# ISO/CCITT and Internet Management Coexistence (IIMC):

# Translation of Internet MIB-II (RFC1213)

# to

# ISO/CCITT GDMO MIB

# (IIMCMIB-II)

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## Status of this Memo

This memo provides information to the network and systems management community. This memo is intended as a contribution to ongoing work in the area of multi-protocol management coexistence and interworking. This memo is part of a package of ISO/CCITT and Internet Management Coexistence (IIMC) drafts; see also [IICMIMIBTRANS] [IIMCOMIBTRANS] [IIMCPARTY] [IIMCPROXY].

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**Abstract**

This memo is intended to facilitate the multi-protocol management coexistance and interworking for networks that are managed using the OSI Common Management Information Protocol (CMIP) and networks that are managed using the Simple Network Management Protocol (SNMP). This RFC contains the OSI definition and registration of the OSI Proxy MIB-II as derived from the Internet MIB-II [RFC1213] according to the procedures defined in "Translation of Internet MIBs to OSI GDMO MIBs" [IIMCIMIBTRANS]. In addition, it includes the IP Forwarding Table defined in [RFC1354].

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## 1. Introduction

The past decade has witnessed the development of enterprise wide networks composed of a multi-vendor environment containing heterogeneous protocol and hardware suites. Organizations have become increasingly dependent on these enterprise networks for their daily operations. This dependence has focussed attention on the need for operation, administration, maintenance, and provisioning (OAM&P) of the multi-vendor enterprise network on an end-to-end basis.

### 1.1 Background

This memo is part of a package of ISO/CCITT and Internet Management Coexistence (IIMC) drafts. Other memos included in this package are:

- Translation of Internet MIBs to ISO/CCITT GDMO MIBs (LaBarre) [IIMCIMIBTRANS]

- Translation of ISO/CCITT GDMO MIBs to Internet MIBs (Newnan) [IIMCOMIBTRANS]

- Translation of Internet Party MIB (RFC1353) to ISO/CCITT GDMO MIB (LaBarre) [IIMCPARTY]

- ISO/CCITT to Internet Management Proxy (Chang) [IIMCPROXY]

These memos together comprise a package aimed at integrating ISO/CCITT-based and Internet-based management systems. These memos are offered as input to coexistence and interworking efforts underway throughout the industry,including organizations such as:

- IETF OSI Internet Management (OIM),
- Network Management Forum Technology Convergence Team,
- X/Open Systems Management (SysMan),
- OIW Network Management Special Interest Group (NMSIG), and
- OSF Management Special Interest Group (MANSIG).

This work was initiated, in part, by NM Forum efforts to translate RFC 1214 for use with OMNIPoint 1 implementations. Through this effort, it became obvious that end-to-end management requires an integrated, unified view of the managed network, despite differences in management protocol and information structure. Integrated management can be facilitated by the development of "proxy" mechanisms which translate between functionally equivalent service, protocol, and SMI differences to create this unified view. MIB translation procedures can be used to support proxy management, as well as to take advantage of existing MIB definition and avoid duplication of effort. In this way, commercial investment in both ISO/CCITT and Internet-based management technologies can be preserved through deployment

of common methods and tools which support integration.

This overall strategy was outlined in a joint publication developed by the NM Forum and X/Open entitled "ISO/CCITT and Internet Management: Coexistence and Interworking Strategy" [NMFMC92]. The memos included in the IIMC package are intended as detailed specifications which implement several of the methodologies identified in this strategy.

**1.2 Overview**

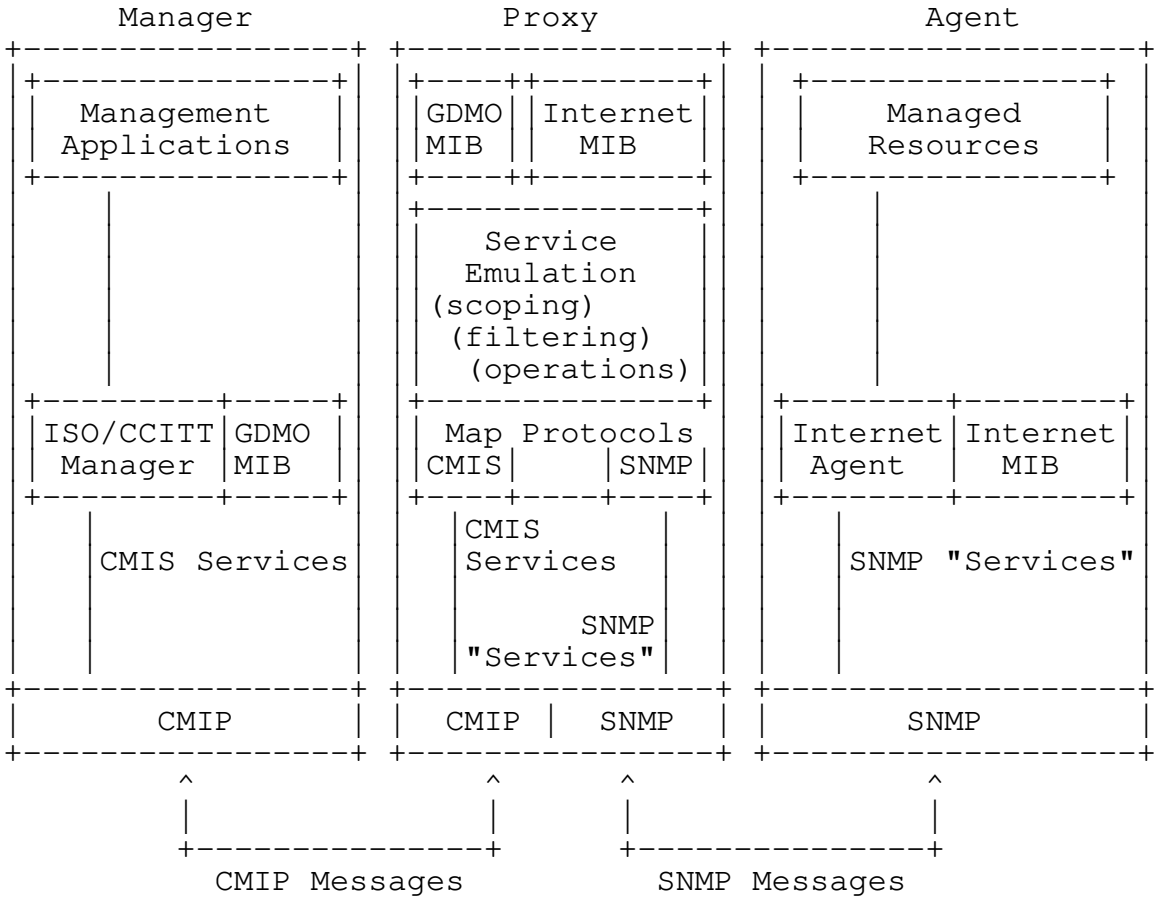
The response to the need for OAM&P of enterprise networks has been the development of network management standards within various networking communities - most notably the ISO/CCITT and Internet community. However, coordination of standards activities between these two communities has not occurred. As a result, although they share a nearly common management model, differences in their management protocols and structure of management Information (SMI) have developed due to differing management philosophies.

The ISO/CCITT community has developed the Common Management Information Protocol (CMIP) [ISO9596], and related SMI documents [ISO10165-1,3,4]. The Internet community has developed the Simple Network Management Protocol (SNMP) [RFC1157], and is developing its successor, SNMP-2, based on [SMPPROT]. The Internet SMI is defined in [RFC1155] and [SMPSMI]. Although functionally similar, the Internet and ISO/CCITT protocols and SMIs differ in terms of their complexity and specific operations.

The focus on the need for end-to-end enterprise management has indicated the need to integrate the management of components managed by ISO/CCITT management, Internet management and proprietary management mechanisms in a manner which presents a unified view of the network despite protocol and SMI differences. One way to integrate management is by the development of "proxy" mechanisms which translate between functionally equivalent services, protocol and SMI differences to create this unified view.

A body of telecommunications and computer vendors, represented by organizations such as the Network Management Forum (NMF), and the U.S. government, as specified in the Government Network Management Profile (GNMP) have based their integrated management model on the ISO/CCITT management model using CMIP and the ISO/CCITT SMI. These organizations are particularly interested in the development of proxies for devices that use the Internet management protocols and SMI. Their interest is primarily due to the widespread commercial implementation and use of such devices within their enterprises, especially devices that use the Internet TCP/IP protocol suite.

The basic model for ISO/CCITT-Internet proxy management is illustrated in the following diagram.




The proxy architecture provides emulation of CMIS services by mapping to the corresponding SNMP message(s) necessary to carry out the service request. The service emulation allows management of Internet objects by an ISO/CCITT manager. The left hand side of the proxy behaves like an ISO/CCITT agent, communicating with the ISO/CCITT manager using CMIP protocols. The right hand side of the proxy behaves like an Internet manager, communicating with the Internet agent using SNMP protocols.

The proxy relies on the existence of a pair of directly-related MIB definitions, where the Internet MIB has been translated into ISO/CCITT GDMO using the procedures specified in [IIMCMIBTRANS]. The proxy defined in [IIMCPROXY] uses these MIB definitions and rules to provide run-time translation of management information carried in service requests and responses.

The proxy architecture is designed with a specified interface between the proxy and the underlying protocol stacks, and so deals primarily in terms of CMIS services and

SNMP "services". The proxy emulates services such as CMIS scoping and filtering, processing of CMIS operations, and forwarding/logging of CMIS notifications by performing a mapping process which must be tailored for each protocol (for example, SNMP, Secure SNMP, and SNMP-2 are all variants of the same protocol mapping process).

Finally, [IIMCOMIBTRANS] specifies translation procedures for converting ISO/CCITT GDMO MIBs into Internet MIBs. MIBs generated by this translation process cannot be utilized by the Proxy defined in [IIMCPROXY], although another kind of Proxy could be defined for this purpose in the future.

