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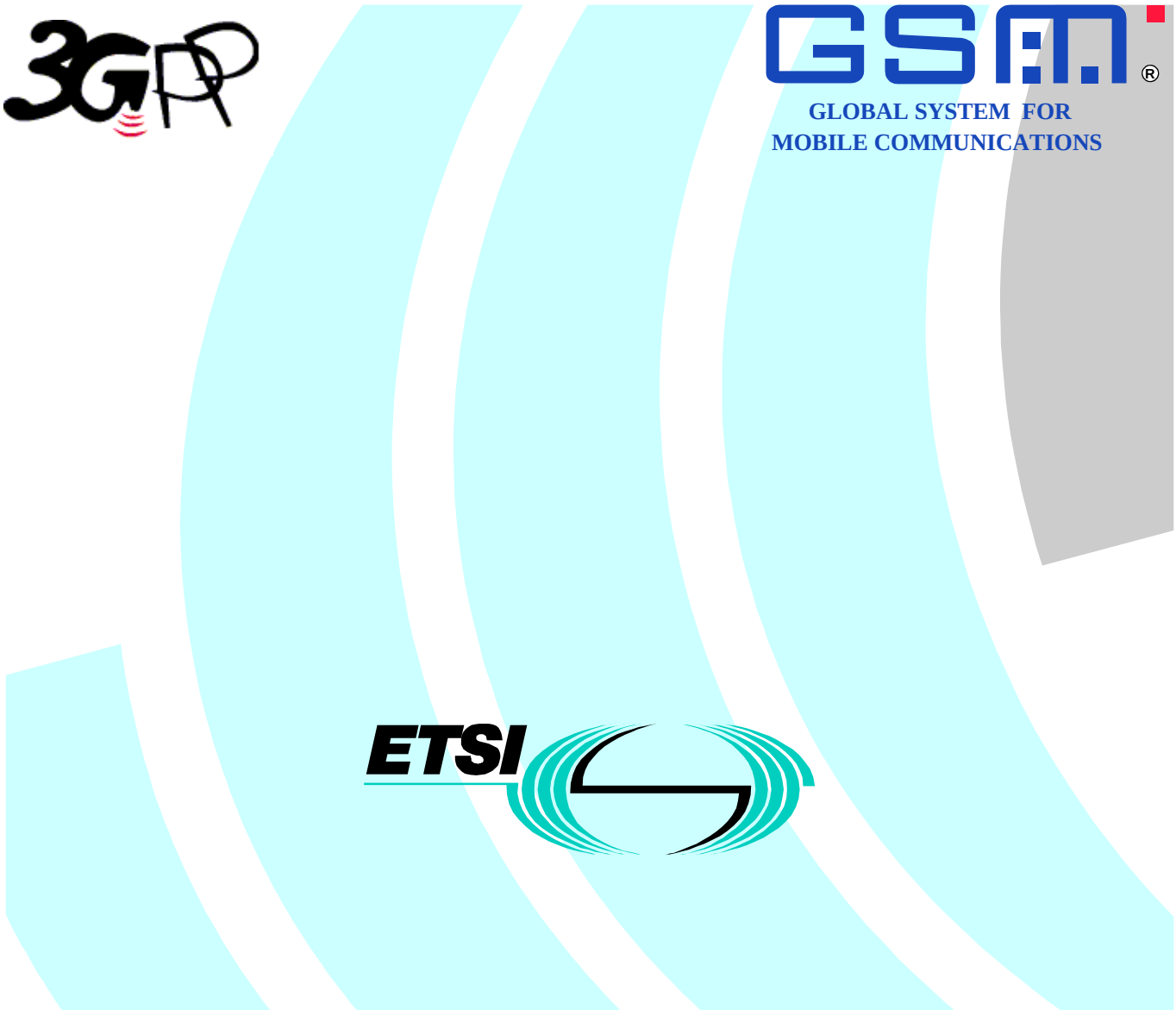
Technical Specification

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
Telecommunication Management;
Configuration Management;
Generic network resources: IRP CMIP solution set
(3GPP TS 32.624 version 4.0.0 Release 4)**



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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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Introduction

Due to the growing number of specifications to model new services and Resource Models for Configuration Management (CM), as well as the expected growth in size of each of them from 3GPP Release 4 onwards, a new structure of the specifications is already needed in Release 4. This structure is needed for several reasons, but mainly to enable more independent development and release for each part, as well as a simpler document identification and version handling. Another benefit would be that it becomes easier for bodies outside 3GPP, such as the ITU-T, to refer to telecom management specifications from 3GPP. The new structure of the specifications does not lose any information or functionality supported by the Release 1999. The restructuring also includes defining new IRPs for the Network Resource Model (NRM) parts of R99 Basic CM IRP (Generic, Core Network and UTRAN NRM). These IRPs are named “Network Resources IRP”.

