INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.791

(10/96)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

OSI management – Management functions

Profile for trouble management function for ITU-T applications

ITU-T Recommendation X.791

(Previously CCITT Recommendation)

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

PUBLIC DATA NETWORKS	X.1–X.199
Services and facilities	X.1–X.19
Interfaces	X.20–X.49
Transmission, signalling and switching	X.50–X.89
Network aspects	X.90–X.149
Maintenance	X.150–X.179
Administrative arrangements	X.180–X.199
OPEN SYSTEM INTERCONNECTION	X.200–X.299
Model and notation	X.200–X.209
Service definitions	X.210–X.219
Connection-mode protocol specifications	X.220–X.229
Connectionless-mode protocol specifications	X.230–X.239
PICS proformas	X.240–X.259
Protocol Identification	X.260–X.269
Security Protocols	X.270–X.279
Layer Managed Objects	X.280–X.289
Conformance testing	X.290–X.299
INTERWORKING BETWEEN NETWORKS	X.300–X.399
General	X.300–X.349
Satellite data transmission systems	X.350–X.399
MESSAGE HANDLING SYSTEMS	X.400–X.499
DIRECTORY	X.500–X.599
OSI NETWORKING AND SYSTEM ASPECTS	X.600–X.699
Networking	X.600–X.629
Efficiency	X.630–X.649
Naming, Addressing and Registration	X.650–X.679
Abstract Syntax Notation One (ASN.1)	X.680–X.699
OSI MANAGEMENT	X.700–X.799
Systems Management framework and architecture	X.700–X.709
Management Communication Service and Protocol	X.710–X.719
Structure of Management Information	X.720–X.729
Management functions	**X.730–X.799**
SECURITY	X.800–X.849
OSI APPLICATIONS	X.850–X.899
Commitment, Concurrency and Recovery	X.850–X.859
Transaction processing	X.860–X.879
Remote operations	X.880–X.899
OPEN DISTRIBUTED PROCESSING	X.900–X.999

For further details, please refer to ITU-T List of Recommendations.

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation X.791 was prepared by ITU-T Study Group 7 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 5th of October 1996.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

CONTENTS

SUMMARY

This Recommendation defines a profile of options, from those in Recommendation X.790/Amd. 1, using the document structure defined in Amendment 1 to Recommendation X.790. The profile is concerned with general trouble management capability and provides an implementation definition for developers to design their software product to. The profile may be used by network operator personnel to specify the precise trouble management capability required, knowing that product vendor can or has used the definition for product development.

Recommendation X.791

PROFILE FOR TROUBLE MANAGEMENT FUNCTION FOR ITU-T APPLICATIONS

(Geneva, 1996)

1 Scope

From time to time all systems, including communications networks, develop problems or malfunctions referred to in this Recommendation as "troubles". A "trouble" in a communications network is a problem that has an adverse effect on the quality of service perceived by network users. When a trouble is detected, possibly as a result of an alarm report, a trouble report may be entered by a user or the system may raise a report automatically. Management of that trouble report is necessary to ensure that it receives attention and that the trouble is cleared to restore the service to its previous level of capability.

At the time of a trouble, a network may have been interworking with another network to provide a service, and the problem or malfunction may be due to the other network. Therefore it may be necessary to exchange trouble management information between management systems across interfaces which may be client to service provider or service provider to service provider interfaces and may represent inter-jurisdictional as well as intra-jurisdictional boundaries. In addition to exchanging information on trouble that has already been detected, advance information on service inaccessibility may also need to be exchanged. Thus, a service provider may need to inform a customer of future service inaccessibility (because of planned maintenance, for example). The scope of this Recommendation includes all of the above processes for exchange of management information.

1.1 Functionality

This Recommendation specifies the Trouble Management functionality for:

- Reporting of troubles on services or resources on a managed network or system;
- Tracking the progress of trouble to resolution;
- Clearing and closure of trouble.

In a network environment this encompasses computer networks, data networks and telephony networks. This Recommendation defines a trouble management model, application services and a number of objects and their attributes that are necessary for trouble management.

Requirements for the detection of a trouble, that is to say any cause that may lead to or contribute to a manager perceiving a degradation in the quality of service of one or more network services or one or more network resources being managed, are outside the scope of this Recommendation.

1.2 Field of application

In general, trouble management is the trouble reporting and tracking between Conformant Management Entities (CMEs) interoperating cooperatively towards resolution of a trouble. (No distinction is made between inter-jurisdictional and intra-jurisdictional interfaces.) A trouble report gets instantiated for this purpose. In cases where CMEs are interoperating cooperatively towards the resolution of a trouble, it means that both manager and agent CME may have a shared responsibility for resolution of trouble.

The trouble management function Recommendation is one that may be used by a CME acting in:

1) **a manager role** to manage trouble(s) and any corresponding trouble report(s) that have been raised to an agent role CME for resolution;
2) **an agent role** responsible for resolving trouble(s) and any corresponding trouble report(s) that have been raised to it by a manager role CME;

3) **both an agent and manager role** to manage trouble(s) and any corresponding trouble report(s) that have been raised internally (i.e. to the part performing the agent role), by another part of itself performing the manager role. In this case, the CME itself is responsible for resolving the trouble, but in addition, the CME may also inform other manager role CMEs that are part of the cooperating networks, if they are liable to be affected by the trouble or can help with trouble resolution.

The actual means and methods by which the manager perceives the trouble in the first place and the means and methods employed by the agent for detection and identification of the trouble are outside the scope of this Recommendation.

2 Normative references

The following Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision: all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: Conventions for the definition of OSI services.*

- ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology – Open Systems Interconnection – Service definition for the association control service element.*

- ITU-T Recommendation X.680 (1994)/Amd.1 (1995) | ISO/IEC 8824-1:1995/Amd.1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation – Amd.1: Rules of extensibility.*

- CCITT Recommendation X.701 (1992)/Cor.1 (1992)/Cor.2 (1995) | ISO/IEC 10040:1992/Cor.1: 1994/Cor.2:1995, *Information technology – Open Systems Interconnection – Systems management overview*.

- CCITT Recommendation X.721 (1992)/Cor.1 (1994) | ISO/IEC 10165-2:1992/Cor.1:1994, *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information.*

- CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects.*

- ITU-T Recommendation X.724 (1996) | ISO/IEC 10165-6:1997, *Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management.*

- CCITT Recommendation X.730 (1992) | ISO/IEC 10164-1:1993, *Information Technology – Open Systems Interconnection – Systems management: Object management function.*

- CCITT Recommendation X.731 (1992)/Cor.1 (1995) | ISO/IEC 10164-2:1992/Cor.1:1995, *Information technology – Open Systems Interconnection – Systems management: State management function.*

- CCITT Recommendation X.734 (1992)/Cor.1 (1994) | ISO/IEC 10164-5:1993/Cor.1:1994, *Information technology – Open Systems Interconnection – Systems management: Event report management function.*

- CCITT Recommendation X.735 (1992) | ISO/IEC 10164-6:1993, *Information technology – Open Systems Interconnection – Systems management: Log control function.*

- ITU-T Recommendation X.741 (1995) | ISO/IEC 10164-9:1995, *Information technology – Open Systems Interconnection – Systems management: Objects and attributes for access control.*

2.2 Paired Recommendations | International Standards equivalent in technical content

– CCITT Recommendation X.209 (1988), *Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1).*

ISO/IEC 8825:1990, *Information technology – Open Systems Interconnection – Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).*

– CCITT Recommendation X.710 (1991), *Common management information service definition for CCITT applications.*

ISO/IEC 9595:1991, *Information technology – Open Systems Interconnection – Common management information service definition.*

2.3 Additional references

– CCITT Recommendation M.3100 (1995), *Generic network information model.*

– ISO/IEC ISP 11183-1:1992, *Information technology – International Standardized Profiles AOM1n OSI Management – Management Communications – Part 1: Specification of ACSE, presentation and session protocols for the use of ROSE and CMISE.*

– ISO/IEC ISP 11183-2:1992, *Information technology – International Standardized Profiles AOM1n OSI Management – Management Communications – Part 2: CMISE/ROSE for AOM12 – Enhanced Management Communications.*

– ISO/IEC ISP 12059-0:1995, *Information technology – International Standardized Profiles – OSI Management – Common information for management functions – Part 0: Common definitions for management function profiles.*

– ISO/IEC ISP 12059-1:1995, *Information technology – International Standardized Profiles – OSI Management – Common information for management functions – Part 1: Object management.*

3 Definitions

For the purposes of this Recommendation, the following definitions apply.

3.1 ASN.1 definitions

This Recommendation makes use of the following term defined in CCITT Rec. X.208 and ISO/IEC 8824:

– object identifier.

3.2 Management framework definitions

This Recommendation makes use of the following term defined in CCITT Rec. X.700 and ISO/IEC 7498-4.

– managed object.

3.3 Conformance testing methodology definitions

This Recommendation makes use of the following terms defined in CCITT Rec. X.290 and ISO/IEC 9646-1:

a) Protocol Implementation Conformance Statement (PICS);

b) PICS proforma;

c) system conformance statement.

3.4 Systems management overview definitions

This Recommendation makes use of the following terms defined in CCITT Rec. X.701 | ISO/IEC 10040, with the exceptions as indicated:

a) agent;

b) managed object class;

c) managed object conformance statement;

d) manager;

e) MOCS proformas;

f) notification.

The definition of the term “agent” in Recommendation X.701 is used with the following restriction. With respect to a particular telecommunications service (or resource) instance, it shall be possible to manage the service with one system playing the manager role, and the other playing the agent role.

The definition of the term “manager” in Recommendation X.701 is used with the following restriction. With respect to a particular telecommunications service (or resource) instance, it shall be possible to manage the service with one system playing the manager role, and the other playing the agent role.

3.5 CMIS definitions

This Recommendation makes use of the following terms defined in CCITT Rec. X.710 and ISO/IEC 9595.

a) attribute;

b) attribute type;

c) attribute value.

3.6 Management information model definitions

This Recommendation makes use of the following terms defined in CCITT Rec. X.720 | ISO/IEC 10165-1:

a) action;

b) behaviour;

c) characteristic;

d) conditional package;

e) instantiation;

f) name binding;

g) package;

h) parameter;

i) superclass.

3.7 Guidelines for the definition of managed objects definitions

This Recommendation makes use of the following term defined in CCITT Rec. X.722 | ISO/IEC 10165-4:

– template.

3.8 Implementation conformance statements definitions

This Recommendation makes use of the following terms defined in ITU-T Rec. X.296 and ISO/IEC 9646-7:

a) (ICS) item;

b) (ICS) question;

c) status (value);

d) (support) answer.

3.9 Implementation conformance statement proforma definitions

This Recommendation makes use of the following terms defined in ITU-T Rec. X.724 | ISO/IEC 10165-6:

a) Managed Relationship Conformance Statement (MRCS);

b) Management Conformance Summary (MCS);

c) MCS proforma;

d) MRCS proforma.

3.10 Additional definitions

For the purposes of this Recommendation, the following definitions apply.

3.10.1 alias: Another name, besides the object identifier, by which a trouble report may be known, referenced or identified (usually by the customer).

3.10.2 application entity: The aspects of an application process pertinent to OSI.

3.10.3 application association: A cooperative relationship between two application entities, formed by their exchange of application protocol control information through their use of presentation services.

3.10.4 application context: An explicitly identified set of application service elements, related options, and any other necessary information for the interworking of application entities on an application association.

3.10.5 associated alarms: Alarms directly related to a given identified trouble.

3.10.6 cancelled: A manager can request the agent to "cancel" a trouble report. The manager wants to abort this trouble report (either because it was entered in error or because there is no longer any trouble condition). Under certain conditions (e.g. the trouble has not been dispatched or tested), the agent will "cancel" the trouble report by updating its status to "closed-out by customer request". "Cancelling" a trouble report may also have business ramifications beyond the scope of this Recommendation (e.g. whether the customer must pay for the trouble report).

3.10.7 clearing trouble reports: An assertion by an agent that actions which are identified in the trouble report or the repair activity object instances, have been satisfactorily performed to resolve the trouble, or that such actions are no longer necessary, such that in either case the trouble report is a candidate for closure.

3.10.8 client: User of a service provided by a system or a network.

3.10.9 closed-out: A trouble report is considered "closed-out" when the agent determines that the reported trouble has either been cleared or no longer exists, and the agent updates the trouble report status to indicate the trouble report is "closed-out". Only an agent can change the trouble report status to "closedOut". The status of a trouble report might change to "closedOutByCustReq" as a result of a request to cancel the trouble report from the manager.

3.10.10 closing trouble reports: An assertion by an agent that the trouble is resolved such that the cleared trouble report may only be processed further to generate a trouble history record and/or be deleted.

3.10.11 conformant management entity: A real open system which supports the interoperable interface defined in this Recommendation.

3.10.12 contact: A person who can provide additional information about the trouble on behalf of the manager or the agent.

3.10.13 customer: The customer is a user of telecommunications services provided by a service provider. Specifically, in the context of this Recommendation, the customer is a user who chooses to use the OS (Operations System) - to-OS-OSI interface for network management across jurisdictions in order to achieve control of the telecommunications services (or resources) being used. The customer (or customer representative) acts in the manager role.

There is no requirement that the interface be confined to cases where there is a traditional telecommunication service customer to service provider relationship between the parties. Two telecommunications service providers (carriers) may use this interface to exchange trouble reports in situations where their networks interwork in order to provide service to an end user. In that case, the Customer role may change from situation to situation. However, in any particular situation, one carrier will be the customer who will act in the manager role, while the other will be the supplier and will act in the agent role.

3.10.14 defer: To postpone work on, or set aside, a trouble report until such time as when appropriate conditions are met and it can be progressed further.

3.10.15 event: An instantaneous occurrence that changes the global status of an object. This status change may be persistent or temporary, thus allowing for surveillance, monitoring, and performance measurement functionality, etc. Events may or may not generate reports; they may be spontaneous or planned; they may trigger other events or may be triggered by one or more other events.

3.10.16 escalating a trouble report: Identifiying a trouble report which is to receive urgent and immediate supervisory attention to resolve the trouble.

3.10.17 fault management: Fault Management consists of a set of functions that enable the detection, isolation, and correction of abnormal operation of the telecommunications network and its environment.

3.10.18 jurisdiction: This refers to the functional separation of telecommunications networks. A jurisdiction is one of the following four types:

- Local Exchange Carrier Network;
- Interexchange Carrier Network;
- End User Network;
- some combination of the above.

3.10.19 outage: Unavailability of a service or resource.

3.10.20 perceived severity: The seriousness of the problem as seen by the person reporting the trouble.

3.10.21 priority: The degree of urgency with which the manager requires resolution of the problem.

3.10.22 service: This term represents telecommunications capabilities that the customer buys or leases from a service provider. Service is an abstraction of the network-element-oriented or equipment-oriented view. Identical services can be provided by different network elements, and different services can be provided by the same network elements.

3.10.23 service provider: A system or a network that provides a telecommunication service to a customer. In the context of this Recommendation, a service provider is specifically a provider of telecommunications services who offers the OS-to-OS-OSI interface to allow a customer the capability for network management across jurisdictions in order to control the services (or resources) being provided (see *Customer*). A service provider acts in the agent role.

There is no requirement that the interface be confined to cases where there is a traditional telecommunication service customer to telecommunication service provider relationship between the parties. It is certainly possible that two telecommunications carriers, whose networks interwork to provide a telecommunications service to an end user, may use this interface. In that case, the customer and service provider roles may change from situation to situation. However, in any particular situation, one carrier will be the customer and have the manager role, while the other will be the supplier, and will have the agent role.

3.10.24 status of a trouble report: The stage that has been reached by a trouble report since its instantiation/creation while the trouble is being resolved.

3.10.25 time-stamp: A time value used to indicate when a particular activity, action or an occurrence of an event took place.

3.10.26 trouble: Any cause that may lead to or contribute to a manager perceiving a degradation in the quality of service of one or more network services or one or more network resources being managed.

3.10.27 trouble administration: Trouble Administration consists of a set of functions that enable troubles to be reported and their status tracked. Trouble Administration services include request trouble report format, enter trouble report, add trouble information, cancel trouble report, request trouble report status, review trouble history, attribute value change notification (e.g. trouble report status/commitment time), object creation/deletion (trouble report), verify trouble repair completion, and modify trouble administration information.

3.10.28 trouble history record: A record of selected information from a trouble report that is retained for historical purposes after the trouble report is closed.

3.10.29 trouble management: The trouble reporting and tracking between CMEs interoperating cooperatively towards resolution of a trouble. (No distinction is made between inter-jurisdictional or intra-jurisdictional interfaces.)

3.10.30 trouble reporting: The act of communicating that a trouble has been detected so that trouble management may be used in its resolution.

3.10.31 trouble resolution: It is the process of diagnosis and repair action required to clear a problem. It includes the process of assigning specific work items or overall responsibility for clearing and closing the trouble report.

3.10.32 trouble tracking: The ability to follow the progress of a trouble report from its creation through to its closure.

3.10.33 trouble type: The description or category of the trouble that was detected.

4 Abbreviations

For the purposes of this Recommendation, the following abbreviations apply.

ANSI	American National Standards Institute
ASN.1	Abstract Syntax Notation One
CME	Conformant Management Entity
CMIS	Common Management Information Service
CMISE	Common Management Information Service Element
CNM	Customer Network Management
DN	Distinguished Name
FU	Functional Unit
GNM	General Network Model
ICS	Implementation Conformance Statement
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MAPDU	Management Application Protocol Data Unit
MCS	Management Conformance Summary
MICS	Management Information Conformance Statement
MOCS	Managed Object Conformance Statement
MRCS	Managed Relationship Conformance Statement
NE	Network Element
NOC	Network Operations Centre
OAM&P	Operations, Administration, Maintenance and Provisioning
OS	Operations System
OSI	Open Systems Interconnection
PICS	Protocol Implementation Conformance Statement
PTR	Provider Trouble Report

RDN	Relative Distinguished Name
SMAPM	System Management Application Protocol Machine
SMO	Systems Management Overview
TMN	Telecommunications Management Network
TSP	Telecommunication Service Priority
TTR	Telecommunications Trouble Report

5 Conventions

This clause explains the conventions used throughout this Recommendation.

