ETSI TS 132 624 V4.5.0 (2003-09)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Configuration Management (CM);
Generic network resources: Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
solution set
(3GPP TS 32.624 version 4.5.0 Release 4)

GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

Reference
RTS/TSGS-0532624v450

Keywords
GSM, UMTS

ETSI

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Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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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: "Telecommunication management; Principles and high level requirements".

[2] 3GPP TS 32.102: "Telecommunication management; Architecture".

[3] 3GPP TS 32.304: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

[4] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

[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".

[10] 3GPP TS 32.111-4: "Telecommunication management; Fault Management (FM); Part 4: Alarm Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

[11] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

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 [11] and 3GPP TS 32.622 [4] 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 [4] for 3G networks. This document provides an implementation of this generic network resource model by using CMIP technology.

4.2 Void

4.3 Mapping

The semantic of the Generic Network Resource Model is defined in 3GPP TS 32.622 [4]. 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
ManagedFunction	managedFunction
ManagementNode	managementNode
MeContext	meContext
BasicCmIRP	bcmControl
VsDataContainer	vsDataContainer
BulkCmIRP	bulkCmControl
AlarmIRP	alarmControl (3GPP TS 32.111-4 [10])
NotificationIRP	notificationControl (3GPP TS 32.304 [3])

4.3.2 Mapping of Attributes

Table 3: 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
subNetworkId	subNetworkId
irpAgentId	irpAgentId
locationName	locationName (ITU-T Recommendation M.3100: 1995)
managedBy	meManagedBy
managedElementType	managedElementType
managementNodeId	managementNodeId
manages	mnManagesList
meContextId	meContextId
systemDN	not needed
userDefinedState	userDefinedState
userLabel	userLabel (ITU-T Recommendation M.3100: 1995)
vendorName	vendorName (ITU-T 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 {ts32-624ObjectClass 1};

5.1.2 managedElement

managedElement MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    managedElementBasicPackage,
    managedElementAssociationPackage;
  CONDITIONAL PACKAGES
    rootOptionalPackage PRESENT IF
      "An instance of managedElement is the accessing root of a MIB.",
    "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.",
    communicationsAlarmPackage PRESENT IF
      "the communicationsAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.",
    equipmentAlarmPackage PRESENT IF
      "the equipmentAlarm notifications defined in Recommendation X.721
       are supported by an instance of this class.";
REGISTERED AS {ts32-624ObjectClass 2};

5.1.3 managementNode

managementNode MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    managementNodeBasicPackage,
    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.",
  communicationsAlarmPackage PRESENT IF
   "the communicationsAlarm notifications defined in Recommendation X.721
 are supported by an instance of this class.",
  equipmentAlarmPackage PRESENT IF
   "the equipmentAlarm notifications defined in Recommendation X.721
 are supported by an instance of this class.";
REGISTERED AS {ts32-624ObjectClass 3};

5.1.4   vsDataContainer

vsDataContainer MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    vsDataContainerBasicPackage;
REGISTERED AS {ts32-624ObjectClass 4};

5.1.5   bulkCmControl

bulkCmControl MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    bulkCmControlBasicPackage,
    bulkCmControlActionPackage,
    bulkCmControlNotificationPackage;
REGISTERED AS {ts32-624ObjectClass 5};

5.1.6   irpAgent

irpAgent MANAGED OBJECT CLASS
DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    irpAgentBasicPackage;
  CONDITIONAL PACKAGES
    "Recommendation M.3100: 1995":processingErrorAlarmPackage PRESENT IF
      "the processingErrorAlarm notifications defined in Recommendation X.721

are supported by an instance of this class.",
  communicationsAlarmPackage PRESENT IF
    "the communicationsAlarm notifications defined in Recommendation X.721
    are supported by an instance of this class.";
REGISTERED AS {ts32-624ObjectClass 6};