### 1.3 Purpose and Scope

A major reason for the rapid commercialization of devices manageable via the Internet management protocol is due to the speed with which the vendors in the Internet community have been able to develop MIBs based on the Internet SMI. To capitalize on this continuing Internet MIB development and their deployment in commercial devices, communities interested in integrated management via CMIP/SNMP proxies require the translation of Internet MIBs defined according to the Internet Structure of Management Information (SMI) [RFC 1155] [SMPSMI] into MIBs defined according to the ISO SMI [ISO 10164-1] and Guidelines for the Definition of Managed Objects (GDMO) [ISO 10165-4]. Procedures for such translations are described in [IIMCIMIBTRANS].

This memo applies the procedures described in [IIMCIMIBTRANS] to the translation and registration of the Internet MIB-II as defined in [RFC1213], and to the IP Forwarding Table defined in [RFC1354].

This memo assumes that the reader is familiar with the ISO/CCITT SMI and terminology as well as the Internet to SMI translation defined in [IIMCIMIBTRANS].

### 1.4 Terms and Conventions

**TBD**

## 2. Object Class Definitions

The Internet MIB-II objects [RFC1213] are recast into ISO/CCITT GDMO templates as defined in ISO10165-4], and registered, using the procedures defined in [IIMCIMIBTRANS].

According to [IIMCIMIBTRANS], OIDs registered under the internet arc are of the form:

OID = <internet> <internetEntityId>

where <internet> is the full registration path to the "internet" arc; and <internetEntityId> is the portion of the OID that uniquely identifies entities under that arc, i.e., the remainder of the OID.

Re-registration of objects is accomplished by replacing the <internet> portion of the OID with a new registration arc allocated for proxy registration such that the OID is of the form:

```
     OID = <cmipsnmpProxyXX> <internetEntityId>
```

Accordingly, object class OIDs assigned in this document to [RFC1213] groups are:

```
cmipsnmpProxyIMIB
    |
    +--- mgmt (2) --- mib-2 (1) - system (1)
                                - interfaces (2)
                                - at (3)
                                - ip (4)
                                - icmp (5)
                                - tcp (6)
                                - udp (7)
                                - egp (8)
                                - transmission (10)
                                - snmp (11)
```

OIDs for additional object classes and attributes are extended from the above OIDs as is done in the corresponding Internet definitions. The object identifier {cmipsnmpProxyIMIB} is defined in [IIMCIMIBTRANS].