5.1 Use of graphic string syntax

By convention, GraphicString may have country or language specific limitations.

5.2 Use of list in attribute labels

By convention, attributes with a "List" suffix indicate that the attribute is set valued.

5.3 Labelling conditional packages

By convention, conditional packages are prefixed with an abbreviation of the object class, e.g. Package1 in the Trouble Report object would be labelled x790Package1.

5.4 Describing parameters in primitives

The definition of certain Fault Management services in this Recommendation includes a table that lists the parameters of its primitives. For a given primitive, the presence of each parameter is described by one of the following values:

M	The parameter is mandatory
(=)	The value of the parameter is equal to the value of the parameter in the column to the left
U	Use of the parameter is a service-user option
–	The parameter is not present in the interaction
C	The parameter is conditionally present The condition(s) are defined by the text that describes the parameter.

The service definitions in clause 9 are described using the service definition conventions specified in Recommendation X.210.

6 Requirements

6.1 Trouble management report creation

1) A trouble report may be created on a resource or service on a managed network (e.g. a circuit, a dialled number, a switched access number or service identifier), or a computer system, when:

   - an agent role CME detects a trouble and automatically generates a trouble report, for instance due to threshold limits being exceeded or alarm notifications;
   - a person in the manager's organisation reports a trouble to the agent by a procedure other than using the interoperable interface, and as a result the agent creates a trouble report;

- a manager role CME requests that a trouble report be created by the agent role CME, i.e. using the interoperable interface;

- an agent role CME wants to create a trouble report to specifically notify the manager role CME that planned maintenance will be carried out at a given time and that all or parts of the service(s), resource(s), network or system will be inaccessible during that time. In this case the trouble management function is used to notify the manager that planned maintenance action is scheduled.

2) A trouble report used during the trouble resolution procedures may have associated with it one or more:

   - other trouble reports used for reporting the trouble; or

   - alarms triggered by a single common problem.

3) Correlation of alarm information is outside the scope of this Recommendation.

4) The agent should be able to select the format of the trouble report with the exception of any compulsory information common to all trouble reports which must be present. The agent may select the format based on the managed object instance, or the managed object class of the managed object instance, against which the trouble is reported. The manager should be able to retrieve the applicable trouble report format to be used, prior to reporting a trouble.

5) It should be possible to have multiple distinct trouble reports created against the same managed object instance.

6) A trouble report shall be time-stamped at creation.

7) It should be possible for the trouble report originator, either agent or manager, to include in the trouble report the trouble type and additional information about the trouble. For example, the nature of the problem being reported, the source of the trouble report (external, internal, customer, etc.) and descriptive information in free format text.

8) The trouble report originator, either agent or manager, should be able to supply the identity of the person who originated the trouble report and/or the person who last modified information in the trouble report.

9) The trouble report originator, either agent or manager, should be able to supply the perceived trouble severity in terms of the effect on the managed object instance (either a service or a resource on a managed network).

10) The trouble report contains the identity of the service or network resource against which the trouble is being reported and may contain additional suspect objects and the location of the trouble.

11) The trouble report originator, either agent or manager, should be able to supply the priority to indicate the urgency for resolution of the trouble as seen by the originator relative to other outstanding trouble reports it has reported.

12) The manager should be able to identify a contact person(s) and also an alternative contact person(s) who can provide additional information to the agent about the trouble on the managed object instance.

13) The agent may also provide a contact who can provide additional information about the trouble.

14) It should be possible to have alias(es) for the trouble report to provide backwards compatibility to existing trouble handling systems, e.g. the trouble report identity derived using existing internal trouble management practices may be used.

15) The trouble report may contain information about associated fault reports, e.g. alarms, other trouble reports and test results, to assist the trouble resolution process.

16) For the purpose of trouble reporting, tracking or monitoring, it should be possible for a manager, to associate several trouble reports together to indicate a common problem. (The criteria for grouping or regrouping trouble reports is outside the scope of this Recommendation.)

17) It should be possible for either the agent or manager to attach comments in free format text to the trouble report.

18) The trouble report originator, either agent or manager, should be able to specify the time at which the trouble was detected, as it is likely to be different from the time at which the trouble report was created.

19) An agent should be able to provide the manager with an identifier for a created trouble report such that the manager can subsequently use it to uniquely identify the trouble report for the purpose of reporting, tracking or monitoring trouble and requesting event forwarding.

20) In some cases it is possible that the agent system may not be able to update the trouble report information. In such a situation, provided the manager has requested event forwarding on events from the trouble report, the manager could be informed that the trouble report is disabled and its information cannot be updated.

21) The manager may be able to indicate that the managed object against which the trouble report is being generated was recently created or another trouble was reported on this object in the recent past. (The mechanism used for the association is outside the scope of this Recommendation.)

22) A trouble report should contain sufficient information to enable it to be directed to the appropriate repair and/or maintenance support location, also commonly referred to as a Work Centre, for trouble resolution.

6.2 Tracking trouble management reports

1) A manager should be able to track the progress of a trouble report to resolution by requesting event forwarding. This includes the ability to request the trouble report state and/or status from the agent.

2) The state and/or status of the trouble report should be updated as the problem it relates to is progressed to resolution. The manager should be notified about the change in state or status of the trouble report if it has requested the forwarding of events from the agent. The time-stamp for the status change may be retained by the trouble report to facilitate subsequent analysis by the manager or agent.

3) The time, at which the trouble report was last updated, should be recorded. The identity of the manager, agent or person who did the last modification should also be recorded.

4) The trouble report should maintain a running account of information on the activities taken to diagnose, test and repair the trouble, the repair type, the length of time spent on each activity, whether the activity is billable or not and the equipment involved in each activity. This information may be provided by either the manager or the agent or both. In addition to the running account, it should be possible to summarise key information, such as, how long was spent on an activity, whether the work is billable or not, etc.

5) The current agent/person working to resolve the problem should be identified in the trouble report.

6) The agent should allow the manager to:

   - view specific trouble reports;
   - view a specific subset of trouble reports, e.g. active (not closed), cleared, updated trouble reports;
   - view historical trouble information for an object if it is still available.

7) It should be possible to view (scope and filter) trouble reports by customer and/or service type.

8) The agent should be able to provide autonomous trouble report status reports to the manager over the interoperable interface within the intervals requested by the manager.

6.3 Management of trouble management reports

1) It should be possible for the agent to allocate the person/agent with overall responsibility for resolving the trouble.

2) It should be possible for the manager to request escalation of a trouble report under certain circumstances, for example, if the trouble has not been resolved in a given period of time, known as time based escalation. Subsequent to receiving a request to escalate a trouble report, the agent should be able to indicate the person the trouble report was escalated to. (Business level agreements, which may be required to define the rules for escalation, are outside the scope of this Recommendation.)

3) It should be possible to automatically notify an appropriate contact within the agent role conformant management entity, based on a time based escalation.

4) A manager should be able to request the cancellation of a trouble report by the agent and indicate in the trouble report the person making the request.

5) It should be possible to defer work on a trouble report. For example, it may be necessary to suspend repair work because access to the faulty resource has been prevented by the manager. The deferral time may be limited by a time-out value or a duration specified by the manager. The agent should notify the manager when a trouble report has been deferred.

6) In order to protect the information in a trouble report from being updated and/or modified by unauthorised users, suitable access control mechanisms should be used. Thus, a manager could be permitted to modify only certain specific attributes in an open trouble report.

7) The manager should be able to request the following information:

   - an indication when an instance of a trouble report is created;
   - an indication when an instance of a trouble report is deleted;
   - an indication when a trouble report's information is changed, for example, the escalation of a trouble report, a trouble report status change, or a commitment time update, etc.

8) The trouble report should contain information to enable the quality of service of the repairer to be determined, for example, information such as, the repairer's name, the time at which the repairer was called and the time at which the repairer arrived to attend to the trouble.

9) The manager should be able to provide the required repair completion time and obtain from the agent the expected repair time, and subsequently the actual repair time to resolve the trouble.

10) The manager should be able to update an active trouble report with new information, e.g. additional trouble related information, contact change, etc.

11) The manager should be able to authorise repairs to be made at the manager's location outside of normal business hours, and also be able to identify the permitted access times for a given location.

12) It should be possible to perform statistical processing on trouble reports, for example, to obtain statistics on the mean time between troubles for a service, instance of a service, network resource or an instance of a resource or the mean time to repair a trouble, etc. (The actual algorithms for statistical analysis are outside the scope of this Recommendation.)

13) Upon receiving a request for authorisation related to specific repair activities from the agent, a manager should be able to provide authorisation over the interoperable interface.

6.4 Trouble management report clearing and closure

1) It should be possible to compute/determine the outage duration of the equipment/service from the repair activity information held in the trouble report or the Repair Activity object instance if present. This outage duration may then be added to the trouble report at the time of closure. (The algorithm for computing/determining the outage duration is outside the scope of this Recommendation.)

2) The manager may be allowed to verify closing can proceed, prior to closure of the trouble report by the agent. When the clearing of the problem related to the trouble report is verified by the manager, the time of verification and the identity of the person doing the verification should be captured in the trouble report. In the event that the manager denies or delays closure verification, then the agent should have the option of closing the trouble report.

3) After receiving the appropriate notification for trouble reports that require verification by the manager before closure, and the manger fails to respond and/or the trouble report clearance is not verified, then the agent should be able to deny the manager the ability to modify some of the information in the trouble report. (The details of how the agent ensures that the appropriate notification has been received by the manager and the time period within which he has to respond to the request are beyond the scope of this Recommendation.)

4) In cases where CMEs are interoperating cooperatively towards the resolution of a trouble, it should be possible for a manager to update the trouble state and status and related information where the manager has shared responsibility towards trouble resolution.

5) When a trouble report is closed, it may be retained for a period in the agent and a subset of the trouble report's information should be logged by the agent to provide a historical record. It should also be possible to report this information to the manager across the interoperable interface and for the manager to review these trouble history records.

6) It should be possible for the agent to delete a trouble history record from the log after a period specified by business agreement.

7) The actual cause of the trouble found, together with the solution provided and other relevant factors, should be recorded in the trouble report.

7 Model description

7.1 Introduction

The trouble management model describes the objects in the trouble management agent CME, and the relationship between them.

Trouble management is initiated by a request to the agent to create a trouble report (trouble report is used here, and elsewhere in this Recommendation, in a generic sense to represent the different types of instantiable report objects, whereas Trouble Report refers to the non-instantiable super-class in the trouble management model).

The trouble report contains information necessary for a manager to manage and track the trouble and the agent to manage and resolve the trouble in a client to service provider environment. In a service provider to service provider environment, a manager may cooperate in the trouble resolution process and take specific steps in its area of responsibility to resolve a trouble. The information contained within a trouble report and that concerned with the management of it may need to pass across the interoperable interface between two CMEs. Once created, the trouble report progresses from queued through to clearance and closure states as a result of actions carried out normally by the CME acting in the agent role during the course of resolving the trouble. Status and state transitions may also occur as a result of intervention by the manager role CME in the service provider to service provider environment.

7.1.1 Instantiation of trouble reports

The model allows a trouble report, to be generated by an agent role CME as a consequence of:

- a trouble detected, automatically or otherwise, by the agent role CME itself;
- a trouble reported by means other than over an interoperable interface, by a person;
- a trouble reported over the interoperable interface, by a manager role CME;
- scheduled maintenance action which the agent role CME wishes to communicate to the manager role CME.

Refer to Figure 7-1.

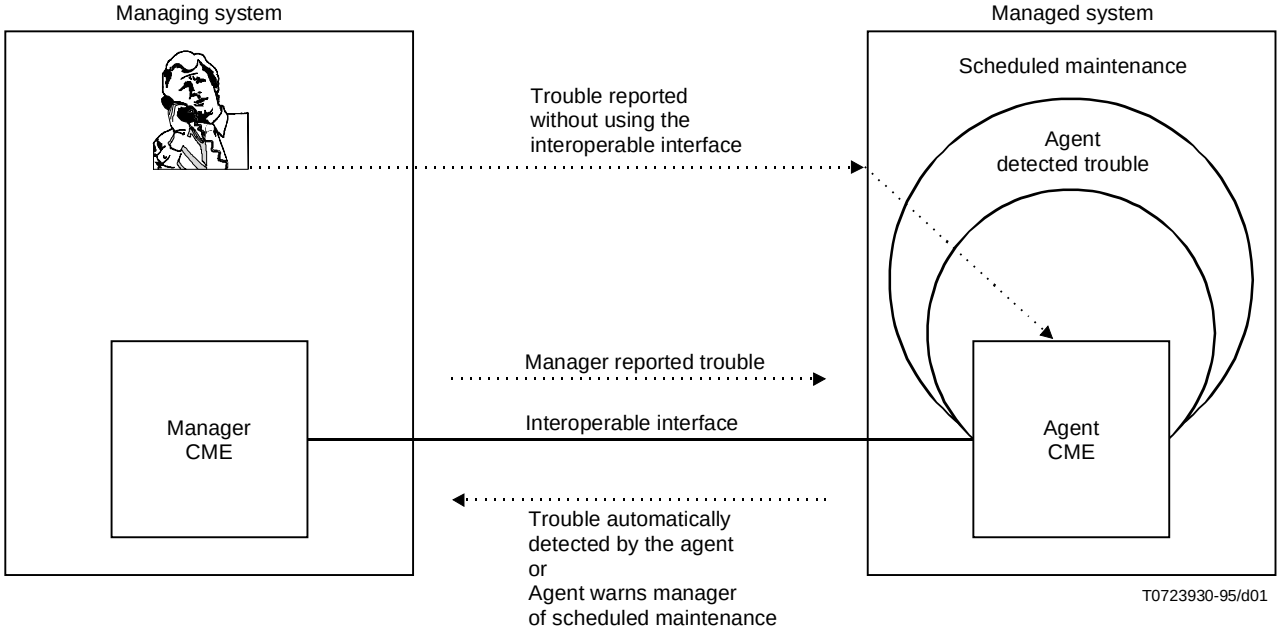


Figure 7-1/X.791 – Trouble management report creation

7.1.2 An overview of the trouble management objects model

The Trouble Management Model defines a non-instantiable super-class (Trouble Report Object class), and two instantiable sub-classes (Provider Trouble Report, and Telecommunications Trouble Report). A Trouble Report Format Definition object class has also been defined, as well as a Trouble History Record object class and a Repair Activity object class. The inheritance relationship between these objects is shown in Figure 7-2. Figure 7-3 provides a diagrammatic summary of the model.

NOTE – In addition to the Telecommunication Trouble Report instantiation shown in above, a TTR object instance may be locally instantiated by the agent.

The scope of the Recommendations in this model is targeted at interfaces between jurisdictional boundaries (i.e. Local Exchange Carrier Network, Interchange Carrier Network, End User Network, or some combination of these). In other words, the scope of the work is focused primarily on information that is made visible to a client by a service provider. The Recommendations do not specifically include interfaces between management systems within jurisdictions; however, its use in such environments is not precluded.

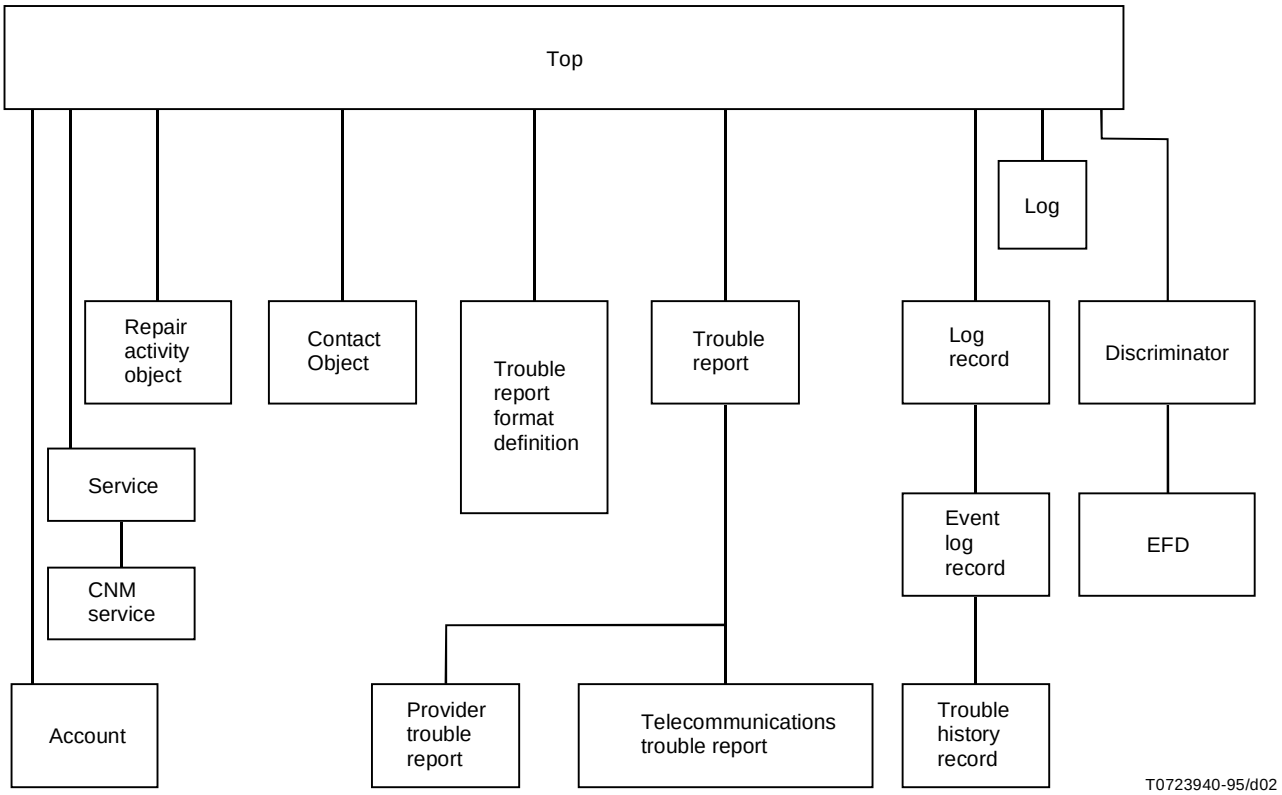


Figure 7-2/X.791 – Inheritance hierarchy

The trouble management function Recommendation models a client to service provider relationship and a service provider to service provider relationship with the Telecommunications Trouble Report object and covers trouble management over an interoperable interface between two CMEs whether constrained by jurisdictional boundaries or not. In order to allow for the differing requirements of the client to service provider interface and the service provider to service provider interface however, separate profiles of the Telecommunications Trouble Report are necessary.