5.1.7   managedFunction

managedFunction MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    managedFunctionBasicPackage;
  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.",
    communicationsAlarmPackage PRESENT IF
      "the communicationsAlarm notifications defined in Recommendation X.721
     are supported by an instance of this class.",
    qualityOfServiceAlarmPackage PRESENT IF
      "the qualityOfServiceAlarm notifications defined in Recommendation X.721
     are supported by an instance of this class.";
REGISTERED AS {ts32-624ObjectClass 7};

5.1.8   meContext

meContext MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    meContextBasicPackage;
  CONDITIONAL PACKAGES
    rootOptionalPackage PRESENT IF
      "An instance of meContext is the accessing root of a MIB.",
    "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.";
REGISTERED AS {ts32-624ObjectClass 8};

5.1.9 bcmControl

bcmControl MANAGED OBJECT CLASS
  DERIVED FROM   "Recommendation X.721: 1992":top;
  CHARACTERIZED BY
    bcmControlBasicPackage,
    bcmIRPVersionPackage;
REGISTERED AS {ts32-624ObjectClass 9};

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 {ts32-624Package 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
    managedElementId GET,
    managedElementType GET,
    userDefinedState GET-REPLACE,
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE,
    "Recommendation M.3100: 1995" : vendorName GET,
    "Recommendation M.3100: 1995" : locationName GET,
    swVersion GET;
REGISTERED AS {ts32-624Package 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
    meManagedBy GET;
REGISTERED AS {ts32-624Package 3};

managedElementAssociationPackageBehaviour BEHAVIOUR
  DEFINED AS

"The attribute 'meManagedBy' points to the managmentNode instance which manages this managedElement instance. It implements the attribute *managedBy* of MOC ManagedElement defined in TS32.622.";

5.2.4 vsDataContainerBasicPackage

vsDataContainerBasicPackage PACKAGE
  BEHAVIOUR
    vsDataContainerBasicPackageBehaviour;
  ATTRIBUTES
    vsDataContainerId GET,
    vsDataType GET,
    vsData GET-REPLACE,
    vsDataFormatVersion GET;
REGISTERED AS {ts32-624Package 4};

vsDataContainerBasicPackageBehaviour 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 {ts32-624Package 5};

bulkCmControlBasicPackageBehaviour 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 32.614 Release 4": startSession,
  "3GPP TS 32.614 Release 4": endSession,
  "3GPP TS 32.614 Release 4": upload,
  "3GPP TS 32.614 Release 4": download,
  "3GPP TS 32.614 Release 4": activate,
  "3GPP TS 32.614 Release 4": fallback,
  "3GPP TS 32.614 Release 4": abortSessionOperation,
  "3GPP TS 32.614 Release 4": getSessionIds,
  "3GPP TS 32.614 Release 4": getSessionStatus,
  "3GPP TS 32.614 Release 4": getSessionLog,
  "3GPP TS 32.614 Release 4": getBulkCmIrpVersion;
REGISTERED AS {ts32-624Package 6};

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

5.2.7   bulkCmControlNotificationPackage

bulkCmControlNotificationPackage PACKAGE
 BEHAVIOUR
  bulkCmControlNotificationPackageBehaviour;
 NOTIFICATIONS
  "3GPP TS 32.614 Release 4": sessionStateChanged,
  "3GPP TS 32.614 Release 4": getSessionLogEnded;
REGISTERED AS {ts32-624Package 7};

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

5.2.8   managementNodeBasicPackage

managementNodeBasicPackage PACKAGE
  ATTRIBUTES
    managementNodeId GET,
    userDefinedState GET-REPLACE,
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE,
    "Recommendation M.3100: 1995" : vendorName GET,
    "Recommendation M.3100: 1995" : locationName GET,
    swVersion: GET;
REGISTERED AS {ts32-624Package 8};

managementNodeBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This managed object class represents a telecommunications management system (EM
    or NM) within the TMN, that manages a number of Managed Elements. The management
    system communicates with the MEs directly or indirectly over one or more
    standard interfaces for the purpose of monitoring and/or controlling these MEs.";

