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Technical Specification

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Generic network resources: Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
solution set
(3GPP TS 32.624 version 5.2.0 Release 5)

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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].

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 [4].

This Solution Set specification is related to 3GPP TS 32.622 V5.1.x [4].

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.
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[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 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[11] 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)".

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 [10] 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 from IOCs to MOCs

Table 1 maps the information object classes defined in the Generic Network Resource Model onto the equivalent MOCs of the CMIP Solution Set.

Table 1: Mapping of MOCs

Information Objects of the Generic NR IRP NRM	MOCs of this CMIP SS
ManagedElement	managedElement
SubNetwork	subNetwork
IRPAgent	irpAgent
ManagedFunction	managedFunction
ManagementNode	managementNode
MeContext	meContext
GenericIRP	no equivalence
VsDataContainer	no equivalence
Top	top (ITU-T Rec. X.721 [6])

4.3.2 Mapping of Attributes

Table 2: Mapping of Attributes

Attribute defined in 3GPP TS 32.622	Attribute defined in this CMIP SS
DnPrefix	systemTitle (ITU-T Rec. X.721 [6])
ManagedElementId	managedElementId
SubNetworkId	subNetworkId
IrpAgentId	irpAgentId
LocationName	locationName (ITU-T Rec. M.3100 [9])
ManagedElementType	managedElementType
ManagementNodeId	managementNodeId
irpId	No equivalence
MeContextId	meContextId
SystemDN	No equivalence
UserDefinedState	userDefinedState
UserLabel	userLabel (ITU-T Rec. M.3100 [9])
VendorName	vendorName (ITU-T Rec. M.3100 [9])
VsDataContainerId	No equivalence
VsDataType	No equivalence
VsData	No equivalence
VsDataFormatVersion	No equivalence
ObjectClass	objectClass (ITU-T Rec. X.721 [6])
ObjectInstance	objectInstance (ITU-T Rec. X.721 [6])
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;
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 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 4};
```

5.1.5 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 5};
```

5.1.6 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 6};
```

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 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 4};

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.";
```

5.2.5 managementNodeAssociationPackage

```
managementNodeAssociationPackage PACKAGE
   BEHAVIOUR
      managementNodeAssociationPackageBehaviour;
   ATTRIBUTES
      mnManagesList   GET;
REGISTERED AS {ts32-624Package 5};

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.";
```

5.2.6 irpAgentBasicPackage

```
irpAgentBasicPackage PACKAGE
   BEHAVIOUR
      irpAgentBasicPackageBehaviour;
   ATTRIBUTES
      irpAgentId                                GET,
      "Recommendation M.3100: 1995" : userLabel   GET-REPLACE,
      supportedIRPs                             GET;
REGISTERED AS {ts32-624Package 6};

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

5.2.7 managedFunctionBasicPackage

```
managedFunctionBasicPackage PACKAGE
   BEHAVIOUR
      managedFunctionBasicPackageBehaviour;
   ATTRIBUTES
      "Recommendation M.3100: 1995" : userLabel   GET-REPLACE;
REGISTERED AS {ts32-624Package 7};

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.";
```

5.2.8 meContextBasicPackage

```
meContextBasicPackage PACKAGE
   BEHAVIOUR
      meContextBasicPackageBehaviour;
   ATTRIBUTES
      meContextId   GET;
REGISTERED AS {ts32-624Package 8};

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.";
```

5.2.9 Void

5.2.10 Void

5.2.11 Void

5.2.12 rootOptionalPackage

```
rootOptionalPackage PACKAGE
   BEHAVIOUR
      rootOptionalPackageBehaviour;
   ATTRIBUTES
      "Recommendation X.721: 1992" : systemTitle   GET;
REGISTERED AS {ts32-624Package 12};

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 Void

5.3.4 Void

5.3.5 Void

5.3.6 Void

5.3.7 Void

5.3.8 Void

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 determin 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 {ts32-624Attribute 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 Void

5.4 Name Binding

5.4.1 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.";
```

5.4.2 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 {ts32-624NameBinding 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.";
```

5.4.3 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 {ts32-624NameBinding 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.";
```

5.4.4 Void

5.4.5 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.";
```

5.4.6 irpAgent - managementNode

```
irpAgent-managementNode NAME BINDING
   SUBORDINATE OBJECT CLASS
      irpAgent;
   NAMED BY SUPERIOR OBJECT CLASS
      managementNode;
   WITH ATTRIBUTE
      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.";
```

5.4.7 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 {ts32-624NameBinding 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.";
```

5.4.8 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.";
```

5.4.9 Void

5.4.10 Void

5.4.11 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.";
```

5.4.12 Void

5.4.13 Void

5.4.14 Void

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

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 2002	S_17	SP-020488	009	--	Upgrade the NRM CMIP Solution Set to Rel-5	4.4.0	5.0.0
Sep 2003	S_21	SP-030417	011	--	Rel-4/5 alignment of OIDs of some attributes and name bindings	5.0.0	5.1.0
Dec 2003	S_22	SP-030642	012	--	Remove notifications from MOC managedFunction - Align with 32.622 (IS)	5.1.0	5.2.0

History

Document history		
V5.0.0	September 2002	Publication
V5.1.0	September 2003	Publication
V5.2.0	December 2003	Publication