subscriber and the service provider in the form of attribute name and attribute value pairs. What attributes could be defined is a service specific issue, which includes Subscription Profile Data and associated Subscription Profile Component data	
suMUserId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SuMUser object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
suMUserInfo	Definition of the properties of a user in the form of attribute name and attribute value pairs. What attributes could be defined is a User identification specific issue. This could include for example MSISDN and IMSI.	
userLabel	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.	

Annex A (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Dec 2003	S_22	SP-030617	--	--	Submitted to TSG SA#22 for Information	1.0.0	