5.2.9   managementNodeAssociationPackage

managementNodeAssociationPackage PACKAGE
  BEHAVIOUR
    managementNodeAssociationPackageBehaviour;
  ATTRIBUTES
    mnManagesList GET;
REGISTERED AS {ts32-624Package 9};

managementNodeAssociationPackageBehaviour BEHAVIOUR
  DEFINED AS
    "The attribute 'mnManagesList' points to all managedElement instances which
    this managementNode instance manages. It implements the attribute *manages* of
    MOC ManagementNode defined in TS32.622.";

5.2.10   irpAgentBasicPackage

irpAgentBasicPackage PACKAGE
  BEHAVIOUR
    irpAgentBasicPackageBehaviour;
  ATTRIBUTES
    irpAgentId GET,
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE,
    supportedIRPs GET;
REGISTERED AS {ts32-624Package 10};

irpAgentBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "irpAgent may have only one instance in R99 and R4. The instance of this MOC represents
     the behaviour of an IRP Agent which implements one or more IRPs";

5.2.11   managedFunctionBasicPackage

managedFunctionBasicPackage PACKAGE
  BEHAVIOUR
    managedFunctionBasicPackageBehaviour;
  ATTRIBUTES
    "Recommendation M.3100: 1995" : userLabel GET-REPLACE;
REGISTERED AS {ts32-624Package 11};

managedFunctionBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This Managed Object class corresponds to the class gsmManagedFunction defined
     in GSM 12.20 0 and is provided for sub-classing only. It provides the attributes
     that are common to functional MO classes. Note that a managed element may
     contain several managed functions. The ManagedFunction may be extended in the
     future if more common characteristics to functional objects are identified.";

5.2.12   meContextBasicPackage

meContextBasicPackage PACKAGE
  BEHAVIOUR
    meContextBasicPackageBehaviour;
  ATTRIBUTES
    meContextId GET;
REGISTERED AS {ts32-624Package 12};

meContextBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This managed object class represents the Managed Element from the network
     perspective. It can be used to hold surveillance status information, and also
     planning status information for the case when the managed element is part of a
     planned configuration in a management system, before it has been taken into
     service. It can also support unambiguous naming in all cases, also for scenarios
     when the Managed Elements have been pre-configured where some of them may have
     equal names (to avoid necessary administration to make all of them globally
     unique at creation/installation time). Thus, by means of globally unique names

for the MEContext instances, and by using these in the DN, the DNs for all MEs (and MOIs contained in them) can be assured to be globally unique, even in such a scenario as described above.";

5.2.13   bcmControlBasicPackage

bcmControlBasicPackage PACKAGE
  BEHAVIOUR
    bcmControlBasicPackageBehaviour;
  ATTRIBUTES
    bcmControlId GET;
REGISTERED AS {ts32-624Package 13};

bcmControlBasicPackageBehaviour BEHAVIOUR
  DEFINED AS
    "The object class bcmControl offers the functions defined in the CM IRP IS
    enabling to control the behaviour and to retrieve the management information
    related a Basic CM IRP agent.
    An instance of the 'BCmControl' MOC is identified by the value of the attribute
    'bcmControlId'.";

5.2.14   bcmIRPVersionPackage

bcmIRPVersionPackage PACKAGE
  BEHAVIOUR
    bcmIRPVersionPackageBehaviour;
  ATTRIBUTES
    supportedBcmIRPVersions GET;
  ACTIONS
    "3GPP TS 32.604 Release 4":getBCmIRPVersion;
REGISTERED AS {ts32-624Package 14};

bcmIRPVersionPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This package has been defined to allow the Manager to get information about the
    Basic CM IRP versions supported by the Agent.
    The attribute 'supportedBCmIRPVersions' indicates all versions of the Basic IRP
    currently supported by the Agent. .
    With the action 'getBasicCmIRPVersion' a manager can find out the versions of
    the Basic CM IRP CMIP solution sets the Agent supports.";