In the client to service provider case, a client may be able to request certain information related to a trouble report while the service provider has responsibility for trouble resolution functions. In this case, the distinction between the agent CME and the manager CME is that the trouble report managed object instance resides in the agent CME, and the agent CME performs trouble resolution functions, while the manager CME is only allowed to perform trouble tracking functions (but not trouble resolution functions).

In the service provider to service provider case, both service providers may be able to perform the same set of trouble resolution functions on the same trouble report. The only distinction that can be drawn between the agent role CME and the manager role CME in this case is that the trouble report managed object instance resides in the agent role CME. Note that the functions that can be performed by a manager and those that can be performed by an agent may be constrained using the Security services to control:

- access to the object, as well as;
- the permission to modify specific individual attributes.

However, such distinctions between manager and agent with respect to the allowable trouble management functions that can be performed is beyond the scope of this trouble management function Recommendation.

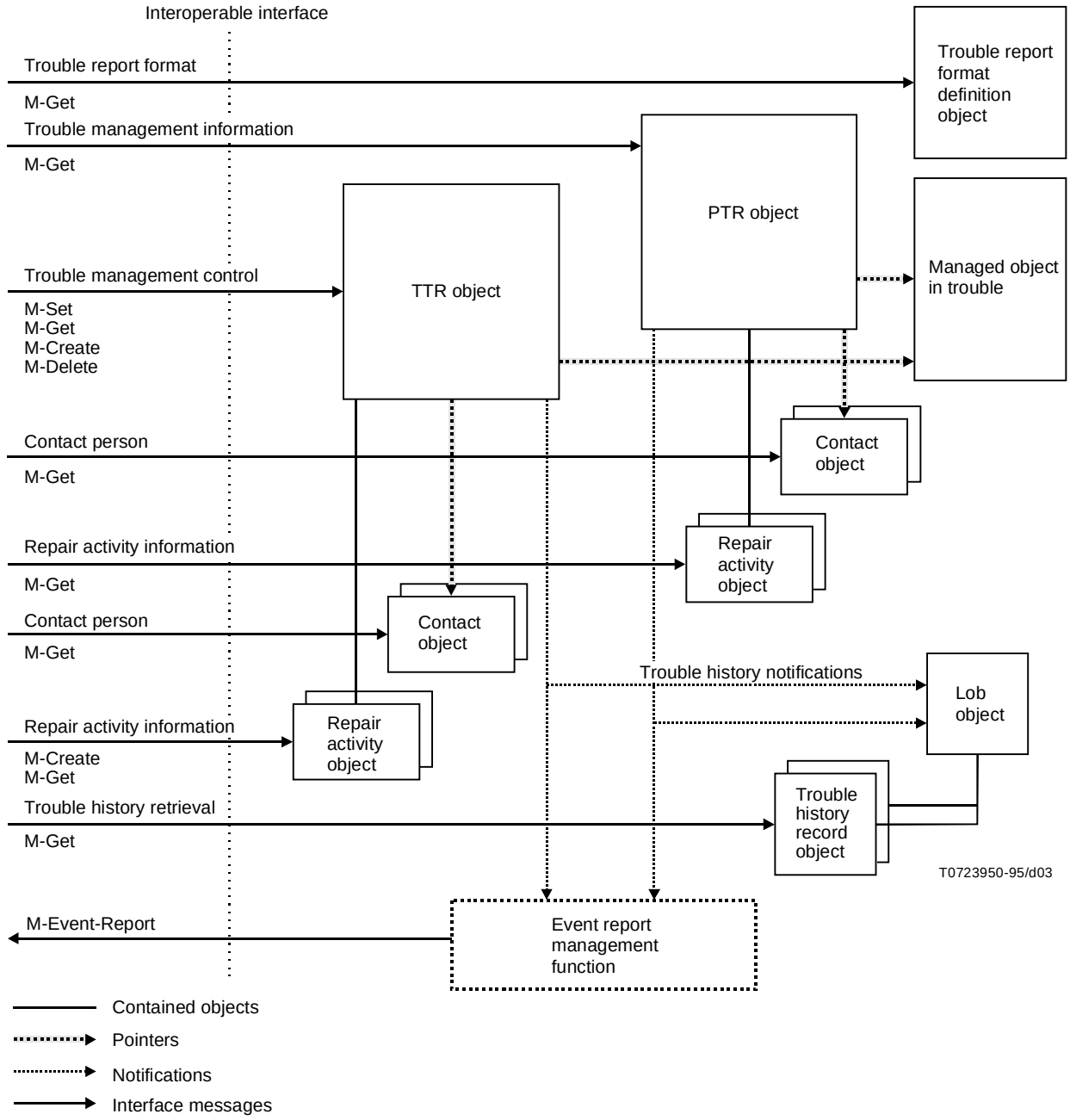


Figure 7-3/X.791 – Trouble management conceptual model overview

The Telecommunications Trouble Report is a superset of the information necessary for both the client to service provider and a service provider to service provider relationships. The distinction between a client to service provider relationship and a service provider to a service provider relationship on an association will be by the selection of a suitable profile and negotiation of appropriate functional units.

The Provider Trouble Report object has been defined to address specific additional requirements covered in clause 2. The Provider Trouble Report object primarily covers the case where the service provider wants to make visible troubles covering routine maintenance to a customer. The Provider Trouble Report object is created by the agent role CME to specifically notify the manager role CME that planned maintenance will be carried out at a given time and all or parts of the service(s), resource(s), network or system will be inaccessible during that time. In this case, the trouble management function is used to notify the manager that planned maintenance action is scheduled to prevent future trouble.

The Trouble History Record object is used to log selected information of reported instances of troubles that have been closed.

Instances of the Repair Activity object capture the activities performed on the individual reported trouble instance as it progresses from creation to closure. The Repair Activity List attribute, which provides an alternative mechanism for storing repair information, is not present in a trouble report instance, when Repair Activity objects are instantiated.

During the trouble resolution process, human actions may be required to perform specific functions. Some of this person-related information may be unique to a trouble report instance, and hence best represented as an attribute (e.g. Z Location Access Person attribute). Other person-related information may be applicable to many trouble reports and stable over an extended period, in which case it may be more appropriate to represent it via an object instance and point to this object from a trouble report instance (e.g. Responsible Person Ptr.). The Contact object is used for this purpose.

The trouble management model allows for multiple trouble report formats. Each trouble report format is a predefined combination of trouble report attributes. The trouble report applicable to a particular service or resource instance can be dynamically specified by the service provider through the Trouble Report Format Definition object. The appropriate instance of the Trouble Report Format Definition object to be used to report a trouble on a service/resource can be selected on an object class basis or on an object instance basis.

When the trouble report format is explicitly defined through the Trouble Report Format Definition object for a service or a resource, a trouble report instance is composed of:

- attributes that are specified as mandatory by the trouble report object class Recommendation;
- attributes in conditional packages of the trouble report which are specified as “must be present” by the appropriate instance of the Trouble Report Format Definition object; and
- optionally attributes in conditional packages of the trouble report which are specified as “may be present” by the appropriate instance of the Trouble Report Format Definition object.

7.1.3 Trouble report states and status

Referring to the State transition diagram in Figure 7-4, a trouble report may go through any of six states during its life cycle. In addition, a Trouble Status attribute is defined which qualifies the state (finer granularity), e.g. cleared awaiting customer verification. The time at which the status attribute changes is also captured in the trouble report.

This subclause defines the trouble report states.

7.1.3.1 Queued

A trouble report is in a queued state when it has been instantiated but the trouble resolution process has not yet been initiated.

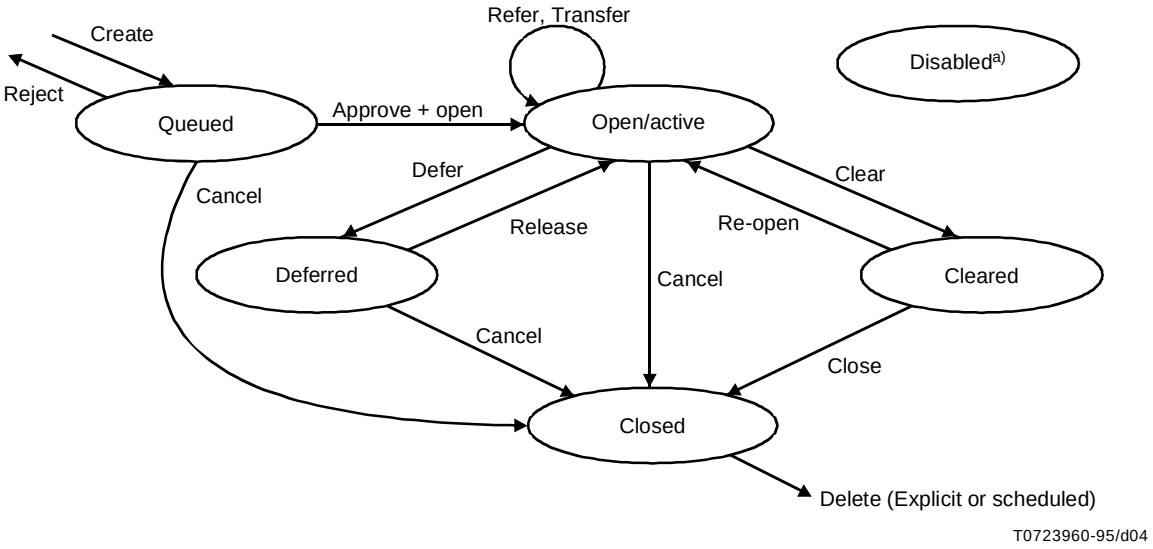
A trouble report which is in the queued state may be cancelled by the manager. The agent on receiving such a request will attempt to close the trouble report.

7.1.3.2 Open/active

The trouble report becomes “open/active” when appropriate actions to resolve the trouble are initiated.

An “open/active” trouble report may be “referred” to another Hand-off Person, or “transferred” to another Responsible Person for further processing. The state however remains unchanged as “open/active”.

A trouble report in the open/active state may be cancelled by the manager. The agent on receiving such a request will attempt to close the trouble report.



[a)] Can be entered from other states due to local conditions.

NOTE – In this model, escalation is not considered to be a separate state, rather it is modelled as a function that applies to a trouble which is in the open/active state.

Figure 7-4/X.791 – State transition diagram for trouble reports

7.1.3.3 Deferred

This state indicates that corrective action to resolve the trouble has been postponed. This can occur when the faulty resource is inaccessible for a period and repair activity cannot proceed.

A deferred Telecommunications Trouble Report may become "open/active" again, or move directly to the "closed" state if it is cancelled for some reason.

A trouble report in the deferred state may be cancelled by the manager. The agent on receiving such a request will attempt to close the trouble report.

7.1.3.4 Cleared

A trouble report is moved by the agent to the "cleared" state when it determines that the trouble has been resolved. If the manager needs to verify that the trouble has been resolved, verification may optionally be awaited by the agent prior to closure of the trouble report.

7.1.3.5 Closed

This state indicates that the trouble resolution process is complete. Upon closure, the trouble report attributes are captured in a historical event generated at trouble report closure which may then be stored in a log of trouble history records, for future reference. The trouble report may then be eliminated at the agent's convenience. However, the agent may be required to maintain such records for a period of time as per business agreements.

7.1.3.6 Disabled

A "disabled" value is exhibited when a trouble report's information cannot be updated due to local conditions. In the "disabled" condition only read operations can be performed.

7.2 Model components generic definitions

This subclause contains the definitions of the object classes and attribute types that form the basis for the extensions to the model needed for interfaces between OSs across jurisdictional boundaries. The various object classes and attribute types are described in 7.2.1-7.2.3, as follows:

Subclause	*Object class/Attribute type*
7.2.1	Object classes
7.2.2	Attribute types using the template notation described in Recommendation X.722
7.2.3	Specific error messages identified for the interface
Annex A/X.790	Type definitions in the Abstract Syntax Notation One (ASN.1) language

The object classes and attribute types defined here should be used wherever possible. However, where the need is justified, additional object classes or attribute types may be required.

NOTE – Being a trouble management Recommendation, billing and service charging are outside the scope of this Recommendation. The inclusion of objects such as 'Account' and 'CNM service' is purely to facilitate the optionality required by those existing implementations that use name bindings based on 'account' and 'CNM Service' objects and not for the purpose of accounting at all.

The subject of security is for further study, and there is a possibility that some objects must be defined for that purpose, probably using authentication, as detailed in Recommendation X.217, and the Access Control object described in Recommendation X.741.

Access permissions are necessary to provide mutual privacy among accounts. Access to an Account object shall be granted on the basis of user permissions specific to that object. Granting access to an Account object may grant access to objects subordinate to that object, or, permission may have to be specifically granted individually for each subordinate and superior object.

7.2.1 Object class definitions

The object classes currently defined in this Recommendation apply only to the trouble report administration aspect of the Fault Management functional area. As message Recommendations for other functional areas are developed, the applicability of an object may expand beyond Fault Management.

For the convenience of the reader, Appendix V/X.790 gives a pictorial representation of the pointer attribute relationships between objects in this Recommendation. Appendix V/X.790 does not represent normative information.

The remainder of this subclause contains the text definition of the object classes specified in this Recommendation. For each object, in addition to the text definition, a template is also provided in this Recommendation, as specified in Recommendation X.722. The templates for the objects as well as name bindings are supplied in Annex A/X.790.

7.2.1.1 Account

This object class contains information that describes a customer account that interacts with the carrier. Naming an account by another account allows a flexible hierarchical organization of the managed objects.

7.2.1.2 CNM Service

The Customer Network Management (CNM) Service object class is a specialization of the Service object class. These refinements are necessary to support the service modelling concept for CNM-OS-OS interfaces across jurisdictional boundaries.

The CNM Service object class represents the specific functionality that a provider supplies to customers. The Service ID attribute identifies the service independent of the Service Aliases (network-specific identifiers such as phone numbers or circuit IDs). The CNM Service object decouples the relationship between services offered to the customer and the specific network components that provide the services.

7.2.1.3 Contact

The Contact object class refers to a person or organization having responsibility for one or more managed object instances.

7.2.1.4 Provider Trouble Report

The trouble management function can be used to notify the manager that planned preventative maintenance action is scheduled to prevent future trouble.

The Provider Trouble Report object is created by the agent role CME to notify the manager role CME that planned maintenance will be carried out at a given time and that all or part(s) of the service(s), resource(s), network or system will be inaccessible during that time.

NOTE – In addition to the attributes listed below, the Provider Trouble Report object also includes the attributes inherited from the Trouble Report.

The information contained in the Provider Trouble Report object class is described below:

- **Begin Time** – Indicates the beginning of the time frame when the service will be unavailable.
- **End Time** – Indicates the end of the time frame for which the service will be unavailable.
- **Location Ptr** – Indicates the location of the managed object instance against which the trouble report is created.
- **Unavailable Service Ptr** – Indicates which service is affected.

7.2.1.5 Telecommunications Trouble Report

The Telecommunications Trouble Report is inherited from the Trouble Report. The Telecommunications Trouble Report object represents reported troubles on telecommunications services or resources. Instances of this class describe the nature of the problem as well as ongoing status.

Local Administrations may put restrictions on the number of open Telecommunications Trouble Reports per managed object through business agreements.

The Trouble Report Administration model allows multiple trouble report formats as defined by instances of the Trouble Report Format Definition object. Each trouble report format is a predefined combination of Telecommunications Trouble Report attributes. The trouble report format applicable to a particular CNM Service or managed object instance can be dynamically specified by the service provider through the Trouble Report Format Definition object. When the Trouble Report format is explicitly defined through the Trouble Report Format Definition object for a CNM-Service-managed or managed object, a Telecommunications Trouble Report instance for that CNM-Service-managed or managed object shall consist of:

- the mandatory attributes of the Telecommunications Trouble Report object class as defined in the Telecommunications Trouble Report object class definition;
- the attributes in conditional packages of the Telecommunications Trouble Report that “must be present” as defined by the corresponding Trouble Report Format Definition object;
- optionally the attributes in conditional packages of the Telecommunications Trouble Report that “may be present” as defined by the corresponding Trouble Report Format Definition object.

The appropriate instance of the Trouble Report Format Definition object is identified either:

a) by a pointer attribute (troubleReportFormatObjectPtr) in the CNM Service object (when the format must be defined on an object instance basis); or

b) by inclusion of the managed object class in an applicableManagedObjectClassList attribute in the Trouble Report Format Definition object (when the format is the same for an entire object class); or

c) by inclusion of an instance of an object class that represents a telecommunications resource in an applicableManagedObjectInstanceList attribute in the Trouble Report Format Definition object (when the format is specific to the object instance).

The manager is allowed to create Telecommunications Trouble Reports. As part of create, the manager is required to supply the following attributes:

- Managed Object Instance;
- Trouble Type;
- Additional Trouble Information List;

plus any manager-supplied attributes in conditional packages identified as “must be present”. The manager also has the option to include manager-supplied attributes in conditional packages identified as “may be present” attributes.

As part of the instantiation of a Telecommunications Trouble Report, the agent is also required to supply values for the remaining “CHARACTERIZED BY” attributes of the Telecommunications Trouble Report object class plus any agent-supplied attributes in conditional packages identified as “must be present”. The agent also has the option to include agent-supplied attributes in conditional packages identified as “may be present” attributes.

For each of the Packages of the Telecommunications Trouble Report, the following specifies whether the attribute can be supplied by the manager or agent and whether it can be later updated by the manager or agent.