The templates for the OIM Proxy MIB-II object classes are listed in alphabetical order.

```
at  MANAGED OBJECT CLASS
    DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
    CHARACTERIZED BY
          atPkg PACKAGE
                   BEHAVIOUR
          atPkgBehaviour BEHAVIOUR
          DEFINED AS
     !This managed object class maps to the at
     group  with object id {mib-2 3} in RFC1213. See RFC 1213
     for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 3 };

atEntry  MANAGED OBJECT CLASS
    DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
         CHARACTERIZED BY
              atEntryPkg PACKAGE
```

```
                BEHAVIOUR
          atEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to atEntry
          object with object id {atTable 1} in RFC1213.
          See RFC 1213 for attribute semantics.
               INDEX { atIfIndex}
               STATUSVAR ::= atIfIndex
               STATUSDELETE ::= 0 !;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId    GET,
                atIfIndex           GET-REPLACE,
                atPhysAddress       GET-REPLACE,
                atNetAddress        GET-REPLACE;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 3 1 1 };

atTable  MANAGED OBJECT CLASS
       DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
       CHARACTERIZED BY
             atTablePkg PACKAGE
             BEHAVIOUR
          atTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to atTable
          object with object id {at 1} in RFC1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId     GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 3 1 };

egp MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               egpPkg PACKAGE
                   BEHAVIOUR
          egpPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to egp group
          with object id {mib-2 8} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               egpInMsgs                     GET,
               egpInErrors                   GET,
               egpOutMsgs                    GET,
               egpOutErrors                  GET,
               egpAs                         GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 8 };


egpNeighEntry MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               egpNeighEntryPkg PACKAGE
```

```
                BEHAVIOUR
          egpNeighEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to
          egpNeighEntry object with object id {egpNeighTable
          1} in RFC 1213. See RFC 1213 for attribute
          semantics.
               INDEX { egpNeighAddr}!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId       GET,
               egpNeighState            GET,
               egpNeighAddr             GET,
               egpNeighAs               GET,
               egpNeighInMsgs           GET,
               egpNeighInErrs           GET,
               egpNeighOutMsgs          GET,
               egpNeighOutErrs          GET,
               egpNeighInErrMsgs        GET,
               egpNeighOutErrMsgs       GET,
               egpNeighStateUps         GET,
               egpNeighStateDowns       GET,
               egpNeighIntervalHello    GET,
               egpNeighIntervalPoll     GET,
               egpNeighMode             GET,
               egpNeighEventTrigger     GET-REPLACE;
          NOTIFICATIONS
               "IIMCIMIBTRANS": egpNeighborLoss;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 8 5 1 };

egpNeighTable MANAGED OBJECT CLASS
     DERIVED FROM   "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               egpNeighTablePkg PACKAGE
                   BEHAVIOUR
               egpNeighTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to
          egpNeighTable object with object id {egp 5} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId     GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 8 5 };

icmp MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               icmpPkg PACKAGE
                    BEHAVIOUR
          icmpPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the icmp
          group with object id {mib-2 5} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
```

```
                "IIMCIMIBTRANS": internetClassId        GET,
                icmpInMsgs                      GET,
                icmpInErrors                    GET,
                icmpInDestUnreachs              GET,
                icmpInTimeExcds                 GET,
                icmpInParmProbs                 GET,
                icmpInSrcQuenchs                GET,
                icmpInRedirects                 GET,
                icmpInEchos                     GET,
                icmpInEchoReps                  GET,
                icmpInTimestamps                GET,
                icmpInTimestampReps             GET,
                icmpInAddrMasks                 GET,
                icmpInAddrMaskReps              GET,
                icmpOutMsgs                     GET,
                icmpOutErrors                   GET,
                icmpOutDestUnreachs             GET,
                icmpOutTimeExcds                GET,
                icmpOutParmProbs                GET,
                icmpOutSrcQuenchs               GET,
                icmpOutRedirects                GET,
                icmpOutEchos                    GET,
                icmpOutEchoReps                 GET,
                icmpOutTimestamps               GET,
                icmpOutTimestampReps            GET,
                icmpOutAddrMasks                GET,
                icmpOutAddrMaskReps             GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 5 };

ifEntry   MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ifEntryPkg PACKAGE
                   BEHAVIOUR
               ifEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ifEntry object with object id {ifTable 1} in
          RFC 1213. See RFC 1213 for attribute semantics.
               INDEX { ifIndex}!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId     GET,
               ifIndex                         GET,
               ifDescr                         GET,
               ifType                          GET,
               ifMtu                           GET,
               ifSpeed                         GET,
               ifPhysAddress                   GET,
               ifAdminStatus                   GET-REPLACE,
               ifOperStatus                    GET,
               ifLastChange                    GET,
               ifInOctets                      GET,
               ifInUcastPkts                   GET,
               ifInNUcastPkts                  GET,
```

```
                ifInDiscards                    GET,
                ifInErrors                      GET,
                ifInUnknownProtos               GET,
                ifOutOctets                     GET,
                ifOutUcastPkts                  GET,
                ifOutNUcastPkts                 GET,
                ifOutDiscards                   GET,
                ifOutErrors                     GET,
                ifOutQLen                       GET,
                ifSpecific                      GET;
           NOTIFICATIONS
                "IIMCIMIBTRANS": linkUp,
                "IIMCIMIBTRANS": linkDown;;;
REGISTERED AS  {cmipsnmpProxyIMIB 2 1 2 2 1 };

ifTable MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                ifTablePkg PACKAGE
                    BEHAVIOUR
                ifTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the ifTable
          object with object id {interface 2} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
                "IIMCIMIBTRANS": internetClassId   GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 2 2 };

interfaces MANAGED OBJECT CLASS
     DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                interfacesPkg PACKAGE BEHAVIOUR
                interfacesPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          interface group with object id {mib-2 2} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
                "IIMCIMIBTRANS": internetClassId   GET,
                ifNumber                        GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 2 };
internetSystem MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                internetSystemPkg PACKAGE
                    BEHAVIOUR
                internetSystemPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the system group
          with object id {mib-2 1} in RFC 1213. See RFC 1213
          for attribute semantics. !;;
          ATTRIBUTES
             "IIMCIMIBTRANS": internetClassId    GET,
```

```
                sysDescr                        GET,
                sysObjectId                     GET,
                sysUpTime                       GET,
                sysContact                      GET-REPLACE,
                sysName                         GET,
                sysLocation                     GET-REPLACE,
                sysServices                     GET;;;
REGISTERED AS   {cmipsnmpProxyIMIB 2 1 1};

ip MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                ipPkg PACKAGE
                    BEHAVIOUR
                ipPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the ip
          group with object id {mib-2 4} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
                "IIMCIMIBTRANS": internetClassId        GET,
                ipForwarding                    GET-REPLACE,
                ipDefaultTTL                    GET-REPLACE,
                ipInReceives                    GET,
                ipInHdrErrors                   GET,
                ipInAddrErrors                  GET,
                ipForwDatagrams                 GET,
                ipInUnknownProtos               GET,
                ipInDiscards                    GET,
                ipInDelivers                    GET,
                ipOutRequests                   GET,
                ipOutDiscards                   GET,
                ipOutNoRoutes                   GET,
                ipReasmTimeout                  GET,
                ipReasmReqds                    GET,
                ipReasmOKs                      GET,
                ipReasmFails                    GET,
                ipFragOKs                       GET,
                ipFragFails                     GET,
                ipFragCreates                   GET,
                ipRoutingDiscards               GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4};

ipAddrEntry MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                ipAddrEntryPkg PACKAGE
                    BEHAVIOUR
                ipAddrEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ipAddrEntry object with object id {ipAddrTable 1}
          in RFC 1213. See RFC 1213 for attribute semantics.
                INDEX { ipAddrEntAddr}!;;
```

```
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId        GET,
               ipAdEntAddr                  GET,
               ipAdEntIfIndex               GET,
               ipAdEntNetMask               GET,
               ipAdEntBcastAddr             GET,
               ipAdEntReasmMaxSize          GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4 20 1};

ipAddrTable MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipAddrTablePkg PACKAGE
                   BEHAVIOUR
               ipAddrTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ipAddrTable object with object id {ip 20} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4 20};

ipForwardEntry  MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipForwardEntryPkg PACKAGE
                   BEHAVIOUR
          ipForwardEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !A particular route to  a  particular  destination,
          under a particular policy.
               INDEX {
                  ipForwardDest,
                  ipForwardProto,
                  ipForwardPolicy,
                  ipForwardNextHop
                  }
               STATUSVAR ::= ipForwardType
               STATUSDELETE ::= 2!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               ipForwardDest            GET,
               ipForwardMask            GET-REPLACE,
               ipForwardPolicy          GET,
               ipForwardNextHop         GET,
               ipForwardIfIndex         GET-REPLACE,
               ipForwardType            GET-REPLACE,
               ipForwardProto           GET,
               ipForwardAge             GET,
               ipForwardInfo            GET-REPLACE,
               ipForwardNextHopAS       GET-REPLACE,
               ipForwardMetric1         GET-REPLACE,
               ipForwardMetric2         GET-REPLACE,
```

```
                ipForwardMetric3         GET-REPLACE,
                ipForwardMetric4         GET-REPLACE,
                ipForwardMetric5         GET-REPLACE;;;
REGISTERED AS   { cmipsnmpProxyIMIB 2 1 4 24 2  1};

ipForwardTable  MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               aclTablePkg PACKAGE
                   BEHAVIOUR
               aclTableBehaviour BEHAVIOUR
          DEFINED AS !This entity's IP Routing table.  RFC
          1213 Section 6.6, the IP Group.  The IP
          Forwarding Table obsoletes and replaces the
          ipRouteTable current in MIB-I and MIB-II.  It
          adds knowledge of the autonomous system of the
          next hop, multiple next hop support, and policy
          routing support.

          The ipForwardNumber attribute contains the
          number of entries in the table.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               ipForwardNumber                    GET;;;
REGISTERED AS   { cmipsnmpProxyIMIB 2 1 4 24 2 };

ipNetToMediaEntry       MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipNetToMediaEntryPkg PACKAGE
                   BEHAVIOUR
               ipNetToMediaEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ipNetToMediaEntry object with object id
          {ipNetToMediaTable 1} in RFC 1213. See RFC 1213 for
          attribute semantics.
               INDEX {ipNetToMediaIfIndex}
               STATUSVAR ::= ipNetToMediaIfIndex
               STATUSDELETE ::= 0 !;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               ipNetToMediaIfIndex           GET-REPLACE,
               ipNetToMediaPhysAddress       GET-REPLACE,
               ipNetToMediaNetAddress        GET-REPLACE,
               ipNetToMediaType              GET-REPLACE;;;
REGISTERED AS   { cmipsnmpProxyIMIB 2 1 4 22 1};

ipNetToMediaTable MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipNetToMediaTablePkg PACKAGE
                   BEHAVIOUR
               ipNetToMediaTablePkgBehaviour BEHAVIOUR
```

```
          DEFINED AS
          !This managed object class maps to the
          ipNetToMediaTable object with object id {ip 22} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
          "IIMCIMIBTRANS": internetClassId   GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4 22};

ipRouteEntry MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipRouteEntryPkg PACKAGE
                   BEHAVIOUR
               ipRouteEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ipRouteEntry object with object id {ipRouteTable
          1} in RFC 1213. See RFC 1213 for attribute
          semantics.
               INDEX {ipRouteDest }
               STATUSVAR ::= ipRouteType
               STATUSDELETE ::= 2 !;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               ipRouteDest                  GET-REPLACE,
               ipRouteIfIndex               GET-REPLACE,
               ipRouteMetric1               GET-REPLACE,
               ipRouteMetric2               GET-REPLACE,
               ipRouteMetric3               GET-REPLACE,
               ipRouteMetric4               GET-REPLACE,
               ipRouteMetric5               GET-REPLACE,
               ipRouteNextHop               GET-REPLACE,
               ipRouteType                  GET-REPLACE,
               ipRouteProto                 GET,
               ipRouteAge                   GET-REPLACE,
               ipRouteMask                  GET-REPLACE,
               ipRouteInfo                  GET-REPLACE;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4 21 1};



ipRouteTable MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               ipRouteTablePkg PACKAGE
                   BEHAVIOUR
               ipRouteTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          ipRouteTable object with object id {ip 21} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET;;;
```

```
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 4 21};

snmp MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               snmpPkg PACKAGE
          BEHAVIOUR snmpPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the snmp group
          with objectid {mib-2 11} in RFC 1213. See
          RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               snmpInPkts                         GET,
               snmpInBadVersions                  GET,
               snmpInBadCommunityNames            GET,
               snmpInBadCommunityUses             GET,
               snmpInASNParseErrs                 GET,
               snmpInTooBigs                      GET,
               snmpInNoSuchNames                  GET,
               snmpInBadValues                    GET,
               snmpInReadOnlys                    GET,
               snmpInGenErrs                      GET,
               snmpInTotalReqVars                 GET,
               snmpInTotalSetVars                 GET,
               snmpInGetRequests                  GET,
               snmpInGetNexts                     GET,
               snmpInSetRequests                  GET,
               snmpInGetResponses                 GET,
               snmpInTraps                        GET,
               snmpOutPkts                        GET,
               snmpOutTooBigs                     GET,
               snmpOutNoSuchNames                 GET,
               snmpOutBadValues                   GET,
               snmpOutGenErrs                     GET,
               snmpOutGetRequests                 GET,
               snmpOutGetNexts                    GET,
               snmpOutSetRequests                 GET,
               snmpOutGetResponses                GET,
               snmpOutTraps                       GET,
               snmpEnableAuthenTraps              GET-REPLACE;;;
REGISTERED AS  {cmipsnmpProxyIMIB 2 1 11};

tcp MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               tcpPkg PACKAGE
                   BEHAVIOUR
               tcpPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the tcp
          group with object id {mib-2 6} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
```

```
                "IIMCIMIBTRANS": internetClassId   GET,
                tcpRtoAlgorithm                GET,
                tcpRtoMin                      GET,
                tcpRtoMax                      GET,
                tcpMaxConn                     GET,
                tcpActiveOpens                 GET,
                tcpPassiveOpens                GET,
                tcpAttemptFails                GET,
                tcpEstabResets                 GET,
                tcpCurrEstab                   GET,
                tcpInSegs                      GET,
                tcpOutSegs                     GET,
                tcpRetransSegs                 GET,
                tcpInErrs                      GET,
                tcpOutRsts                     GET;;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 6 };

tcpConnEntry MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                tcpConnEntryPkg PACKAGE
                    BEHAVIOUR
                tcpConnEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          tcpConnEntry object with object id {tcpConnTable 1}
          in RFC 1213. See RFC 1213 for attribute semantics.
                INDEX {
                tcpConnLocalAddress,
                tcpConnLocalPort,
                tcpConnRemAddress,
                tcpConnRemPort
                } !;;
          ATTRIBUTES
                "IIMCIMIBTRANS": internetClassId   GET,
                tcpConnState                   GET-REPLACE,
                tcpConnLocalAddress            GET,
                tcpConnLocalPort               GET,
                tcpConnRemAddress              GET,
                tcpConnRemPort                 GET;;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 6 13 1};

tcpConnTable MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
                tcpConnTablePkg PACKAGE
                    BEHAVIOUR
                tcpConnTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          tcpConnTable object with object id {tcp 13} in
          RFC 1213. See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
                "IIMCIMIBTRANS": internetClassId   GET;;;
```

```
REGISTERED AS { cmipsnmpProxyIMIB 2 1 6 13};

udp MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               udpPkg PACKAGE
                   BEHAVIOUR
               udpPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the udp
          group with object id {mib-2 7} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET,
               udpInDatagrams                GET,
               udpNoPorts                    GET,
               udpInErrors                   GET,
               udpOutDatagrams               GET;;;
REGISTERED AS  { cmipsnmpProxyIMIB 2 1 7};

udpEntry MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               udpEntryPkg PACKAGE
                   BEHAVIOUR
               udpEntryPkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          udpEntry object with object id {udpTable 1} in
          RFC 1213. See RFC 1213 for attribute semantics.
               INDEX {
               udpLocalAddress,
               udpLocalPort
               } !;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId        GET,
               udpLocalAddress                    GET,
               udpLocalPort                       GET;;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 7 5 1};



udpTable MANAGED OBJECT CLASS
   DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2:1992":top;
          CHARACTERIZED BY
               udpTablePkg PACKAGE
                   BEHAVIOUR
               udpTablePkgBehaviour BEHAVIOUR
          DEFINED AS
          !This managed object class maps to the
          udpTable object with object id {udp 5} in RFC 1213.
          See RFC 1213 for attribute semantics.!;;
          ATTRIBUTES
               "IIMCIMIBTRANS": internetClassId   GET;;;
```

```
REGISTERED AS { cmipsnmpProxyIMIB 2 1 7 5};
```