Further, the Notification IRP (in Release 1999: 32.106-1 to -4) and the Name convention for Managed Objects (in Release 1999: 32.106-8) have been moved to a separate number series used for specifications common between several management areas (e.g. CM, FM, PM).

Finally, in addition to the restructuring mentioned above, the need to define some new functionality and IRPs for CM compared to Release 1999, has also been identified. Firstly, a new Bulk CM IRP, and secondly an a GERAN Network Resources IRP, have been created. Thirdly, the Generic, UTRAN and GERAN Network Resources IRPs have been extended with support for GSM-UMTS Inter-system handover (ISH), and the 32.600 (Concept and High-level Requirements) has been modified to cover the high-level Bulk CM and ISH requirements.

Table: Mapping between Release '99 and the new specification numbering scheme

R99 Old no.	Old (R99) specification title	Rel-4 New no.	New (Rel-4) specification title
32.106-1	3G Configuration Management: Concept and Requirements	32.600	**3G Configuration Management**: **Concept and High-level Requirements**
32.106-1	<Notification IRP requirements from 32.106-1 and 32.106-2>	32.301	**Notification IRP**: Requirements
32.106-2	Notification IRP: IS	32.302	Notification IRP: Information Service
32.106-3	Notification IRP: CORBA SS	32.303	Notification IRP: CORBA SS
32.106-4	Notification IRP: CMIP SS	32.304	Notification IRP: CMIP SS
32.106-8	Name convention for Managed Objects	32.300	**Name Convention for Managed Objects**
32.106-1	<Basic CM IRP IS requirements from 32.106-1 and 32.106-5>	32.601	**Basic CM IRP**: Requirements
32.106-5	Basic CM IRP IM (Intro & IS part)	32.602	Basic CM IRP: Information Service
32.106-6	Basic CM IRP CORBA SS (IS related part)	32.603	Basic CM IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (IS related part)	32.604	Basic CM IRP: CMIP SS
32.106-8	Name convention for Managed Objects	32.300	**Name Convention for Managed Objects**
-	-	32.611	**Bulk CM IRP**: Requirements
-	-	32.612	Bulk CM IRP: Information Service
-	-	32.613	Bulk CM IRP: CORBA SS
-	-	32.614	Bulk CM IRP: CMIP SS
		32.615	Bulk CM IRP: XML file format definition
32.106-1	<Basic CM IRP Generic NRM requirements from 32.106-1 and 32.106-5>	32.621	**Generic Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (Generic NRM part)	32.622	Generic Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (Generic NRM related part)	32.623	Generic Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (Generic NRM related part)	32.624	Generic Network Resources IRP: CMIP SS
32.106-1	<Basic CM IRP CN NRM requirements from 32.106-1 and 32.106-5>	32.631	**Core Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (CN NRM part)	32.632	Core Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (CN NRM related part)	32.633	Core Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (CN NRM related part)	32.634	Core Network Resources IRP: CMIP SS
32.106-1	<Basic CM IRP UTRAN NRM requirements from 32.106-1 and 32.106-5>	32.641	**UTRAN Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (UTRAN NRM part)	32.642	UTRAN Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (UTRAN NRM related part)	32.643	UTRAN Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (UTRAN NRM related part)	32.644	UTRAN Network Resources IRP: CMIP SS
		32.651	**GERAN Network Resources IRP**: Requirements
		32.652	GERAN Network Resources IRP: NRM
		32.653	GERAN Network Resources IRP: CORBA SS
		32.654	GERAN Network Resources IRP: CMIP SS

1 Scope

The present document specifies the Common Management Information Protocol (CMIP) Solution Set (SS) for the Generic Network Resource Integration Reference Point (IRP): Network Resource Model defined in 3GPP TS 32.622. In detail:

- Clause 4 contains an introduction to some concepts that are the base for some specific aspects of the CMIP interfaces.
- Clause 5 contains the GDMO definitions for the Alarm Management over the CMIP interfaces
- Clause 6 contains the ASN.1 definitions supporting the GDMO definitions provided in clause 5.

