ISO/CCITT and Internet Management Coexistence (IIMC):

ISO/CCITT to Internet Management Security

(IIMCSEC)

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Status of this Memo

This document provides information to the network and systems management community. This document is intended as a contribution to ongoing work in the area of multi-protocol management coexistence and interworking. This document is part of a package; see also [IIMCOMIBTRANS] [IIMCMIB-II] [IIMCPROXY] and [IIMCIMIBTRANS]. Distribution of this document is unlimited. Comments should be sent to the Network Management Forum IIMC working group (iimc@thumper.bellcore.com).

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Abstract

This document is intended to facilitate the multi-protocol management coexistence and interworking for networks that are managed using the ISO/CCITT Common Management Information Protocol (CMIP) and networks that are managed using the Internet Simple Network Management Protocol (SNMP). This document defines the end-to-end security architecture, services, and mechanisms for use with ISO/CCITT-Internet proxies. This document also contains the ISO/CCITT GDMO definition and registration of the SNMP Parties MIB, derived from the Internet SNMP Parties MIB [27] according to the procedures defined in "Translation of Internet MIBs to ISO/CCITT GDMO MIBs" [32].

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REVISION HISTORY

Issue 1.0, October 1993

This is the first issue of this document. The internet draft <draft-labarre-iimc-party-04>, dated February, 1994, is identical in content to Issue 1.0, October 1993. It has been reformatted for posting as an internet draft.

1. INTRODUCTION

This section provides an overview of ISO/CCITT and Internet Management Coexistence (IIMC) activities, insight into the problem being addressed by IIMC, and a brief introduction to the strategy adopted by IIMC: use of translated MIBs in either a proxy or native implementation. The section concludes by describing the scope of this document, and terms and conventions used by this document.

1.1 PROBLEM STATEMENT

The need for enterprise network management has been addressed by development of network management standards within various communities, most notably the ISO/CCITT and Internet communities.

- The ISO/CCITT community developed the Common Management Information Protocol (CMIP) [6], and related SMI documents [8,9,10].

- The Internet community developed the Simple Network Management Protocol (SNMP) [19], and its successor, SNMPv2 [28]. The Internet SMI is defined in [18] and [24].

These standards share a nearly common management model, but diverge due to differing management philosophies. Although functionally similar, the Internet and ISO/CCITT protocols and SMIs differ in terms of their complexity and specific operations. Business requirements for end-to-end enterprise management include the need to integrate the management of many different devices, potentially owned or administered by many independent organizations. This requires components to be accessed 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.

For example, many 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) Version 1.0 [37], have based their enterprise management model on the ISO/CCITT management model. These organizations are particularly interested in integrated management of devices that use the Internet management. This interest is primarily due to the widespread commercial implementation and use of such devices, especially devices that use the Internet TCP/IP protocol suite.

1.2 OVERVIEW OF IIMC

The ISO/CCITT and Internet Management Coexistence (IIMC) package includes the following documents.

IIMCIMIBTRANS	Translation of Internet MIBs to ISO/CCITT GDMO MIBs [33]
IIMCOMIBTRANS	Translation of ISO/CCITT GDMO MIBs to Internet MIBs [32]
IIMCMIB-II	Translation of Internet MIB-II (RFC 1213) to ISO/CCITT GDMO MIB [30]

IIMCPROXY ISO/CCITT to Internet Management Proxy [31]

IIMCSEC ISO/CCITT to Internet Management Security

These documents together comprise a package aimed at integrating ISO/CCITT-based and Internet-based management systems.

IIMC specifications address the problem 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" [35]. The documents included in the IIMC package are the next level of detailed specifications which implement several of the methodologies identified in the strategy. Additional specifications may be defined in the future.

1.3 MIB TRANSLATION PROCEDURES

The foundation of IIMC is provided by a pair of Management Information Base (MIB) translation procedures.

- IIMCIMIBTRANS [24] specifies translation procedures for converting MIBs from Internet MIB macro format into ISO/CCITT GDMO template format.

- IIMCOMIBTRANS [33] specifies translation procedures for converting MIBs from ISO/CCITT GDMO template format into Internet MIB macro format.

The IIMC approach is to specify direct translation procedures which yield a pair of functionally-equivalent MIBs, as shown in Figure 1.

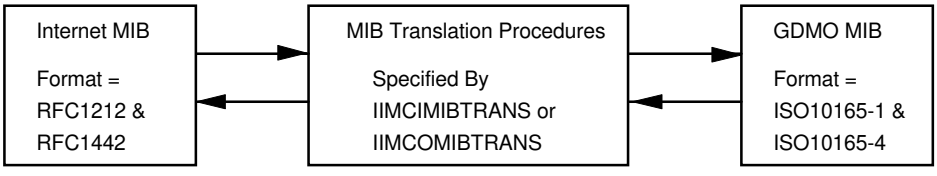


Figure 1. MIB translation.

MIBs translated by these procedures may be used to take advantage of existing MIB definitions when business needs require deployment in a different management environment. Translated MIBs may also be used to provide uniformity when multiple management environments are supported by a single system (e.g., dual stack managers). Finally, IIMC MIB translation procedures may be used to support service emulation by a proxy.

1.4 NATIVE MANAGEMENT MODEL

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

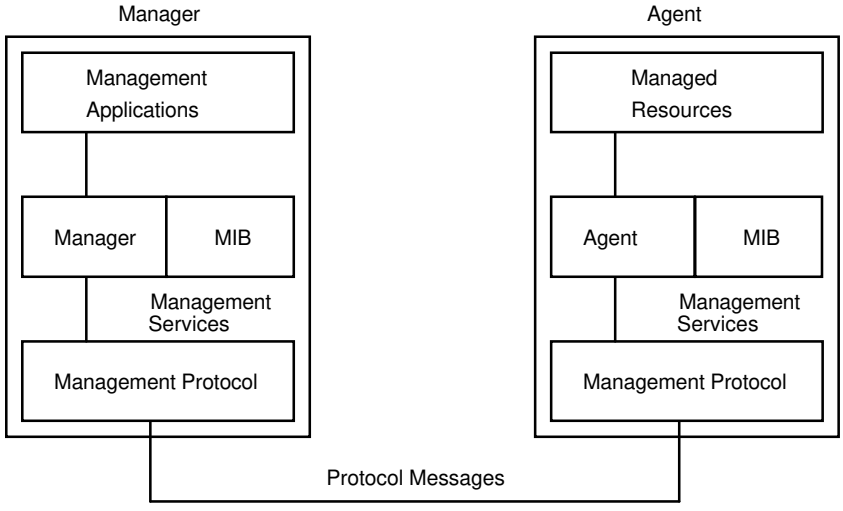


Figure 2. Native management.

Within IIMC documents, this model is referred to as the "native" management model. MIBs translated using IIMC procedures can be used by "native" agent implementations. For example, an ISO/CCITT agent can make visible TCP/IP managed resources using the translated GDMO version of the Internet MIB-II [21] specified by [30]. Dual-stack managers or agents may also be implemented which support both the original MIB and the translated MIB generated using IIMC-specified procedures.

1.5 PROXY MANAGEMENT MODEL

The basic model for ISO/CCITT to Internet proxy management is illustrated in the following diagram. This proxy is specified by [31]. A similar approach could also be taken to specify an Internet to ISO/CCITT proxy, although no such IIMC document is currently specified.

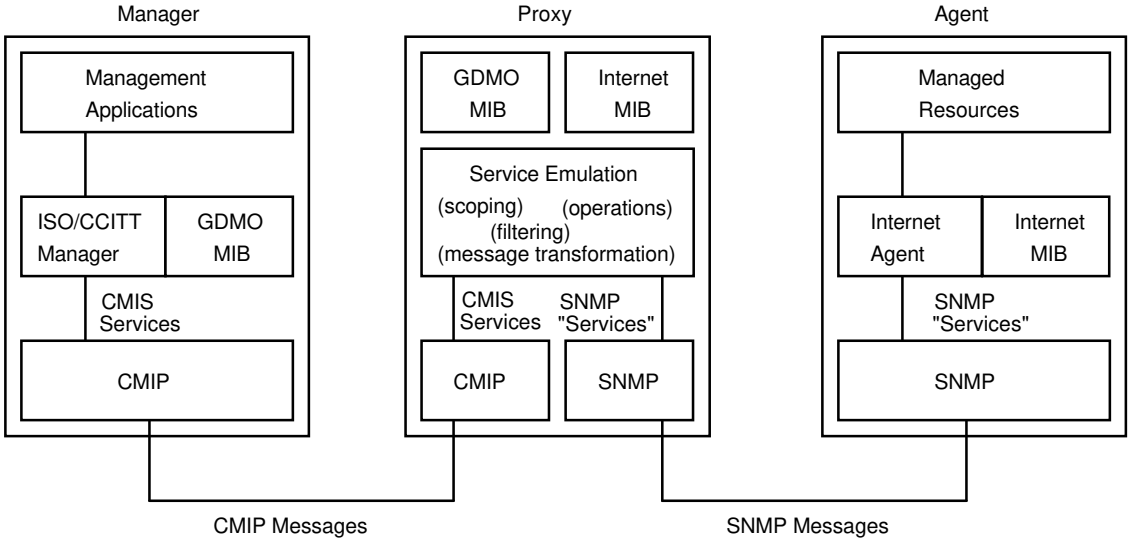


Figure 3. Proxy management.

This ISO/CCITT to Internet proxy 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 IIMCIMIBTRANS. The proxy uses these MIB definitions and rules to provide run-time translation of management information carried in service requests and responses.

The proxy 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 CMIP operations, and forwarding/logging of CMIS notifications by performing a mapping process which must be tailored for each protocol (for example, SNMPv1 and SNMPv2 are variants of the same protocol mapping process).

1.6 SCOPE OF THIS DOCUMENT

One of the IIMC objectives is to provide for the secure end-to-end management of resources managed using ISO/CCITT and Internet management services, protocols and SMI. Security and management by their very nature are entwined such that each needs the services of the other. Security services are required to protect management services. Management services are required to monitor and control security services.

This document (IIMCSEC) defines the security architecture for end-to-end security between an ISO/CCITT manager and an Internet agent via proxies such as that defined in [31]. The architecture requires that information required to support Internet security mechanisms from an end-to-end perspective, and to manage it, be translated into the ISO/CCITT SMI. This document applies the procedures described in [33] to the translation and registration of the Internet SNMP Parties MIB defined in [27].

This document primarily addresses issues concerning security architecture and interoperability of security mechanisms. Issues concerning trusted implementations, although important, are beyond the scope of this document.

1.7 TERMS AND CONVENTIONS

This document assumes that the reader is familiar with the ISO/CCITT SMI and Internet SMI, and the terminology of each. The term SNMP will be used throughout the document to indicate either SNMPv1 or SNMPv2, unless a distinction needs to be made.

This document assumes that the reader is familiar with the ISO/CCITT and Internet management security services, protocols and mechanisms.

This document assumes that the reader is familiar with the Internet to SMI translation procedures defined in [33].

Other terms and conventions used throughout this document are defined in Section 2.

2. SECURITY AND MANAGEMENT CONSIDERATIONS

Security and management are entwined by their very nature such that each needs the services of the other. Security services are needed to protect management services. Management services are needed to monitor and control security services. These considerations are briefly presented in this section. Additional background information can be found in ISO/IEC 7498-2, OSI Reference Model - Part 2: Security Architecture [38].

2.1 GENERAL CONSIDERATIONS

2.1.1 Security of Management

Management is most vulnerable to security attacks at the manager user interface, the communications path over which management messages are transmitted, and at the managed system that contains the resources being managed. Accordingly, management's security considerations are to overcome these threats by:

- Preventing unauthorized operator access to manager applications and associated management information contained in a manager workstation,
- Protecting management information in transit between managers and agents, and
- Enforcing management policy regarding access to information within the managed system.

Preventing unauthorized access to manager applications is beyond the scope of this document, and therefore will not be discussed. The characterization of the security threats in relation to the other two vulnerable areas are discussed more fully in the following sections.