## 3. Attribute Definitions

Attribute templates for the attributes referenced in the managed object class templates of section 4, and the notifications of section 6, are listed here in alphabetical order.

```
atIfIndex ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          atIfIndexBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to atIfIndex with object id
          {atEntry 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 3  1 1 1};

atNetAddress ATTRIBUTE
     DERIVED FROM  "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          atNetAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to atNetAddress with object id
          {atEntry 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 3  1 1 3};

atPhysAddress ATTRIBUTE
     WITH ATTRIBUTE SYNTAX OIMRFC1213ProxyASN1.OctetString;
     MATCHES FOR      EQUALITY, SUBSTRING;
     BEHAVIOUR
          atPhysAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to atPhysAddress with object
          id {atEntry 2} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 3  1 1 2};

egpAs   ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          egpAsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpAs with object id
          {egp 6} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 6};

egpInErrors ATTRIBUTE
```

```
     DERIVED FROM "IIMCIMIBTRANS":counter32;
      BEHAVIOUR
           egpInErrorsBehaviour BEHAVIOUR
           DEFINED AS
           !This attribute maps to egpInErrors with object id
           {egp 2} in RFC1213. See RFC 1213 for attribute
           semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 2};

egpInMsgs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpInMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpInMsgs with object id
          {egp 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 1};

egpNeighAddr    ATTRIBUTE
     DERIVED FROM  "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          egpNeighAddrBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighAddr with object id
          {egpNeighEntry 2} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 2};

egpNeighAs      ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          egpNeighAsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighAs with object id
          {egpNeighEntry 3} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 3};

egpNeighEventTrigger    ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.EgpNeighEventTrigger;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          egpNeighEventTriggerBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighEventTrigger with
          objectid {egpNeighEntry 15} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 15};

egpNeighInErrMsgs       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
```

```
     BEHAVIOUR
          egpNeighInErrMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighInErrMsgs with
          object id {egpneighEntry 8} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 8};

egpNeighInErrs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighInErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighInErrs with object
          id {egpNeighEntry 5} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 5};

egpNeighInMsgs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighInMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighInMsgs with object
          id {egpNeighEntry 4} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 4};

egpNeighIntervalHello   ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          egpNeighIntervalHelloBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the egpNeighIntervalHello
          with object id {egpNeighEntry 12} in RFC1213. See
          RFC 1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 12};


egpNeighIntervalPoll    ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          egpNeighIntervalPollBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighIntervalPoll with
          object id {egpNeighEntry 13} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 13};

egpNeighMode    ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.EgpNeighMode;
     MATCHES FOR      EQUALITY;
```

```
     BEHAVIOUR
          egpNeighModeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighMode with object
          id {egpNeighEntry 14} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 14};

egpNeighOutErrMsgs      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighOutErrMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighOutErrMsgs with
          object id {egpNeighEntry 9} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 9};

egpNeighOutErrs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighOutErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighOutErrs with object
          id {egpNeighEntry 7} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 7};

egpNeighOutMsgs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighOutMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighOutMsgs with
          object id {egpNeighEntry 6} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 6};

egpNeighState ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.EgpNeighState;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          egpNeighStateBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighState with object
          id {egpNeighEntry 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 1};

egpNeighStateDowns      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighStateDownsBehaviour BEHAVIOUR
```

```
          DEFINED AS
          !This attribute maps to egpNeighStateDowns with
          object id {egpNeighEntry 11} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 11};

egpNeighStateUps        ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpNeighStateUpsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpNeighStateUps with
          object id {egpNeighEntry 10} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 5 1 10};

egpOutErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpOutErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpOutErrors with object id
          {egp 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 4};

egpOutMsgs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          egpOutMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to egpOutMsgs with object id
          {egp 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 8 3};

icmpInAddrMaskReps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInAddrMaskRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInAddrMaskReps with
          object id {icmp 13} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 13};

icmpInAddrMasks ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInAddrMasksBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInAddrMasks with
          object id {icmp 12} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
```

```
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 12};

icmpInDestUnreachs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInDestUnreachsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInDestUnreachs with
          object id {icmp 3} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 3};

icmpInEchoReps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInEchoRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInEchoReps with object
          id {icmp 9} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 9};

icmpInEchos  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInEchosBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInEchos with object id
          {icmp 8} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 8};

icmpInErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInErrors with object id
          {icmp 2} in RFC1213.See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 2};

icmpInMsgs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInMsgs with object id
          {icmp 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 1};

icmpInParmProbs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
```

```
     BEHAVIOUR
          icmpInParmProbsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInParmProbs with
          object id {icmp 5} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 5};

icmpInRedirects ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInRedirectsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInRedirects with id
          {icmp 7} in RFC1213.See RFC 1213 for semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 7};

icmpInSrcQuenchs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInSrcQuenchsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInSrcQuenchs with
          object id {icmp 6} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 6};

icmpInTimeExcds ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInTimeExcdsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInTimeExcds with
          object id {icmp 4} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 4};

icmpInTimestampReps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInTimestampRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInTimestampReps with
          object id {icmp 11} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 11};

icmpInTimestamps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpInTimeStampsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpInTimestamps with
          object id {icmp 10} in RFC1213. See RFC 1213 for
```

```
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 10};

icmpOutAddrMaskReps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutAddrMaskRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutAddrMaskReps with
          object id {icmp 26} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 26};

icmpOutAddrMasks ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutAddrMasksBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute map to icmpOutAddrMasks with
          object id{icmp 25} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 25};

icmpOutDestUnreachs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutDestUnreachsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutDestUnreachs with
          object id {icmp 16} in RFC213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 16};

icmpOutEchoReps  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutEchoRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutEchoReps with
          object id {icmp 22} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 22};

icmpOutEchos ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutEchosBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutEchos with object id
          {icmp 21} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 21};

icmpOutErrors ATTRIBUTE
```

```
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutErrors with object
          id {icmp 15} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 15};

icmpOutMsgs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutMsgsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutMsgs with object id
          {icmp 14} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 14};

icmpOutParmProbs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutParmProbsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutParmProbs with
          object id{icmp 18} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 18};

icmpOutRedirects ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutRedirectsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutRedirects with
          object id {icmp 20} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 20};

icmpOutSrcQuenchs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutSrcQuenchsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutSrcQuenchs with
          object id {icmp 19} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 19};

icmpOutTimeExcds ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutTimeExcdsBehaviour BEHAVIOUR
          DEFINED AS
```

```
          !This attribute maps to icmpOutTimeExcds with
          object id {icmp 17} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 17};

icmpOutTimestampReps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutTimestampRepsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutTimestampReps
          with object id {icmp 24} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 24};

icmpOutTimestamps ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          icmpOutTimestampsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to icmpOutTimestamps with
          object id {icmp 23} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 5 23};

ifAdminStatus ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IfAdminStatus;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ifAdminStatusBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifAdminStatus with object
          id {ifEntry 7} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 7};

ifDescr ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.DisplayString;
     MATCHES FOR      EQUALITY, SUBSTRINGS;
     BEHAVIOUR
          ifDescrBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifDescr with object id
          {ifEntry 2} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 2};

ifIndex    ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ifIndexBehaviour BEHAVIOUR
```

```
          DEFINED AS
          !This attribute maps to ifIndex with object id
          {ifEntry 1} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 1};

ifInDiscards ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInDiscardsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInDiscards with object id
          {ifEntry 13} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 13};

ifInErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInErrors with object id
          {ifEntry 14} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 14};

ifInNUcastPkts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInNUcastPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInNUcastPkts with object
          id {ifEntry 12} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 12};

ifInOctets ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInOctetsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInOctects with object id
          {ifEntry 10} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 10};

ifInUcastPkts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInUcastPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInUcastPkts with object
          id {ifEntry 11} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
```

```
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 11};

ifInUnknownProtos ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifInUnknownProtosBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifInUnknownProtos with
          object id {if Entry 15} in RFC123. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS { cmipsnmpProxyIMIB 2 1 2 2 1 15};

ifLastChange ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": TimeTicks;
     BEHAVIOUR
          ifLastChangeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifLastChange with object id
          {ifEntry 9} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 9};

ifMtu ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ifMtuBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifMtu with object id
          {ifEntry 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 4};

ifNumber  ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ifNumberBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifNumber with object id
          {interfaces 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 1};

ifOperStatus ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IfOperStatus;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ifOperStatusBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOperStatus with object id
          {ifEntry 8} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
```

```
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 8};

ifOutDiscards ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifOutDiscardsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutDiscards with object
          id {ifEntry 19} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 19};

ifOutErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifOutErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutErrors with object id
          {ifEntry 20} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 20};

ifOutNUcastPkts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifOutNUcastPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutNUcastPkts with object
          id {ifEntry 18} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 18};

ifOutOctets ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ifOutOctetsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutOctets with object id
          {ifEntry 16} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 16};

ifOutQLen ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": gauge32;
     BEHAVIOUR
          ifOutQLenBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutQLen with object id
          {ifEntry 21} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 21};

ifOutUcastPkts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
```

```
     BEHAVIOUR
          ifOutUcastPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifOutUcastPkts with object
          id {ifEntry 17} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 17};

ifPhysAddress ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.PhysAddress;
     MATCHES FOR      EQUALITY, SUBSTRINGS;
     BEHAVIOUR
          ifPhysAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifPhysAddress with object
          id {ifEntry 6} in RFC 1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 6};

ifSpecific ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.ObjectIdentifier;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ifSpecificBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifSpecific with object id
          {ifEntry 22} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 22};

ifSpeed ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": gauge32;
     BEHAVIOUR
          ifSpeedBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifSpeed with object id