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: "3G Telecom Management principles and high level requirements".

[2] 3GPP TS 32.102: "3G Telecom Management architecture".

[3] 3GPP TS 32.304: "Telecommunication Management; Notificaion Management; Part 4: Notification Integration Reference Point; CMIP Solution Set".

[4] 3GPP TS 32.622: "Telecommunication Management; Configuration Management: Generic Network Resource Integration Reference Point: Network Resource Model".

[5] ITU-T Recommendation X.710 (1991): "Common Management Information Service Definition for CCITT Applications".

[6] ITU-T Recommendation X.721 (02/92): "Information Technology - Open Systems Interconnection – Structure of Management Information: Definition of Management Information".

[7] ITU-T Recommendation X.730 (01/92): "Information Technology - Open Systems Interconnection – Systems Management: Object Management Function".

[8] ITU-T Recommendation X.733 (02/92): "Information Technology - Open Systems Interconnection - Alarm Reporting Function".

[9] ITU-T Recommendation M.3100 (07/95): "Maintenance Telecommunications Management Network – Generic Network Information Model".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.600 and 3GPP TS 32.622 apply.

3.2 Abbreviations

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

CMIP	Common Management Information Protocol
DN	Distinguished Name
GDMO	Guidelines for the Definition of Managed Objects
IDL	Interface Definition Language
IEC	International Electro-technical Commission
ISO	International Standards Organization
ITU-T	International Telecommunication Union, Telecommunication Sector
MIB	Management Information Base
MIM	Management Information Model
MIT	Management Information Tree (or Naming Tree)
MOC	Managed Object Class
MOI	Managed Object Instance
NE	Network Element
NR	Network Resource
NRM	Network Resource Model
TMN	Telecommunications Management Network

4 Basic aspects

4.1 Explanation

A technology independent generic network resource model is defined in 3GPP TS 32.622 for 3G networks. This document provides an implementation of this generic network resource model by using CMIP technology.

4.2 Allowed Alarms of MOCs

Table 1 defines the allowed alarms of each MOCs for this CMIP Solution Set. The MOCs, which do not appear in table 1, may not issue any alarm except the alarms that are defined allowed for its parent MOC(s).

Table 1: Allowed alarms of MOCs

MOCs	Legal Alarms
SubNetwork	EnvironmentalAlarm
ManagedElement	environmentalAlarm equipmentAlarm communicationsAlarm processingErrorAlarm
ManagementNode	environmentalAlarm equipmentAlarm communicationsAlarm processingErrorAlarm
ManagedFunction	communicationsAlarm processingErrorAlarm QualityofServiceAlarm
IRPAgent	communicationsAlarm processingErrorAlarm
AlarmIRP	alarmListRebuiltAlarm

4.3 Mapping

The semantic of the Generic Network Resource Model is defined in 3GPP TS 32.622. The specification of the information object classes defined there is independent of any implementation technology and protocol.
This subclause maps these technology and protocol independent definitions onto the equivalencies of the CMIP Solution Set of the Generic Network Resource IRP.

4.3.1 Mapping of MOCs

Table 2 maps the managed object classes defined in the Generic Network Resource Model onto the equivalent MOCs of the CMIP Solution Set.

Table 2: Mapping of MOCs

Managed Objects of the Generic NR IRP NRM	MOCs of this CMIP SS
ManagedElement	managedElement
SubNetwork	subNetwork
IRPAgent	irpAgent (3GPP TS 32.106-7 : 6.2001)
ManagedFunction	managedFunction (3GPP TS 32.106-7 : 6.2001)
ManagementNode	managementNode (3GPP TS 32.106-7 : 6.2001)
MeContext	meContext (3GPP TS 32.106-7 : 6.2001)
BasicCmIRP	bcmControl (3GPP TS 32.106-7 : 6.2001)
VsDataContainer	vsDataContainer
BulkCmIRP	bulkCmControl