5.2.15 communicationsAlarmPackage

communicationsAlarmPackage PACKAGE
  NOTIFICATIONS
    "Recommendation X.721:1992": communicationsAlarm;
REGISTERED AS {ts32-624Package 15};

5.2.16 equipmentAlarmPackage

equipmentAlarmPackage PACKAGE
  NOTIFICATIONS
    "Recommendation X.721:1992": equipmentAlarm;
REGISTERED AS {ts32-624Package 16};

5.2.17 qualityOfServiceAlarmPackage

qualityOfServiceAlarmPackage PACKAGE
  NOTIFICATIONS
    "Recommendation X.721:1992": qualityofServiceAlarm;
REGISTERED AS {ts32-624Package 17};

5.2.18 rootOptionalPackage

rootOptionalPackage PACKAGE
  BEHAVIOUR
     rootOptionalPackageBehaviour;
  ATTRIBUTES
    "Recommendation X.721: 1992" : systemTitle GET;
REGISTERED AS {ts32-624Package 18};

rootOptionalPackageBehaviour BEHAVIOUR
  DEFINED AS
    "This package shall be present in an instance of meContext or managedElement when it is the accessing point (root) of a MIB.";

5.3   Attributes

5.3.1   managedElementType

managedElementType ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule .ManagedElementType;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    managedElementTypeBehaviour;
REGISTERED AS {ts32-624Attribute 1};

managedElementTypeBehaviour BEHAVIOUR

DEFINED AS

"This attribute specifies which managed functions a managed element contains.";

5.3.2 subNetworkId

subNetworkId ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;

MATCHES FOR EQUALITY;

BEHAVIOUR

subNetworkIdBehaviour;

REGISTERED AS {ts32-624Attribute 2};

subNetworkIdBehaviour BEHAVIOUR

DEFINED AS

"This attribute identifies a subNetwork instance.";

5.3.3 vsDataContainerId

vsDataContainerId ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;

MATCHES FOR EQUALITY;

BEHAVIOUR

vsDataContainerIdBehaviour;

REGISTERED AS {ts32-624Attribute 100};

vsDataContainerIdBehaviour BEHAVIOUR

DEFINED AS

"This attribute identifies a vsDataContainer instance.";

5.3.4 vsDataType

vsDataType ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.VsDataType;

MATCHES FOR EQUALITY;

BEHAVIOUR

vsDataTypeBehaviour;

REGISTERED AS {ts32-624Attribute 3};

vsDataTypeBehaviour BEHAVIOUR

DEFINED AS

```
    "Type of vendor specific data contained by this instance, e.g. relation
specific algorithm parameters, cell specific parameters for power control or re-
selection or a timer. The type itself is also vendor specific.";
```


5.3.5 vsData

vsData ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.VsData;
MATCHES FOR EQUALITY;
BEHAVIOUR
  vsDataBehaviour;
REGISTERED AS {ts32-624Attribute 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.";

5.3.6   vsDataFormatVersion

vsDataFormatVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.VsDataFormatVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    vsDataFormatVersionBehaviour;
REGISTERED AS {ts32-624Attribute 5};

vsDataFormatVersionBehaviour BEHAVIOUR
  DEFINED AS

  "Name of the data format file, including version.";

5.3.7   bulkCmControlId

bulkCmControlId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    bulkCmControlIdBehaviour;
REGISTERED AS {ts32-624Attribute 6};

bulkCmControlIdBehaviour BEHAVIOUR
  DEFINED AS

  "This attribute identifies a bulkCmControl instance.";