2.1.2 Management of Security

Security requires management support for three basic activities:

- monitoring and control of security mechanisms,
- detection of security related events through security alarm generation, reporting and audit trail analysis, and
- damage assessment and recovery from a security attack.

Security mechanisms and algorithm resources are modeled as managed objects and the management information is stored in the management information base. The same management and security mechanisms used to manage non-security managed objects may be applied to the management of security objects, and the generation of security notifications associated with their operation.

2.1.3 Threat Characterization

Security threats for management are the same as for any distributed application. Security threats can be characterized as being active or passive. Active threats to a management system may effect changes to the state or operation of the managed resource. Examples of active threats are malicious changes to the routing tables of a system, or to the objects used to control decisions related to policies, such as security policies relating to resource access.

Active threats include:

- masquerade,
- modification and fabrication of messages and stored data,
- replay and reordering of messages, and
- denial of management services.

Passive threats are those which, if realized, would not result in any modifications to information contained in the system, e.g., management information, and where neither the operation nor the state of the system is changed.

Passive threats include:

- disclosure of message contents and stored data,
- traffic analysis, and
- repudiation.

2.1.3.1 Communications Path Security

The threats to the communications path used for manager to agent communications, and applicable security services include:

- modification and fabrication of management messages
    - integrity

- disclosure of management message data
    - confidentiality, selective field confidentiality

- replay and reordering of messages
    - integrity

- denial of management services
    - continuity of operations

- traffic analysis
    - confidentiality

Note that the communications path from the manager to an agent may be direct, or indirect via the management applications of an intermediate manager or proxy. In the indirect case, the portion of the message that must be exposed in the intermediate manager for the purpose of application layer relaying is subject to unauthorized disclosure and modification. Such entities must be trusted not to perform such modifications and not to disclose the contents of the management messages. Selective field confidentially services may be needed if intermediate managers or proxies are acting as application layer relays in the path. Such selective field

services allow only the information in management messages needed for application layer routing to be unprotected while preventing other fields in the message from disclosure or modification.

2.1.3.2 Managed System Security

The threats to the managed system include:

- masquerade of a manager application or operator
    - peer authentication, data origin authentication
- modification and fabrication of data residing in the management information base
    - access control, data integrity
- disclosure of management data in the managed system
    - access control, confidentiality
- repudiation of management requests at destination
    - non-repudiation at destination.

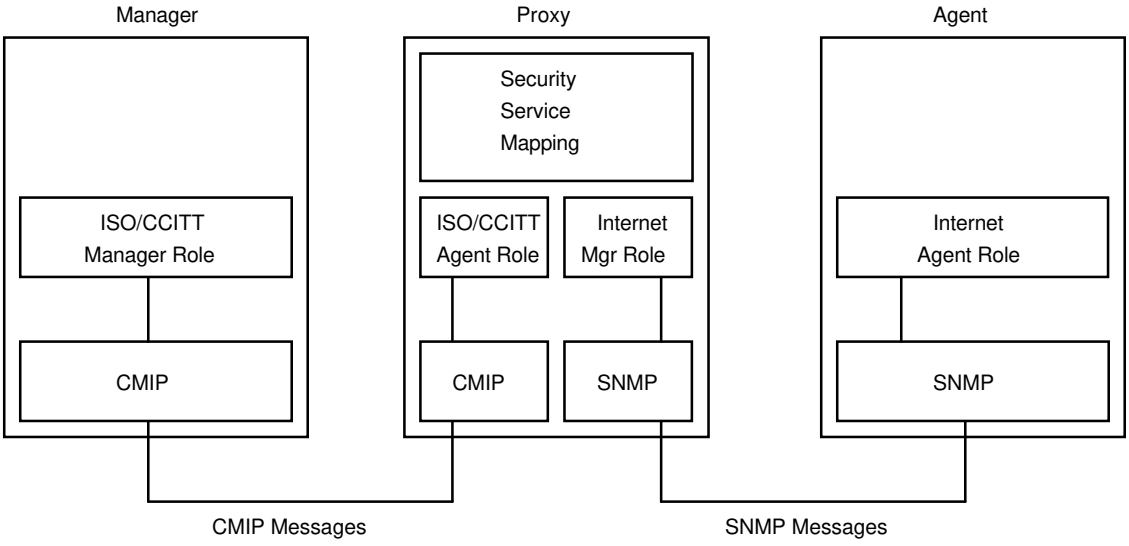
Non-repudiation services may be provided in circumstances where such accountability is needed. While the non-repudiation service does nothing to protect the network, it does provide the capability to trace the entities that are to be blamed for mis-management.

2.2 ISO/CCITT TO INTERNET SECURITY ENVIRONMENT

2.2.1 Security Model

The model for IIMC end-to-end security is illustrated in Figure 4. The objective is to provide continuity of security services from the ISO/CCITT Manager through to the Internet Agent. The end-to-end solution is constrained by the security services available at the Internet agent and those available at the ISO/CCITT Manager. The mapping of security services is provided by the ISO/CCITT-Internet proxy. The mapping of those services at the proxy depends upon the availability of the services and the compatibility of the mechanisms used to provide the services.

This figure illustrates the proxy in a separate device from the manager or the agent. If the proxy function is performed in the manager, then how the manager's internal security mechanisms map to Internet security services is beyond the scope of this document. If ISO management services and protocol are provided in the managed device (native CMIP agent), the ISO security services apply at the managed system. The mapping of any ISO security services that may still possibly apply at the internal proxy to Internet agent interface into equivalent Internet services, e.g., authentication and access control, is beyond the scope of this document.



- ISO peer authentication
- ISO data origin authentication*
- ISO integrity, confidentiality*
- Internet access control
- ISO access control+
- Internet data origin authentication#
- Internet integrity, confidentiality#
- Internet access control#

* OSI application layer standards [13,14,15,16] are in progress. These services may also be provided by lower layers in some environments, e.g., transport and network

SNMPv1 mechanisms differ

+ ISO access control may be applied by the proxy to GDMO objects, if enforcement is at the proxy.

Figure 4. IIMC End-to-end Security Model.

All security services do not have to be provided at the same layers in the protocol suites on the two external proxy interfaces. For example, integrity and confidentiality services may be applied at the transport or network layer at the interface to the ISO/CCITT manager, and at the application layer at the interface to the Internet agent. However, authentication and access control services should be provided at the application layer so that the same granularity of control may be achieved on both sides of the interface. For example, access should be controlled to the application user, and to the level of individual attributes within OSI objects.

Some security services may not be needed depending on the environment and the security policy. For example, data origin authentication and confidentiality services may not be needed between the proxy and ISO/CCITT manager if the two devices are close together and physical security is adequate to satisfy the security policy.

2.2.2 Security Capabilities

The basic security capabilities that should be met by an architecture for providing end-to-end security services are:

- enforcement of SNMPv1 security services at the agent (community string, and possibly source node address),

- enforcement of SNMPv2 security services at the agent (party/context based),

- enforcement of access control at the proxy using OSI access control mechanisms [7] for the ISO/CCITT managed objects derived from Internet objects for all proxied agents, and for the MIB specific to the proxy [31],

- OSI security services between the ISO/CCITT manager and the proxy, e.g., those provided by [13,14,15,16], and

- mapping of OSI security services into Internet security services, where possible, and forwarding from the ISO/CCITT manager of information needed for Internet security mechanisms.

2.2.3 Internet Management Security

The security services for Internet management differs depending on the version of SNMP (SNMPv1 or SNMPv2) used.

2.2.3.1 SNMPv1 Security

The SNMPv1 security relies on the transfer of an unprotected community string that represents the capabilities that the initiator has with respect to operations on a set of objects.

2.2.3.2 SNMPv2 Security

The SNMPv2 security architecture relies on the identification of distinct, globally unique, entities, called "parties", for peers that exchange SNMP messages [25]. Multiple parties may exist at the manager and at the agent.

Each distinct SNMPv2 peer is identified by a "party identifier", an OID. Associated with the party identifier are it's agent address, and parameters for access control, authentication, integrity and confidentiality services which may be used when communicating with other parties. Since parties form a peer relationship, these security service parameters for peer parties must be compatible.

The peer relationship between SNMPv2 parties is established via an associated "context", identified by an OID, which provides a means to identify constraints on valid management operations and access to associated resources (MIB objects). The context also specifies whether the constraints apply to local resources or to remote resources via a (yet another) proxy relationship.

The minimal SNMPv2 security service allowed is access control as specified by the source (srcParty), destination party (dstParty), and context identifiers. SNMPv2 requests that do not contain all three identifiers are discarded.

As discussed in 2.2.5, the access control scheme used by SNMP security can be considered a form of capability scheme.

2.2.4 Constraints on Mapping Security Services

The mapping of security services end-to-end is constrained by the security services available at the Internet agent. The possible application level security services at Internet agents is well defined for SNMPv1, and for SNMPv2. However, it cannot be assumed that all Internet agents will implement the full range of their defined security services, or that they are all required for any given environment.

Given the known potential availability of Internet security services at Internet agents, and at the Internet proxy, three major problems arise in proxy situations:

a) Selection from the security services available at the Internet proxy to Internet agent interface of those services that are appropriate to the threats at that interface, according to the established security policy.

b) Providing security services at the ISO manager to Internet proxy interface that are appropriate to the threats at that interface, according to the established security policy.

c) Transfer to the Internet proxy from the ISO manager of security parameters required for Internet proxy to Internet agent security.

Note: An exact mapping of security services between both Internet proxy interfaces may not be required. The environments at the two interfaces may be completely different, e.g., the manager and proxy may be in the same room while the agents are geographically distributed.

Assume the following environment and constraints.

i) The ISO/CCITT-Internet proxy is geographically remote from both the ISO/CCITT manager and the Internet agents, and the threats at both interfaces are the same.

ii) Only application level security services are used.

iii) The Internet agents and Internet proxy support the full range of security services defined for them. They include, for the respective SNMP versions:

Service	SNMPv1	SNMPv2
Peer Authentication	-	X
Data Origin Authentication	-	X
Access Control	X	X
Connectionless Integrity	-	X
Connectionless Confidentiality	-	X
Replay, Reorder Protection	-	X

Table 1. SNMP security services.

The first problem (a) can be solved by configuring the security parameters of the Internet agents and Internet proxy, either through local or remote management mechanisms.

The second problem (b) can be solved by implementing the appropriate OSI management services in the ISO/CCITT manager and ISO/CCITT-Internet proxy, and configuring the mechanisms to provide the service. This problem is complicated by the current lack of Stable

OSI security standards for data origin authentication, integrity, confidentiality, and access control. Future documents will describe how the stable versions of [7], Objects and Attributes for Access Control, will be applied to access control at the proxy, and [13,14,15,16], Generic Upper Layer Security, will be applied to provide data origin authentication, integrity, and confidentiality services between the ISO/CCITT manager and the proxy.

The third problem (c) can be solved by using an access control certificate to transfer the Internet security parameters. This problem is complicated by the current lack of a stable standard for access control certificates. Given the necessity for such transfers in proxy situations, an preliminary Access Control Certificate (ACC) will have to be used. However, an attempt should be made to align as closely as possible with proposed ISO standards.

2.2.5 SNMP Security and the ISO Access Control Framework

The SNMP access control schemes can be most nearly categorized as capability schemes using the definitions in the ISO Access Control Framework [12]. A capability defines a set of allowed operations that the initiator of the operation is allowed to perform on an identified set of targets.

The SNMPv1 scheme is a very weak capability scheme which uses the community string to identify which operations are permitted or not permitted on a set of objects. However the community string is not bound to the initiator, i.e., it may possibly be changed in transit. Proof of its authenticity can be inferred from the fact that the SNMPv1 agent is configured to have knowledge of the capabilities represented by the community string. In that sense, the person that configured the community string, either via local mechanisms, or via remote management mechanisms can be considered to provide the third party level of authenticity which is acceptable for the environment. However, if security management parameters, exchanged between the manager and the agent, or proxy, are not protected, then authenticity is not guaranteed since the community string may have been compromised.