- *The following attributes can only be supplied by the manager:*

  managedObjectInstance

  suspectObjectList

  troubleType

  calledNumber

  customerWorkCenter

  custTroubleTickNum

  troubleReportFormatObjectPtr

  tspPriority

- *The following attributes can only be supplied by the manager and updated by the manager:*

  aLocationAccessAddress

  zLocationAccessAddress

  aLocationAccessHours

  zLocationAccessHours

  aLocationAccessPerson

  zLocationAccessPerson

  additionalTroubleInfoList

  alternateManagerContactPerson

  alternateManagerContactObjectPtr

  callBackInfoList

  commitmentTimeRequest

  managedObjectAccessHours

  managedObjectAccessFromTime

  managedObjectAccessToTime

  managerContactPerson

  managerContactObjectPtr

  managerSearchKey1

  managerSearchKey2

  managerSearchKey3

  managerSearchKeyList

perceivedTroubleSeverity
preferredPriority
troubleDetectionTime
troubleReportStatusWindow

– *The following attributes can only be supplied by the agent:*
initiatingMode
receivedTime
troubleReportID

– *The following attributes can only be supplied by the agent and updated by the agent:*
activityDuration[1)]
additionalTroubleStatusInfo
agentContactPerson
agentContactObjectPtr
alarmRecordPtrList
commitmentTime
lastUpdateTime
relatedTroubleReportList
responsiblePersonName[1)]
responsiblePersonPtr[1)]
troubleLocation[1)]
troubleReportNumberList
troubleReportState[1)]
troubleReportStatus[1)]
troubleReportStatusTime

– *The following attributes can be set to default by the agent and only updated by the agent:*
closeOutNarr[1)]
handOffCenter
handOffLocation
handOffPersonName[1)]
handOffPersonPtr[1)]
handOffTime
maintenanceOrgContactName[1)]
maintenanceOrgContactPtr[1)]
maintenanceOrgContactTime[1)]
maintServiceCharge
outageDuration
repairActivityList[1)]
restoredTime[1)]
troubleFound[1)]

---

1) These attributes are required to be updatable by the manager in the service-provider-to-service-provider interface.

– *The following attributes can be set to default by the agent and only updated by the manager:*

  afterHrsRepairAuth

  cancelRequestedByManager

  closeOutVerification

  troubleClearancePerson

– *The following attribute can only be supplied by the manager and updated by the agent:*

  managedObjectInstanceAliasList

– *The following attributes can only be supplied by the manager and updated by the manager or agent:*

  authorizationList

  dialog

  escalationList

  repeatReport

The manager can create Telecommunications Trouble Report instances in the agent system. Telecommunications Trouble Reports may also be created locally by the agent on behalf of the manager. The Initiating Mode attribute may be used to indicate the source of the trouble report – manager or agent.

Manager deletion of Telecommunications Trouble Reports is not supported on inter-jurisdictional interfaces. A manager may request that a Telecommunications Trouble Report be cancelled, which may or may not result in the Telecommunications Trouble Report being closed-out immediately. Closed-out Telecommunications Trouble Reports are deleted locally by the agent according to some storage period criteria (e.g. 3, 12, or 18 months).

The Telecommunications Trouble Report object generates the object creation and object deletion notifications whenever the agent creates the Telecommunications Trouble Report object or deletes the Telecommunications Trouble Report object through local administrative procedures.

An Attribute Value Change Notification is emitted when there is a change in the value of a Telecommunications Trouble Report attribute. In some implementations, only changes in the Trouble Report Status or Commitment Time attributes are emitted.

The Telecommunications Trouble Report object generates a Trouble History Event Notification with Trouble History information whenever the Trouble Report Status attribute value changes to a closed-out value.

NOTE 1 – This notification is in addition to the attribute value change notification for the Trouble Report Status attribute. This notification is offered to a Log where the discriminator attribute of the log decides whether the notification will be logged. In some implementations the attributes that allow selective logging will be absent or not under the control of the interface. The concept of logs is introduced in Recommendation X.735.

NOTE 2 – If an additional trouble type defined as an integer is considered necessary, then a subclass of the TTR object can be specified to provide context specifc trouble type attribute.

7.2.1.6 Repair Activity

The Repair Activity object class will contain parameters and text describing the specific repair functions performed, who performed them, and when they were performed. For each repair activity performed in conjunction with resolving a problem related to a Trouble Report, a Repair Activity object is created.

A Trouble Report is the main point of the coordination of problem-solving activity. The Repair Activity object will provide a user with information regarding the activities carried out so far to resolve the problem. The manager will only be allowed to get its associated attributes and display them.

When a Trouble Report is deleted locally by the agent, the associated Repair Activity object(s) will also be deleted.

Repair Activity information may be alternatively stored in the Repair Activity List attribute in the Trouble Report. Both methods may not be used simultaneously.

7.2.1.7 Trouble History Record

The Trouble History Record object class is a refinement of the Log Record object class in Recommendation X.721 and is used to log the Trouble History Event notifications from the Trouble Report object and its sub-classes. The Trouble History Record object is a repository for selected information from a Trouble Report object and its sub-classes. Instantiated sub-classes of the Trouble Report object generate a Trouble History Event notification with Trouble History information whenever the Trouble Report Status attribute value changes to a final closed-out value. The attributes in the Trouble History Event notification (and therefore the Trouble History object) may be a subset of the attributes present in the Trouble Report object.

Trouble History Records are contained in a Log object. If the Log is deleted, all its contained Trouble History Records shall also be automatically deleted by the managed system. The service provider may also remove selected Trouble History Records locally based on some criteria, e.g. reaching a certain age limit or the number of records stored reaching a certain threshold value.

7.2.1.8 Trouble Report

The Trouble Report object is the super-class of the Telecommunications Trouble Report object. The Trouble Report object is not instantiated. Instances of the Telecommunications Trouble Report sub-class represent customer-reported troubles on telecommunications services or resources. Trouble reports describe the nature of the problem as well as ongoing status.

Local Administrations may put restrictions on the number of open trouble reports per managed object through business agreements.

The Trouble Report Administration model allows multiple Trouble Report formats as defined by instances of the Trouble Report Format Definition object. Each Trouble Report format is a predefined combination of trouble report attributes. The Trouble Report format applicable to a particular CNM-Service-managed or managed object instance can be dynamically specified by the service provider through the Trouble Report Format Definition object. When the Trouble Report format is explicitly defined through the Trouble Report Format Definition object for a CNM-Service-managed or managed object, a Telecommunications Trouble Report instance for that CNM-Service-managed or managed object shall consist of:

- the mandatory attributes of the Telecommunications Trouble Report, as defined in the Telecommunications Trouble Report object definition;
- the attributes in conditional packages of the Telecommunications Trouble Report that “must be present” as defined by the corresponding Trouble Report Format Definition object;
- optionally the attributes in conditional packages of the Telecommunications Trouble Report that “may be present”, as defined by the corresponding Trouble Report Format Definition object.

The appropriate instance of the Trouble Report Format Definition object is identified either:

a) by a pointer attribute (troubleReportFormatObjectPtr) in the CNM Service object (when the format must be defined on an object instance basis);

b) by inclusion of the managed object class in an applicableManagedObjectClassList attribute in the Trouble Report Format Definition object (when the format is the same for an entire object class);

c) by inclusion of an instance of an object class that represents a telecommunications resource in an applicableManagedObjectInstanceList attribute in the Trouble Report Format Definition object (when the format is specific to the object instance).

The manager is allowed to create Telecommunications Trouble Reports (sub-class of Trouble Report). As part of the create, the manager is required to supply the following attributes:

- Managed Object Instance;
- Trouble Type;
- Additional Trouble Information List,

plus any manager-supplied attributes in conditional packages identified as “must be present” attributes. The manager also has the option to include manager-supplied attributes in conditional packages identified as “may be present” attributes.

As part of the instantiation of a Telecommunications Trouble Report object, the agent is also required to supply values for the remaining characterized by attributes of the Telecommunications Trouble Report object class plus any agent-supplied attributes in conditional packages identified as “must be present” attributes. The agent also has the option to include agent-supplied attributes in conditional packages identified as “may be present” attributes.

A manager may request that a trouble report be cancelled, which may or may not result in the trouble report being closed-out immediately. Closed-out trouble reports are deleted locally by the agent according to some storage period criteria (e.g. 3, 12, or 18 months).

The Telecommunications Trouble Report object generates the object creation and object deletion notifications whenever the agent creates a Telecommunications Trouble Report object or deletes a Telecommunications Trouble Report object through local administrative procedures. These notifications are inherited from the Trouble Report object.

An Attribute Value Change Notification is emitted when there is a change in the value of a Telecommunications Trouble Report attribute. This notification is inherited from the Trouble Report object. In some implementations, only changes in the Trouble Report Status or Commitment Time attributes are emitted.

The Telecommunications Trouble Report object generates a Trouble History Event Notification with Trouble History information whenever the Trouble Report Status attribute value changes to a closed-out value. This notification is inherited from the Trouble Report object.

NOTE – This notification is in addition to the attribute value change notification for the Trouble Report Status attribute. This notification is offered to a Log where the discriminator attribute of the log decides whether the notification will be logged. In some implementations, the attributes that allow selective logging will be absent or not under the control of the interface. The concept of logs is introduced in Recommendation X.735.

7.2.1.9 Trouble Report Format Definition

The Trouble Report Format Definition object gives the service provider a flexible scheme that allows definition of Trouble Report formats. It also provides the flexibility to dynamically specify Trouble Report formats for a service/resource object on an object class basis or on an object instance basis. A Trouble Report Format Definition contains a selected list of attribute identifiers, from the attributes in conditional packages of the Trouble Report object class or its sub-classes.

An instance of the Trouble Report Format Definition object defines which Trouble Report conditional package attributes “must be present” or “may be present” in an instance of the Telecommunications Trouble Report. The behaviour of the Telecommunications Trouble Report object determines whether the manager or agent supplies and/or updates the attributes associated with these conditional packages.

“Must be present” and “may be present” conditional package attributes are identified by the tRMustBePresentAttrIDList and the tRMayBePresentAttrIDList attributes, respectively. The tRMustBePresentAttrIDList and tRMayBePresentAttrIDList attributes may only contain attribute IDs that have already been defined as attributes in conditional packages of the Trouble Report object class or its sub-classes.

The Trouble Report Format Definition object can be used in determining the format for reporting troubles either on an instance of the CNM Service object or on an instance of an object representing a telecommunications resource. The appropriate instance of the Trouble Report Format Definition object is identified through one of the following ways:

a) by a pointer attribute (Trouble Report format) in the CNM Service object (when the format must be defined on an object instance basis);

b) by inclusion of the managed object class (either CNM Service or telecommunications resource) in an applicableManagedObjectClassList attribute in the Trouble Report Format Definition object (when the format is the same for an entire object class);

c) by inclusion of a managed object instance of a telecommunications resource in an applicableManagedObjectInstanceList attribute in the Trouble Report Format Definition object (when the format is specific to the object instance).

Instances of the Trouble Report Format Definition object class are locally created and updated by the agent system.

NOTE 1 – If all instances of the same object class use the same trouble report format, it is recommended that this be represented using the applicableManagedObjectClassList attribute.

NOTE 2 – Trouble Report format examples for a typical Exchange Carrier are provided in Appendix IV/X.790 which does not contain normative information.

7.2.2 Attribute type definitions

This subclause contains the text definitions of the attribute types specified in this Recommendation. For each attribute type definition, in addition to the text definition, this Recommendation also provides a template, as specified in Recommendation X.722. The attribute templates are in Annex A/X.790.

The ability to read and write attributes belonging to object classes defined in this Recommendation can generally be accomplished using the PT-GET and PT-SET services of Recommendation X.730. However, the ability to read or write any given attribute is constrained by the object class definition in which the attribute appears and also by the Functional Units negotiated at the start of the association.

Some attributes (e.g. Managed Object Instance) are defined as pointers to other objects belonging to an object class specified in this Recommendation (e.g. CNM Service). These pointers may also reference objects belonging to sub-classes of the specified object classes (e.g. sub-classes of CNM Service). When these sub-classes are not known to the peer systems, objects of these sub-classes are to be treated as members of an object class specified in this Recommendation (e.g. CNM Service if the pointer refers to a sub-class of CNM Service, etc.).

Some Administrations restrict the use of matching criteria for certain attributes.

NOTE – For the convenience of the reader, Appendix V/X.790 gives a pictorial representation of the pointer attribute relationships between objects in this Recommendation. Appendix V/X.790 does not represent normative information.

7.2.2.1 Account Contact List

The Account Contact List attribute specifies the individuals in the manager’s organization, who can be contacted regarding the account.

7.2.2.2 Account Name

The Account Name attribute is the name given to an account by the customer, where an account is a customer or agency entity that may be billed by the service provider or that may take responsibility for performing network management services for the customer. The Account Name is the RDN of the Account object.

7.2.2.3 Activity Code

The Activity Code attribute identifies a general repair activity category.

7.2.2.4 Activity Duration

The Activity Duration attribute indicates time spent on billable and non-billable activities. It is possible to indicate the total billable or non-billable time spent on a group of activities as indicated by the bits with a value of “1” in the bit string.

7.2.2.5 Activity Information

The Activity Information attribute will contain 256 bytes of text that will indicate what repair activity is being carried out to repair the problem.

7.2.2.6 Activity Person

The Activity Person attribute contains information about the operator or supervisor who created the repair activity request. Matching for equality means checking personNumber only in the sequence.

7.2.2.7 Additional Text

The Additional Text attribute contains additional pertinent enterprise information that describes the Account. This enterprise information pertains to the way the customer and the service provider interact when conducting business.

7.2.2.8 Additional Trouble Information List

The Additional Trouble Information List attribute further describes the selected Trouble Type. A minimum of 256 octets shall be supported, regardless of the number of values in the set. The manager can only add information, but not remove it. It is possible that the oldest information may be lost if an implementation has restrictions on the maximum size.

7.2.2.9 Additional Trouble Status Information

The Additional Trouble Status Information attribute further describes the value of the Trouble Report Status attribute. Information shall only be added and not removed.

7.2.2.10 Administrative State

This attribute is imported from Recommendation X.731.

7.2.2.11 After Hours Repair Authorisation

The After Hours Repair Authorisation attribute indicates whether the customer has given the OK to repair the service outside normal business hours (e.g. 9 a.m.-5 p.m., Monday through Friday).

7.2.2.12 Agent Contact Person

The Agent Contact Person attribute identifies an individual in the agent's organization who can be contacted regarding the reported trouble. Matching for equality means checking personNumber only in the sequence.

7.2.2.13 Agent Contact Object Pointer

The Agent Contact Object Pointer attribute points to a Contact object that identifies an individual in the agent's organization who can be contacted regarding the reported trouble.

7.2.2.14 Alarm Record Pointer List

The Alarm Record Pointer List attribute points to instance(s) of the Alarm Record available in the agent system. A necessary condition for this attribute to be present is that the Trouble Report shall have been generated as a result of an alarm. However, this is not a sufficient condition since some Administrations may choose not to support this attribute even if the Trouble Report was generated as a result of an alarm received or generated in the agent.

7.2.2.15 Alarm State

This attribute is shown in detail in Annex A/X.790.

7.2.2.16 Alternate Manager Contact Person

The Alternate Manager Contact Person attribute identifies an alternative individual to the manager contact in the manager's organization who can be contacted regarding the reported trouble. Matching for equality means checking personNumber only in the sequence.

7.2.2.17 Alternate Manager Contact Object Pointer

The Alternate Manager Contact Object Pointer attribute points to a Contact object that identifies an alternative individual to the manager contact in the manager's organization who can be contacted regarding the reported trouble.

7.2.2.18 Applicable Managed Object Class List

The Applicable Managed Object Class List attribute identifies the classes of managed objects to which a particular Trouble Report Format Definition applies.

7.2.2.19 Applicable Managed Object Instance List

The Applicable Managed Object Instance List attribute identifies the instances of managed objects to which a particular Trouble Report Format Definition applies.

7.2.2.20 Authorisation List

7.2.2.20.1 General

The Authorisation List attribute identifies whether authorisation is requested by the agent and granted by the manager. It also specifies the type of activities that are authorised, and optionally the authorising person, and the time of authorisation.

7.2.2.20.2 Mechanism for requesting and granting authorisation

When the troubleReport objectClass is entered, the authorisationList attribute may have been created as an empty SEQUENCE (a sequence of zero length) or may have been created with an initial set of authorisations provided by the manager. In the former case, no activities are authorised by the manager. In the latter case, the authorisationList attribute would include a requestedState with a value of "provided(2)" (since authorisation is always provided by the manager and may be requested by the agent). It would also include an activityType where the bitString would include a "1" for each bit representing an activity that is authorised. It may also include an authTime and an authPerson indicating who in the manager's organization has authorised the specific activities.

Subsequently, after the troubleReport object instance has been created, the agent may request authorisation by changing the value of the authorisationList attribute. The sequence shall include a state = "requested(1)" and an activityType plus a bit string indicating which items are being requested (all items for which authorisation is required shall be indicated, even if previously authorised). The agent would not include an authTime or a value for the authPerson in the sequence. This change (request for authorisation) would be indicated to the manager via an attribute ValueChange notification.

The manager then responds to this request for authorisation by adding a new sequence to this attribute. This sequence shall include a state = "provided(2)", an activityType indicating the total set of authorised activities, an authTime and optionally the person providing the authorisation.

7.2.2.21 Call Back Information List

The Call Back Information List attribute identifies the call back types requested by the manager and the person to be contacted for each call back type. Call back requests of multiple types can be present in the trouble report. The call back types identified are as follows:

- escalation, indicating customer requested a call back from the higher officials of the service provider;
- before_auto_test, indicating customer requested a call back before performing any automatic tests on the service;
- after_cleared, indicating customer requested a call back when the trouble is cleared.

The person information is modelled as a sequence of various optional elements with the condition that at least one of the optional elements should be present.

7.2.2.22 Called Number

The Called Number attribute specifies the number being called at the time of trouble detection.

7.2.2.23 Cancel Requested By Manager

The Cancel Requested By Manager attribute is a Boolean that indicates whether the manager has initiated the process to cancel a trouble report. When set to "TRUE", the manager has requested that the trouble report be cancelled.

7.2.2.24 Close Out Narrative

The Close Out Narrative attribute specifies additional information about the problem. This field provides a place for the person who resolved the problem to document any additional information regarding the trouble report closure. This field will be copied into the Trouble History information.

7.2.2.25 Commitment Time

The Commitment Time attribute indicates either the on-site or trouble cleared time given to the customer. The agent provides a value when a trouble report is entered, but may update the value later.

7.2.2.26 Commitment Time Request

The Commitment Time Request attribute indicates either the on-site or trouble cleared time requested by the customer.

7.2.2.27 Contact Object Pointer List

The Contact Object Pointer List attribute points to instances of the Contact object that represents individuals in the agent's or manager's organization.