          {ifEntry 5} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 5};

ifType ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.IfType;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ifTypeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ifType with object id
          {ifEntry 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 2 2 1 3};

ipAdEntAddr ATTRIBUTE
```

```
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipAdEntAddrBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipAdEntAddr with object id
          {ipAddrEntry 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 20 1 1};

ipAdEntBcastAddr ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipAdEntBcastAddrBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipAdEntBcastAddr with
          object id {ipAddrEntry 4} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 20 1 4};

ipAdEntIfIndex ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipAdEntIfIndexBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipAdEntIfIndex with object
          id {ipAddrEntry 2} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 20 1 2};

ipAdEntNetMask ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipAdEntNetMaskBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipAdEntNetMask with object
          id {ipAddrEntry 3} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 20 1 3};

ipAdEntReasmMaxSize ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer64k;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipAdEntReasmMaxSizeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipAdEntReasmMaxSize with
          object id {ipAddrEntry 5} in RFC123. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 20 1 5};

ipDefaultTTL ATTRIBUTE
     WITH ATTRIBUTE SYNTAX OIMRFC1213ProxyASN1.Integer;
```

```
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipDefaultTTLBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipDefaultTTL with object id
          {ip 2} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 2};

ipForwardAge ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardAgeBehaviour BEHAVIOUR
          DEFINED AS
               !The number of seconds  since  this  route
               was last  updated  or  otherwise
               determined  to be correct.  Note that no
               semantics of  `too  old'can  be implied
               except through knowledge of the routing
               protocol  by  which  the   route   was
                    learned.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 8};

ipForwardDest ATTRIBUTE
     DERIVED FROM
          "IIMCIMIBTRANS": ipAddress;
     BEHAVIOUR
          ipForwardDestBehaviour BEHAVIOUR
          DEFINED AS
          !The destination IP address of this
          route.   An entry  with  a value of 0.0.0.0 is
          considered a default route.

           This object may not take a Multicast (Class  D)
           address value.

           Any assignment (implicit or  otherwise)  of  an
           instance  of  this  object to a value x must be
           rejected if the bitwise logical-AND of  x  with
           the  value of the corresponding instance of the
           ipForwardMask object is not equal to x.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 1};

ipForwardIfIndex ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardIfIndexBehaviour BEHAVIOUR
          DEFINED AS
          !The ifIndex value which identifies  the  local
          interface  through  which  the next hop of this
```

```
          route should be reached.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 5};

ipForwardInfo ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.ObjectIdentifier;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardInfoBehaviour BEHAVIOUR
          DEFINED AS
          !A reference to MIB definitions specific to the
          particular routing protocol which is responsible
          for this route, as determined by the  value
          specified  in the route's ipForwardProto value.
          If this information is not present,  its  value
          should be set to the OBJECT IDENTIFIER {0 0 },
          which is a syntactically valid object  identif-
          ier, and any implementation conforming to
          ASN.1 and the Basic Encoding Rules must  be
          able  to generate and recognize this value.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 9};

ipForwarding ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.IpForwarding;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ipForwardingBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipForwarding with object id
          {ip 1} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 1};

ipForwardMask ATTRIBUTE
     DERIVED FROM
          "IIMCIMIBTRANS": ipAddress;
     BEHAVIOUR
          ipForwardMaskBehaviour BEHAVIOUR
          DEFINED AS
          !Indicate the mask to be logical-
          ANDed with the destination  address  before
          being compared to the value  in  the
          ipForwardDest  field.   For those systems  that
          do  not support arbitrary subnet masks, an
          agent constructs the value of the
          ipForwardMask by reference to the IP Address
          Class.

          Any assignment (implicit or  otherwise)  of  an
          instance  of  this  object to a value x must be
          rejected if the bitwise logical-AND of  x  with
          the  value of the corresponding instance of the
          ipForwardDest object is not equal to
          ipForwardDest.!;;
```

```
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 2};

ipForwardNextHop ATTRIBUTE
     DERIVED FROM
          "IIMCIMIBTRANS": ipAddress;
     BEHAVIOUR
          ipForwardNextHopBehaviour BEHAVIOUR
          DEFINED AS
          !On remote routes, the address of
          the next system en route; Otherwise, 0.0.0.0.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 4};

ipForwardNextHopAS ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardNextHopASBehaviour BEHAVIOUR
          DEFINED AS
          !The Autonomous System Number of the Next Hop.
          When  this  is  unknown  or not relevant to
          the protocol indicated by ipForwardProto, zero.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 10};

ipForwardNumber ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": gauge32;
     BEHAVIOUR
          ipForwardNumberBehaviour BEHAVIOUR
          DEFINED AS
          !The number of current ipForwardTable entries
          that are not invalid.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 1};

ipForwardMetric1 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardMetric1Behaviour BEHAVIOUR
          DEFINED AS
          !The primary routing  metric  for  this  route.
          The  semantics of this metric are determined
          by the routing-protocol specified in  the
          route's ipForwardProto  value.   If this metric
          is not used, its value should be set to -1.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 11};


ipForwardMetric2 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardMetric2Behaviour BEHAVIOUR
```

```
          DEFINED AS
          !An alternate routing metric  for  this  route.
          The  semantics of this metric are determined
          by the routing-protocol specified in  the
          route's ipForwardProto  value.   If this metric
          is not used, its value should be set to -1.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 12};

ipForwardMetric3 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardMetric3Behaviour BEHAVIOUR
          DEFINED AS
          !An alternate routing metric  for  this  route.
          The  semantics of this metric are determined
          by the routing-protocol specified in the
          route's ipForwardProto  value.   If this metric
          is not used, its value should be set to -1.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 13};

ipForwardMetric4 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardMetric4Behaviour BEHAVIOUR
          DEFINED AS
          !An alternate routing metric  for  this  route.
          The  semantics of this metric are determined
          by the routing-protocol specified in the
          route's ipForwardProto  value.   If this metric
          is not used, its value should be set to -1.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 14};

ipForwardMetric5 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardMetric5Behaviour BEHAVIOUR
          DEFINED AS
          !An alternate routing metric  for  this  route.
          The  semantics of this metric are determined
          by the routing-protocol specified in  the
          route's ipForwardProto  value.   If this metric
          is not used, its value should be set to -1.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 15};

ipForwardPolicy ATTRIBUTE
     DERIVED FROM
          OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR    EQUALITY, ORDERING;
```

```
     BEHAVIOUR
          ipForwardPolicyBehaviour BEHAVIOUR
          DEFINED AS
          !The general set of conditions that
          would cause the  selection  of  one multipath
          route (set of next hops for a given destination)
          is  referred to as 'policy'.

              Unless the mechanism indicated by
          ipForwardProto specifies otherwise, the policy
          specifier is the IP TOS Field.  The encoding of
          IP TOS is as specified  by  the  following
          convention.  Zero indicates the default path if
          no more  specific policy applies.

        +-----+-----+-----+-----+-----+-----+-----+-----+
        |                 |                 |           |
        |   PRECEDENCE    | TYPE OF SERVICE |     0     |
        |                 |                 |           |
        +-----+-----+-----+-----+-----+-----+-----+-----+

               IP TOS                    IP TOS
         Field         Policy       Field        Policy
        Contents       Code         Contents     Code
         0 0 0 0  ==>   0                0 0 0 1  ==>   2
         0 0 1 0  ==>   4                0 0 1 1  ==>   6
         0 1 0 0  ==>   8                0 1 0 1  ==>  10
         0 1 1 0  ==>  12                0 1 1 1  ==>  14
         1 0 0 0  ==>  16                1 0 0 1  ==>  18
         1 0 1 0  ==>  20                1 0 1 1  ==>  22
         1 1 0 0  ==>  24                1 1 0 1  ==>  26
         1 1 1 0  ==>  28                1 1 1 1  ==>  30

         Protocols defining 'policy' otherwise must  ei-
         ther define a set of values which are valid for
         this  object  or  must  implement  an  integer-
         instanced  policy table for which this object's
         value acts as an index.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 3};

ipForwardProto ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IpForwardProto;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardProtoBehaviour BEHAVIOUR
          DEFINED AS
          !The routing mechanism via which this route
          was learned.  Inclusion of values for gateway
          routing protocols is not  intended  to  imply
          that hosts should support those protocols.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 7};

ipForwardType ATTRIBUTE
```

```
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IpForwardType;
     MATCHES FOR    EQUALITY, ORDERING;
     BEHAVIOUR
          ipForwardTypeBehaviour BEHAVIOUR
          DEFINED AS
          !The type of route.  Note that local(3)  refers
          to  a route for which the next hop is the final
          destination; remote(4) refers to  a  route  for
          which the next hop is not the final destination.

          Setting this object to the value invalid(2) has
          the  effect  of  invalidating the corresponding
          entry in the ipForwardTable object.   That  is,
          it  effectively  disassociates  the destination
          identified with said entry from the route
          identified with said entry.  It is an
          implementation-specific matter  as  to
          whether the agent removes an invalidated
          entry from the table.  Accordingly,
          management  stations  must be prepared to
          receive tabular information from agents that
          corresponds to entries not currently  in  use.
          Proper interpretation of such entries requires
          examining the relevant ipForwardType object.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 24 2  1 6};

ipForwDatagrams ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipForwDatagramsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipForwDatagrams with
          object id {ip 6} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 6};

ipFragCreates ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipFragCreatesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipFragCreates with object
          id {ip 19} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 19};

ipFragFails ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipFragFailsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipFragFails with object id
          {ip 18} in RFC1213. See RFC 1213 for attribute
```

```
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 18};

ipFragOKs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipFragOKsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipFragOKs with object id
          {ip 17} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 17};

ipInAddrErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInAddrErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInAddrErrors with object
          id {ip 5} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 5};

ipInDelivers ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInDeliversBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInDelivers with object id
          {ip 9} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 9};

ipInDiscards ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInDiscardsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInDiscards with object id
          {ip 8} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 8};

ipInHdrErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInHdrErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInHdrErrors with object
          id {ip 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 4};

ipInReceives ATTRIBUTE
```

```
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInReceivesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInReceives with object id
          {ip 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 3};

ipInUnknownProtos ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipInUnknownProtosBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipInUnknownProtos with
          object id {ip 7} in RFC123. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 7};

ipNetToMediaIfIndex ATTRIBUTE
     WITH ATTRIBUTE SYNTAX    OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipNetToMediaIfIndexBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipNetToMediaIfIndex with
          object id {ipNetToMediaEntry 1} in RFC1213. See
          RFC 1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 22 1 1};

ipNetToMediaNetAddress ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipNetToMediaNetAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipNetToMediaNetAddress
          with object id {ipNetToMediaEntry 3} in RFC1213.
          See RFC 1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 22 1 3};

ipNetToMediaPhysAddress ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
               OIMRFC1213ProxyASN1.PhysAddress;
     MATCHES FOR      EQUALITY, SUBSTRINGS;
     BEHAVIOUR
          ipNetToMediaPhysAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipNetToMediaPhysAddress
          with object id {ipNetToMediaEntry 2} in RFC1213.
          See RFC 1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 22 1 2};

ipNetToMediaType ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
```

```
          OIMRFC1213ProxyASN1.IpNetToMediaType;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ipNetToMediaTypeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipNetToMediaType with
          object id {ipNetToMediaEntry 4} in RFC1213. See
          RFC 1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 22 1 4};

ipOutDiscards ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipOutDiscardsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipOutDiscards with object
          id ip 11} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 11};

ipOutNoRoutes ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipOutNoRoutesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipOutNoRoutes with object
          id {ip 12} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 12};

ipOutRequests ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipOutRequestsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipOutRequests with object
          id {ip 10}. See RFC 1213 for semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 10};

ipReasmFails ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipReasmFailsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipReasmFails with objects
          id {ip 16} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 16};

ipReasmOKs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipReasmOKsBehaviour BEHAVIOUR
          DEFINED AS
```

```
          !This attribute maps to ipReasmOKs with object id
          {ip 15} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 15};

ipReasmReqds ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipReasmReqdsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipReasmReqds with object id
          {ip 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 4};

ipReasmTimeout ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipReasmTimeoutBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipReasmTimeout with object
          id {ip 13} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 13};

ipRouteAge ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteAgeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteAge with object id
          {ipRouteEntry 10} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 10};

ipRouteDest ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipRouteDestBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteDest with object id