4.3.2 Mapping of Attributes

Table 11: Mapping of Attributes

Attribute defined in 3GPP TS 32.622	Attribute defined in this CMIP SS
dnPrefix	systemTitle (ITU-T Recommendation X.721: 1992)
managedElementId	managedElementId (3GPP TS 32.106-7 : 6.200)
subNetworkId	subNetworkId (3GPP TS 32.106-7 : 6.200)
irpAgentId	irpAgentId (3GPP TS 32.106-7 : 6.2001)
locationName	locationName (Recommendation M.3100: 1995)
managedBy	meManagedBy (3GPP TS 32.106-7 : 6.2001)
managedElementType	managedElementType
managementNodeId	managementNodeId (3GPP TS 32.106-7 : 6.2001)
manages	mnManagesList (3GPP TS 32.106-7 : 6.2001)
meContextId	meContextId (3GPP TS 32.106-7 : 6.2001)
systemDN	not needed
userDefinedState	userDefinedState (3GPP TS 32.106-7 : 6.2001)
userLabel	userLabel (Recommendation M.3100: 1995)
vendorName	vendorName (Recommendation M.3100: 1995)
VsDataContainerId	vsDataContainerId
VsDataType	vsDataType
VsData	vsData
vsDataFormatVersion	vsDataFormatVersion
BulkCmIrpId	bulkCmControlId
IrpVersion	irpVersion
userDefinedNetworkType	userDefinedNetworkType
SwVersion	swVersion

5 GDMO Definitions

5.1 Managed Object Classes

5.1.1 subNetwork

```
subNetwork MANAGED OBJECT CLASS
  DERIVED FROM      "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    subNetworkBasicPackage;
  CONDITIONAL PACKAGES
     "Recommendation M.3100: 1995":attributeValueChangeNotificationPackage  PRESENT IF
       "the attributeValueChange notifications defined in Recommendation X.721
        are supported by an instance of this class.",
    "Recommendation M.3100: 1995":environmentalAlarmPackage  PRESENT IF
       "the environmentalAlarm notifications defined in Recommendation X.721
        are supported by an instance of this class.";
REGISTERED AS {ts32-620ObjectClass 1};
```

5.1.2 managedElement

```
managedElement MANAGED OBJECT CLASS
  DERIVED FROM      "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    managedElementBasicPackage,
    managedElementAssociationPackage;
  CONDITIONAL PACKAGES
    "Recommendation M.3100: 1995":createDeleteNotificationsPackage  PRESENT IF
      "the objectCreation and the objectDeletion defined in Recommendation
       X.721 are supported by an instance of this class.",
    "Recommendation M.3100: 1995":attributeValueChangeNotificationPackage PRESENT IF
      "the attributeValueChange notifications defined in Recommendation X.721
     are supported by an instance of this class.",
    "Recommendation M.3100: 1995":processingErrorAlarmPackage  PRESENT IF
      "the processingErrorAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.",
    "Recommendation M.3100: 1995":environmentalAlarmPackage  PRESENT IF
      "the environmentalAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.",
   “3GPP TS 32.106-7: 6.2001”: communicationsAlarmPackage  PRESENT IF
      "the communicationsAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.",
   “3GPP TS 32.106-7: 6.2001”: equipmentAlarmPackage  PRESENT IF
      "the equipmentAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.";
REGISTERED AS {ts32-620ObjectClass 2};
```

5.1.3 managementNode

managementNode MANAGED OBJECT CLASS
DERIVED FROM "Recommendation X.721: 1992":top;
CHARACTERIZED BY
managementNodeBasicPackage,
“3GPP TS 32.106-7: 6.2001”: managementNodeAssociationPackage;
CONDITIONAL PACKAGES
"Recommendation M.3100: 1995":createDeleteNotificationsPackage PRESENT IF
"the objectCreation and the objectDeletion defined in Recommendation
X.721 are supported by an instance of this class.",
"Recommendation M.3100: 1995":attributeValueChangeNotificationPackage PRESENT IF
"the attributeValueChange notifications defined in Recommendation X.721
are supported by an instance of this class.",
"Recommendation M.3100: 1995":processingErrorAlarmPackage PRESENT IF
"the processingErrorAlarm notifications defined in Recommendation X.721
are supported by an instance of this class.",
"Recommendation M.3100: 1995":environmentalAlarmPackage PRESENT IF
"the environmentalAlarm notifications defined in Recommendation X.721
are supported by an instance of this class.",
“3GPP TS 32.106-7: 6.2001”: communicationsAlarmPackage PRESENT IF
"the communicationsAlarm notifications defined in Recommendation X.721
are supported by an instance of this class.",
“3GPP TS 32.106-7: 6.2001”: equipmentAlarmPackage PRESENT IF
"the equipmentAlarm notifications defined in Recommendation X.721
are supported by an instance of this class.";
REGISTERED AS {ts32-620ObjectClass 3};