The SNMPv2 scheme is a stronger capability scheme, tied to a strong source authentication mechanism, which uses the combination of SNMPv2 srcParty, dstParty, and context identifiers to identify which operations are permitted or not-permitted on a set of objects. The srcParty binds it to the initiator of the request. Proof of its authenticity can be inferred from the fact that the SNMPv2 agent is configured to have knowledge of the capabilities represented by the interrelated parameters. In that sense, the person that configured the Internet Party MIB, either via local mechanisms, or via remote management mechanisms can be considered to provide the third party level of authenticity which is acceptable for the environment. However, if security management parameters, exchanged between the manager and the agent, or proxy, are not protected, then authenticity is not guaranteed since the security parameters may have been compromised.

Capabilities may be carried in access control tokens or access control certificates. Tokens and certificates are similar. A token differs from a certificate in that it is not created by an entity which is a security authority, and it does not necessarily contain an indication of the time period for which it is valid. The sealing of the ACC by a security authority and the provision of a time period for which it is valid provides third party proof of its authenticity.

3. SECURITY SPECIFICATIONS

3.1 ISO MANAGER TO ISO/CCITT-INTERNET PROXY SECURITY

OSI data origin authentication services, integrity services, confidentiality services, and access control services are currently beyond the scope of this document due to the lack of stable relevant ISO security standards. Specifications for these services, based on [7] and [13,14,15,16], will be defined in a future Issue when the relevant base standards become International Standards.

3.1.1 Peer Authentication Services

OSI peer authentication services shall be supported in accordance with OMNIPoint 1 security specifications in [34] Annex B. The authentication class supported shall be Class 2, as defined in [34] Annex G. The minimum requirements for Class 2 authentication are support for the use of simple authentication with protected password as specified in [34] Annex B.2.

The authentication value for Class 2 authentication shall include the ASN.1 SimpleCredentials definition contained in [34] Annex B.2, including the name field (an ASN.1 DistinguishedName), the validity field with sub-field time1 included, and the password field with the choice of PROTECTED OCTET STRING that contains the OID for the hash algorithm used in the hashing function and a transformed password.

The procedure for producing the transformed password shall be as follows:

1) Insert the initiator Distinguished Name into the name field of the SimpleCredentials construct.

2) Insert the current time into the validity.time1 field of the SimpleCredentials construct.

3) Insert the password value into the password field of the SimpleCredentials construct.

4) Encode the SimpleCredentials construct using the Distinguished Encoding Rules as specified in [17], Part 12, clause 7.14.1.

5) Apply the hash algorithm to the encoded SimpleCredentials to produce the hash value, i.e., the transformed password.

The password field of the SimpleCredentials construct shall be an octet string formatted as:

<hash algorithm OID> || "@" || <transformed password>

where "||" means concatenate, and:

<hash algorithm OID> - the alphanumeric form of the OID that contains the OID sub-identifiers represented as decimal integers separated by decimal points, i.e., the familiar "dot" notation.

3.1.2 Transfer of SNMP Security Parameters

Support shall be provided for the transfer of Internet security service parameters from the ISO/CCITT manager to an ISO/CCITT-Internet proxy at the time of management association establishment, and with CMIP requests. Access control security parameters shall be transferred as security attributes of an Access Control Certificate (ACC), also referred to as a Privilege Attribute Certificate (PAC). Implementations shall support the ACC defined in OMNIPoint 1 [34] Annex K, and the associated PICS in Annex E.8.8.

To allow for later inclusion of security attributes for OSI access control, the ACC transferred to an ISO/CCITT-Internet proxy shall be a compound ACC, with the first ACC in the sequence of contained ACCs being the ACC with the SNMP security attributes. The containing ACC of the compound ACC transferred to an ISO/CCITT-Internet proxy shall contain the privilegeAttributes sequence, in accordance with [34] Annex E.8.8. The privilegeAttributes sequence may be empty.

The Internet security parameters shall be transferred using the security attributes defined by [36]. The security attributes are defined in the Security-Services-Attributes module in [36] using the attribute macro defined for the ISO Directory Services [4].

Note: For ease of use, these definitions are repeated below; in the event of transcription error, the original source specification [36] is normative.

The security parameters to be transferred in the ACC shall include the Security-capability-type-1 attribute as defined in [36].

The Security-capability-type-1 attribute grants access of the type accessType to the object(s) defined by objectDefiner.

```
Security-capability-type-1 ::= ATTRIBUTE
        WITH ATTRIBUTE-SYNTAX CapabilityType1
        SINGLE VALUE

CapabilityType1 ::= SEQUENCE {
        objectDefiner   ObjectDefiner,
        accessType      AccessDefiner}

ObjectDefiner ::= IntegerOrString
AccessDefiner ::= IntegerOrString

IntegerOrString ::= CHOICE {
        integerPart     INTEGER,
        stringPart      IA5String}
```

The IntegerOrString choice shall be IA5String.

The Security-capability-type-1 attribute is registered as:

```
desd-att-capability-type-1 OBJECT IDENTIFIER ::=
{iso(1) identified-organization(3) icd-ecma(0012) standard(0) desd(138) attributeIdentifiers(3) 4}
```

The Security-capability-type-1 attribute shall be used for proxy to SNMPv1 agents to carry the community string indicating the accessType. The objectDefiner shall be undefined and represented as an empty string (''H).

The Security-capability-type-1 attribute shall be used for proxy to SNMPv2 agents to carry the srcParty and dstParty as the objectDefiners, and the context identifier as the accessType.

The contents of the Security-capability-type-1 attribute shall be as described below.

ECMA [36] Security Attribute	SNMPv2 Security Parameter	SNMPv1 Security Parameter
Security-capability-type-1		
objectDefiner	src/dst Parties	""H
accessType	context	community string

Table 2. SNMP security parameters.

The src/dst Parties are the srcParty and dstParty SNMPv2 parameters separated by a slash (/). The SNMPv2 parameters shall be ASN.1 object identifiers represented using the "dot" notation convention, where the OID sub-identifiers are represented in decimal character form and separated by decimal points. For example, {1 3 6 1 6 3 3 2 3 1 1 3} is represented as "1.3.6.1.6.3.3.2.3.1.1.3".

3.1.3 ISO/CCITT-Internet Proxy Party MIB

The ISO/CCITT-Internet proxy shall maintain the security parameters used for communicating with the ISO/CCITT manager in a partyEntry managed object within the Party MIB instantiated in the proxy.

The OID for the hash algorithm used for authentication shall be contained in the partyAuthProtocol object.

The OID for the default MD5 hash algorithm shall be as defined in [17], clause 7.10.4.1.

The password used for authentication shall be contained in the partyAuthPrivate columnar object, and shall be stored and updated in accordance with the procedures defined for the object, i.e., the exclusive OR mechanism.

The partyAuthLifetime object shall contain the value, in seconds, to be added to the time1 value contained in the SimpleCredentials construct passed to the proxy by the manager. If the value of time1, augmented by the partyAuthLifetime value, is less than the proxy's local notion of time, then the authentication shall be considered invalid.

3.2 ISO/CCITT-INTERNET PROXY TO INTERNET AGENT SECURITY

An ISO/CCITT-Internet proxy that supports SNMPv1 shall support the community string security services as defined in [19].

An ISO/CCITT-Internet proxy that supports SNMPv2 shall support the security services as defined in [27], with minimal support for the "Party No Privacy" compliance level specified by clause 3.7.1 of [27].

3.3 ISO/CCITT-INTERNET PROXY ACCESS CONTROL ENFORCEMENT

Access control enforcement at the ISO/CCITT-Internet proxy is currently beyond the scope of this document. However, access control enforcement at the proxy will be based on OSI access control for management as defined in [7] when it becomes an International Standard.

4. IIMC PARTY MIB

Support for the SNMPv2 security services requires that some of the Internet Party MIB [27] be instantiated in the ISO/CCITT-Internet proxy, and SNMPv2 agents. The IIMC Party MIB is derived from the Internet Party MIB defined in [27]. Adjustments have been made to the behavior of some elements in the MIB to accommodate SNMPv1 community string based security.

A Naming Tree diagram for IIMC Party MIB managed object classes is illustrated below. The IIMC Party MIB is subordinate to the ISO/CCITT system managed object that represents the Internet agent or proxy.

```
"Rec. X.721 | ISO/IEC 10165-2 : 1992":system
          |
          |
          partyMIBObjects
            |
            |---partyEntry
            |
            |---contextEntry
            |
            |---aclEntry (instantiated only at agent)
            |
            |---viewEntry (instantiated only at agent)
```

The IIMC Party MIB elements that are specific to the proxy, i.e., local instantiations of partyMIBGroup, partyEntry and contextEntry, should be instantiated under the ISO system object that is specific to the proxy. The IIMC MIB elements that are specific to each SNMP agent are actually instantiated in the SNMP agent. Duplicates of MIB elements instantiated in the SNMP agent should not be instantiated in the proxy if a stateless approach to proxy is used as described in [31].

The GDMO templates and ASN.1 modules are included here in one section to facilitate automated processing. Comments and subsection headers are included in the form of ASN.1 comments, i.e., preceded by "--".

This document (IIMCSEC) is allocated the following registration identifier for purposes of referencing the translated RFC 1147 Party MIB contained herein.

```
iimcRFC1447 OBJECT IDENTIFIER ::={ iimcAutoDocument 1447 }
```