7.2.2.28 Close Out Verification

The Close Out Verification attribute indicates whether the manager has verified repair completion, denied repair completion, or taken no action.

7.2.2.29 Current Problem List

This attribute is shown in detail in Annex A/X.790.

7.2.2.30 Customer Trouble Ticket Number

The Customer Trouble Ticket Number attribute contains the customer's internal trouble ticket number. It allows the customer to access troubles reported to the service provider with the local ticket number.

7.2.2.31 Customer Work Center

The Customer Work Center attribute identifies the manager work center from which the trouble was entered.

7.2.2.32 Dialog

The Dialog attribute enables interaction to take place between the agent and the manager at each stage of the resolution of the trouble. This "dialog text" is free format text and a notification (attributeValueChange) is emitted each time it is modified. The contents are replaced by new "dialog text" as the dialog progresses during the trouble resolution. If the update is a response to previous text, the update may overwrite the current text.

7.2.2.33 Entry Time

The Entry Time attribute indicates the time when the repair activity has been started.

7.2.2.34 Escalation List

7.2.2.34.1 General

The Escalation List attribute indicates whether escalation is requested by the manager and granted by the agent. It optionally specifies the level of escalation and the person escalated to.

7.2.2.34.2 Mechanism for requesting and granting escalation

After a trouble report is created, the manager may request escalation by adding a "request" sequence to this multivalued escalationList attribute. The manager may indicate an escalation level (each level above 0 is another level higher in the agent organization). Typically the request would not include the person escalated to. The agent would respond by adding a "provided" sequence with the escalation time, and optionally the person and level escalated to.

7.2.2.35 Event Time

This attribute is shown in detail in Annex A/X.790.

7.2.2.36 Hand Off Center

The Hand Off Center attribute identifies the service provider's control center to which a trouble report has been referred.

7.2.2.37 Hand Off Location

The Hand Off Location attribute identifies the location within a service provider control centre to which a trouble report has been referred.

7.2.2.38 Hand Off Person Name

The Hand Off Person Name attribute identifies the person who is the head of the Hand Off Center where the trouble report has been referred. This centre is on the agent side. Matching for equality means checking personNumber only in the sequence.

7.2.2.39 Hand Off Person Pointer

The Hand Off Person Pointer attribute identifies the person who is the head of the Hand Off Center where the trouble report has been referred. This centre is on the agent side.

7.2.2.40 Hand Off Time

The Hand Off Time attribute indicates the time at which a trouble was referred to the Hand Off Center. Matching for ordering is only applicable to GeneralizedTime.

7.2.2.41 Initiating Mode

The Initiating Mode attribute specifies the mode of initiation of the trouble report. This attribute can take the following integer values:

- managerDirect indicating that the manager caused the creation of the trouble report across the interoperable interface;
- managerIndirect indicating that the manager reported the trouble to the agent (other than through this interface) and the agent locally created the trouble report in the system;
- managerIndirectEMail … (via email)...;
- managerIndirectFAX … (via Fax)...;
- managerIndirectPersonal ... (personally)...;
- managerIndirectPhone ... (via phone)...;
- agentOriginated indicating that the agent detected a problem and locally created the trouble report in the system;
- alarmOriginated indicating that the trouble report was automatically created by the network/equipment because of an alarm.

7.2.2.42 Last Update Time

The Last Update Time attribute identifies the time and date of the most recent update made to the trouble report by either the manager or the agent. This attribute does not emit an attribute value change notification. The update is performed locally by the agent.

7.2.2.43 A Location Access Address

The A Location Access Address attribute identifies the A address for which the respective A Location Access Hours attribute values are valid.

7.2.2.44 Z Location Access Address

The Z Location Access Address attribute identifies the Z address for which the respective Z Location Access Hours attribute values are valid.

7.2.2.45 A Location Access Hours

The A Location Access Hours attribute defines the specific hours for each day of the week during which access to the A location is available. Same day may not be repeated in SET OF WeekMask syntax.

7.2.2.46 Z Location Access Hours

The Z Location Access Hours attribute defines the specific hours for each day of the week during which access to the Z location is available. Same day may not be repeated in SET OF WeekMask syntax.

7.2.2.47 A Location Access Person

The A Location Access Person attribute enables the manager to specify the details of the person at the A location. Matching for equality means checking personNumber only in the sequence.

7.2.2.48 Z Location Access Person

The Z Location Access Person attribute enables the manager to specify the details of the person at the Z location. Matching for equality means checking personNumber only in the sequence.

7.2.2.49 Maintenance Organization Contact Name

The Maintenance Organization Contact Name attribute describes the company or organization whose responsibility is to perform maintenance on the "managed object instance". It is the agent who calls the Maintenance Organization Contact Name and not the manager. Matching for equality means checking personNumber only in the sequence.

7.2.2.50 Maintenance Organization Contact Pointer

The Maintenance Organization Contact Pointer attribute describes the company or organization whose responsibility is to perform maintenance on the "managed object instance". It is the agent who calls the Maintenance Organization Contact Name and not the manager [the agent is the service dedicated to "trouble management" within the company and centralizes all the trouble tickets for the company (CME to CME interface)]. Note that there is only one maintenance company for a given managed object instance, specified by contract.

7.2.2.51 Maintenance Organization Contact Time

The Maintenance Organization Contact Time attribute indicates the time at which the maintenance organization was contacted by the agent and requested to repair the trouble. Matching, for ordering, is only applicable to GeneralizedTime.

7.2.2.52 Maintenance of Service Charge

The Maintenance of Service Charge attribute indicates, once determined, whether the customer will be charged for repairs performed on the service.

7.2.2.53 Managed Object Access From Time

The Managed Object Access From Time attribute identifies the beginning of the time frame during which the service personnel can have access to the managed object. Access restrictions within this time frame can be specified through the Managed Object Access Hours attribute. The managed object access time frame is service affecting by nature.

7.2.2.54 Managed Object Access Hours

The Managed Object Access Hours attribute defines the specific hours for each day of the week during which access to the managed object is available. This attribute further delimits the time frame defined by the attributes Managed Object Access From Time and Managed Object Access To Time by specifying the access availability intervals for each day of the week. Same day may not be repeated in "SET OF WeekMask" syntax.

7.2.2.55 Managed Object Access To Time

The Managed Object Access To Time attribute identifies the end of the time frame during which the service personnel can have access to the managed object. Access restrictions within this time frame can be specified through the Managed Object Access Hours attribute. The managed object access time frame is service affecting by nature.

7.2.2.56 Managed Object Instance

The Managed Object Instance attribute indicates the CNM Service object class instance or the telecommunications network resource instance associated with a particular trouble report instance.

7.2.2.57 Managed Object Instance Alias List

The Managed Object Instance Alias List attribute identifies the managed object on which trouble has been reported by its alias(es). These aliases could be a Service Alias or a Managed Object alias.

7.2.2.58 Manager Contact Person

The Manager Contact Person attribute identifies an individual in the manager's organization who can be contacted regarding the reported trouble. Matching for equality means checking personNumber only in the sequence.

7.2.2.59 Manager Contact Object Pointer

The Manager Contact Object Pointer attribute points to a Contact object that identifies an individual in the manager's organization who can be contacted regarding the reported trouble.

7.2.2.60 Manager Search Key 1

The Manager Search Key 1 attribute (single-valued) enables the manager to filter trouble reports, for example, by account or customerID. The use of GraphicString as a search key may not guarantee the desired results.

7.2.2.61 Manager Search Key 2

The Manager Search Key 2 attribute (single-valued) enables the manager to filter trouble reports, for example, by account or customerID. The use of GraphicString as a search key may not guarantee the desired results.

7.2.2.62 Manager Search Key 3

The Manager Search Key 3 attribute (single-valued) enables the manager to filter trouble reports, for example, by account or customerID. The use of GraphicString as a search key may not guarantee the desired results.

7.2.2.63 Manager Search Key List

The Manager Search Key List attribute is used to filter and scope trouble reports, for example, by account or customerID. Use of a GraphicString as a search may not guarantee the desired results.

7.2.2.64 Operational State

This attribute is imported from Recommendation X.731.

7.2.2.65 Outage Duration

The Outage Duration attribute, once determined, indicates the amount of time between the Trouble Report clearing time and the Trouble Report received time, excluding any times for delayed maintenance or any times the service could not be accessed by the service provider for repair.

7.2.2.66 Perceived Trouble Severity

The Perceived Trouble Severity attribute allows the manager to indicate the effect of the trouble on the managed object being reported.

7.2.2.67 Preferred Priority

The Preferred Priority attribute defines the urgency with which the manager requires resolution of the problem.

7.2.2.68 Received Time

The Received Time attribute indicates the date and time when a trouble report was entered.

7.2.2.69 Related Trouble Report List

The Related Trouble Report List attribute identifies other associated trouble reports.

7.2.2.70 Repair Activity Identifier

The Repair Activity Identifier attribute is the distinguishing attribute of the Repair Activity managed object class.

7.2.2.71 Repair Activity List

The Repair Activity List attribute contains parameters and text describing the specific repair functions performed, who performed them, and when they were performed. This attribute is intended to provide supporting details of repair activities for the purpose of tracking repair activity. Support of this optional attribute is determined by the policies of the Administration performing the repair activities.

7.2.2.72 Repeat Report

The Repeat Report attribute code value indicates whether there has been a provisioning/installation or a trouble activity on the managed object in the recent past (established by local administrative procedures), e.g. within the last 30 days.

7.2.2.73 Responsible Person Name

The Responsible Person Name attribute indicates the person who has the overall responsibility for solving the problem indicated by the trouble report. He or she may not be the person who performs the repair activities, but is the one who is responsible for the trouble resolution process, which includes the tracking of the problem, the isolation of the problem, and the correction of the problem. Matching for equality means checking personNumber only in the sequence.

7.2.2.74 Responsible Person Pointer

The Responsible Person Pointer attribute indicates the person who has the overall responsibility for solving the problem indicated by the trouble report. He or she may not be the person who performs the repair activities, but is the one who is responsible for the trouble resolution process, which includes the tracking of the problem, the isolation of the problem, and the correction of the problem.

7.2.2.75 Restored Time

The Restored Time attribute indicates when the trouble was cleared. The precise definition of cleared is outside the scope of this Recommendation. Matches for ordering only applies to GeneralizedTime.

7.2.2.76 Service Alias List

The Service Alias List attribute identifies a CNM Service object instance by commonly used telecommunications terminology (e.g. telephone number, special services number). Administrations may specify additional structure for this graphic string.

7.2.2.77 Service Description

The Service Description attribute explains a particular instance of the CNM Service object in text format.

7.2.2.78 Service Identifier

This attribute is shown in detail in Annex A/X.790.

The Service Identifier is the distinguishing attribute of the CNM Service managed object class. It is assigned by the service provider at the time the service is delivered to the customer. The Service ID may include a combination of the Service Alias attribute and the Service Type attribute (or some other attribute) to guarantee that the Service ID is unique.

7.2.2.79 Service Location List

The Service Location List attribute identifies the locations where a service is used. Because there may be several locations on a particular service (e.g. a multipoint private line), it is multivalued.

7.2.2.80 Service Profile Description

The Service Profile Description attribute explains a particular instance of the Service Profile object in text format.

7.2.2.81 Service Profile Identifier

The Service Profile Identifier attribute is the distinguishing attribute of the Service Profile managed object class.

7.2.2.82 Service Profile Object Pointer

The Service Profile Object Pointer attribute points to an instance of the Service Profile object class.

7.2.2.83 Service Type

The Service Type attribute identifies the category of service (e.g. POTS, CENTREX, private line).

7.2.2.84 Supported Service Name List

This attribute specifies the services supported by a given managed object.

7.2.2.85 Suspect Object List

This optional attribute indicates managed object instance(s) that may be the underlying cause of the trouble.

7.2.2.86 Trouble Clearance Person

The Trouble Clearance Person attribute identifies an individual in the manager's organization who last modified either of the following two attributes:

- Cancel Requested By Manager;
- CloseOut Verification.

Matching for equality means checking personNumber only in the sequence.

7.2.2.87 Trouble Detection Time

The Trouble Detection Time attribute indicates the time at which the trouble was detected. This may be different from the time at which the trouble report was created. Matching for ordering is only applicable to GeneralizedTime.

7.2.2.88 Trouble Found

The Trouble Found attribute specifies an enumerated code value, which identifies the problem resolved. This field will be copied into the Trouble History information.

7.2.2.89 Trouble Location

The Trouble Location attribute indicates where the trouble is. This information could not be known at the time when the trouble report is created.

7.2.2.90 Trouble Report Constrained To Single Value Attribute ID List

The Trouble Report Constrained To Single Value Attribute ID List attribute specifies the trouble report set-valued attributes that are constrained by the agent to a single value.

7.2.2.91 Trouble Report Format Object Pointer

The Trouble Report Format Object Pointer attribute indicates which instance of the Trouble Report Format Definition object class will be used for trouble reports for a particular CNM Service or managed object.

7.2.2.92 Trouble Report Format Identifier

The Trouble Report Format Identifier attribute is the distinguishing attribute of the Trouble Report Format Definition object class. It specifies the "format" of a trouble report.

7.2.2.93 Trouble Report Identifier

The Trouble Report Identifier is the distinguishing attribute of the Trouble Report managed object class. It is assigned by the service provider at the time the trouble report is entered. The Trouble Report ID may include information that has been defined by the Trouble Report Number List attribute and/or the Service Alias List attribute.

7.2.2.94 Trouble Report Must Be Present Attribute ID List

The Trouble Report Must Be Present Attribute ID List attribute specifies the list of attributes in conditional packages in the Trouble Report object class (and its sub-classes) that "must be present" in a particular instance of a trouble report according to a particular Trouble Report Format Definition.

7.2.2.95 Trouble Report May Be Present Attribute ID List

The Trouble Report May Be Present Attribute ID List attribute specifies the list of attributes in conditional packages in the Trouble Report object class (and its sub-classes) that "may be present" in a particular instance of a trouble report according to a particular Trouble Report Format Definition.

7.2.2.96 Trouble Report Number List

The Trouble Report Number List attribute represents a list of internal trouble report alias identifiers presently being used to identify the trouble report within each of the agent's internal systems working on a particular manager's trouble. The trouble report number used by each internal agent system is not necessarily unique within the agent environment. However, by combining the trouble report number with an identifier for the agent's internal system, a unique trouble report alias identifier can be constructed. These trouble report alias identifiers are needed by the manager when trouble resolution requires telephone conversations between the manager and a person working at a particular internal agent system (i.e. the trouble report object instances DN may not be available to uniquely identify the trouble report).

7.2.2.97 Trouble Report State

The Trouble Report State attribute indicates the current state of a trouble report. A trouble report may be in the following states as defined below:

- *Queued* – A trouble report is in a queued state when it has been instantiated but the trouble resolution process has not yet been initiated.
- *Open/Active* – This is the active phase of the trouble report when appropriate actions to resolve the trouble are being carried.
- *Deferred* – This state indicates that the corrective action on the trouble report has been postponed. A deferred report can become Open/Active when specific conditions are met.
- *Cleared* – This state indicates that the trouble has been corrected. If the manager needs to verify that the trouble has been resolved, verification may optionally be awaited by the agent prior to closure of the trouble report.
- *Closed* – This state indicates that the trouble has been corrected, and a Trouble History Notification is emitted. Under specific conditions, a request to cancel a trouble report may be accepted from Queued, Open/Active, or Deferred states.
- *Disabled* – An instance of a trouble report exhibits a disabled value when its information cannot be updated due to local conditions. In the Disabled condition, only read operations can be performed on the trouble report object instance.

7.2.2.98 Trouble Report Status

The Trouble Report Status attribute indicates the current status of an active trouble report.

7.2.2.99 Trouble Report Status Time

The Trouble Report Status Time attribute identifies the last time at which the status was known to be changed or validated.

7.2.2.100 Trouble Report Status Window

The Trouble Report Status Window attribute specifies a sliding window during which a troubleReportProgress notification is expected. This notification shall include the Trouble Report Status attribute and if the value of the status has not changed since last issued, it shall also include the Additional Trouble Status Info attribute, i.e. a status narrative

describing what progress has been made in resolving the trouble report. The sliding window begins at the event time for the most recent notification that includes an Additional Trouble Status Info attribute describing progress on the trouble.

7.2.2.101 Trouble Type

The Trouble Type attribute identifies the category of trouble that is being reported on a CNM Service or managed object.

7.2.2.102 TSP Priority

The Telecommunication Service Priority (TSP) Priority attribute conveys TSP codes if applicable between the manager and the agent.

7.2.2.103 Usage state

This attribute is imported from Recommendation X.731.

7.2.3 Error messages

7.2.3.1 Trouble Report Already Exists

This error is applicable only where Administrations restrict the number of trouble reports per managed object. In such cases, the manager may use the additionalTroubleInfo attribute to include information on the new trouble. The error message returns the instance of the object, optionally the managed object class and the instance of the trouble report on which a trouble already exists.

7.2.3.2 Fallback Reporting

A trouble report object will not be created (although the agent may accept the trouble report and process it manually). Fallback trouble reporting is defined to be outside the scope of the information model. Since a trouble report object will not exist, none of the other services normally associated with the Trouble Report object class are supported for fallback reporting. This error will be returned in the following two cases:

- Service pre-designated by agent to receive fallback reporting;
- Agent partially failed or temporarily unavailable for receiving trouble reports.

7.2.3.3 Can Not close

canNotClose PARAMETER

This error message is sent to the manager when the trouble report cannot be closed by the agent because it is already cleared.

7.2.3.4 Trouble Report Must Be Present Attribute Missing

This error message is sent to the manager by the agent when the manager fails to provide all required attributes identified in the attribute tRMustBePresentAttrID List, the error message contains the attributeIDs of the missing attributes.

7.2.3.5 Cannot Verify or Deny at This Time

If the manager changes the value of the CloseOut Verification attribute before the Trouble Report Status value is 'clearedAwaitingCustVerification', the agent system may optionally respond with this error.

7.2.3.6 Trouble Report Change Denied

This error message is sent to the manager when the manager attempts to change a trouble report which is not in an appropriate state to accept the change.

8 Service description

8.1 Introduction

This clause describes the details of Trouble Management Services and functional units. Subclauses 8.4 and 8.11 provide details of additional functional units.