5.1.4 vsDataContainer

vsDataContainer MANAGED OBJECT CLASS
DERIVED FROM "Recommendation X.721: 1992":top;
CHARACTERIZED BY
vsDataContainerBasicPackage;
REGISTERED AS {ts32-620ObjectClass 4};

5.1.5 bulkCmControl

bulkCmControl MANAGED OBJECT CLASS
DERIVED FROM "Recommendation X.721: 1992":top;
CHARACTERIZED BY
bulkCmControlBasicPackage,
bulkCmControlActionPackage,
bulkCmControlNotificationPackage;
REGISTERED AS {ts32-620ObjectClass 5};

5.2 Packages

5.2.1 subNetworkBasicPackage

subNetworkBasicPackage PACKAGE
  BEHAVIOUR
    subNetworkBasicPackageBehaviour;
  ATTRIBUTES
    subNetworkId GET,
    "Recommendation X.721: 1992": systemTitle GET,
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE,
    userDefinedNetworkType GET;
REGISTERED AS {ts32-620Package 1};

subNetworkBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This managed object class represents collections of interconnected
    telecommunications and management objects (logical or physical) capable of
    exchanging information. A network may be nested within another (larger) network,
    thereby forming a containment relationship.";

5.2.2 managedElementBasicPackage

managedElementBasicPackage PACKAGE
  BEHAVIOUR
    managedElementBasicPackageBehaviour;
  ATTRIBUTES
    “3GPP TS 32.106-7: 6.2001”: managedElementId GET,
    managedElementType GET,
    “3GPP TS 32.106-7: 6.2001”: userDefinedState GET-REPLACE,
   "Recommendation X.721: 1992" : systemTitle GET,
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE,
    "Recommendation M.3100: 1995" : vendorName GET,
    "Recommendation M.3100: 1995" : locationName GET,
    swVersion GET;
REGISTERED AS {ts32-620Package 2};

managedElementBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This managed object class represents telecommunications equipment within the
    telecommunications network that performs managed element functions, i.e.
    provides support and/or service to the subscriber. A managed element
    communicates with a manager (directly or indirectly) over one or more standard
    interfaces for the purpose of being monitored and/or controlled. A managed
    element contains equipment that may or may not be geographically distributed. A
    Managed Element is often referred to as a 'node' or a 'network element'.";

5.2.3 managedElementAssociationPackage

managedElementAssociationPackage PACKAGE
  BEHAVIOUR
    managedElementAssociationPackageBehaviour;
  ATTRIBUTES
    “3GPP TS 32.106-7: 6.2001”: meManagedBy GET;
REGISTERED AS {ts32-620Package 3};

managedElementAssociationPackageBehaviour BEHAVIOUR
  DEFINED AS
    "The attribute 'meManagedBy' points to the g3ManagmentNode instance which
    manages this g3ManagedElement instance. It implements the attribute *managedBy*
    of MOC G3ManagedElement defined in TS32.106-5.";

5.2.4 vsDataContainerBasicPackage

vsDataContainerBasicPackage PACKAGE
  BEHAVIOUR
    vsDataContainerBasicPackageBehaviour;
  ATTRIBUTES
    vsDataContainerId GET,
    vsDataType GET,
    vsData GET-REPLACE,
    vsDataFormatVersion GET;
REGISTERED AS {ts32-620Package 4};

vsDataContainerBasicPackagBehaviour BEHAVIOUR
  DEFINED AS
    "The ’VsDataContainer’ managed object is a container for vendor specific data. The number of instances of the ’VsDataContainer’ can differ from vendor to vendor. This MOC shall only be used by the Bulk CM IRP for the UTRAN and GERAN object models.";

5.2.5 bulkCmControlBasicPackage

bulkCmControlBasicPackage PACKAGE
  BEHAVIOUR
    bulkCmControlBasicPackageBehaviour;
  ATTRIBUTES
    bulkCmControlId GET,
    irpVersion GET;
REGISTERED AS {ts32-620Package 5};

bulkCmControlBasicPackagBehaviour BEHAVIOUR
  DEFINED AS
    "This Managed Object Class represents the Bulk CM IRP capability associated with each IRPAgent. Restriction in Rel-4: Number of instances = 0..1.";