-- 4.1 PARTY MIB GDMO TEMPLATES

-- 4.1.1 Party MIB Managed Object Classes

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

```
        aclEntryPkg PACKAGE
        BEHAVIOUR
                aclEntryPkgBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This managed object class maps to aclEntry object in [27].!!;
                DESCRIPTION
                        !!The access privileges for a particular requesting SNMP party in accessing a
                        particular target SNMP party.!!;
                INDEX  SNMPv2-Party-MIB.aclTarget,
                        SNMPv2-Party-MIB.aclSubject,
                        SNMPv2-Party-MIB.aclResources;
                ENDPARSE!;;
                ATTRIBUTES
                        aclEntryId                              GET,
                        aclTarget                               GET,
                        aclSubject                              GET,
                        aclResources                            GET,
                        aclPrivileges
                                DEFAULT VALUE IIMCRFC1447ASN1.c-aclPrivileges
                                GET-REPLACE,
                        aclStorageType
                                DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTStorageType
                                GET-REPLACE,
                        aclStatus                               GET-REPLACE;;;
REGISTERED AS  {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1};

contextEntry  MANAGED OBJECT CLASS
        DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2 : 1992" :top;
        CHARACTERIZED BY
        contextEntryPkg PACKAGE
        BEHAVIOUR
                contextEntryPkgBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This managed object class maps to contextEntry object in [27].!!;
                DESCRIPTION
                        !!Locally held information about a particular SNMPv2 context.!!;
                INDEX  IMPLIED SNMPv2-Party-MIB.contextIdentity;
                ENDPARSE!;;
                ATTRIBUTES
                        contextEntryId                  GET,
                        contextIdentity                 GET,
                        contextIndex                    GET-REPLACE,
                        contextLocal
                                DEFAULT VALUE IIMCRFC1447ASN1.c-contextLocal
                                GET-REPLACE,
                        contextViewIndex                GET-REPLACE,
                        contextLocalEntity
                                DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                                GET-REPLACE,
                        contextLocalTime
```

```
                        DEFAULT VALUE IIMCRFC1447ASN1.c-contextLocalTime
                        GET-REPLACE,
                contextProxyDstParty        GET-REPLACE,
                contextProxySrcParty        GET-REPLACE,
                contextProxyContext         GET-REPLACE,
                contextStorageType
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTStorageType
                        GET-REPLACE,
                contextStatus               GET-REPLACE;;;
REGISTERED AS  {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1};

partyEntry  MANAGED OBJECT CLASS
        DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2 : 1992":top;
        CHARACTERIZED BY
        partyEntryPkg PACKAGE
        BEHAVIOUR
                partyEntryPkgBehaviour BEHAVIOUR
                DEFINED AS
                !REFERENCE
                        !!This managed object class maps to partyEntry object in [27].!!;
                DESCRIPTION
                        !!Locally held information about a particular SNMPv2 party.!!;
                INDEX  IMPLIED SNMPv2-Party-MIB.partyIdentity;
                ENDPARSE!;;
                ATTRIBUTES
                        partyEntryId                GET,
                        partyIdentity               GET,
                        partyIndex                  GET,
                                partyTDomain
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyTDomain
                                GET-REPLACE,
                        partyTAddress
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyTAddress
                                GET-REPLACE,
                        partyMaxMessageSize
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyMaxMessageSize
                                GET-REPLACE,
                        partyLocal
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyLocal
                                GET-REPLACE,
                        partyAuthProtocol
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyAuthProtocol
                                GET-REPLACE,
                        partyAuthClock
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyAuthClock
                                GET-REPLACE,
                        partyAuthPrivate
                                DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                                GET-REPLACE,
                        partyAuthPublic
                                DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                                GET-REPLACE,
                        partyAuthLifetime
                                DEFAULT VALUE IIMCRFC1447ASN1.c-partyAuthLifetime
```

```
                        GET-REPLACE,
                partyPrivProtocol
                        DEFAULT VALUE IIMCRFC1447ASN1.c-partyPrivProtocol
                        GET-REPLACE,
                partyPrivPrivate
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                        GET-REPLACE,
                partyPrivPublic
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                        GET-REPLACE,
                partyCloneFrom          GET-REPLACE,
                partyStorageType
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTStorageType
                        GET-REPLACE,
                partyStatus             GET-REPLACE;;;
REGISTERED AS  {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1};

partyMIBObjects  MANAGED OBJECT CLASS
        DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2 : 1992" :top;
        CHARACTERIZED BY
        partyMIBObjectsPkg PACKAGE
        BEHAVIOUR
                partyMIBObjectsPkgBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This managed object class maps to partyMIBObjects group OID in
                        [27].!!;
                DESCRIPTION
                        !!This group contains the security related parameters needed for communicating
                        with SNMP agents.  The security services to which these parameters apply are
                        authentication, integrity, confidentiality, and access control.

                        This object class contains only the naming attribute.!!;
                ENDPARSE!;;
                ATTRIBUTES
                        partyMIBObjectsId       GET;;;
REGISTERED AS  {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2};

viewEntry  MANAGED OBJECT CLASS
        DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2 : 1992" :top;
        CHARACTERIZED BY
        viewEntryPkg PACKAGE
        BEHAVIOUR
                viewEntryPkgBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This managed object class maps to viewEntry object in [27].!!;
                INDEX  SNMPv2-Party-MIB.viewIndex,
                        IMPLIED SNMPv2-Party-MIB.viewSubtree;
                DESCRIPTION
                        !!Information on a particular family of view subtrees included in or
                        excluded from a particular  SNMPv2 context's MIB view.
```

Each SNMPv2 context which is locally accessible has a single MIB view which is defined by two collections of view subtrees: the included view subtrees, and the excluded view subtrees. Every such subtree, both included and excluded, is defined in an entry.

To determine if a particular object instance is in a particular MIB view, compare the object instance's OBJECT IDENTIFIER with each of the MIB view's entries. If none match, then the object instance is not in the MIB view. If one or more match, then the object instance is included in, or excluded from, the MIB view according to the value of viewType in the entry whose value of viewSubtree has the most sub-identifiers. If multiple entries match and have the same number of sub-identifiers, then the lexicographically greatest instance of viewType determines the inclusion or exclusion.

An object instance's OBJECT IDENTIFIER X matches an entry when the number of sub- identifiers in X is at least as many as in the value of viewSubtree for the entry, and each sub- identifier in the value of viewSubtree matches its corresponding sub-identifier in X. Two sub identifiers match either if the corresponding bit of viewMask is zero (the 'wild card' value), or if they are equal.

Due to this 'wild card' capability, we introduce the term, a 'family' of view subtrees, to refer to the set of subtrees defined by a particular combination of values of viewSubtree and viewMask. In the case where no 'wild card' is defined in viewMask, the family of view subtrees reduces to a single view subtree.

Implementations must not restrict the number of families of view subtrees for a given MIB view, except as dictated by resource constraints on the overall number of entries in the viewTable.!!;

```
        ENDPARSE!;;
        ATTRIBUTES
                viewEntryId                     GET,
                viewIndex                       GET,
                viewSubtree                     GET,
                viewMask
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTNullString
                        GET-REPLACE,
                viewType
                        DEFAULT VALUE IIMCRFC1447ASN1.c-viewType
                        GET-REPLACE,
                viewStorageType
                        DEFAULT VALUE IIMCRFC1447ASN1.c-DEFAULTStorageType
                        GET-REPLACE,
                viewStatus                      GET-REPLACE;;;
REGISTERED AS  {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1};
```

-- 4.1.2 Party MIB Attribute Types

```
party ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
```

```
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the type defined in [27] by the same name.!!;
                DESCRIPTION
                        !!Denotes a SNMPv2 party identifier.  Note that agents may impose
                        implementation limitations on the length of OIDs used to identify Parties.
                        As such, management stations creating new parties should be aware
                        that using an excessively long OID may result in the agent refusing to
                        perform the set operation and instead returning the appropriate error
                        response, e.g., noCreation.!!;
                ENDPARSE!;;;

tAddress ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.OctetString;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                tAddressBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the type defined in [27] by the same name.!!;
                DESCRIPTION
                        !!Denotes a transport service address.  For snmpUDPDomain, a
                        TAddress is 6 octets long, the initial 4 octets containing the IP-address in
                        network-byte order and the last 2 containing the UDP port in network-
                        byte order.  Consult [28] for further information on snmpUDPDomain.!!;
                ENDPARSE!;;;

clock ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:uInteger32;
        BEHAVIOUR
                clockBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the type defined in [27] by the same name.!!;
                DESCRIPTION
                        !!A party's authentication clock - a non-negative integer which is
                        incremented as specified/allowed by the party's Authentication Protocol.
                        For noAuth, a party's authentication clock is unused and its value is
                        undefined.

                        For v2md5AuthProtocol, a party's authentication clock is a relative clock
                        with 1-second granularity.!!;
                ENDPARSE!;;;

context ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
```

```
                contextBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the type defined in [27] by the same name.!!;
                DESCRIPTION
                        !!Denotes a SNMPv2 context identifier. Note that agents may impose
                        implementation limitations on the length of OIDs used to identify Parties.
                        As such, management stations creating new parties should be aware
                        that using an excessively long OID may result in the agent refusing to
                        perform the set operation and instead returning the appropriate error
                        response, e.g., noCreation.!!;
                ENDPARSE!;;;


storageType ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.StorageType;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                storageTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the type defined in [27] by the same name.!!;
                DESCRIPTION
                        !!Describes the memory realization of a conceptual row.  A row which is
                        volatile(2) is lost upon reboot.  A row which is nonVolatile(3) is backed up
                        by stable storage.  A row which is permanent(4) cannot be changed nor
                        deleted.!!;
                ENDPARSE!;;;
```

-- 4.1.3 Party MIB Attributes

```
aclEntryId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.AclEntryIdValue;
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                aclEntryIdBehaviour BEHAVIOUR
                DEFINED AS
                !The naming attribute for object class aclEntry!;;
REGISTERED AS {iimcAutoName 1 3 6 1 6 3 3 2 3 1 1};

aclPrivileges ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.AclPrivileges;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                aclPrivilegesBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
```

```
                    !!The access privileges which govern what management operations a particular
                    target party may perform with respect to a particular SNMPv2 context when
                    requested by a particular subject party.  These privileges are specified as a sum
                    of values, where each value specifies a SNMPv2 PDU type by which the subject
                    party may request a permitted operation.  The value for a particular PDU type is
                    computed as 2 raised to the value of the ASN.1 context-specific tag for the
                    appropriate SNMPv2 PDU type.  The values (for the tags defined in [28]) are
                    defined in [25] as:

                    Get          :  1
                    GetNext      :  2
                    Response     :  4
                    Set          :  8
                    unused       : 16
                    GetBulk      : 32
                    Inform       : 64
                    SNMPv2-Trap  : 128

                  The null set is represented by the value zero.!!;
            ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 4};

aclResources ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                aclResourcesBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type efined in [27] by the same name.!!;
                DESCRIPTION
                        !!The value of an instance of this object identifies a SNMPv2 context in an
                        access control policy, and has the same value as the instance of the
                        contextIndex object for that SNMPv2 context.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 3};

aclStatus ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:rowStatus;
        BEHAVIOUR
                aclStatusBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The status of this conceptual row in the aclTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 6};

aclStorageType ATTRIBUTE
        DERIVED FROM storageType;
```

```
        BEHAVIOUR
                aclStorageTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The storage type for this conceptual row in the aclTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 5};

aclSubject ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                aclSubjectBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The value of an instance of this object identifies a SNMPv2 party which is
                        the subject of an access control policy, and has the same value as the
                        instance of the partyIndex object for that SNMPv2 party.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 2};

aclTarget ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                aclTargetBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The value of an instance of this object identifies a SNMPv2 party which is
                        the target of an access control policy, and has the same value as the
                        instance of the partyIndex object for that party.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 3 1 1 1};

contextEntryId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ContextEntryIdValue;
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                contextEntryIdBehaviour BEHAVIOUR
                DEFINED AS
                !The naming attribute for object class contextEntry!;;
REGISTERED AS {iimcAutoName 1 3 6 1 6 3 3 2 2 1 1};
```

```
contextIdentity ATTRIBUTE
        DERIVED FROM context;
        BEHAVIOUR
                contextIdentityBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A context identifier uniquely identifying a particular SNMPv2 context.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 1};

contextIndex ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR EQUALITY, ORDERING;
        BEHAVIOUR
                contextIndexBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A unique value for each SNMPv2 context. The value for each SNMPv2
                        context must remain constant at least from one re-initialization of the entity's
                        network management system to the next re-initialization.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 2};

contextLocal ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:truthValue;
        BEHAVIOUR
                contextLocalBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!An indication of whether this context is realized by this SNMPv2 entity.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 3};

contextViewIndex ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                contextViewIndexBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
```

```
                !!This corresponds to the object type defined in [27] by the same
                name.!!;
        DESCRIPTION
                !!If the value of an instance of this object is zero, then this corresponding
                conceptual row in the contextTable refers to a SNMPv2 context which identifies a
                proxy relationship; the values of the corresponding instances of the
                contextProxyDstParty, contextProxySrcParty, and contextProxyContext objects
                provide further information on the proxy relationship.

                Otherwise, if the value of an instance of this object is greater than zero, then
                this corresponding conceptual row in the contextTable refers to a SNMPv2
                context which identifies a MIB view of a locally accessible entity; the value of
                the instance identifies the particular MIB view which has the same value of
                viewIndex; and the value of the corresponding instances of the
                contextLocalEntity and contextLocalTime objects provide further information
                on the local entity and its temporal domain.!!;
        ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 4};

contextLocalEntity ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.OctetString;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                contextLocalEntityBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!If the value of the corresponding instance of the contextViewIndex is
                        greater than zero, then the value of an instance of this object identifies the
                        local entity whose management information is in the SNMPv2 context's MIB
                        view.  The empty string indicates that the MIB view contains the SNMPv2
                        entity's own local management information; otherwise, a non-empty string
                        indicates that the MIB view contains management information of some other
                        local entity, e.g.,'Repeater1'.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 5};

contextLocalTime ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                contextLocalTimeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!If the value of the corresponding instance of the contextViewIndex is
                        greater than zero, then the value of an instance of this object identifies the
                        temporal context of the management information in the MIB view.!!;
```

```
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 6};

contextProxyDstParty ATTRIBUTE
        DERIVED FROM party;
        BEHAVIOUR
                contextProxyDstPartyBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!If the value of the corresponding instance of the contextViewIndex is equal to
                        zero, then the value of an instance of this object identifies a SNMPv2 party which
                        is the proxy destination of a proxy relationship.

                        If the value of the corresponding instance of the contextViewIndex is greater
                        than zero, then the value of an instance of this object is zero.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 7};

contextProxySrcParty ATTRIBUTE
        DERIVED FROM party;
        BEHAVIOUR
                contextProxySrcPartyBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!If the value of the corresponding instance of the contextViewIndex is equal to
                        zero, then the value of an instance of this object identifies a SNMPv2 party which
                        is the proxy source of a proxy relationship.

                        Interpretation of an instance of this object depends upon the value of the transport
                        domain associated with the SNMPv2 party used as the proxy destination in this
                        proxy relationship.

                        If the value of the corresponding instance of the contextViewIndex is greater
                        than zero, then the value of an instance of this object is zero.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 8};

contextProxyContext ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                contextProxyContextBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
```

```
                !!This corresponds to the object type defined in [27] by the same
                name.!!;
        DESCRIPTION
                !!If the value of the corresponding instance of the contextViewIndex is equal to
                zero, then the value of an instance of this object identifies the context of a proxy
                relationship.

                Interpretation of an instance of this object depends upon the value of the transport
                domain associated with the SNMPv2 party used as the proxy destination in this
                proxy relationship.

                If the value of the corresponding instance of the contextViewIndex is greater
                than zero, then the value of an instance of this object is { 0 0 }.!!;
        ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 9};

contextStorageType ATTRIBUTE
        DERIVED FROM storageType;
        BEHAVIOUR
                contextStorageTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The storage type for this conceptual row in the contextTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 10};

contextStatus ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:rowStatus;
        BEHAVIOUR
                contextStatusBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The status of this conceptual row in the contextTable.

                        A context is not qualified for activation until instances of all corresponding
                        columns have the appropriate value.  In  particular, if the context's
                        contextViewIndex is greater than zero, then the viewStatus column of the
                        associated conceptual row(s) in the viewTable must have the value `active'.
                        Until instances of all corresponding columns are appropriately configured, the
                        value of the corresponding instance of the contextStatus column is
                        `notReady'.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 2 1 1 11};

partyAuthClock ATTRIBUTE
        DERIVED FROM clock;
```

```
        BEHAVIOUR
                partyAuthClockBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The authentication clock which represents the local notion of the current
                        time specific to the party.  This value must not be decremented unless the
                        party's secret information is changed simultaneously, at which time the
                        party's nonce and last-timestamp values must also be reset to zero, and the
                        new value of the clock, respectively.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 8};

partyAuthLifetime ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.PartyAuthLifetime;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyAuthLifetimeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The lifetime (in units of seconds) which represents an administrative upper
                        bound on acceptable delivery delay for protocol messages generated by the
                        party.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 11};

partyAuthPrivate ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
                IIMCRFC1447ASN1.OctetString;
        MATCHES FOR     EQUALITY, SUBSTRINGS;
        BEHAVIOUR
                partypartyAuthPrivateBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type efined in [27] by the same name. It
                        is modified to accommodate SNMPv1 community strings.!!;
                DESCRIPTION
                        !!If the value of partyAuthProtocol is {snmpv1CommString} then this
                        attribute contains the community string to be used with SNMPv1
                        security.

                        If the value of partyAuthProtocol is not {snmpv1CommString} then this
                        attribute contains an encoding of the party's private authentication  key
                        which may be needed to support the authentication protocol.  Although
                        the value of  this variable may be altered by a management  operation
                        (e.g., a SNMPv2 Set-Request), its value  can never be retrieved by a
```