To provide additional functionality, this Recommendation makes use of PT-GET, PT-SET, PT-CREATE, and PT-DELETE which map into CMIS M-GET, CMIS M-SET, CMIS M-CREATE and CMIS M-DELETE services. Object creation reporting, object deletion reporting and attribute value change reporting services are also utilised.

In addition to the Trouble History Event Notification and the Telecommunications Trouble Report Progress Notification Services, the Trouble Management Function provides the capabilities such as:

The following list describes the trouble administration functions of Fault Management:

a) *enter trouble report* – TMN gives notice to another TMN that a service provided by that TMN is in need of repair.

b) *request trouble report status* – TMN asks for status information on a previously entered trouble report.

c) *request trouble report format* – TMN requests another TMN to provide a template for a trouble report for a particular service or class of services. This allows the originating TMN to know what attributes of a trouble report are considered mandatory or optional by the receiving TMN.

d) *trouble history event* – TMN notifies the TMN that originated the trouble report that it has been closed out, or keeps the close out information in an internal log.

e) *review trouble history* – TMN asks for information about past troubles that it has reported.

f) *add trouble information* – TMN adds information to a trouble report that it has entered.

g) *trouble report status update* – TMN notifies the TMN that originated a trouble report that the status of that trouble report has changed.

h) *trouble report commitment time update* – TMN notifies the TMN that originated a trouble report that the commitment time for that trouble report has changed.

i) *trouble report attribute value change* – TMN notifies the TMN that originated a trouble report that other attributes of interest for that trouble report have changed.

j) *enrol trouble report* – TMN notifies the TMN that would normally originate a trouble report that a trouble report has been created, either as the result of a request or as a result of an internal action by the notifying TMN.

k) *deenrol trouble report* – TMN notifies the TMN that would normally originate a trouble report that a trouble report has been deleted, either as the result of a request or as a result of an internal action by the notifying TMN.

l) *verify repair completion* – This allows the TMN that originated a trouble report to verify that the repair has been completed to its satisfaction before the trouble report is closed out in the receiving TMN.

m) *modify other trouble report attributes* – TMN modifies writable attributes of a trouble report that are not specifically covered in other functions.

n) *enrol Trouble Report Format Definition* – TMN notifies the TMN that would normally originate a trouble report that a Trouble Report Format Definition has been created.

o) *deenrol Trouble Report Format Definition* – TMN notifies the TMN that would normally originate a trouble report that a Trouble Report Format Definition has been deleted.

p) *attribute value change Trouble Report Format Definition* – TMN notifies the TMN that would normally originate a trouble report that a Trouble Report Format Definition attribute of interest has changed.

q) *trouble report progress update* – TMN notifies the TMN that originated a trouble report about progress on resolving the trouble.

r) *cancel trouble report* – TMN gives notice to another TMN that a previously reported trouble is no longer of interest.

This subclause defines the services needed to support the trouble administration category of Fault Management functions defined in clause 6. Each service definition consists of:

- behaviour and purpose of the service;
- the CMISE service that it maps onto;
- restrictions (if any) on the usages of the CMIS parameters.

NOTE – Detailed parameter descriptions are not included when the SET and GET services are used.

The CMIS services, procedures and the CMIS parameters are defined in Recommendation X.710.

The mapping of the following services to the confirmed or unconfirmed mode of the supporting CMISE services, except where specified, is a local implementation issue and is not specified by this Recommendation.

8.2 Kernel functional unit

The Kernel functional unit has the following capabilities:

- Entering Trouble Report;
- Requesting Trouble Report Status.

8.2.1 Enter Trouble Report

The PT-CREATE service, as described in Recommendation X.730, is used to allow a manager to request that a trouble report be created by the agent with the appropriate information.

The PT-CREATE service request is issued by the manager with the Telecommunications Trouble Report object class as the managed object class parameter. If the manager chooses not to use the reference object option, the manager shall supply the following attributes as part of the create operation:

- Managed Object Instance;
- Trouble Type;
- Additional Trouble Information List,

plus any manager-supplied attributes in conditional packages identified as “must be present”. The manager also has the option to include manager-supplied attributes in conditional packages identified as “may be present” attributes.

Administrations (Service Providers) shall state the required object classes on which troubles may be reported.

If the input information is correct, the agent will respond with the name (Trouble Report ID). The attribute list parameter is mandatory in the response for trouble reports that contain attributes (other than Trouble Report ID) supplied by the agent.

The error parameters are listed in A.3/X.790.

This error will be returned in the following two cases:

- Service pre-designated by agent to receive fallback reporting;
- Agent partially failed or temporarily unavailable for receiving trouble reports.

8.2.2 Request Trouble Report Status

The PT-GET service, as described in Recommendation X.730, is used to allow a manager to request status information on a trouble report.

The manager issues a PT-GET against the Trouble Report Status attribute and the Trouble Report Status Time attribute in the Telecommunications Trouble Report object class. Other "readable" Telecommunications Trouble Report attributes may also be present in the request.

For example, this service could also be used to query the status of more than one (potentially all) trouble reports for that manager. For example, a manager may wish to view all clearedAwaitingCustVerification trouble reports. By using the scoping and filtering capabilities of CMISE, the managing system could get the trouble report status of all its trouble reports where the state is not closed.

8.3 Request Trouble Report Format Functional Unit

The PT-GET service, as described in Recommendation X.730, is used to allow a manager to determine the format for reporting troubles on either a CNM Service or an object representing a telecommunications network resource. Based on the trouble report format, the manager supplies a different set of attributes when entering a trouble report (see Enter Trouble Report service).

The Telecommunications Trouble Report attributes that the manager must supply are determined by a PT-GET on the tRMustBePresentAttrIDList attribute in the appropriate instance of the Trouble Report Format Definition object. The Telecommunications Trouble Report attributes that the manager may choose to supply, are determined by a PT-GET on the tRMayBePresentAttrIDList attribute in the appropriate instance of the Trouble Report Format Definition object.

The appropriate instance of the Trouble Report Format Definition object is determined by either:

a) a PT-GET on the Trouble Report Format Pointer attribute in the CNM Service object (when the format must be defined on an object instance basis); or

b) a scoped and filtered PT-GET of the Trouble Report Format Definition object for values of the Applicable Managed Object Classes attribute that match the CNM Service or object class (when the format is the same for an entire object class); or

c) a scoped and filtered PT-GET of the Trouble Report Format Definition object for values of the Applicable Managed Object Instances attribute that match the object instance (when the format is specific to the object instance).

8.4 Trouble History Event Notification Functional Unit

8.4.1 Trouble History Event Notification

The Trouble History Event Notification service allows a managed system to report the trouble report close-out information (when the trouble report state transitions to the closed value) to the managing system or log the information in the managed system. This service uses the CMIS M-EVENT-REPORT service and procedures defined in Recommendation X.710.

Some implementations may restrict the values of the discriminator construct so that all Trouble History Event Notifications are logged in the managed system and none are reported to the managing system.

8.4.2 Parameters

The following parameters are defined for use in this Recommendation in the Trouble History Event Notification Service and are formally defined in Recommendation X.710:

– *Invoke identifier* – See Recommendation X.710.

– *Mode* – The mode shall have the value, "confirmed".

– *Managed object class* – This parameter indicates the Telecommunications Trouble Report object class.

– *Managed object instance* – This parameter specifies an instance of the Telecommunications Trouble Report object class.

– *Event type* – This parameter identifies the Trouble History Event Notification. It may be included in the success confirmation and shall be included if the event reply parameter is included.

– *Event time* – This parameter is mandatory.

– *Event information* – This parameter includes the trouble report close-out information. This includes the following parameters (defined in 7.2.2):

- managed object instance;
- received time;
- trouble found;
- activity duration (optional);
- additional trouble information list (optional);
- authorisation list (optional);
- cancel requested by manager (optional);
- close-out narrative (optional);
- close-out verification (optional);
- commitment time (optional);
- customer trouble ticket number (optional);
- perceived trouble severity (optional);
- restored time (optional);
- trouble clearance person (optional);
- trouble report number list (optional);
- trouble type (optional).

– *Current time* – See Recommendation X.710.

– *Event reply* – The inclusion of this parameter in the response is conditional upon the successful receipt of the event report. If included, it will be NULL.

– *Errors* – See Recommendation X.710.

8.5 Review Trouble History Functional Unit

The PT-GET service, described in Recommendation X.730, is used to allow a manager to request information about past troubles reported for a particular CNM service or object instance representing a telecommunications resource.

The PT-GET service request is issued by the manager with the trouble history record object as the managed object class parameter.

8.6 Add Trouble Information Functional Unit

The PT-SET service, described in Recommendation X.730, is used to allow a manager to provide additional descriptive text for an open trouble report. This additional information will be added to the description provided upon trouble entry. The Additional Trouble Information attribute is set-valued with an attribute syntax “graphic string”. A minimum of 256 octets shall be supported regardless of the number of values in the set. The manager can only add information, but not remove it. It is possible that the oldest information may be lost if an implementation has restrictions on the maximum size.

The PT-SET service is issued by the manager against the Additional Trouble Information attribute in the Telecommunications Trouble Report object class. Modification requests for other "writable" attributes may also be present in the same PT-SET if the associated functional units were successfully negotiated during the association establishment phase.

8.7 Trouble Report Status/Commitment Time Update Notification Functional Unit

This functional unit is currently defined to report changes in the values of the following trouble report attributes:

- Trouble Report Status;
- Commitment Time.

NOTE – Although these are "read-only" attributes, the agent system may locally modify their attribute values in the process of addressing the trouble report.

8.7.1 Trouble Report Status/Commitment Time Update Notification

The Trouble Report Status/Commitment Time Update uses the Attribute Value Change Notification service defined in Recommendation X.730. In this FU, the Trouble Report Status/Commitment Time Update Notification service allows the agent to notify the manager of changes in the value(s) of a Trouble Report's Status or Commitment Time attributes.

The Trouble Report Status/Commitment Time Update Notifications will be filtered by instances of the Event Forwarding Discriminator object in the agent system and, if the discriminator criterion is satisfied, result in the generation of an M-EVENT-REPORT to the manager specified by the destination address.

8.8 Verify Repair Completion Functional Unit

The PT-SET service, described in Recommendation X.730, is used to allow the manager to verify that repair has been completed to its satisfaction before the trouble report is permanently closed out by the agent. This service only applies after the service provider has repaired the trouble and changes the Trouble Report Status attribute value to "clearedAwaitingCustVerification"[3)].

The PT-SET service request is issued by the manager to change the value of the Close Out Verification attribute in the Telecommunications Trouble Report object to "verified". Once verified by the manager, the agent system will update the Trouble Report Status to "closedOutCustVerified". The PT-SET should also include a Trouble Clearance Person attribute value identifying the person verifying the trouble report.

If the manager determines that the trouble still exists, the manager will use the PT-SET to change the value of the Close Out Verification attribute to "denied". The PT-SET should also include a Trouble Clearance Person Attribute value identifying the person verifying the trouble report. The agent will then either resume work on the trouble report or update the Trouble Report Status value to "closedOutCustDenied".

If after some time period (set by the local Administration) the manager has not "verified" or "denied" the repair, the agent will update the trouble report status value to "closedOut".

If the manager changes the value of the Close Out Verification attribute before the Trouble Report status value is "clearedAwaitingCustVerification", the agent system may optionally respond to the PT-SET with a processing failure (e.g. "cannot verify/deny at this time").

Modification requests for other "writable" attributes may also be present in the same PT-SET if the associated functional units were successfully negotiated during the association establishment phase.

---

3) This service is meant to be a courtesy to the manager and is not intended to add an additional time element to a trouble report's open time. For purposes of tracking indices, "clearedAwaitingCustVerification" should be considered "closedOut".

8.9 Modify Trouble Administration Information Functional Unit

The PT-SET service, as described in Recommendation X.730, is used to allow the manager to modify the "writable" attributes that are not covered for a similar function under other functional units.

NOTE – The following attributes of the Telecommunications Trouble Report object are identified as applicable to this service:

- A Location Access Address;
- A Location Access Hours;
- A Location Access Person;
- After Hours Repair Authorisation;
- Alternate Manager Contact Person;
- Alternate Manager Contact Object Pointer;
- Authorisation List;
- Callback Information List;
- Commitment Time Request;
- Escalation List;
- Managed Object Access From Time;
- Managed Object Access Hours;
- Managed Object Access To Time;
- Manager Contact Person;
- Manager Contact Object Pointer;
- Manager Search Key List;
- Perceived Trouble Severity;
- Trouble Clearance Person;
- Trouble Report Status Window;
- Z Location Access Address;
- Z Location Access Hours;
- Z Location Access Person.

The PT-SET service request is issued by the manager to change the values of the "writable" attributes of the Telecommunications Trouble Report object, with the exceptions mentioned above. Modification requests for other "writable" attributes may also be present in the same PT-SET if the associated functional units were successfully negotiated during the association establishment phase.

8.10 Trouble Administration Configuration Event Notification Functional Unit

This FU allows the manager to be notified by the managed system when:

- the value of an attribute is changed in the Telecommunications Trouble Report or Trouble Report Format Definition object;
- a Telecommunications Trouble Report or Trouble Report Format Definition object instance is created or deleted by the agent.

Most Telecommunications Trouble Reports are created by the manager, but occasionally a Telecommunications Trouble Report could be opened by the agent on behalf of the managing system. Only the agent deletes Telecommunications Trouble Reports. The manager cannot create or delete Trouble Report Format Definitions.

8.10.1 Attribute Value Change Notification

The Attribute Value Change Notification service is defined in Recommendation X.730. In this FU, the Attribute Value Change Notification service allows the agent to notify the manager of changes in the value(s) of a Telecommunications Trouble Report's or a Trouble Report Format Definition's attributes. In general, this notification is used to report one or more of the following:

- the addition of one or more new members to one or more set-valued attributes;
- the removal of one or more members from one or more set-valued attributes;
- the replacement of the values of one or more attributes;
- the changing of the values of one or more attributes to their default value(s),

through either internal operation of the managed object or via management operation.

Attribute Value Change Notifications will be filtered by instances of the Event Forwarding Discriminator object in the agent system and, if the discriminator criterion is satisfied, result in the generation of an M-EVENT-REPORT to the manager specified by the destination address. A manager may also log these events as instances of the Attribute Value Change Record object class.

8.10.2 Object CreationNotification

The Object Creation Notification service is defined in Recommendation X.730. In this FU, the Object Creation Notification service allows the agent to notify the manager when a Telecommunications Trouble Report or a Trouble Report Format Definition object is created through local administrative procedures.

Object Creation Notifications will be filtered by instances of the Event Forwarding Discriminator object in the agent system and, if the discriminator criterion is satisfied, result in the generation of an M-EVENT-REPORT to the manager specified by the destination address. A manager may also log these events as instances of an Object Creation Record object class.

8.10.3 Object Deletion Notification

The object Deletion Notification service is defined in Recommendation X.730. In this FU, the object Deletion Notification service allows the agent to notify the manager when a Telecommunications Trouble Report or a Trouble Report Format Definition object is deleted through local administrative procedures.

Object Deletion Notifications will be filtered by instances of the Event Forwarding Discriminator object in the agent system and, if the discriminator criterion is satisfied, result in the generation of an M-EVENT-REPORT to the manager specified by the destination address. A manager may also log these events as instances of an Object Deletion Record object class.

8.11 Trouble Report Progress Notification Functional Unit

8.11.1 Trouble Report Progress Notification

The Trouble Report Progress Notification service allows an agent system to indicate progress made in resolving the trouble report. This notification is generated by the agent within the maximum time allotted by the troubleReportStatusWindow attribute if it is present in the instance of the Telecommunications Trouble Report object class. Once the troubleReportProgressNotification is sent, the value of troubleReportStatusWindow attribute is automatically reset by the agent system and begins to count down once more. The notification shall include the troubleReportStatus attribute and if the value of the status has not changed since last issued, it must also include the additionalTroubleStatusInfo attribute, indicating what progress has been made in resolving the troubleReport. The service uses the CMIS M-EVENT-REPORT service and procedures defined in Recommendation X.710.

8.11.2 Parameters

The following parameters are defined for use in this Recommendation in the Trouble Report Progress Notification service and are formally defined in Recommendation X.710:

- *Invoke identifier* – See Recommendation X.710.
- *Mode* – The mode shall have the value, confirmed.
- *Managed object class* – This parameter indicates the Telecommunications Trouble Report object class.
- *Managed object instance* – This parameter specifies an instance of the Telecommunications Trouble Report object class.
- *Event type* – This parameter identifies the Trouble Report Progress Notification. It may be included in the success confirmation and shall be included if the event reply parameter is included.
- *Event time* – This parameter is mandatory.
- *Event Information* – This parameter includes the trouble report progress information. This includes the following parameters (defined in Annex A/X.790):
  - trouble report status;
  - additional trouble status information (optional).

8.12 Cancel Trouble Report Functional Unit

The PT-SET service (see Recommendation X.730) is used to allow a manager to attempt to remove a trouble report from the agent. Typically, the manager made an error in reporting the trouble or has resolved the trouble and wants to abort the trouble report. In all cases, the agent will respect the manager's request.

The PT-SET service request is issued by the manager to change the value of the Cancel Requested By Manager attribute in the Telecommunications Trouble Report object to "True". The PT-SET should also include a Trouble Report Clearance Person attribute value identifying the person cancelling the trouble report. When the request is accepted, the cancellation process begins. This process may have associated billing implications beyond the scope of this Recommendation if work has already started on the trouble (e.g. testing dispatched). The cancellation process started by this PT-SET will eventually result in the update of the Trouble Report Status to "closedOutByCustReq" and, ultimately, in a Trouble History Record entry. A Can Not Close error message in response to the PT-SET implies that the trouble report is already cleared.

8.13 Extended Modify Trouble Administration Information Functional Unit

The Extended Modify Trouble Administration Information Functional Unit allows the manager, in both client to service provider and service provider to service provider application environments, to update the following attributes:

- Dialogue;
- Manager Search Key 1;
- Manager Search Key 2;
- Manager Search Key 3;
- Preferred Priority;
- Repeat Report;
- Trouble Detection Time.

The Extended Modify Trouble Administration Information capability is invoked by the manager using the PT-SET service to change one or more of the above mentioned attributes.