5.3.8   irpVersion

irpVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.IrpVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    irpVersionBehaviour;
REGISTERED AS {ts32-624Attribute 7};

irpVersionBehaviour BEHAVIOUR
  DEFINED AS

    `"One or more Bulk CM IRP version entries.";`

5.3.9   userDefinedNetworkType

userDefinedNetworkType ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.UserDefinedNetworkType;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    userDefinedNetworkTypeBehaviour;
REGISTERED AS {ts32-624Attribute 8};

userDefinedNetworkTypeBehaviour BEHAVIOUR
  DEFINED AS

    `"Textual information regarding the type of network, e.g. UTRAN.";`

5.3.10   swVersion

swVersion ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.SwVersion;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    swVersionBehaviour;
REGISTERED AS {ts32-624Attribute 9};

swVersionBehaviour BEHAVIOUR
  DEFINED AS

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

5.3.11   managedElementId

managedElementId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule .GeneralObjectId;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    managedElementIdBehaviour;
REGISTERED AS {ts32-624Attribute 10};

managedElementIdBehaviour BEHAVIOUR
  DEFINED AS

    "This attribute names an instance of the '3gManagedElement' object class.";

5.3.12   userDefinedState

userDefinedState ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.UserDefinedState;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    userDefinedStateBehaviour;
REGISTERED AS {ts32-624Attribute 11};

userDefinedStateBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute specifies an operator defined state for operator specific usage.";

5.3.13   meManagedBy

meManagedBy ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectPointer;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    meManagedByBehaviour;
REGISTERED AS {ts32-624Attribute 12};

meManagedByBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute points to the managementNode instance which manages the
    related 3gManagedElement instance.";

5.3.14   managementNodeId

managementNodeId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    managmentNodeIdBehaviour;
REGISTERED AS {ts32-624Attribute 13};

managmentNodeIdBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute names an instance of the 'managmentNode' object class.";

5.3.15   mnManagesList

mnManagesList ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectPointerList;
  MATCHES FOR EQUALITY;
  BEHAVIOUR

mnManagesListBehaviour;
REGISTERED AS {ts32-624Attribute 14};

mnManagesListBehaviour BEHAVIOUR

DEFINED AS

"This attribute points to all 3gManagedElement instances which this
3gManagmentNode instance manages.";

5.3.16   irpAgentId

irpAgentId ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
    irpAgentIdBehaviour;
REGISTERED AS {ts32-624 Attribute 15};

irpAgentIdBehaviour BEHAVIOUR

DEFINED AS

"This attribute identifies an irpAgent instance.";

5.3.17   supportedIRPs

supportedIRPs ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.SupportedIRPs;
MATCHES FOR EQUALITY;
BEHAVIOUR
    supportedIRPsBehaviour;
REGISTERED AS {ts32-624Attribute 16};

supportedIRPsBehaviour BEHAVIOUR

DEFINED AS

"This attribute provides the information about IRPs an IRPAgent supports.";

5.3.18   meContextId

meContextId ATTRIBUTE

WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
    meContextIdBehaviour;
REGISTERED AS {ts32-624Attribute 17};

meContextIdBehaviour BEHAVIOUR

DEFINED AS

"This attribute names an instance of the 'MEContext' object class.";

5.3.19 bcmControlId

bcmControlId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.GeneralObjectId;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    bcmControlIdBehaviour;
REGISTERED AS {ts32-624Attribute 18};

bcmControlIdBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute names an instance of the 'bcmControl' object class.";

5.3.20 supportedBcmIRPVersions

supportedBcmIRPVersions ATTRIBUTE
  WITH ATTRIBUTE SYNTAX   TS32-624TypeModule.SupportedBCmIRPVersions;
  MATCHES FOR EQUALITY;
  BEHAVIOUR
    supportedBCmIRPVersionsBehaviour;
REGISTERED AS {ts32-624Attribute 19};

supportedBCmIRPVersionsBehaviour BEHAVIOUR
  DEFINED AS
    "This attribute provides the information concerning the Basic CM IRP versions
    currently supported by the Agent.";

5.4 Actions

Void.

5.4.1 getBcmIRPVersion

Void.