management operation: when read, the value of this variable is the zero length OCTET STRING.

The private authentication key is NOT directly represented by the value of this variable, but rather it is represented according to an encoding. This encoding is the bitwise exclusive-OR of the old key with the new key, i.e., of the old private authentication key (prior to the alteration) with the new private authentication key (after the alteration). Thus, when processing a received protocol Set operation, the new private authentication key is obtained from the value of this variable as the result of a bitwise exclusive-OR of the variable's value and the old private authentication key. In calculating the exclusive-OR, if the old key is shorter than the new key, zero-valued padding is appended to the old key. If no value for the old key exists, a zero-length OCTET STRING is used in the calculation.!!;

ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 9};

partyAuthProtocol ATTRIBUTE
WITH ATTRIBUTE SYNTAX
IIMCRFC1447ASN1.ObjectIdentifier;
MATCHES FOR EQUALITY;
BEHAVIOUR
partypartyAuthProtocolBehaviour BEHAVIOUR
DEFINED AS
!BEGINPARSE
REFERENCE
!!This corresponds to the object type defined in [27] by the same name.!!;
DESCRIPTION
!!The authentication protocol by which all messages generated by the party are authenticated as to origin and integrity. In this context, the value {noAuth } signifies that messages generated by the party are not authenticated.

The value {snmpv1CommString} indicates that SNMPv1 community string is to be used. The community string shall be present in partyAuthPrivate!!;
ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 7};

partyAuthPublic ATTRIBUTE
WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.OctetString;
MATCHES FOR EQUALITY;
BEHAVIOUR
partyAuthPublicBehaviour BEHAVIOUR
DEFINED AS
!BEGINPARSE
REFERENCE
!!This corresponds to the object type defined in [27] by the same name.!!;
DESCRIPTION
!!A publicly-readable value for the party. Depending on the party's authentication protocol,this value may be needed to support the party's authentication protocol. Alternatively, it may be used by a manager during the procedure foraltering secret information about a party. (For example, by altering the value of an instance of this object in the same

SNMP Set-Request used to update an instance of partyAuthPrivate, a subsequent Get-Request can determine if the Set- Request was successful in the event that no response to the Set-Request is received, see RFC1446.)

The length of the value is dependent on the party's authentication protocol. If not used by the authentication protocol, it is recommended that agents support values of any length up to and including the length of the corresponding partyAuthPrivate object.!!;

ENDPARSE!;;

REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 10};

partyCloneFrom ATTRIBUTE

DERIVED FROM party;

BEHAVIOUR

partyCloneFromBehaviour BEHAVIOUR

DEFINED AS

!BEGINPARSE

REFERENCE

!!This corresponds to the object type defined in [27] by the same name.!!;

DESCRIPTION

!!The identity of a party to clone authentication and privacy parameters from. When read, the value { 0 0 } is returned.

This value can only be written when the associated instance of partyStatus either does not exist or has the value `notReady'. When written, the value identifies a party, the cloning party, whose status column has the value `active'. The cloning party is used in two ways.

One, if instances of the following objects do not exist for the party being created, then they are created with values identical to those of the corresponding objects for the cloning party:

partyAuthProtocol
partyAuthPublic
partyAuthLifetime
partyPrivProtocol
partyPrivPublic

Two, instances of the following objects are updated using the corresponding values of the cloning party:

partyAuthPrivate
partyPrivPrivate

(e.g., the value of the cloning party's instance of the partyAuthPrivate object is XOR'd with the value of the partyAuthPrivate instances of the party being created.)!!;

ENDPARSE!;;

REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 15};

partyEntryId ATTRIBUTE

WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.PartyEntryIdValue;

```
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                partyEntryIdBehaviour BEHAVIOUR
                DEFINED AS
                !The naming attribute for object class partyEntry!;;
REGISTERED AS {iimcAutoName 1 3 6 1 6 3 3 2 1 1 1};

partyIdentity ATTRIBUTE
        DERIVED FROM party;
        BEHAVIOUR
                partyIdentityBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A party identifier uniquely identifying a particular SNMP party.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 1};

partyIndex ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyIndexBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A unique value for each SNMPv2 party.  The value for each SNMPv2 party
                        must remain constant at least from one re-initialization of the entity's network
                        management system to the next reinitialization.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 2};

partyLocal ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:truthValue;
        BEHAVIOUR
                partyLocalBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!An indication of whether this party executes at this SNMPv2 entity.  If
                        this object has a value of true(1), then the SNMPv2 entity will listen for
                        SNMPv2 messages on the partyTAddress associated with this party.  If
                        this object has the value false(2), then the SNMPv2 entity will not listen
                        for SNMPv2 messages on the partyTAddress associated with this
                        party.!!;
```

```
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 6};

partyMaxMessageSize ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
                                IIMCRFC1447ASN1.PartyMaxMessageSize;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyMaxMessageSizeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The maximum length in octets of a SNMP message which this party will
                        accept.  For parties which execute at an agent, the agent initializes this
                        object to the maximum length supported by the agent, and does not let
                        the object be set to any larger value.  For parties which do not execute at
                        the agent, the agent must allow the manager to set this object to any
                        legal value, even if it is larger than the agent can generate.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 5};

partyMIBObjectsId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.PartyMIBObjectsIdValue;
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                partyMIBObjectsIdBehaviour BEHAVIOUR
                DEFINED AS
                !The naming attribute for object class partyMIBObjects!;;
REGISTERED AS {iimcAutoName 1 3 6 1 6 3 3 2};

partyPrivProtocol ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyPrivProtocolBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The privacy protocol by which all protocol messages received by the party
                        are protected from disclosure.  In this context, the value { noPriv } signifies
                        that messages received by the party are not protected.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 12};

partyPrivPrivate ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.OctetString;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
```

```
                partyPrivPrivateBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!An encoding of the party's private encryption key which may be needed
                        to support the privacy protocol.  Although the value of this variable may
                        be altered by a management operation (e.g., a SNMPv2 Set-Request),
                        its value can never be retrieved by a management operation: when read,
                        the value of this variable is the zero length OCTET STRING.

                        The private encryption key is NOT directly represented by the value of
                        this variable, but rather it is represented according to an encoding. This
                        encoding is the bitwise exclusive-OR of the old key with the new key,
                        i.e., of the old private encryption key (prior to the alteration) with the new
                        private encryption key (after the alteration). Thus, when processing a
                        received protocol Set operation, the new private encryption key is
                        obtained from the value of this variable as the result of a bitwise
                        exclusive-OR of the variable's value and the old private encryption key.
                        In calculating the exclusive-OR, if the old key is shorter than the new
                        key, zero-valued padding is appended to the old key.  If no value for the
                        old key exists, a zero-length OCTET STRING is used in the
                        calculation.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 13};

partyPrivPublic ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.OctetString;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                partyPrivPublicBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A publicly-readable value for the party. Depending on the party's
                        privacy protocol, this value may be needed to support the party's privacy
                        protocol.  Alternatively, it may be used by a manager as a part of its
                        procedure for altering secret information about a party.  (For example, by
                        altering the value of an instance of this object in the same SNMP Set-
                        Request used to update an instance of partyPrivPrivate, a subsequent
                        Get-Request can determine if the Set-Request was successful in the
                        event that no response to the Set-Request is received, see RFC 1446.)

                        The length of the value is dependent on the party's privacy protocol.  If
                        not used by the privacy protocol, it is recommended that agents support
                        values of any length up to and including the length of the corresponding
                        partyPrivPrivate object.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 14};
```

```
partyStatus ATTRIBUTE
        DERIVED FROM {iimcIIMCIMIBTRANS}:rowStatus;
        BEHAVIOUR
                partyStatusBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The status of this conceptual row in the partyTable.

                        A party is not qualified for activation until instances of all columns of its
                        partyEntry row have an appropriate value.  In particular:

                        A value must be written to the Party's partyCloneFrom object.

                        If the Party's partyAuthProtocol object has the value md5AuthProtocol,
                        then the corresponding instance of partyAuthPrivate must contain a
                        secret of the appropriate length.  Further, at least one management
                        protocol set operation updating the value of the party's partyAuthPrivate
                        object must be successfully processed, before the partyAuthPrivate
                        column is considered appropriately configured.

                        If the Party's partyPrivProtocol object has the value desPrivProtocol,
                        then the corresponding instance of partyPrivPrivate must contain a
                        secret of the appropriate length.  Further, at least one management
                        protocol set operation updating the value of the party's partyPrivPrivate
                        object must be successfully processed, before the partyPrivPrivate
                        column is considered appropriately configured.

                        Until instances of all corresponding columns are appropriately
                        configured, the value of the corresponding instance of the partyStatus
                        column is `notReady'.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 17};

partyStorageType ATTRIBUTE
        DERIVED FROM storageType;
        BEHAVIOUR
                partyStorageTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The storage type for this conceptual row in the partyTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 16};

partyTAddress ATTRIBUTE
        DERIVED FROM tAddress;
```

```
        BEHAVIOUR
                partyTAddressBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The transport service address by which the party receives network
                        management traffic, formatted according to the corresponding value of
                        partyTDomain.  For rfc1351Domain, partyTAddress is formatted as a 4-
                        octet IP Address concatenated with a 2-octet UDP port number.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 4};

partyTDomain ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
                        IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                partyTDomainBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!Indicates the kind of transport service by which the party receives
                        network management traffic. An example of a transport domain is
                        'rfc1351Domain' (SNMP over UDP).!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 1 1 1 3};

viewEntryId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ViewEntryIdValue;
        MATCHES FOR     EQUALITY;
        BEHAVIOUR
                viewEntryIdBehaviour BEHAVIOUR
                DEFINED AS
                !The naming attribute for object class viewEntry!;;
REGISTERED AS {iimcAutoName 1 3 6 1 6 3 3 2 4 1 1};

viewIndex ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.Index;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                viewIndexBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
```

```
                !!A unique value for each MIB view.  The value for each MIB view must
                remain constant at least from one re-initialization of the entity's network
                management system to the next re-initialization.!!;
        ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 1};

viewMask ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
                        IIMCRFC1447ASN1.ViewMask;
    MATCHES FOR     EQUALITY, ORDERING;
    BEHAVIOUR
        viewMaskBehaviour BEHAVIOUR
        DEFINED AS
        !BEGINPARSE
        REFERENCE
            !!This corresponds to the object type defined in [27] by the same
            name.!!;
        DESCRIPTION
            !!The bit mask which, in combination with the corresponding instance of
            viewSubtree, defines a family of view subtrees.

            Each bit of this bit mask corresponds to a sub-identifier of viewSubtree,
            with the most significant bit of the i-th octet of this octet string value
            (extended if necessary, see below) corresponding to the (8*i - 7)-th sub-
            identifier, and the least significant bit of the i-th octet of this octet string
            corresponding to the (8*i)-th sub-identifier, where i is in the range 1
            through 16.

            Each bit of this bit mask specifies whether or not the corresponding sub-
            identifiers must match when determining if an OBJECT IDENTIFIER is in
            this family of view subtrees; a '1' indicates that an exact match must
            occur; a '0' indicates 'wild card', i.e., any sub-identifier value matches.
            Thus, the OBJECT IDENTIFIER X of an object instance is contained in a
            family of view subtrees if the following criteria are met:

            for each sub-identifier of the value of viewSubtree, either:

                the i-th bit of viewMask is 0, or

                the i-th sub-identifier of X is equal to  the i-th sub-identifier of
                the value of  viewSubtree.

            If the value of this bit mask is M bits long and there are more than M
            sub-identifiers in the corresponding instance of viewSubtree, then the bit
            mask is extended with 1's to be the required length.

            Note that when the value of this object is the zero-length string, this
            extension rule results in a mask of all-1's being used (i.e., no 'wild card'),
            and the family of view subtrees is the one view subtree uniquely
            identified by the corresponding instance of viewSubtree.!!;
        ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 3};

viewStatus ATTRIBUTE
```

```
        DERIVED FROM {iimcIIMCIMIBTRANS}:rowStatus;
        BEHAVIOUR
                viewStatusBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The status of this conceptual row in the viewTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 6};

viewStorageType ATTRIBUTE
        DERIVED FROM storageType;
        BEHAVIOUR
                viewStorageTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!The storage type for this conceptual row in the viewTable.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 5};

viewSubtree ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ObjectIdentifier;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                viewSubtreeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
                        !!A MIB subtree.!!;
                ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 2};

viewType ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCRFC1447ASN1.ViewType;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                viewTypeBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                REFERENCE
                        !!This corresponds to the object type defined in [27] by the same
                        name.!!;
                DESCRIPTION
```

```
                    !!The status of a particular family of view subtrees within the particular
                    SNMPv2 context's MIB view.  The value 'included(1)' indicates that the
                    corresponding instances of viewSubtree and viewMask define a family of
                    view subtrees included in the MIB view.  The  value 'excluded(2)'
                    indicates that the corresponding instances of viewSubtree and viewMask
                    define a family of view subtrees excluded from the MIB view.!!;
            ENDPARSE!;;
REGISTERED AS {iimcAutoObjAndAttr 1 3 6 1 6 3 3 2 4 1 1 4};
```