8.14 Delete Telecommunications Trouble Report functional unit

The Delete Telecommunications Trouble Report functional unit allows the manager, in a service provider to service provider application environment, to delete "closed" Telecommunications Trouble Reports. Consequently, an Object Deletion Notification will be emitted. If the manager attempts to delete a telecommunications trouble report which is not in a "closed" state, then "trouble ReportChangeDenied" specific error is returned.

8.15 Refer Telecommunications Trouble Report functional unit

The Refer Telecommunications Trouble Report functional unit allows the manager, in a service provider to service provider application environment, to delegate problem resolution to a hand-off person.

The Refer Telecommunications Trouble Report capability is invoked by the manager using PT-SET service (confirmed mode) to change either the Hand-off person name or the Hand-off person pointer attribute value, only if the telecommunications trouble report is in the "open/active" state. If the manager attempts to set this attribute in other than "open/active" state, then a CMIS error Processing Failure with "specific Error Info" value as "miscellaneousError" is returned.

8.16 Transfer Telecommunications Trouble Report functional unit

The Transfer Telecommunications Trouble Report functional unit allows the manager, in a service provider to service provider application environment, to either assign a Responsible Person, or re-assign to another Responsible person.

The Transfer Telecommunications Trouble Report capability is invoked by the manager using the PT-SET service to change either the Responsible Person Name or the Responsible Person Pointer attribute value, only if the telecommunications trouble report is in the "open/active" state. If the manager attempts to set this attribute in other than "open/active" state, then a CMIS error Processing Failure with "specific Error Info" value as "miscellaneousError" is returned.

8.17 Update State and Status functional unit

The Update State and Status functional unit requires the support of PT-SET service.

The Update State and Status capability is invoked by the manager using PT-SET service in a service provider to service provider application environment to modify the Trouble Report State, Trouble Report Status and other associated attributes that need to be modified as the trouble resolution process progresses.

Attributes that may be set when this functional unit is invoked are:

- Activity Duration;
- Close-Out Narrative;
- Maintenance Organization Contact Name;
- Maintenance Organization Contact Ptr;
- Maintenance Organization Contact Time;
- Repair Activity List;
- Restored Time;
- Trouble Found;
- Trouble Location;
- Trouble Report State;
- Trouble Report Status.

8.18 Repair Activity Object Functional Unit

The Repair Activity Object Functional Unit allows the manager, in a service provider to service provider application environment, to update repair and maintenance related information about a trouble report by creating an instance of a Repair Activity object named by the Telecommunications Trouble Report.

To create a Repair Activity object, the manager uses the PT-CREATE service. Note that in order for the Repair Activity object to be created (and thus named by a Telecommunications Trouble Report instance), the Repair Activity List attribute must not be in the Telecommunications Trouble Report instance.

8.19 Provider Trouble Report Control Functional Unit

The Provider Trouble Report Control Functional Unit allows an agent to inform the manager of planned maintenance. The agent system uses object creation reporting service to notify the manager of a newly created Provider Trouble Report or of any attribute value changes (e.g. Trouble Report State) through the use of the attribute change notification. The object deletion reporting service is used to notify deletion of Provider Trouble Reports.

The manager uses the PT-GET services to view specific attributes of a Provider Trouble Report.

8.20 Summary of functional units

Table 8-1 provides a summary of the functional units for the Trouble Management Function and the related objects required for conformance.

Table 8-1/X.791 – Functional units, services and objects

Functional unit	Services	Object(s) required for FU conformance
Kernel	PT-CREATE PT-GET	Telecommunications Trouble Report
Request Trouble Report Format	PT-GET	Trouble Report Format Definition
Trouble History Event Notification	Trouble History Event Notification	Telecommunications Trouble Report Event Forwarding Discriminator
Review Trouble History Record	PT-GET	Log Trouble History Record
Add Trouble Information	PT-SET	Telecommunications Trouble Report
Trouble Report Status/Commitment Time Update Notification	Attribute Value Change Reporting	Telecommunications Trouble Report Event Forwarding Discriminator
Verify Trouble Repair Completion	PT-SET	Telecommunications Trouble Report
Modify Trouble Administration Information	PT-SET	Telecommunications Trouble Report
Trouble Administration Configuration Event Notification	Object Creation Reporting Object Deletion Reporting Attribute Value Change Reporting	Event Forwarding Discriminator Trouble Report Format Definition and/or Telecommunications Trouble Report

Table 8-1/X.791 – Functional units, services and objects *(concluded)*

Functional unit	Services	Object(s) required for FU conformance
Trouble Report Progress Notification	Trouble Report Progress Notification	Telecommunications Trouble Report Event Forwarding Discriminator
Cancel Trouble Report	PT-SET	Telecommunications Trouble Report
Extended Modify Trouble Administration Information	PT-SET	Telecommunications Trouble Report
Delete Telecommunications Trouble Report	PT-DELETE	Telecommunications Trouble Report
Refer Telecommunications Trouble Report	PT-SET	Telecommunications Trouble Report
Transfer Telecommunications Trouble Report	PT-SET	Telecommunications Trouble Report
Update State and Status	PT-SET	Telecommunications Trouble Report
Repair Activity Object	PT-CREATE	Repair Activity
Provider Trouble Report Control	PT-GET Object Creation Reporting Object Deletion Reporting Attribute Value Change Reporting	Provider Trouble Report Event Forwarding Discriminator

9 Service mapping to Protocol

This clause provides the mapping of the services specifically defined by the trouble management function to the M-EVENT-REPORT CMIS-service. The PT-services map directly onto the CMIS-services as defined in the Object Management Function, Recommendation X.730. The application context is defined in Systems Management Overview, Recommendation X.701. For the CMIS-services to be transferred between an agent role CME and a manager role CME, an association established by using the Association Control Service Element and a Remote Operations Service Element in the Application Layer of the Open Systems Interconnection Model must be available.

9.1 Element of procedure

Trouble Management Function defines two new services, Trouble History Event Notification and Trouble Report Progression Notification, specified in the services description in 8.4 and 8.11 respectively. Clause 8, the services description, provides references to other Recommendations whose services are needed for the Trouble Management Function.

Trouble History Event Notification element of procedure is specified in 9.1.1.

Trouble Report Progress Notification element of procedure is specified in 9.1.2.

9.1.1 Trouble History Event Notification Service procedures

For the Trouble History Event Notification Service, the agent role and manager role procedures are as follows.

9.1.1.1 Agent role

9.1.1.1.1 Invocation

See Figure 9-1.

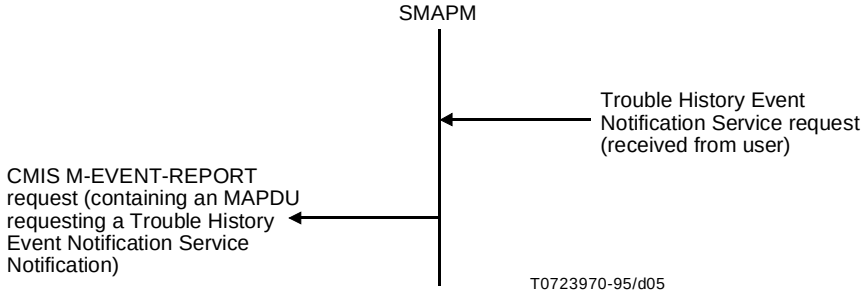


Figure 9-1/X.791 – Invocation (Agent role)

The Trouble History Event Notification Service procedures are initiated by the Trouble History Event Notification Service request primitive. On receipt of a Trouble History Event Notification Service request primitive, the System Management Application Protocol Machine (SMAPM) shall construct a Management Application Protocol Data Unit (MAPDU) and issue a CMIS M-EVENT-REPORT request service primitive with parameters derived from the Trouble History Event Notification Service request primitive.

9.1.1.1.2 Receipt of response

See Figure 9-2.

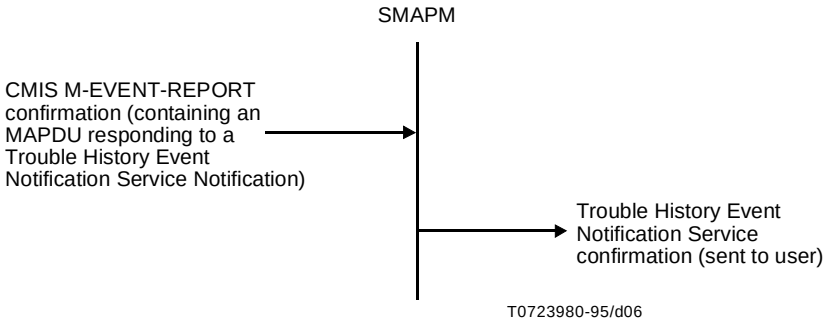


Figure 9-2/X.791 – Receipt of response (Agent role)

On receipt of a CMIS M-EVENT-REPORT confirm service primitive containing an MAPDU responding to a Trouble History Event Notification Service notification, the SMAPM shall issue a Trouble History Event Notification Service confirmation primitive to the Trouble History Event Notification Service user with parameters derived from the CMIS M-EVENT-REPORT confirm service primitive, thus completing the Trouble History Event Notification Service procedure.

NOTE – The SMAPM shall ignore all errors in the received MAPDU. The Trouble History Event Notification Service user may ignore such errors, or abort the association as a consequence of such errors.

9.1.1.2 Manager role

9.1.1.2.1 Receipt of request

See Figure 9-3.

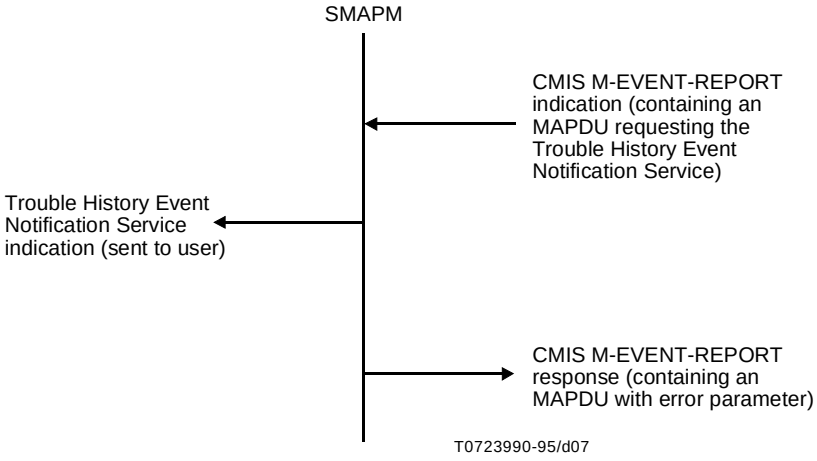


Figure 9-3/X.791 – Receipt of request (Manager role)

On receipt of a CMIS M-EVENT-REPORT indication service primitive containing an MAPDU requesting the Trouble History Event Notification Service, the SMAPM shall, if the MAPDU is well formed, issue a Trouble History Event Notification Service indication primitive to the Trouble History Event Notification Service user with parameters derived from the CMIS M-EVENT-REPORT indication service primitive.

Otherwise, the SMAPM shall construct an appropriate MAPDU containing notification of the error, and shall issue a CMIS M-EVENT-REPORT response service primitive with an error parameter present.

9.1.1.2.2 Response

The SMAPM shall accept Trouble History Event Notification Service response primitive and shall construct an MAPDU confirming the notification and issue a CMIS M-EVENT-REPORT response service primitive with parameters derived from the Trouble History Event Notification Service response primitive. See Figure 9-4.

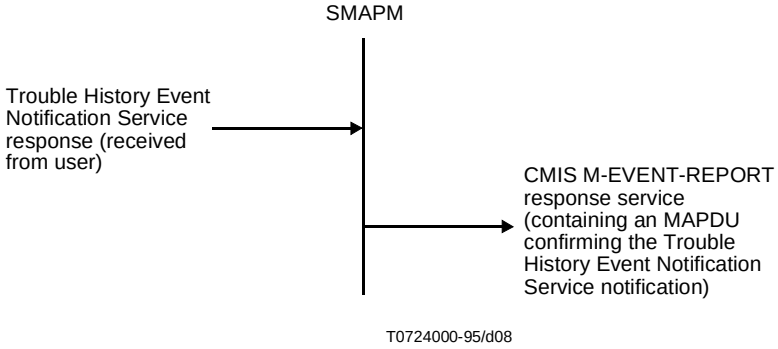


Figure 9-4/X.791 – Response (Manager role)

9.1.2 Trouble Report Progress Notification Service procedures

For the Trouble Report Progress Notification Service, the agent role and manager role procedures are as follows.

9.1.2.1 Agent role

9.1.2.1.1 Invocation

See Figure 9-5.

The Trouble Report Progress Notification Service procedures are initiated by the Trouble Report Progress Notification Service request primitive. On receipt of a Trouble Report Progress Notification Service request primitive, the System Management Application Protocol Machine (SMAPM) shall construct a Management Application Protocol Data Unit (MAPDU) and issue a CMIS M-EVENT-REPORT request service primitive with parameters derived from the Trouble Report Progress Notification Service request primitive.

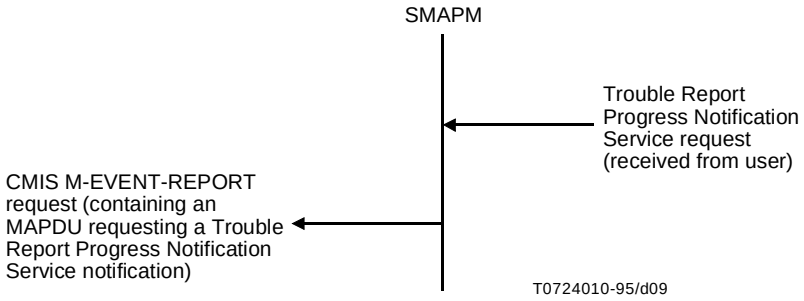


Figure 9-5/X.791 – Invocation (Agent role)

9.1.2.1.2 Receipt of response

See Figure 9-6.

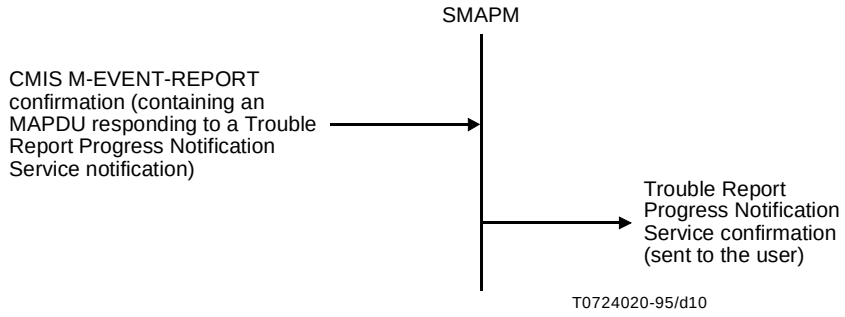


Figure 9-6/X.791 – Receipt of response (Agent role)

On receipt of a CMIS M-EVENT-REPORT confirm service primitive containing an MAPDU responding to a Trouble Report Progress Notification Service notification, the SMAPM shall issue a Trouble Report Progress Notification Service confirmation primitive to the Trouble Report Progress Notification Service user with parameters derived from the CMIS M-EVENT-REPORT confirm service primitive, thus completing the Trouble Report Progress Notification Service procedure.

NOTE – The SMAPM shall ignore all errors in the received MAPDU. The Trouble Report Progress Notification Service user may ignore such errors, or abort the association as a consequence of such errors.

9.1.2.2 Manager role

9.1.2.2.1 Receipt of request

See Figure 9-7.

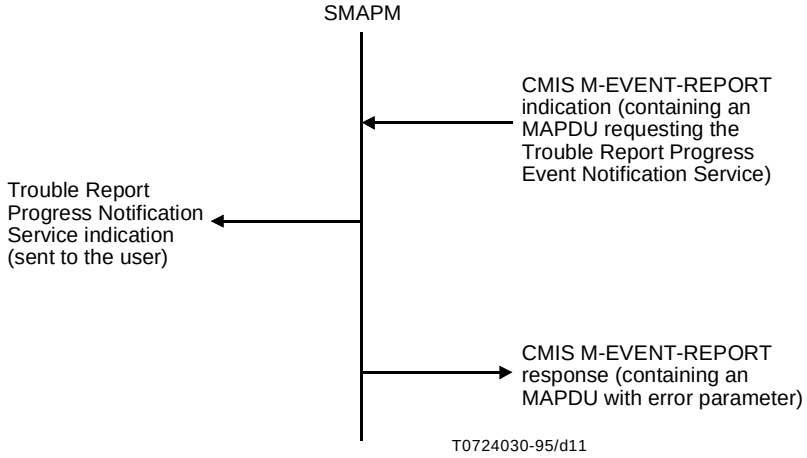


Figure 9-7/X.791 – Receipt of request (Manager role)

On receipt of a CMIS M-EVENT-REPORT indication service primitive containing an MAPDU requesting the Trouble Report Progress Notification Service, the SMAPM shall, if the MAPDU is well formed, issue a Trouble Report Progress Notification Service indication primitive to the Trouble Report Progress Notification Service user with parameters derived from the CMIS M-EVENT-REPORT indication service primitive.

Otherwise, the SMAPM shall construct an appropriate MAPDU containing notification of the error, and shall issue a CMIS M-EVENT-REPORT response service primitive with an error parameter present.

9.1.2.2.2 Response

See Figure 9-8.

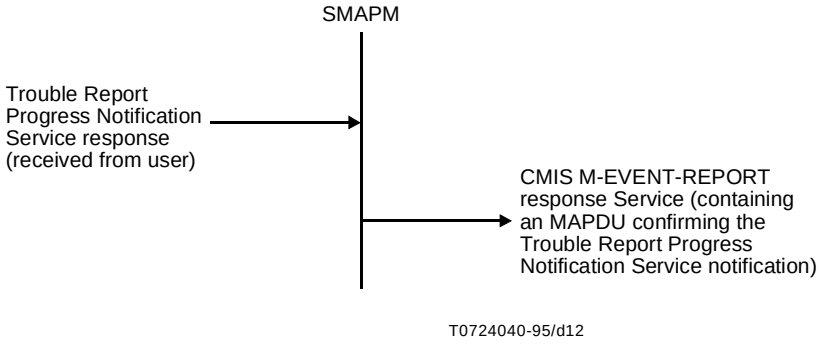


Figure 9-8/X.791 – Response (Manager role)

The SMAPM shall accept Trouble Report Progress Notification Service response primitive and shall construct an MAPDU confirming the notification and issue a CMIS M-EVENT-REPORT response service primitive with parameters derived from the Trouble Report Progress Notification Service response primitive.