5.2.6 bulkCmControlActionPackage

bulkCmControlActionPackage PACKAGE
BEHAVIOUR
bulkCmControlActionPackageBehaviour;
ACTIONS
"3GPP TS 32.602-4: 6.2001": startSession,
"3GPP TS 32.602-4: 6.2001": endSession,
"3GPP TS 32.602-4: 6.2001": upload,
"3GPP TS 32.602-4: 6.2001": download,
"3GPP TS 32.602-4: 6.2001": activate,
"3GPP TS 32.602-4: 6.2001": fallback,
"3GPP TS 32.602-4: 6.2001": abortSessionOperation,
"3GPP TS 32.602-4: 6.2001": getSessionIds,
"3GPP TS 32.602-4: 6.2001": getSessionStatus,
"3GPP TS 32.602-4: 6.2001": getSessionLog,
"3GPP TS 32.602-4: 6.2001": getBulkCmVersion;
REGISTERED AS {ts32-620Package 6};

bulkCmControlActionPackagBehaviour BEHAVIOUR
DEFINED AS
"This package specifies all actions a bulkCmControl shall provide.";

5.2.7 bulkCmControlNotificationPackage

bulkCmControlNotificaionPackage PACKAGE
BEHAVIOUR
bulkCmControlNotificationPackageBehaviour;
NOTIFICATIONS
"3GPP TS 32.602-4: 6.2001": sessionStateChanged,
"3GPP TS 32.602-4: 6.2001": getSessionLogEnded;
REGISTERED AS {ts32-620Package 7};

bulkCmControlBasicPackageBehaviour BEHAVIOUR
DEFINED AS
"This package specifies all notifications a bulkCmControl shall provide.";

5.2.8 managementNodeBasicPackage

managedFunctionBasicPackage PACKAGE
BEHAVIOUR
managementFunctionBasicPackageBehaviour;
ATTRIBUTES
"Recommendation M.3100: 1995" : userLabel GET-REPLACE,

swVersion: GET;
REGISTERED AS {ts32-620Package 8};

5.3 Attributes

5.3.1 managedElementType

managedElementType ATTRIBUTE
WITH ATTRIBUTE SYNTAX TS32-620TypeModule .ManagedElementType;
MATCHES FOR EQUALITY;
BEHAVIOUR
managedElementTypeBehaviour;
REGISTERED AS {ts32-620Attribute 1};

managedElementTypeBehaviour BEHAVIOUR
DEFINED AS
"This attribute specifies which managed functions a managed element contains.";

5.3.2 subNetworkId

subNetworkId ATTRIBUTE
WITH ATTRIBUTE SYNTAX TS32-106-7TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
subNetworkIdBehaviour;
REGISTERED AS {ts32-620Attribute 2};

subNetworkIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute identifies a subNetwork instance.";

5.3.2 vsDataContainerId

vsDataContainerId ATTRIBUTE
WITH ATTRIBUTE SYNTAX TS32-106-7TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
vsDataContainerIdBehaviour;
REGISTERED AS {ts32-620Attribute 2};

vsDataContainerIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute identifies a vsDataContainer instance.";

5.3.3 vsDataType

vsDataType ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-620TypeModule.VsDataType;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    vsDataTypeBehaviour;
REGISTERED AS {ts32-620Attribute 3};

vsDataTypeBehaviour BEHAVIOUR
  DEFINED AS
    "Type of vendor specific data contained by this instance, e.g. relation specific algorithem parameters, cell specific parameters for pewer control or re-selection or a timer. The type itself is also vendor specific.";

5.3.4 vsData

vsData ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-620TypeModule.VsData;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    vsDataBehaviour;
REGISTERED AS {ts32-620Attribute 4};

vsDataBehaviour BEHAVIOUR
  DEFINED AS
    "Vendor specific attributes of the type vsDataType. The attribute definitions including constraints (value ranges, data types, etc.) are specified in a vendor specific data format file.";

5.3.5 vsDataFormatVersion

vsDataFormatVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-620TypeModule.VsDataFormatVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    vsDataFormatVersionBehaviour;
REGISTERED AS {ts32-620Attribute 5};

vsDataFormatVersionBehaviour BEHAVIOUR
  DEFINED AS
    "Name of the data format file, including version.";

5.3.6 bulkCmControlId

bulkCmControlId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX TS32-106-7TypeModule.GeneralObjectId;

```
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    bulkCmControlIdBehaviour;
REGISTERED AS {ts32-620Attribute 6};

bulkCmControlIdBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute identifies a bulkCmControl instance.";
```