-- 4.1.4 Party MIB Name Bindings

```
aclEntry-partyMIBObjectsNB  NAME BINDING
        SUBORDINATE OBJECT CLASS  aclEntry  AND SUBCLASSES;
        NAMED BY SUPERIOR OBJECT CLASS  partyMIBObjects  AND SUBCLASSES;
        WITH ATTRIBUTE  aclEntryId;
                BEHAVIOUR
                aclEntry-partyMIBObjectsNBBehaviour  BEHAVIOUR
                        DEFINED AS
                        !BEGINPARSE
                        INDEX  SNMPv2-Party-MIB.aclTarget,
                                SNMPv2-Party-MIB.aclSubject,
                                SNMPv2-Party-MIB.aclResources;
                        DELETEATT aclStatus;
                        DELETEVALUE SNMPV2ROWSTATUS;
                        ENDPARSE!;;
                CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                        WITH-REFERENCE-OBJECT;
                DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcAutoNameBinding 1 3 6 1 6 3 3 2 3 1 1};

contextEntry-partyMIBObjectsNB  NAME BINDING
  SUBORDINATE OBJECT CLASS  contextEntry  AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS  partyMIBObjects  AND SUBCLASSES;
  WITH ATTRIBUTE  contextEntryId;
                BEHAVIOUR
                contextEntry-partyMIBObjectsNBBehaviour BEHAVIOUR
                        DEFINED AS
                        !BEGINPARSE
                        INDEX IMPLIED SNMPv2-Party-MIB.contextIdentity;
                        DELETEATT contextStatus;
                        DELETEVALUE SNMPV2ROWSTATUS;
                        ENDPARSE!;;
                CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                        WITH-REFERENCE-OBJECT;
                DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcAutoNameBinding 1 3 6 1 6 3 3 2 2 1 1};

partyEntry-partyMIBObjectsNB  NAME BINDING
        SUBORDINATE OBJECT CLASS  partyEntry AND SUBCLASSES;
        NAMED BY SUPERIOR OBJECT CLASS  partyMIBObjects  AND SUBCLASSES;
        WITH ATTRIBUTE  partyEntryId;
                BEHAVIOUR
```

```
                partyEntry-partyMIBObjectsNBBehaviour BEHAVIOUR
                        DEFINED AS
                        !BEGINPARSE
                        INDEX IMPLIED SNMPv2-Party-MIB.partyIdentity;
                        DELETEATT partyStatus;
                        DELETEVALUE SNMPV2ROWSTATUS;
                        ENDPARSE!;;
                CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                        WITH-REFERENCE-OBJECT;
                DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcAutoNameBinding 1 3 6 1 6 3 3 2 1 1 1};

viewEntry-partyMIBObjectsNB  NAME BINDING
                SUBORDINATE OBJECT CLASS  viewEntry AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS  partyMIBObjects  AND SUBCLASSES;
                WITH ATTRIBUTE viewEntryId;
                BEHAVIOUR
                viewEntry-partyMIBObjectsNBBehaviour BEHAVIOUR
                        DEFINED AS
                        !BEGINPARSE
                        INDEX  SNMPv2-Party-MIB.viewIndex,
                                IMPLIED SNMPv2-Party-MIB.viewSubtree;
        DELETEATT viewStatus;
                        DELETEVALUE SNMPV2ROWSTATUS;
                        ENDPARSE!;;
                CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                        WITH-REFERENCE-OBJECT;
                DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcAutoNameBinding 1 3 6 1 6 3 3 2 4 1 1};

partyMIBObjects-systemNB  NAME BINDING
                SUBORDINATE OBJECT CLASS partyMIBObjects AND SUBCLASSES;
                NAMED BY SUPERIOR OBJECT CLASS
                "Rec. X.721 | ISO/IEC 10165-2 : 1992":system  AND SUBCLASSES;
                WITH ATTRIBUTE  partyMIBObjectsId;
                BEHAVIOUR
                partyMIBObjects-systemNBBehaviour BEHAVIOUR
                        DEFINED AS
                        !BEGINPARSE
                        INDEX  NULL;
                        ENDPARSE!;;
                CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                        WITH-REFERENCE-OBJECT;
                DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcAutoNameBinding 1 3 6 1 6 3 3 2};
```

-- 4.2 PARTY MIB ASN.1 MODULES

```
IIMCRFC1447ASN1
{iso(1) member-body(2) 124 forum(360501) iimcAutoTrans(14) iimcAutoModule(0) 1447}
DEFINITIONS IMPLICIT TAGS ::= BEGIN
IMPORTS
                UInteger32, snmpv2
                        FROM SNMPv2-SMI
                partyAdmin, partyProtocols, noAuth, noPriv, desPrivProtocol, v2md5AuthProtocol,
                temporalDomains, currentTime, restartTime, cacheTime, initialPartyId,
                initialContextId
                        FROM SNMPv2-Party-MIB
                snmpUDPDomain
                        FROM SNMPv2-TM
                iimcAutoModule, iimcAutoObjAndAttr, iimcAutoNameBinding,
                iimcAutoDocument, iimcAutoName, iimcIIMCIMIBTRANS,
                        FROM IimcAssignedOIDs
                        {iso(1) member-body(2) 124 forum(360501)
                        iimcManual(15) iimcModule(0) 1}
                Integer, OctetString, ObjectIdentifier
                        FROM IimcCommonDef
                        {iso(1) member-body(2) 124 forum(360501)
                        iimcManual(15) iimcModule(0) 2};

iimcRFC1447 OBJECT IDENTIFIER ::= {iimcAutoDocument 1447}

AclPrivileges ::= INTEGER (0..255)

AclEntryIdValue::= SEQUENCE{
                                        aclTarget       [1] Index,
                                        aclSubject      [2] Index,
                                        aclResources    [3] Index
                                        }

Clock   ::= UInteger32

ContextEntryIdValue     ::= SEQUENCE{
                                contextIdentity  [1] OBJECT IDENTIFIER
                        }

Index   ::= INTEGER (1..65535)

PartyAuthLifetime       ::= INTEGER (0..2147483647)

PartyEntryIdValue       ::= SEQUENCE{
                                        partyIdentity     [1] OBJECT IDENTIFIER
                                }

PartyMIBObjectsIdValue          ::= NULL

PartyMaxMessageSize  ::= INTEGER (484..65507)

StorageType ::= INTEGER {
```

```
  other(1),       -- eh?
  volatile(2),    -- e.g., in RAM
  nonVolatile(3), -- e.g., in NVRAM
  permanent(4)    -- e.g., in ROM
  }

ViewEntryIdValue        ::= SEQUENCE{
                                viewIdentity      [1] OBJECT IDENTIFIER
                            }

ViewMask        ::= OCTET STRING (SIZE (0..16))

ViewType ::= INTEGER  {
   included(1),
   excluded(2)
                                    }


-- Default value constants

c-aclPrivileges                 INTEGER ::= 35
c-contextLocal                  BOOLEAN ::= TRUE
c-DEFAULTNullString             OCTET STRING ::= ''H
c-contextLocalTime              Clock ::= currentTime
c-DEFAULTStorageType            INTEGER ::= 3
c-partyTDomain                  OBJECT IDENTIFIER ::= snmpUDPDomain
c-partyTAddress                 OCTET STRING  ::= '000000000000'H
c-partyMaxMessageSize           INTEGER ::= 484
c-partyLocal                    BOOLEAN ::= FALSE
c-partyAuthProtocol             OBJECT IDENTIFIER ::= v2md5AuthProtocol
c-partyAuthClock                INTEGER ::= 0
c-partyAuthLifetime             INTEGER ::= 300
c-partyPrivProtocol             OBJECT IDENTIFIER ::= noPriv
c-viewType                      INTEGER ::= 1

END
```

5. IIMC ACL MIB

The use of parties and contexts and community strings can be very confusing for application programmers. Also the actual privileges associated with an individual user of an application are not generally at the discretion of the user or programmer, but are at the discretion of the person responsible for enforcing the security policy, i.e., configuring the security MIB elements. The actual party identities and associated contexts, or community strings that the user needs for access could remain hidden from the user - and perhaps should.