5.5 Name Binding

5.5.1 managedElement - meContext

managedElement-meContext NAME BINDING
  SUBORDINATE OBJECT CLASS managedElement;
  NAMED BY SUPERIOR OBJECT CLASS meContext;
  WITH ATTRIBUTE managedElementId;
  BEHAVIOUR
    managedElement-meContextBehaviour;

 CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 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.";

5.5.2   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 {ts32-624NameBinding 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.";

5.5.3   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 {ts32-624NameBinding 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.";

5.5.4 bulkCmControl - irpAgent

bulkCmControl-irpAgent NAME BINDING
  SUBORDINATE OBJECT CLASS bulkCmControl;
  NAMED BY SUPERIOR OBJECT CLASS irpAgent;
  WITH ATTRIBUTE bulkCmControlId;
  BEHAVIOUR
    bulkCmControl-irpAgentBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 4};

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.";

5.5.5 irpAgent - subNetwork

irpAgent-subNetwork NAME BINDING
  SUBORDINATE OBJECT CLASS irpAgent;
  NAMED BY SUPERIOR OBJECT CLASS subNetwork;
  WITH ATTRIBUTE irpAgentId;
  BEHAVIOUR
    irpAgent-subNetworkBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 5};

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

5.5.6 irpAgent - managementNode

irpAgent - managementNode NAME BINDING
  SUBORDINATE OBJECT CLASS irpAgent;
  NAMED BY SUPERIOR OBJECT CLASS managementNode;
  WITH ATTRIBUTE "3GPP TS 32.624: 6.2001": irpAgentId;
  BEHAVIOUR
    irpAgent-managementNodeBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {ts32-624NameBinding 6};

irpAgent-managementNodeBehaviour 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.";

5.5.7   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 {ts32-624NameBinding 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.";

5.5.8   irpAgent - managedElement

irpAgent-managedElement NAME BINDING
    SUBORDINATE OBJECT CLASS irpAgent;
    NAMED BY SUPERIOR OBJECT CLASS managedElement;
    WITH ATTRIBUTE irpAgentId;
    BEHAVIOUR
        irpAgent-managedElementBehaviour;
    CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 8};

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

5.5.9   bcmControl - irpAgent

bcmControl-irpAgent NAME BINDING
  SUBORDINATE OBJECT CLASS bcmControl;
  NAMED BY SUPERIOR OBJECT CLASS irpAgent;
  WITH ATTRIBUTE bcmControlId;
  BEHAVIOUR
    bcmControl-irpAgentBehavior;
  CREATE WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 9};

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

5.5.10   vsDataContainer - vsDataContainer

vsDataContainer-vsDataContainer NAME BINDING
  SUBORDINATE OBJECT CLASS vsDataContainer;
  NAMED BY SUPERIOR OBJECT CLASS vsDataContainer;
  WITH ATTRIBUTE vsDataContainerId;
  BEHAVIOUR
    vsDataContainer-vsDataContainerBehaviour;
  CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 10};

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 Bulk CM IRP
CMIP SS defined in 3GPP TS 32.614.";

5.5.11   subNetwork - subNetwork

```
subNetwork-subNetwork NAME BINDING
   SUBORDINATE OBJECT CLASS
      subNetwork;
   NAMED BY SUPERIOR OBJECT CLASS
      subNetwork;
   WITH ATTRIBUTE
      subNetworkId;
   BEHAVIOUR
      subNetwork-subNetworkBehaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
```

```
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 11};


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

5.5.12   notificationControl - irpAgent

```
notificationControl-irpAgent NAME BINDING
    SUBORDINATE OBJECT CLASS
        notificationControl;
    NAMED BY SUPERIOR OBJECT CLASS
        irpAgent;
    WITH ATTRIBUTE
        "3GPP TS 32.304 Release 4": notificationControlId;
    BEHAVIOUR
        notificationControl-irpAgentBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 12};