5.3.7 irpVersion

```
irpVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX    TS32-620TypeModule.IrpVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    irpVersionBehaviour;
REGISTERED AS {ts32-620Attribute 7};

irpVersionBehaviour BEHAVIOUR
  DEFINED AS
    "One or more Bulk CM IRP version entries.”;
```

5.3.8 userDefinedNetworkType

```
userDefinedNetworkType ATTRIBUTE
  WITH ATTRIBUTE SYNTAX    TS32-620TypeModule.UserDefinedNetworkType;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    userDefinedNetworkTypeBehaviour;
REGISTERED AS {ts32-620Attribute 8};

userDefinedNetworkTypeBehaviour BEHAVIOUR
  DEFINED AS
    "Textual information regarding the type of network, e.g. UTRAN.”;
```

5.3.9 swVersion

```
swVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX    TS32-620TypeModule.SwVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    swVersionBehaviour;
REGISTERED AS {ts32-620Attribute 9};

swVersionBehaviour BEHAVIOUR
  DEFINED AS
```

```
   "The software version of the managed element (this is used for determin which
version of the vendor specific information that is valid for the managed
element).”;
```

5.4 Name Binding

5.4.1 managedElement - meContext

managedElement-meContext NAME BINDING
  SUBORDINATE OBJECT CLASS managedElement;
  NAMED BY SUPERIOR OBJECT CLASS “3GPP TS 32.106-7: 6.2001”: meContext;
  WITH ATTRIBUTE managedElementId;
  BEHAVIOUR
    managedElement-meContextBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 1};

managedElement-meContextBehaviour BEHAVIOUR
  DEFINED AS
    "The name binding represents a relationship in which a meContext contains and
    controls a managedElement. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";

5.4.2 managedElement - subNetwork

managedElement-subNetwork NAME BINDING
  SUBORDINATE OBJECT CLASS managedElement;
  NAMED BY SUPERIOR OBJECT CLASS subNetwork;
  WITH ATTRIBUTE managedElementId;
  BEHAVIOUR
    managedElement-subNetworkBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 2};

managedElement-subNetworkBehaviour BEHAVIOUR
  DEFINED AS
    "The name binding represents a relationship in which a subNetwork contains and
    controls a managedElement. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";

5.4.3 meContext - subNetwork

meContext-subNetwork NAME BINDING
  SUBORDINATE OBJECT CLASS meContext;
  NAMED BY SUPERIOR OBJECT CLASS subNetwork;

```
  WITH ATTRIBUTE meContextId;
  BEHAVIOUR
    meContext-subNetworkBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 3};

meContext-subNetworkBehaviour BEHAVIOUR
  DEFINED AS
    "The name binding represents a relationship in which a subNetwork contains and
    controls a meContext. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";
```

5.4.3 bulkCmControl - irpAgent

```
bulkCmControl-irpAgent NAME BINDING
  SUBORDINATE OBJECT CLASS bulkCmControl;
  NAMED BY SUPERIOR OBJECT CLASS “3GPP TS 32.106-7: 6.2001”: irpAgent;
  WITH ATTRIBUTE managedElementId;
  BEHAVIOUR
    bulkCmControl-irpAgentBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 3};

bulkCmControl-irpAgentBehaviour BEHAVIOUR
  DEFINED AS
    "The name binding represents a relationship in which a irpAgent contains and
    controls a bulkCmControl. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";
```

5.3.4 vsDataContainer - vsDataContainer

```
vsDataContainer-vsDataContainer NAME BINDING
  SUBORDINATE OBJECT CLASS “3GPP TS 32.620-4:  06.2001”: vsDataContainer;
  NAMED BY SUPERIOR OBJECT CLASS  “3GPP TS 32.620-4:  06.2001”: vsDataContainer;
  WITH ATTRIBUTE vsDataContainerId;
  BEHAVIOUR
    vsDataContainer-vsDataContainerBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 4};

vsDataContainer-vsDataContainerBehaviour BEHAVIOUR
  DEFINED AS
    "The name binding represents a relationship in which a vsDataContainer contains and
```

controls another vsDataContainer. When automatic instance naming is used, the choice
of name bindings is left as a local matter. This containment relation shall be used only with BulkCmIRP CMIP SS defined in 3GPP TS 32.602-4.";