          {ipRouteEntry 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 1};

ipRouteIfIndex ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteIfIndexBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteIfIndex with object
```

```
          id {ipRouteEntry 2} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 2};

ipRouteInfo ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.ObjectIdentifier;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ipRouteInfoBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteInfo with object id
          {ipRouteEntry 13} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 13};

ipRouteMask ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipRouteMaskBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteMask with object id
          {ipRouteEntry 11} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 11};

ipRouteMetric1 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteMetric1Behaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteMetric1 with object
          id {ipRouteEntry 3} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 3};

ipRouteMetric2 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteMetric2Behaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteMetric with object
          id {ipRouteEntry 4} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 4};

ipRouteMetric3 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteMetric3Behaviour BEHAVIOUR
          DEFINED AS
```

```
          !This attribute maps to ipRouteMetric3 with object
          id {ipRouteEntry 5} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 5};

ipRouteMetric4 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteMetric4Behaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteMetric4 with object
          id {ipRouteEntry 6} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 6};

ipRouteMetric5 ATTRIBUTE
     WITH ATTRIBUTE SYNTAX   OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          ipRouteMetric5Behaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteMetric5 with object
          id {ipRouteEntry 12} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 12};

ipRouteNextHop ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          ipRouteNextHopBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteNextHop with object
          id {ipRouteEntry 7} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 7};

ipRouteProto ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IpRouteProto;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          ipRouteProtoBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteProto with object id
          {ipRouteEntry 9} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 9};

ipRouteType ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.IpRouteType;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
```

```
          ipRouteTypeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRouteType with object id
          {ipRouteEntry 8} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 21 1 8};

ipRoutingDiscards ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          ipRoutingDiscardsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to ipRoutingDiscards with
          object id {ip 23} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 4 23};

snmpEnableAuthenTraps   ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.SnmpEnableAuthenTraps;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          snmpEnableAuthenTrapsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpEnableAuthenTraps
          with object id {snmp 30} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 30};

snmpInASNParseErrs      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInASNParseErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInASNPareErrs with
          object id {snmp 6} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 6};

snmpInBadCommunityNames ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInBadCommunityNamesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to
          snmpInBadCommunityNames with object id {snmp
          4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 4};

snmpInBadCommunityUses  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInBadCommunityUsesBehaviour BEHAVIOUR
```

```
          DEFINED AS
          !This attribute maps to snmpInBadCommunityUses
          with object id {snmp 5} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 5};

snmpInBadValues ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInBadValuesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInBadValues with
          object id {snmp 10} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 10};

snmpInBadVersions       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInBadVersionsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInBadVersions
          with object id {snmp 3} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 3};

snmpInGenErrs   ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInGenErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInGenErrs with
          object id {snmp 12} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 12};

snmpInGetNexts  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInGetNextsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInGetNexts with
          object id {snmp 16} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 16};

snmpInGetRequests       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInGetRequestsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInGetRequests
          with object id {snmp 15} in RFC1213. See RFC 1213
          for attribute semantics.!;;
```

```
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 15};

snmpInGetResponses      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInGetResponsesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInGetResponses
          with object id {snmp 18} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 18};

snmpInNoSuchNames       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInNoSuchNamesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInNoSuchNames
          with object id {snmp 9} in RFC1213. See RFC 1213
          for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 9};

snmpInPkts      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInPkts with object id
          {snmp 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 1};

snmpInReadOnlys ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInReadOnlysBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to the snmpInReadOnlys with
          object id {snmp 11} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 11};

snmpInSetRequests       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInSetRequestsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInSetRequests with
          object id {snmp 17} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 17};

snmpInTooBigs   ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
```

```
     BEHAVIOUR
          snmpInTooBigsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInTooBigs with object
          id {snmp 8} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 8};

snmpInTotalReqVars      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInTotalReqVarsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInTotalReqVars with
          object id {snmp 13} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 13};

snmpInTotalSetVars      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInTotalSetVarsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInTotalSetVars with
          object id {snmp 14} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 14};

snmpInTraps     ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpInTrapsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpInTraps with object id
          {snmp 19}. See RFC 1213 for semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 19};

snmpOutBadValues        ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutBadValuesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutBadValues with
          object id {snmp 22} in RFC1213.See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 22};

snmpOutGenErrs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutGenErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutGenErrs with object
          id {snmp 24} in RFC1213. See RFC 1213 for
```

```
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 24};

snmpOutGetNexts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutGetNextsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutGetNexts with
          object id {snmp 26} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 26};

snmpOutGetRequests      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutGetRequestsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutGetRequests with
          object id {snmp 25} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 25};

snmpOutGetResponses     ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutGetResponsesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutGetResponses with
          object id {snmp 28} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 28};

snmpOutNoSuchNames      ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutNoSuchNamesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutNoSuchNames with
          object id {snmp 21} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 21};

snmpOutPkts     ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutPktsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutPkts with object id
          {snmp 2} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 2};

snmpOutSetRequests      ATTRIBUTE
```

```
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutSetRequestsBehaviour BEHAVIOUR
          DEFINED AS
          !This attributes maps to snmpOutSetRequests with
          object id {snmp 27} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 27};

snmpOutTooBigs  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutTooBigsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutTooBigs with object
          id {snmp 20} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 20};

snmpOutTraps    ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          snmpOutTrapsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to snmpOutTraps with object
          id {snmp 29} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 11 29};

sysContact ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :displayString;
     BEHAVIOUR
          sysContactBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to sysContact with object id
          {system 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 4};

sysDescr ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :displayString;
     BEHAVIOUR
          sysDescrBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to sysDescr with object id
          {system 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 1};

sysLocation     ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :displayString;
     BEHAVIOUR
          sysLocationBehaviour BEHAVIOUR
          DEFINED AS
```

```
          !This attribute maps to sysLocation with object id
          {system 6} in RFC 1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 6};

sysName         ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :displayString;
     BEHAVIOUR
          sysNameBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to sysName with object id
          {system 5} in RFC1213. See RFC 1213 for attribute
          semantics. Usually the node's domain name.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 5};

sysObjectId     ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.ObjectIdentifier;
     MATCHES FOR                EQUALITY;
     BEHAVIOUR
          sysObjectIdBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to sysObjectId with object id
          {system 2} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 2};

sysServices     ATTRIBUTE
     WITH ATTRIBUTE SYNTAX OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR  EQUALITY, ORDERING;
     BEHAVIOUR
          sysServicesBehaviour BEHAVIOUR
          DEFINED AS
          !This attribite maps to sysServices with object id
          {system 7}. See RFC 1213 for semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 7};

sysUpTime       ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": TimeTicks;
     BEHAVIOUR
          sysUpTimeBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to sysUpTime with object id
          {system 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 1 3};

tcpActiveOpens ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpActiveOpensBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpActiveOpens with object
          id {tcp 5} in RFC1213. See RFC 1213 for attribute
```

```
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 5};

tcpAttemptFails  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpAttemptFailsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpAttemptFails with object
          id {tcp 7} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 7};

tcpConnLocalAddress ATTRIBUTE
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          tcpConnLocalAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpConnLocalAddress with
          object id {tcpConnEntry 2} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 13 1};

tcpConnLocalPort ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer64k;
    MATCHES FOR      EQUALITY, ORDERING;
    BEHAVIOUR
          tcpConnLocalPortBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpConnLocalPort with
          object id {tcpConnEntry 3} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 13 3};


tcpConnRemAddress ATTRIBUTE
    DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
    BEHAVIOUR
          tcpConnRemAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpConnRemAddress with
          object id {tcpConnEntry 4} in RFC1213. See RFC
          1213 for attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 13 4};

tcpConnRemPort  ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer64k;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          tcpConnRemPortBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpConnRemPort with object
```

```
          id {tcpConnEntry 5} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 13 5};

tcpConnState ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.TcpConnState;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          tcpConnStateBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpConnState with object id
          {tcpConnEntry 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 13 1};

tcpCurrEstab ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS": gauge32;
     BEHAVIOUR
          tcpCurrEstabBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpCurrEstab with object id
          {tcp 9} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 9};

tcpEstabResets ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpEstabResetsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpEstabResets with object
          id {tcp 8} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 8};

tcpInErrs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpInErrsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpInErrs with object id
          {tcp 14} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 14};

tcpInSegs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpInSegsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpInSegs with object id
          {tcp 10} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
```

```
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 10};

tcpMaxConn ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          tcpMaxConnBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps ti tcpMaxConn with object id
          {tcp 4} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 4};

tcpOutRsts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpOutRstsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpOutRsts with object id
          {tcp 15} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 15};

tcpOutSegs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpOutSegsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpOutSegs with object id
          {tcp 11} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 11};

tcpPassiveOpens  ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpPassiveOpensBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpPassiveOpens with object
          id {tcp 6} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 6};

tcpRetransSegs ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          tcpRetransSegsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpRetransSegs with object
          id {tcp 12} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 12};

tcpRtoAlgorithm ATTRIBUTE
```

```
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.TcpRtoAlgorithm;
     MATCHES FOR      EQUALITY;
     BEHAVIOUR
          tcpRtoAlgorithmBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpRtoAlgorithm with object
          id {tcp 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 1};

tcpRtoMax  ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          tcpRtoMaxBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpRtoMax with object id
          {tcp 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 3};

tcpRtoMin ATTRIBUTE
     WITH ATTRIBUTE SYNTAX  OIMRFC1213ProxyASN1.Integer;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          tcpRtoMinBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to tcpRtoMin with object id
          {tcp 2} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 6 2};

udpInDatagrams ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          udpInDatagramsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpInDatagrams with object
          id {udp 1} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 1};

udpInErrors ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32
     BEHAVIOUR
          udpInErrorsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpInErrors with object id
          {udp 3} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 3};

udpLocalAddress ATTRIBUTE
```