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

5.5.13   alarmControl - irpAgent

```
alarmControl-irpAgent NAME BINDING
    SUBORDINATE OBJECT CLASS
        alarmControl;
    NAMED BY SUPERIOR OBJECT CLASS
        irpAgent;
    WITH ATTRIBUTE
        "3GPP TS 32.111-4 Release 4": alarmControlId;
    BEHAVIOUR
        alarmControl-irpAgentBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-624NameBinding 13};


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

6   ASN.1 Definitions

TS32-624TypeModule {ccitt (0) identified-organization (4) etsi (0)
       mobileDomain (0) umts-Operation-Maintenance (3) ts32-624 (624)
     informationModel (0) asn1Module (2) version1 (1)}

DEFINITIONS IMPLICIT TAGS ::=
BEGIN
--EXPORTS everything

IMPORTS
ObjectInstance FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)}

-- 3GPP TS 32.624 related Object Identifiers

baseNodeUMTS OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
                    umts-Operation-Maintenance(3)}
ts32-624   OBJECT IDENTIFIER ::= { baseNodeUMTS ts32-624(624)}
ts32-624InfoModel   OBJECT IDENTIFIER ::= { ts32-624 informationModel(0)}

ts32-624ObjectClass OBJECT IDENTIFIER ::= { ts32-624InfoModel managedObjectClass(3)}
ts32-624Package   OBJECT IDENTIFIER ::= { ts32-624InfoModel package(4)}
ts32-624Parameter   OBJECT IDENTIFIER ::= { ts32-624InfoModel parameter(5)}
ts32-624NameBinding   OBJECT IDENTIFIER ::= { ts32-624InfoModel nameBinding(6)}
ts32-624Attribute   OBJECT IDENTIFIER ::= { ts32-624InfoModel attribute(7)}
ts32-624Action   OBJECT IDENTIFIER ::= { ts32-624InfoModel action(9)}
ts32-624Notification OBJECT IDENTIFIER ::= { ts32-624InfoModel notification(10)}

-- Start of 3GPP SA5 own definitions

ManagedElementType::= GraphicString
GeneralObjectId ::= INTEGER
UserDefinedState ::= GraphicString
GeneralObjectPointer ::= ObjectInstance
GeneralObjectPointerList ::= SEQUENCE OF ObjectInstance
IRPNames::= SET OF ENUMERATED
{
notificationIRP   (1),
alarmIRP   (2),
basicCmIRP   (3),
bulkCmIRP   (4),
genericNRM   (5),
cnNRM   (6),

```
utranNRM          (7),
geranNRM          (8)
}
SupportedIRPs ::= SET OF IRPNames
VsDataType ::= GraphicString
VsData ::= GraphicString
VsDataFormatVersion ::= GraphicString
UserDefinedNetworkType ::= GraphicString
SwVersion ::= GraphicString


END  -- of TS32-624TypeModule
```

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
Sep 2001	S_13	SP-010478	001	--	Correction due to TS renumbering	4.0.0	4.1.0
Sep 2001	S_13	SP-010479	002	--	Change the attribute "systemTitle" from mandatory to optional	4.0.0	4.1.0
Dec 2001	S_14	SP-010648	003	--	Change to Read/Write the attribute "userDefinedState" in MOC "ManagementNode"	4.1.0	4.2.0
Mar 2002	S_15	SP-020021	004	--	Removal of redundant GDMO/ASN.1 Code	4.2.0	4.3.0
Mar 2002	S_15	SP-020021	005	--	Making 'elementType' consistent	4.2.0	4.3.0
Mar 2002	S_15	SP-020021	006	--	Change the attribute "userLabel" from Read-Only to Read-Write	4.2.0	4.3.0
Jun 2002	S_16	SP-020300	007	--	Making 32.624 (CMIP SS) consistent with 32.622 (IS) and 32.623 (CORBA SS)	4.3.0	4.4.0
Jun 2002	S_16	SP-020300	008	--	Align with 32.622 (IS) by changing "userDefinedState" from read-only to read-write	4.3.0	4.4.0
Sep 2003	S_21	SP-030417	010	--	Rel-4/5 alignment of OIDs of some attributes and name bindings	4.4.0	4.5.0

History

Document history		
V4.0.0	June 2001	Publication
V4.1.0	September 2001	Publication
V4.2.0	December 2001	Publication
V4.3.0	March 2002	Publication
V4.4.0	June 2002	Publication
V4.5.0	September 2003	Publication