5.4.5 meContext - subNetwork

meContext-subNetwork NAME BINDING
SUBORDINATE OBJECT CLASS meContext;
NAMED BY SUPERIOR OBJECT CLASS subNetwork;
WITH ATTRIBUTE meContextId;
BEHAVIOUR
meContext-subNetworkBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 5};

meContext-subNetworkBehaviour BEHAVIOUR
DEFINED AS
"The name binding represents a relationship in which a subNetwork contains and
controls a meContext. When automatic instance naming is used, the choice
of name bindings left as a local matter.";

5.4.6 irpAgent - managementNode

irpAgent - managementNode NAME BINDING
SUBORDINATE OBJECT CLASS “3GPP TS 32.106-7: 6.2001”: irpAgent;
NAMED BY SUPERIOR OBJECT CLASS managementNode;
WITH ATTRIBUTE “3GPP TS 32.106-7: 6.2001”: irpAgentId;
BEHAVIOUR
irpAgent-managementNodeBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 6};

bulkCmControl-irpAgentBehaviour BEHAVIOUR
DEFINED AS
"The name binding represents a relationship in which a managedNode contains and
controls a irpAgent. When automatic instance naming is used, the choice
of name bindings left as a local matter.";

5.4.7 managementNode - subNetwork

managementNode-subNetwork NAME BINDING
SUBORDINATE OBJECT CLASS managementNode;
NAMED BY SUPERIOR OBJECT CLASS subNetwork;
WITH ATTRIBUTE managementNodeId;
BEHAVIOUR

managementNode-subNetworkBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-620NameBinding 7};

managementNode-subNetworkBehaviour BEHAVIOUR
DEFINED AS
"The name binding represents a relationship in which a subNetwork contains and controls a managementNode. When automatic instance naming is used, the choice of name bindings left as a local matter.";

6 ASN.1 Definitions

```
TS32-620TypeModule {ccitt (0) identified-organization (4) etsi (0)
        mobileDomain (0) umts-Operation-Maintenance (3) ts-32-620 (620)
        informationModel (0) asn1Module (2) version1 (1)}



DEFINITIONS IMPLICIT TAGS ::=
BEGIN
--EXPORTS everything

--IMPORTS



-- 3GPP TS 32.620-4 related Object Identifiers

baseNodeUMTS  OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
                        umts-Operation-Maintenance(3)}
ts32-620      OBJECT IDENTIFIER ::= { baseNodeUMTS ts-32-620(620)}
ts32-620InfoModel     OBJECT IDENTIFIER ::= { ts32-620 informationModel(0)}

ts32-620ObjectClass   OBJECT IDENTIFIER ::= { ts32-620InfoModel managedObjectClass(3)}
ts32-620Package       OBJECT IDENTIFIER ::= { ts32-620InfoModel package(4)}
ts32-620Parameter     OBJECT IDENTIFIER ::= { ts32-620InfoModel parameter(5)}
ts32-620NameBinding   OBJECT IDENTIFIER ::= { ts32-620InfoModel nameBinding(6)}
ts32-620Attribute     OBJECT IDENTIFIER ::= { ts32-620InfoModel attribute(7)}
ts32-620Action      OBJECT IDENTIFIER ::= { ts32-620InfoModel action(9)}
ts32-620Notification  OBJECT IDENTIFIER ::= { ts32-620InfoModel notification(10)}



-- Start of 3GPP SA5 own definitions

ManagedElementType::= SET OF ENUMERATED
{
rnc     (1),
nodeB       (2),
msc       (3),
hLR       (4),
vLR       (5),
aUC       (6),
eIR       (7),
sms-IWNSC(8),
```

```
sms-GMSC (9),
sGSN (10),
gGSN (11),
bG (12),
gmsc (13),
smlc (14),
gmlc (15),
scf (16),
srf (17),
cbc (18),
cgf (19),
mgw (20),
gmscServer (21),
iwf (22),
mnpSrf (23),
npdb (24),
rSgw (25),
ssf (26),
bs (27)
}

VsDataType ::= GraphicString
VsData ::= GraphicString
VsDataFormatVersion ::= GraphicString
IrpVersion ::= GraphicString
UserDefinedNetworkType ::= GraphicString
SwVersion ::= GraphicString

END -- of TS32-620TypeModule
```

Annex A (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2001	S_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0

History

Document history		
V4.0.0	June 2001	Publication