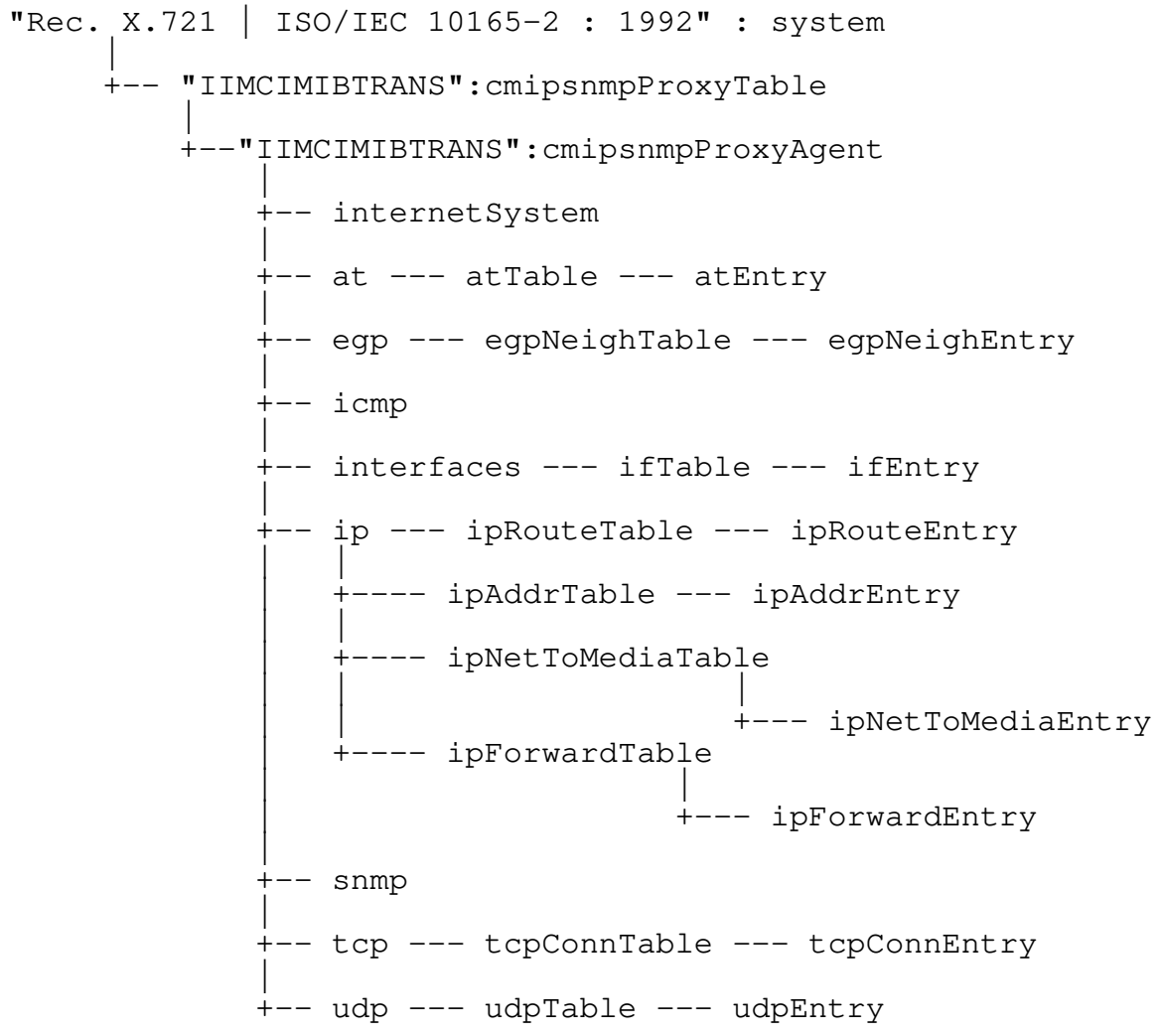
```
     DERIVED FROM   "IIMCIMIBTRANS":ipAddress;
     BEHAVIOUR
          udpLocalAddressBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpLocalAddress with
          object id {udpEntry 1} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 5 1 1};

udpLocalPort ATTRIBUTE
     WITH ATTRIBUTE SYNTAX
          OIMRFC1213ProxyASN1.Integer64k;
     MATCHES FOR      EQUALITY, ORDERING;
     BEHAVIOUR
          udpLocalPortBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpLocalPort with object id
          {udpEntry 2} in RFC 1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 5 1 2};

udpNoPorts ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          udpNoPortsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpNoPorts with object id
          {udp 2} in RFC1213. See RFC 1213 for attribute
          semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 2};

udpOutDatagrams ATTRIBUTE
     DERIVED FROM "IIMCIMIBTRANS" :counter32;
     BEHAVIOUR
          udpOutDatagramsBehaviour BEHAVIOUR
          DEFINED AS
          !This attribute maps to udpOutDatagrams with
          object id {udp 4} in RFC1213. See RFC 1213 for
          attribute semantics.!;;
REGISTERED AS {cmipsnmpProxyIMIB 2 1 7 4};
```