A mechanism for hiding most of the assignment and configuration of security parameters associated with user security privileges for proxy/agent communications is to implement an access control list (ACL) scheme at the proxy. The ACL scheme allows an identity to be specified with the CMIP request, or ACSE association, have it authenticated, and on the basis of that authenticated identity be assigned the context and source/destination party pairs, or community string, that grants or denies them access to specific operations on specific objects associated with specific managed systems. The actual association between the identity and the party/context or community string shall be accomplished by configuring the security management parameters within the aclSecurityInfoEntry objects of the proxy system.

The information for the access control list for ISO/CCITT-Internet shall be maintained in a table of entries (aclSecurityInfoEntry) that contain:

- an <identity> associated with a user, application, or role,
- the SNMP agent identification, and
- the associated party/context or community string information needed to determine, from other elements in the MIB, the security and communication parameters required to communicate with the remote SNMP agent.

The <identity> shall be provided in the access control certificate (ACC) used for security services between the ISO/CCITT manager and the proxy. Therefore, no additional information needs to be delivered in a contained ACC that holds security parameters for proxy to SNMP agent communications. It is a local security policy matter whether the SNMP security parameters delivered in an ACC over an association, or in a CMIP PDU, will have precedence over those in the aclSecurityInfoEntry's parameters.

The naming attribute of the aclSecurityInfoEntry shall contain a sequence of the <identity> (an octet string) and the <agent id>. The <agent id> shall be the same format as that specified for the cmipsnmpProxyAgentId attribute of the cmipsnmpProxyAgent object class [31].

The proxy shall determine the transport address of the SNMP agent from data in the Proxy MIB [31], i.e., in the cmipsnmpProxyAgent entry that contains the indicated <agent id>. It shall then formulate the combination of identity and transport address necessary to find the party/context/community string in a aclSecurityInfoEntry.

The combination of SNMP agent transport address and community string provides sufficient information to communicate with an SNMPv1 agent.

The partyEntry and contextEntry associated with the parties and context found in the aclSecurityInfoEntry provide the communication and security parameters necessary to communicate with the SNMPv2 agent.

For efficiency, this mechanism has been adapted for use with defined parties and contexts in the UDP domain that are derived from the IP address of the agent, as described in [27].

To accommodate defined UDP contexts and parties, the iimcAclIdentity naming attribute shall be allowed to have values that do not contain the "<agent Id>" component. The naming attribute shall also be allowed to have the associated party and context OIDs of the form for the default party {initialPartyId 0 0 0 0 x} and default context {initialContextId 0 0 0 0 x} as defined in [27]. The string of "0"s are to be interpreted as the OID fragment representation of the IP address. The x assumes the value as defined in [27].

For example the aclSecurityInfoEntry below, associated with "John Doe" provides for access to any SNMPv2 device in the snmpUDPDomain conforming to [27], that uses the defaults for mD5Auth/noPriv and allows Get, Get-Next, Set, and Get-Bulk operations.

iimcAclIdentity	=	"John Doe"
aclTarget	=	{initialPartyId 0 0 0 0 3 }
aclSubject	=	{initialPartyId 0 0 0 0 4 }
aclResources	=	{initialContextId 0 0 0 0 2 }
snmpv1CommunityString	=	"H

The proxy can determine the actual party and context OIDs by filling in the "0 0 0 0" portion of the OIDs with the agents IP address.

It is possible for "John Doe" to have different privileges for different SNMP agents. Other entries could exist for "John Doe" that are specific to the agent. Therefore, a procedure must be established for processing entries in the table. The procedure for processing the table of aclSecurityInfoEntry shall be:

1) check for an entry that may be specific to an agent;

2) if an agent specific entry is not found, then check for an entry for a generic agent.

The above technique avoids the necessity for creating a table entry for every party pair and context for each agent. It is also possible to extend the generic policies by using the same technique defined in [27].

The objects, attributes, and name bindings for an access control list scheme within a proxy are defined below. Support for this access control list scheme shall require the proxy to instantiate the partyEntry and the contextEntry managed objects for communicating with SNMP agents.

A Naming Tree diagram for the ACL related managed object classes is illustrated below. The aclSecurityInfoEntry is subordinate to the ISO/CCITT system managed object that represents the proxy.

```
"Rec. X.721 | ISO/IEC 10165-2 : 1992" : system
        |
        |--- aclSecurityInfoEntry
```

This document (IIMCSEC) is allocated the following registration identifier for purposes of referencing the ACL MIB contained herein.

iimcIIMCACLMIB OBJECT IDENTIFIER ::= { iimcDocument 4 }

-- 5.1 IIMC ACL MIB GDMO TEMPLATES

-- 5.1.1 IIMC ACL MIB Managed Object Classes

```
aclSecurityInfoEntry  MANAGED OBJECT CLASS
        DERIVED FROM  "Rec. X.721 | ISO/IEC 10165-2 : 1992" :top;
        CHARACTERIZED BY
        aclSecurityInfoEntryPkg PACKAGE
        BEHAVIOUR
                aclSecurityInfoEntryPkgBehaviour BEHAVIOUR
                DEFINED AS
                !BEGINPARSE
                DESCRIPTION
                        !!The security information for a particular requesting identity when
                        communicating with a particular SNMP agent.  The identity is associated
                        with either the specific SNMP source party, destination party, and
                        context triplet, or the community string to be used for the communication
                        between the proxy and the SNMP agent.

                        Attributes for this object are read only.

                        When created, only the security information specific to the SNMP
                        protocol version needs to be provided.  The security parameters for the
                        version not chosen are set to default values indicating that they are not
                        applicable for communicating with the SNMP agent.!!;
                ENDPARSE!;;
                ATTRIBUTES
                        iimcAclIdentity                                 GET,
                        {iimcRFC1447}:aclTarget
                        DEFAULT VALUE IIMCACLMIBASN1.c-DEFAULToidNA
                                                                        GET,

                        {iimcRFC1447}:aclSubject
                        DEFAULT VALUE IIMCACLMIBASN1.c-DEFAULToidNA
                                                                        GET,

                        {iimcRFC1447}:aclResources
                        DEFAULT VALUE IIMCACLMIBASN1.c-DEFAULToidNA
                                                                        GET,

                        snmpv1CommunityString
                        DEFAULT VALUE IIMCACLMIBASN1.c-DEFAULTNullString
                                                                        GET;;;
REGISTERED AS  {iimcObjectClass 5};
```

-- 5.1.2 IIMC ACL MIB Attributes

```
iimcAclIdentity ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCACLMIBASN1.IimcAclIdentity;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                iimcAclIdentityBehaviour BEHAVIOUR
                DEFINED AS
                !The value of an instance of this object is an identity that is associated either with
                a specific source party, destination party, and context triplet, or a community
                string.  It may optionally include the specific SNMP agent identity, where the
                agent identity shall be the same format as is specified for the
                {iimcIIMCProxy}:cmipsnmpProxyAgentId attribute defined in [31].!;;
REGISTERED AS {iimcAttribute 18};

snmpv1CommunityString ATTRIBUTE
        WITH ATTRIBUTE SYNTAX IIMCACLMIBASN1.OctetString;
        MATCHES FOR     EQUALITY, ORDERING;
        BEHAVIOUR
                snmpv1CommunityStringBehaviour BEHAVIOUR
                DEFINED AS
                !The value of an instance of this object is an SNMPv1 community string that is
                associated with the remote SNMP agent.!;;
REGISTERED AS {iimcAttribute 19};
```

-- 5.1.3 IIMC ACL MIB Name Bindings

```
aclSecurityInfoEntry-systemNB  NAME BINDING
        SUBORDINATE OBJECT CLASS aclSecurityInfoEntry AND SUBCLASSES ;
        NAMED BY SUPERIOR OBJECT CLASS
                "Rec. X.721 | ISO/IEC 10165-2 : 1992":system AND SUBCLASSES;
        WITH ATTRIBUTE iimcAclIdentity;
        CREATE                  WITH-AUTOMATIC-INSTANCE-NAMING,
                                WITH-REFERENCE-OBJECT;
        DELETE                  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {iimcNameBinding 4};
```

-- 5.2 IIMC ACL MIB ASN.1 MODULES

```
IIMCACLMIBASN1
{iso(1) member-body(2) 124 forum(360501) iimcManual(15) iimcModule(0) 4}
DEFINITIONS IMPLICIT TAGS ::= BEGIN
IMPORTS
                iimcModule, iimcDocument, iimcObjectClass, iimcAttribute,
                iimcNameBinding, iimcIIMCACLMIB
                        FROM IimcAssignedOIDs
                        {iso(1) member-body(2) 124 forum(360501)
                        iimcManual(15) iimcModule(0) 1}
                OctetString
                        FROM IimcCommonDef
                        {iso(1) member-body(2) 124 forum(360501)
                        iimcManual(15) iimcModule(0) 2}
                CmipsnmpProxyAgentId
                        FROM IimcProxyASN1
                        {iso(1) member-body(2) 124 forum(360501)
                        iimcManual(15) iimcModule(0) 3};

IimcAclIdentity  ::= SEQUENCE{
                                identity OCTET STRING,
                                agentId CmipsnmpProxyAgentId
                                OPTIONAL}

c-DEFAULToidNA                  OBJECT IDENTIFIER ::= {0 0}
c-DEFAULTNullString             OCTET STRING ::= "H

END
```

6. CONFORMANCE

An implementation claiming conformance to this document:

(a) shall conform the to translated ISO/CCITT GDMO Party MIB {iimcRFC1447} requirements stated in the corresponding MOCS proforma specified by Annex A;

(b) shall optionally conform to all of the ISO Manager to ISO/CCITT Internet Proxy security requirements stated in section 3.1, in the agent role;

(c) shall support all of the ISO/CCITT-Internet Proxy to Internet Agent security requirements stated in section 3.2, in the manager role; and

(d) shall optionally conform to the aclSecurityInfoEntry class requirements stated in the corresponding MOCS proforma specified by Annex A.

ANNEX A (NORMATIVE): MANAGED OBJECT CONFORMANCE STATEMENTS (MOCS)

Class	Status	Support
partyEntry	m	
contextEntry	m	
viewEntry	c1	
aclEntry	c1	
aclInfoEntry	o	

c1: - if ISO/CCITT-Internet Proxy implementation, else m

A.1 ACL ENTRY [{IIMCRFC1447}]

Table A.1.1 aclEntry Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	aclEntry	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1}		

Table A.1.2 aclEntry PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	aclEntryPkg		Mandatory	m		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		

Table A.1.3 aclEntry Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	aclEntryId	{1 2 124 360501 14 15 1 3 6 1 6 3 3 2 3 1 1}	SEQUENCE	m		m		-		-		-		-		
2	aclPrivileges	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 4}	INTEGER	m		m		m		-		-		-		
3	aclResources	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 3}	INTEGER	m		m		-		-		-		-		
4	aclStatus	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 6}		m		m		m		-		-		-		
5	aclStorageType	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 5}		m		m		m		-		-		-		
6	aclSubject	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 2}	INTEGER	m		m		-		-		-		-		
7	aclTarget	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 1}	INTEGER	m		m		-		-		-		-		
8	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
9	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
10	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
11	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		

Table A.1.4 aclEntry Attribute group support

There are no attribute groups specified for this managed object class.