## 4. Notifications

No traps have been specified in Internet MIB-II [RFC1213].

## 5. The Containment Hierarchy

A Naming Tree diagram for OIM MIB-II managed object classes is illustrated below. Although the ISO/CCITT "system" object class is shown to be the root of the tree, other object classes may be used.




Name Binding templates that define the containment hierarchy for the ISO/CCITT MIB-II managed object classes are listed here in alphabetical order. The object identifier {cmipsnmpProxyNB} is defined in [IIMCIMIBTRANS]. Also defined in that document is the convention for creating OIDs for name bindings:

- Replace the {cmipsnmpProxyIMIB} portion of the ISO/CCITT defined OID for the object class, ..., with {cmipsnmpProxyNB <sub-dentifier>}. The integer <sub-identifier> is used to distinguish possible multiple name bindings for the same object class. Sub-identifier values shall be greater than or

equal to 1.

Since this defines the first name binding for each object defined in this MIB, the <integer> is 1. Consequently, all name binding OIDs begin with {cmipsnmpProxyNB 1}

```
at-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     at
                                      AND SUBCLASSES ;
            NAMED BY SUPERIOR OBJECT CLASS
                  "IIMCIMIBTRANS":cmipsnmpProxyAgent
                                      AND SUBCLASSES;
            WITH ATTRIBUTE
                        "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 3 };

atEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     atEntry
                                      AND SUBCLASSES ;
            NAMED BY SUPERIOR OBJECT CLASS  atTable
                                      AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            CREATE     WITH-AUTOMATIC-INSTANCE-NAMING;
            DELETE     DELETES-CONTAINED-OBJECTS;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 3 1 1};

atTable-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     atTable
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS   at
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 3 1};

egp-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     egp
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                  "IIMCIMIBTRANS":cmipsnmpProxyAgent
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 8 };

egpNeighEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS egpNeighEntry
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                           egpNeighTable
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
```

```
                CREATE     WITH-AUTOMATIC-INSTANCE-NAMING;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 8 5 1};

egpNeighTable-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     egpNeighTable
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS      egp
                                AND SUBCLASSES;
                WITH ATTRIBUTE
                      "IIMCIMIBTRANS": internetClassId;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 8 5};

icmp-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     icmp
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS
                      "IIMCIMIBTRANS":cmipsnmpProxyAgent
                                    AND SUBCLASSES;
                WITH ATTRIBUTE
                      "IIMCIMIBTRANS": internetClassId;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 5 };

ifEntry-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     ifEntry
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS   ifTable
                                    AND SUBCLASSES;
                WITH ATTRIBUTE
                      "IIMCIMIBTRANS": internetClassId;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 2 2 1};

ifTable-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     ifTable
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS  interfaces
                                    AND SUBCLASSES;
                WITH ATTRIBUTE
                      "IIMCIMIBTRANS": internetClassId;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 2 2};

interfaces-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     interfaces
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS
                      "IIMCIMIBTRANS":cmipsnmpProxyAgent
                                AND SUBCLASSES;
                WITH ATTRIBUTE "IIMCIMIBTRANS": internetClassId;
                REGISTERED AS { cmipsnmpProxyNB 1 2 1 2 };

internetSystem-NB  NAME BINDING
                SUBORDINATE OBJECT CLASS     internetSystem
                                    AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS
                      "IIMCIMIBTRANS":cmipsnmpProxyAgent
```

```
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 1 };

ip-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     ip AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                  "IIMCIMIBTRANS":cmipsnmpProxyAgent
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 4};

ipAddrEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     ipAddrEntry
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS  ipAddrTable
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 20 1};

ipAddrTable-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     ipAddrTable
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS   ip
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 20};

ipForwardEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     ipForwardEntry
                                AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                              ipForwardTable
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS":internetClassId;
            CREATE          WITH-REFERENCE-OBJECT,
                         WITH-AUTOMATIC-INSTANCE-NAMING;
            DELETE     DELETES-CONTAINED-OBJECTS;
       REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 24 2  1};

ipForwardTable-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     ipForwardTable
                                AND SUBCLASSS;
            NAMED BY SUPERIOR OBJECT CLASS   ip
                                AND SUBCLASSES;
            WITH ATTRIBUTE "IIMCIMIBTRANS":internetClassId;
   REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 24 2 };
```

```
ipNetToMediaEntry-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     ipNetToMediaEntry
                                 AND SUBCLASSES;
              NAMED BY SUPERIOR OBJECT CLASS
                        ipNetToMediaTable
                                 AND SUBCLASSES;
              WITH ATTRIBUTE
                    "IIMCIMIBTRANS": internetClassId;
              CREATE      WITH-AUTOMATIC-INSTANCE-NAMING;
              DELETE     DELETES-CONTAINED-OBJECTS;
              REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 22 1};

ipNetToMediaTable-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     ipNetToMediaTable
                                 AND SUBCLASSES;
              NAMED BY SUPERIOR OBJECT CLASS  ip
                                 AND SUBCLASSES;
              WITH ATTRIBUTE
                    "IIMCIMIBTRANS": internetClassId;
              REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 22};

ipRouteEntry-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     ipRouteEntry
                                 AND SUBCLASSES;
              NAMED BY SUPERIOR OBJECT CLASS  ipRouteTable
                                 AND SUBCLASSES;
              WITH ATTRIBUTE
                    "IIMCIMIBTRANS": internetClassId;
              CREATE      WITH-REFERENCE-OBJECT,
                         WITH-AUTOMATIC-INSTANCE-NAMING;
              DELETE     DELETES-CONTAINED-OBJECTS;
              REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 21 1};

ipRouteTable-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     ipRouteTable
                                 AND SUBCLASSES;
              NAMED BY SUPERIOR OBJECT CLASS   ip
                                 AND SUBCLASSES;
              WITH ATTRIBUTE
                    "IIMCIMIBTRANS": internetClassId;
              REGISTERED AS { cmipsnmpProxyNB 1 2 1 4 21};

snmp-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     snmp
                                 AND SUBCLASSES;
              NAMED BY SUPERIOR OBJECT CLASS
                    "IIMCIMIBTRANS": cmipsnmpProxyAgent
                                 AND SUBCLASSES;
              WITH ATTRIBUTE
                    "IIMCIMIBTRANS": internetClassId;
              REGISTERED AS { cmipsnmpProxyNB 1 2 1 11};

tcp-NB  NAME BINDING
              SUBORDINATE OBJECT CLASS     tcp
```

```
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                  "IIMCIMIBTRANS":cmipsnmpProxyAgent
                              AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 6 };

tcpConnEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     tcpConnEntry
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                        tcpConnTable
                              AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            CREATE      WITH-AUTOMATIC-INSTANCE-NAMING;
            DELETE     DELETES-CONTAINED-OBJECTS;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 6 13 1};

tcpConnTable-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     tcpConnTable
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS      tcp
                              AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 6 13};

udp-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     udp
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS
                  "IIMCIMIBTRANS":cmipsnmpProxyAgent
                              AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 7};

udpEntry-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     udpEntry
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS      udpTable
                              AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            CREATE     WITH-AUTOMATIC-INSTANCE-NAMING;
            DELETE     DELETES-CONTAINED-OBJECTS;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 7 5 1};

udpTable-NB  NAME BINDING
            SUBORDINATE OBJECT CLASS     udpTable
                              AND SUBCLASSES;
            NAMED BY SUPERIOR OBJECT CLASS  udp
```

```
                                AND SUBCLASSES;
            WITH ATTRIBUTE
                  "IIMCIMIBTRANS": internetClassId;
            REGISTERED AS { cmipsnmpProxyNB 1 2 1 7 5 1};
```

## 6. ASN.1 Definitions

The OIMRFC1213ProxyASN1 contains the ASN.1 [ISO8824] syntax referenced by the attribute templates in 3. of this memo. The object identifier {cmipsnmpProxyPMIBMOD} is defined in [IIMCIMIBTRANS].

```
OIMRFC1213ProxyASN1 {cmipsnmpProxyPMIBMOD 4}
DEFINITIONS ::=
BEGIN
IMPORTS   cmipsnmpProxyIMIB, cmipsnmpProxyNB,
          cmipsnmpProxyPMIBMOD
               FROM CmipsnmpProxyAssignedOIDs;
EXPORTS ; --     Everything

--  Generic syntax

Integer ::= INTEGER

OctetString ::= OCTET STRING

ObjectIdentifier ::= OBJECT IDENTIFIER

--  MIB specific syntax

EgpNeighEventTrigger     ::= INTEGER    {
                                        start(1),
                                        stop(2)
                                        }

EgpNeighMode    ::= INTEGER   {
                                active(1),
                                passive(2)
                               }

EgpNeighState   ::= INTEGER   {
                                idle(1),
                                acquisition(2),
                                down(3),
                                up(4),
                                cease(5)
                                }


Integer128      ::= INTEGER (0..127)

Integer64k      ::= INTEGER (0..65535)
```

```
IfAdminStatus   ::= INTEGER {
                            up(1),  -- ready to pass packets
                            down(2),
                            testing(3)  -- in some test mode
                             }

IfOperStatus    ::= INTEGER   {
                             up(1),  -- ready to pass packets
                             down(2),
                             testing(3)  -- in some test mode
                              }

IfType ::=     INTEGER   {
                         other(1),  -- none of the following
                         regular1822(2),
                         hdh1822(3),
                         ddn-x25(4),
                         rfc877-x25(5),
                         ethernet-csmacd(6),
                         iso88023-csmacd(7),
                         iso88024-tokenBus(8),
                         iso88025-tokenRing(9),
                         iso88026-man(10),
                         starLan(11),
                         proteon-10Mbit(12),
                         proteon-80Mbit(13),
                         hyperchannel(14),
                         fddi(15),
                         lapb(16),
                         sdlc(17),
                         ds1(18),
                         e1(19), -- european equivalent of T-1
                         basicISDN(20),
                         primaryISDN(21),-- proprietary serial
                         propPointToPointSerial(22),
                         ppp(23),
                         softwareLoopback(24),
                         eon(25),  -- CLNP over IP
                         ethernet-3Mbit(26),
                         nsip(27),  -- XNS over IP
                         slip(28),  -- generic SLIP
                         ultra(29),  -- ULTRA technologies
                         ds3(30),  -- T-3
                         sip(31),  -- SMDS
                         frame-relay(32)
                         }

IpForwarding    ::= INTEGER   {
                forwarding(1),-- acting as a gateway
                not-forwarding(2)  -- NOT acting as a gateway
                                  }

IpForwardType ::= INTEGER {
```

```
                other    (1), -- not specified by this MIB
                invalid  (2), -- logically deleted
                local    (3), -- local interface
                remote   (4)  -- remote destination
                         }

IpForwardProto ::=  INTEGER {
                other     (1),  -- not specified
                local     (2),  -- local interface
                netmgmt   (3),  -- static route
                icmp      (4),  -- result of ICMP Redirect

                          -- the following are all dynamic
                          -- routing protocols
                egp       (5), -- Exterior Gateway Protocol
                ggp       (6),  -- Gateway-Gateway Protocol
                hello     (7),  -- FuzzBall HelloSpeak
                rip       (8),  -- Berkeley RIP or RIP-II
                is-is     (9),  -- Dual IS-IS
                es-is     (10), -- ISO 9542
                ciscoIgrp (11), -- Cisco IGRP
                bbnSpfIgp (12), -- BBN SPF IGP
                ospf      (13), -- Open Shortest Path First
                bgp       (14), -- Border Gateway Protocol
                idpr      (15)
                         -- InterDomain Policy Routing
                      }

IpNetToMediaType ::= INTEGER {
                       other(1),  -- none of the following
                       invalid(2),  -- an invalidated mapping
                       dynamic(3),
                       static(4)
                         }

IpRouteProto    ::= INTEGER   {
                       other(1),   -- none of the following
                       local(2),   -- configured entries
                       netmgmt(3),  -- mgmt protocol
                       icmp(4),    -- obtained via ICMP,
                                    -- e.g., redirect
                       egp(5),
                       ggp(6),
                       hello(7),
                       rip(8),
                       is-is(9),
                       es-is(10),
                       ciscoIgrp(11),
                       bbnSpfIgp(12),
                       ospf(13),
                       bgp(14)
                        }

IpRouteType     ::= INTEGER   {
```

```
                    other(1),   -- none of the
                                -- following
                    invalid(2),  -- an invalidated
                                -- route
                    direct(3),      -- route to directly
                                -- connected
                                -- subnetwork
                    indirect(4)  -- route to a
                                -- non-local
                                -- host/network/
                                -- subnet
                                            }

PhysAddress     ::= OCTET STRING


TcpConnState    ::= INTEGER {
                                    closed(1),
                                    listen(2),
                                    synSent(3),
                                    synReceived(4),
                                    established(5),
                                    finWait1(6),
                                    finWait2(7),
                                    closeWait(8),
                                    lastAck(9),
                                    closing(10),
                                    timeWait(11),
                                    deleteTCP(12) }

TcpRtoAlgorithm  ::= INTEGER  {
                        other(1),     -- none of the
                                      -- following
                        constant(2),  -- a constant rto
                        rsre(3),      -- MIL-STD-1778,
                                      -- Appendix B
                        vanj(4)       -- Van Jacobsons alg.
                              }

END
```

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