Table A.1.5 aclEntry Action support

There are no actions specified for this managed object class.

Table A.1.6 aclEntry Notification support

There are no notifications specified for this managed object class.

Table A.1.7 aclEntry Parameter support

There are no parameters specified for this managed object class.

Table A.1.8 aclEntry Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.1.2/3

Table A.1.9 aclEntry Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	aclEntry-partyMIBObjectsNB	{1 2 124 360501 14 4 1 3 6 1 6 3 3 2 3 1 1}	Superior class: partyMIBObjects AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

A.2 CONTEXT ENTRY [{IIMCRFC1447}]

Table A.2.1 contextEntry Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	contextEntry	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1}		

Table A.2.2 contextEntry PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
2	contextEntryPkg		Mandatory	m		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		

Table A.2.3 contextEntry Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
2	contextEntryId	{1 2 124 360501 14 15 1 3 6 1 6 3 3 2 2 1 1}	SEQUENCE	m		m		-		-		-		-		
3	contextIdentity	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 1}		m		m		-		-		-		-		
4	contextIndex	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 2}	INTEGER	m		m		m		-		-		-		
5	contextLocal	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 3}		m		m		m		-		-		-		
6	contextLocalEntity	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 5}	OCTET STRING	m		m		m		-		-		-		
7	contextLocalTime	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 6}	OBJECT IDENTIFIER	m		m		m		-		-		-		
8	contextProxyContext	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 9}	OBJECT IDENTIFIER	m		m		m		-		-		-		
9	contextProxyDstParty	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 7}		m		m		m		-		-		-		
10	contextProxySrcParty	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 8}		m		m		m		-		-		-		
11	contextStatus	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 11}		m		m		m		-		-		-		
12	contextStorageType	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 10}		m		m		m		-		-		-		
13	contextViewIndex	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 2 1 1 4}	INTEGER	m		m		m		-		-		-		
14	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
15	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
16	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		

Table A.2.4 contextEntry Attribute group support

There are no attribute groups specified for this managed object class.

Table A.2.5 contextEntry Action support

There are no actions specified for this managed object class.

Table A.2.6 contextEntry Notification support

There are no notifications specified for this managed object class.

Table A.2.7 contextEntry Parameter support

There are no parameters specified for this managed object class.

Table A.2.8 contextEntry Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.2.2/3

Table A.2.9 contextEntry Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	contextEntry-partyMIBObjectsNB	{1 2 124 360501 14 4 1 3 6 1 6 3 3 2 2 1 1}	Superior class: partyMIBObjects AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

A.3 PARTY ENTRY [{IIMCRFC1447}]

Table A.3.1 partyEntry Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	partyEntry	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1}		

Table A.3.2 partyEntry PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
3	partyEntryPkg		Mandatory	m		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		

Table A.3.3 partyEntry Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		
5	partyAuthClock	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 8}		m		m		m		-		-		-		
6	partyAuthLifetime	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 11}	INTEGER	m		m		m		-		-		-		
7	partyAuthPrivate	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 9}	OCTET STRING	m		m		m		-		-		-		
8	partyAuthProtocol	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 7}	OBJECT IDENTIFIER	m		m		m		-		-		-		
9	partyAuthPublic	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 10}	OCTET STRING	m		m		m		-		-		-		
10	partyCloneFrom	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 15}		m		m		m		-		-		-		
11	partyEntryId	{1 2 124 360501 14 15 1 3 6 1 6 3 3 2 1 1 1}	SEQUENCE	m		m		-		-		-		-		
12	partyIdentity	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 1}		m		m		-		-		-		-		
13	partyIndex	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 2}	INTEGER	m		m		-		-		-		-		
14	partyLocal	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 6}		m		m		m		-		-		-		
15	partyMaxMessageSize	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 5}	INTEGER	m		m		m		-		-		-		
16	partyPrivPrivate	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 13}	OCTET STRING	m		m		m		-		-		-		

17	partyPrivProtocol	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 12}	OBJECT IDENTIFIER	m		m		m		-		-		-		
18	partyPrivPublic	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 14}	OCTET STRING	m		m		m		-		-		-		
19	partyStatus	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 17}		m		m		m		-		-		-		
20	partyStorageType	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 16}		m		m		m		-		-		-		
21	partyTAddress	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 4}		m		m		m		-		-		-		
22	partyTDomain	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 1 1 1 3}	OBJECT IDENTIFIER	m		m		m		-		-		-		

Table A.3.4 partyEntry Attribute group support

There are no attribute groups specified for this managed object class.

Table A.3.5 partyEntry Action support

There are no actions specified for this managed object class.

Table A.3.6 partyEntry Notification support

There are no notifications specified for this managed object class.

Table A.3.7 partyEntry Parameter support

There are no parameters specified for this managed object class.

Table A.3.8 partyEntry Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.3.2/2

Table A.3.9 partyEntry Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	partyEntry-partyMIBObjectsNB	{1 2 124 360501 14 4 1 3 6 1 6 3 3 2 1 1 1}	Superior class: partyMIBObjects AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

A.4 PARTY MIB OBJECTS [{IIMCRFC1447}]

Table A.4.1 partyMIBObjects Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	partyMIBObjects	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2}		

Table A.4.2 partyMIBObjects PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
3	partyMIBObjectsPkg		Mandatory	m		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		

Table A.4.3 partyMIBObjects Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		
5	partyMIBObjectsId	{1 2 124 360501 14 15 1 3 6 1 6 3 3 2}	NULL	m		m		-		-		-		-		

Table A.4.4 partyMIBObjects Attribute group support

There are no attribute groups specified for this managed object class.

Table A.4.5 partyMIBObjects Action support

There are no actions specified for this managed object class.

Table A.4.6 partyMIBObjects Notification support

There are no notifications specified for this managed object class.

Table A.4.7 partyMIBObjects Parameter support

There are no parameters specified for this managed object class.

Table A.4.8 partyMIBObjects Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.4.2/2

Table A.4.9 partyMIBObjects Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	partyMIBObjects-systemNB	{1 2 124 360501 14 4 1 3 6 1 6 3 3 2}	Superior class: "Rec. X.721 | ISO/IEC 10165-2 : 1992": Superior class: system AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

A.5 VIEW ENTRY [{IIMCRFC1447}]

Table A.5.1 viewEntry Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	viewEntry	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1}		

Table A.5.2 viewEntry PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		
4	viewEntryPkg		Mandatory	m		

Table A.5.3 viewEntry Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		
5	viewEntryId	{1 2 124 360501 14 15 1 3 6 1 6 3 3 2 4 1 1}	SEQUENCE	m		m		-		-		-		-		
6	viewIndex	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 1}	INTEGER	m		m		-		-		-		-		
7	viewMask	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 3}	OCTET STRING	m		m		m		-		-		-		
8	viewStatus	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 6}		m		m		m		-		-		-		
9	viewStorageType	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 5}		m		m		m		-		-		-		
10	viewSubtree	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 2}	OBJECT IDENTIFIER	m		m		-		-		-		-		
11	viewType	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 4 1 1 4}	INTEGER	m		m		m		-		-		-		

Table A.5.4 viewEntry Attribute group support

There are no attribute groups specified for this managed object class.

Table A.5.5 viewEntry Action support

There are no actions specified for this managed object class.

Table A.5.6 viewEntry Notification support

There are no notifications specified for this managed object class.

Table A.5.7 viewEntry Parameter support

There are no parameters specified for this managed object class.

Table A.5.8 viewEntry Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.5.2/2

Table A.5.9 viewEntry Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	viewEntry-partyMIBObjectsNB	{1 2 124 360501 14 4 1 3 6 1 6 3 3 2 4 1 1}	Superior class: partyMIBObjects AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

A.6 ACL SECURITY INFO ENTRY [{IIMCIIMCACLMIB}]

Table A.6.1 aclSecurityInfoEntry Managed object class support

Index	Managed object class template label	Value of object identifier for class	Support of all mandatory features? (Y/N)	Is the actual class the same as the managed object class to which conformance is claimed? (Y/N)
1	aclSecurityInfoEntry	{1 2 124 360501 15 3 5}		

Table A.6.2 aclSecurityInfoEntry PACKAGES

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Support	Additional information
1	aclSecurityInfoEntryPkg		Mandatory	m		
2	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphicPackage	{2 9 3 2 4 17}	"if an object supports allomorphism"	o		
3	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packagesPackage	{2 9 3 2 4 16}	"any registered package, other than this package has been instantiated"	c1		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": topPackage		Mandatory	m		

Table A.6.3 aclSecurityInfoEntry Attribute support

				Set by create		Get		Replace		Add		Remove		Set to default		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Status	Support	Additional information
1	{iimcRFC1447}: aclResources	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 3}	INTEGER	m		m		-		-		-		-		
2	{iimcRFC1447}: aclSubject	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 2}	INTEGER	m		m		-		-		-		-		
3	{iimcRFC1447}: aclTarget	{1 2 124 360501 14 1 1 3 6 1 6 3 3 2 3 1 1 1}	INTEGER	m		m		-		-		-		-		
4	"Rec. X.721 | ISO/IEC 10165-2 : 1992": allomorphs	{2 9 3 2 7 50}	SET OF ObjectClass	-		o		-		-		-		-		
5	iimcAclIdentity	{1 2 124 360501 15 1 18}	SEQUENCE	m		m		-		-		-		-		
6	"Rec. X.721 | ISO/IEC 10165-2 : 1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o		m		-		-		-		-		
7	"Rec. X.721 | ISO/IEC 10165-2 : 1992": objectClass	{2 9 3 2 7 65}	ObjectClass	-		m		-		-		-		-		
8	"Rec. X.721 | ISO/IEC 10165-2 : 1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o		c1		-		-		-		-		
9	snmpv1CommunityString	{1 2 124 360501 15 1 19}	OCTET STRING	m		m		-		-		-		-		

Table A.6.4 aclSecurityInfoEntry Attribute group support

There are no attribute groups specified for this managed object class.

Table A.6.5 aclSecurityInfoEntry Action support

There are no actions specified for this managed object class.

Table A.6.6 aclSecurityInfoEntry Notification support

There are no notifications specified for this managed object class.

Table A.6.7 aclSecurityInfoEntry Parameter support

There are no parameters specified for this managed object class.

Table A.6.8 aclSecurityInfoEntry Conditions

Condition number	Condition	Reference
c1	IF "any registered package, other than this package has been instantiated" THEN m ELSE -	A.6.2/3

Table A.6.9 aclSecurityInfoEntry Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Contraints and values	Status	Support	Additional information	Subindex	Operation	Constraints and values	Status	Support	Additional information
1	aclSecurityInfoEntry-systemNB	{1 2 124 360501 15 4 4}	Superior class: "Rec. X.721 | ISO/IEC 10165-2 : 1992": Superior class: system AND SUBCLASSES	o			1.1	Create support		c:m		
							1.2	Create with reference object		c:m		
							1.3	Create with automatic instance naming		c:m		
							1.4	Delete support		c:m		
							1.5	Delete only if no contained objects		c:x		
							1.6	Delete contained objects		c:m		

ANNEX B: GLOSSARY

ACC	Access Control Certificate
ACL	Access Control List
ACSE	Association Control Service Element
ASN.1	Abstract Syntax Notation One
CCITT	Consultative Committee on Telephony and Telegraphy
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
DN	Distinguished Name
GDMO	Guidelines for the Definition of Managed Objects
GNMP	Government Network Management Profile
IIMC	ISO/CCITT and Internet Management Coexistence
ISO	International Standards Organization
MD5	Message Digest 5
MIB	Management Information Base
MOCS	Managed Object Conformance Statement
NMF	Network Management Forum
OID	Object Identifier
OSI	Open Systems Interconnection
PDU	Protocol Data Unit
RDN	Relative Distinguished Name
RFC	Request For Comments
SMI	Structure of Management Information
SNMP	Simple Network Management Protocol
SNMPv1	Simple Network Management Protocol Version 1
SNMPv2	Simple Network Management Protocol Version 2
TCP/IP	Transmission Control Protocol/Internetwork Protocol

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