9.2 List of items having templates in Annex A/X.790 and Recommendation X.721

9.2.1 Objects

This Recommendation defines the following object classes for which the templates are specified in A.1/X.790:

- Repair Activity;
- Telecommunications Trouble Report;
- Trouble History Record;
- Trouble Report;
- Provider Trouble Report;
- Trouble Report Format Definition;
- Contact;
- Account;
- CnmService;
- Service.

This Recommendation references the following objects for which the templates are specified in Recommendation X.721:

- Event Log Record;
- Log Record;
- Top;
- Event Forwarding Discriminator;
- Discriminator;
- Log.

9.2.2 Attributes

This Recommendation defines the following management attributes for which the templates are specified in A.2/X.790 See Table 9-1.

Table 9-1/X.791 – A.2/X.790 trouble management attribute labels

	A.2/X.790 trouble management attribute labels
1	beginTime
2	endTime
3	unavailable ServicePtr

This Recommendation also references the following management attributes for which the templates are specified in A.2/X.790 and Recommendation X.721. See Table 9-2.

9.2.3 Notifications

This Recommendation references the following notifications defined in A.4/X.790:

- troubleHistoryEventNotification;
- troubleReportProgressNotification.

This Recommendation references the following notifications defined in ITU-T Rec. X.721 | ISO/IEC 10165-2:

- attributeValueChange;
- objectCreation;
- objectDeletion.

9.2.4 Actions

No actions are defined or referenced by this Recommendation.

Table 9-2/X.791 – Attribute labels of trouble management attributes in A.2/X.790 and Recommendation X.721

	A.2/X.790 and Recommendation X.721 attributes
1	activityCode
2	activityDuration
3	activityInfo
4	activityPerson
5	additionalInformation
6	“Rec. X.721”: additionalText
7	additionalTroubleInfoList
8	additionalTroubleStatusInfo
9	afterHrsRepairAuth
10	agentContactPerson
11	agentContactObjectPtr
12	alarmRecordName
13	alarmRecordPtrList
14	“Rec. X.721”: allomorphs
15	alternateManagerContactPerson
16	alternateManagerContactObjectPtr
17	aLocationAccessAddress
18	aLocationAccessHours
19	aLocationAccessPerson
20	applicableManagedObjectClassList
21	applicableManagedObjectInstanceList
22	authorizationList
23	callBackInfoList
24	calledNumber
25	cancelRequestedByManager
26	closeOutNarr
27	closeOutVerification
28	commitmentTime
29	commitmentTimeRequest

Table 9-2/X.791 – Attribute labels of trouble management attributes in A.2/X.790 and Recommendation X.721 *(continued)*

	A.2/X.790 and Recommendation X.721 attributes
30	"Rec. X.721": correlated Notifications
31	custTroubleTickNum
32	customerWorkCenter
33	dialogue
34	entryTime
35	escalationList
36	"Rec. X.721": eventTime
37	"Rec. X.721": eventType
38	handOffCenter
39	handOffLocation
40	handOffPersonName
41	handOffPersonPtr
42	handOffTime
43	initiatingMode
44	lastUpdateTime
45	"Rec. X.721": loggingTime
46	"Rec. X.721": logRecordId
47	maintenanceOrgContactName
48	maintenanceOrgContactPtr
49	maintenanceOrgContactTime
50	maintServiceCharge
51	managedObjectAccessFromTime
52	managedObjectAccessHours
53	managedObjectAccessToTime
54	managedObjectInstance
55	managedObjectInstanceAliasList
56	managerContactPerson
57	managerContactObjectPtr
58	managerSearchKey1
59	managerSearchKey2
60	managerSearchKey3
61	managerSearchKeyList
62	"Rec. X.721": nameBinding
63	"Rec. X.721": notificationIdentifier
64	"Rec. X.721": objectClass
65	outageDuration
66	"Rec. X.721": packages

Table 9-2/X.791 – Attribute labels of trouble management attributes in A.2/X.790 and Recommendation X.721 *(concluded)*

	A.2/X.790 and Recommendation X.721 attributes
67	perceivedTroubleSeverity
68	preferredPriority
69	receivedTime
70	relatedTroubleReportList
71	repairActivityID
72	repairActivityList
73	repeatReport
74	responsiblePersonName
75	responsiblePersonPtr
76	restoredTime
77	suspectObjectList
78	troubleClearancePerson
79	troubleDetectionTime
80	troubleFound
81	troubleLocation
82	tRConstrainedToSingleValueAttrIDList
83	tRFormatID
84	tRMayBePresentAttrIDList
85	tRMustBePresentAttrIDList
86	troubleReportFormatObjectPtr
87	troubleReportID
88	troubleReportNumberList
89	troubleReportState
90	troubleReportStatus
91	troubleReportStatusTime
92	troubleReportStatusWindow
93	troubleType
94	tspPriority
95	zLocationAccessAddress
96	zLocationAccessHours
97	zLocationAccessPerson

9.3 Negotiation of functional units

9.3.1 The following object identifier value {itu-t(0) recommendation(0) x(24) x790(790) managementApplications-Support(2) functionalUnitPackage(1) troubleManagement(1)} has been assigned as a value of the ASN.1 type FunctionalUnitsPackageId defined in CCITT Rec. X.701 | ISO/IEC 10040 to use for negotiating the following functional units. See Table 9-3.

Table 9-3/X.791 – Functional units to be referenced by the object identifier in 9.3.1

	Functional unit
0	Extended Modify Trouble Administration Information
1	Delete Telecommunications Trouble Report
2	Refer Telecommunications Trouble Report
3	Transfer Telecommunications Trouble Report
4	Update State and Status
5	Repair Activity Object
6	Provider Trouble Report Control

9.3.2 The Trouble Management function uses the functional units in Table 9-3 in conjunction with those in Table 9-4. This Recommendation assigns the following object identifier value {itu-t(0) recommendation(0) x(24) x790(790) managementApplicationsSupport(2) functionalUnitPackage(1) troubleAdminFunctionPkg(2)} as a value of the ASN.1 type functional unit package ID defined in CCITT Rec. X.701 | ISO/IEC 10040 to use for negotiating the following functional units for the Telecommunications Trouble Report object class or any of its sub-classes.

Table 9-4/X.791 – Functional units to be referenced specifically using object identifier in 9.3.2

	Functional unit
0	Kernel
1	Request Trouble Report Format
2	Trouble History Event Notification
3	Review Trouble History Record
4	Add Trouble Information
5	Trouble Report Status/Commitment Time Update Notification
6	Verify Trouble Repair Completion
7	Modify Trouble Administration Information
8	Trouble Administration Configuration Event Notification
9	Trouble Report Progress Notification
10	Cancel Trouble Report

10 Relationship with other Standards

The interface recommendation in this Recommendation is interoperable with the following standards:

- ANSI T1.227 – American National Standard for Telecommunications: Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Model for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration), September 22, 1992. This together with ANSI T1.228 constitutes the North American standard for telecommunication trouble management.
- ANSI T1.228 – American National Standard for Telecommunications: Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration), October 12, 1992.
- Network Management Forum: Forum 024, Application Services: Trouble Management Function, Issue 1.0, August 1992.

11 Conformance

Implementations claiming to conform to this Recommendation shall comply with the conformance requirements as defined in the following subclauses.

11.1 Static conformance

The implementation shall conform to the requirements of this Recommendation in the manager role, the agent role, or both roles. A claim of conformance to at least one role shall be made in Table B0.4.1.

If a claim of conformance is made for support in the manager role, the implementation shall support at least one management operation or notification of the telecommunication trouble report managed object or at least one management operation or notification of the provider trouble report managed object specified by this Recommendation. The conformance requirements in the manager role for those management operations and notifications are identified in Table B0.4.3 and further tables referenced by Annex B.

If a claim of conformance is made for support in the agent role, the implementation shall support one or more instances of the telecommunications trouble report managed object class identified in Table B0.4.4, or it shall support one or more instances of the provider trouble report managed object class.

The implementation shall support the transfer syntax derived from the encoding rules specified in CCITT Rec. X.209 and ISO/IEC 8825 named {joint-iso-itu-t asn1(1) basicEncoding(1)} for the abstract data types referenced by the definitions for which support is claimed.

NOTE – Prior to the publication of the 97 version, this Recommendation identified general and dependent conformance classes. A claim of conformance similar to general conformance class can be made by stating support in the manager role, the agent role, or both roles, for the kernel functional unit in Table B0.4.2. A claim of conformance similar to dependent conformance class can be made by stating support for at least one of the items in Tables B0.4.3 or B0.4.4.

11.2 Dynamic conformance

Implementations claiming to conform to this Recommendation shall support the elements of procedure and definitions of semantics corresponding to the definitions for which support is claimed.

11.3 Management implementation conformance statement requirements

Any MCS proforma and MOCS proforma which conforms to this Recommendation shall be technically identical to the proformas specified in Annex B, preserving table numbering and the index numbers of items, and differing only in pagination and page headers.

The supplier of an implementation which is claimed to conform to this Recommendation shall complete a copy of the Management Conformance Summary (MCS) provided in Annex B as part of the conformance requirements together with any other ICS proformas referenced as applicable from that MCS. An ICS which conforms to this Recommendation shall:

- describe an implementation which conforms to this Recommendation;
- have been completed in accordance with the instructions for completion given in ITU-T Rec. X.724 | ISO/IEC 10165-6;
- include the information necessary to uniquely identify both the supplier and the implementation.

Annex B[4)]

MCS proforma

B0.1 Introduction

Please refer to the main body of this Recommendation for details about MCS proformas and their:

B0.1.1 Purpose and structure
B0.1.2 Instructions for completing the MCS proforma to produce an MCS
B0.1.3 Symbols, abbreviations and terms
B0.1.4 Table format

B0.2 Identification of the implementation

B0.2.1 Date of statement

The supplier of the implementation shall enter the date of this statement in the box below. Use the format DD MM-YYYY.

Date of statement

B0.2.2 Identification of the implementation

The supplier of the implementation shall enter information necessary to uniquely identify the implementation and the system(s) in which it may reside, in the box below.

B0.2.3 Contact

The supplier of the implementation shall provide information on whom to contact if there are any queries concerning the contents of the MCS or any referenced implementation conformance statement, in the box below.

4) **Copyright release for MCS proforma**
Users of this Recommendation may freely reproduce the MCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MCS. Instructions for completing the MCS proforma are specified in ITU-T Rec. X.724 | ISO/IEC 10165-6.

B0.3 Identification of the Recommendations | International Standards in which the management information is defined

The supplier of the implementation shall enter the title, reference number and date of the publication of the Recommendations | International Standards which specify the management information to which conformance is claimed, in the box below.

Recommendations | International Standards to which conformance is claimed

B0.3.1 Technical corrigenda implemented

The supplier of the implementation shall enter the reference numbers of implemented technical corrigenda which modify the identified Recommendations | International Standards, in the box below.

B0.3.2 Amendments implemented

The supplier of the implementation shall state the titles and reference numbers of implemented amendments to the identified Recommendations | International Standards, in the box below.

B0.4 Management conformance summary

The supplier of the implementation shall state the capabilities and features supported and provide a summary of conformance claims to Recommendations | International Standards using the tables in this annex.

The supplier of the implementation shall specify the roles that are supported, in Table B0.4.1.

TABLE B0.4.1/X.791

Roles

Index	Roles supported	Status	Profile	Support	Additional information
1	Manager role support	o.1	o.1		
2	Agent role support	o.1	o.1		

The supplier of the implementation shall specify support for the systems management functional units, in Table B0.4.2.

TABLE B0.4.2/X.791

Systems management functional units

		Manager		Agent		
Index	Systems management functional unit name	Status	Profile	Status	Profile	Additional information
1	kernel functional unit	c1	c1	c2	c2	
	request trouble report format	c1	c1	c2	c2	
	trouble history event notification	c1	c1	c2	c2	
	review trouble history record	c1	c1	c2	c2	
	add trouble information	c1	c1	c2	c2	
	trouble report status/commitment time update notification	c1	c1	c2	c2	
	verify trouble repair completion	c1	c1	c2	c2	
	modify trouble administration information	c1	c1	c2	c2	
	trouble administration configuration event notification	c1	c1	c2	c2	
	trouble report progress notification	c1	c1	c2	c2	
	cancel trouble report	c1	c1	c2	c2	
	extended modify trouble administration information	c1	c1	c2	c2	
	delete telecommunications trouble report	c1	c1	c2	c2	
	refer telecommunications trouble report	c1	c1	c2	c2	
	transfer telecommunications trouble report	c1	c1	c2	c2	
	update state and status	c1	c1	c2	c2	
	repair activity object	c1	c1	c2	c2	
2	provider trouble report control	c1	c1	c2	c2	

c1: if B0.4.1/1a then o else –.

c2: if B0.4.1/2a then o else –.

The supplier of the implementation shall specify support for management information in the manager role, in Table B0.4.3.

TABLE B0.4.3/X.791

Manager role minimum conformance requirement

Index	Item	Status	Profile	Additional information
1	Operations on the managed objects telecommunications trouble report or provider trouble report	c3	c3	
2	State change notification for the managed objects	c4	c4	
3	Object creation notification for the managed objects	c4	c4	
4	Object deletion notification for the managed objects	c4	c4	
5	Attribute value change notification for the managed objects	c4	c4	
6	Processing error alarm notification for the managed objects	c4	c4	

c3: if B0.4.2/1a or B.2/2a then m else (if B.1/1a then o.2 else –).

c4: if B0.4.2/1a then m else [if B.2/2a then o.2 else (if B.1/1a then o.2 else –)].

NOTE – Manager role minimum conformance requires support for at least one of the items identified in this table. Support for any of the functional units identified in Table B0.4.2 mandates support for some of those items. Conditions c3 and c4 express both of these requirements.

The supplier of the implementation shall specify support for management information in the agent role, in Table B0.4.4. If additional subclasses of trouble report objects are supported, the supplier of the implementation shall list the classes in the Additional information column.

TABLE B0.4.4/X.791

Agent role minimum conformance requirement

Index	Item	Status	Profile	Additional information
1	TroubleReport managed object class	c5	c5	
2	Sub-classes of log records associated with notifications emitted by the Trouble Report managed object	c6	c6	
3	Additional sub-classes of log records	c7	c7	
c5: if B0.4.1/2a then m else –. c6: if B0.4.1/2a and B0.4.5/1a then m else –. c7: if B0.4.1/2a then o else –. NOTE – Condition c6 makes it mandatory, if Trouble Reporting is supported, to support the event log records associated with the notifications supported.				

TABLE B0.4.5/X.791

Trouble Reporting

Index		Status	Profile	Additional information
1	Does the implementation support reporting of trouble in agent role?	c8	c8	
c8: if B.1/2a then o else –.				

The supplier of the implementation shall provide information on claims of conformance to any of the Recommendations | International Standards summarized in Tables B0.4.6 to B0.4.9. For each Recommendation | International Standard that the supplier of the implementation claims conformance to, the corresponding conformance statement(s) shall be completed, or referenced by, the MCS. The supplier of the implementation shall complete the Support, Table numbers and Additional information columns.

In Tables B0.4.6 to B0.4.9, the Status column is used to indicate whether the supplier of the implementation is required to complete the referenced tables or referenced items. Conformance requirements are as specified in the referenced tables or referenced items and are not changed by the value of the MCS Status column. Similarly, the Support column is used by the supplier of the implementation to indicate completion of the referenced tables or referenced items.

TABLE B0.4.6/X.791

PICS support summary

Index	Identification of the document that includes the PICS proforma	Table numbers of PICS proforma	Description	Constraints and values	Status	Profile	Table numbers of PICS	Additional information
1	CCITT Rec. X.730 (1992) | ISO/ IEC 10164-1:1993	Annex E, all tables	SM application context	OBJECT IDENTIFIER	m	m		

NOTE – Conformance to the MAPDUs defined in this Recommendation can be claimed by completing the corresponding tables in the MICS and MOCS annexes of the referenced Recommendations | International Standards.

TABLE B0.4.7/X.791

MOCS support summary

Index	Identification of the document that includes the MOCS proforma	Table numbers of MOCS proforma	Description	Constraints and values	Status	Profile	Table numbers of MOCS	Additional information
1	CCITT Rec. X.730 (1992) | ISO/ IEC 10164-1:1993	Annex C, all tables	objectCreation, objectDeletion and attributeValueChange records	–	c9	c9		
2	CCITT Rec. X.731 (1992) | ISO/ IEC 10164-2:1992	Annex C, all tables	stateChange record	–	c9	c9		
3	CCITT Rec. X.733 (1992) | ISO/ IEC 10164-4:1992	Annex C, all tables	alarmRecord	–	c9	c9		
4	Rec. X.790	B1.1 - B1.10	account		o	o		
5	Rec. X.790	B2.1 - B2.10	cnmService		o	o		
6	Rec. X.790	B3.1 - B3.10	contact		o	o		
7	Rec. X.790	B4.1 - B4.10	providerTroubleReport		o	o		
8	Rec. X.790	B5.1 - B5.10	repairActivity		o	o		
9	Rec. X.790	B6.1 - B6.10	service		o	o		
10	Rec. X.790	B7.1 - B7.10	telecommunicationsTroubleReport		m	m		
11	Rec. X.790	B8.1 - B8.10	troubleHistoryRecord		o	o		
12	Rec. X.790	B9.1 - B9.10	troubleReportFormatDefn		o	o		
c9: if B.4/2a then m else –.								

TABLE B0.4.8/X.791

MRCS support summary

Index	Identification of the document that includes the MRCS proforma	Table numbers of MRCS proforma	Description	Constraints and values	Status	Profile	Table numbers of MRCS	Additional information
1	Rec. X.790	B1.10	account-account		c:o.1	c:o.1		
2	Rec. X.790	B1.10	account-network		c:o.1	c:o.1		
3	Rec. X.790	B2.10	cnmService-account		c:o.2	c:o.2		
4	Rec. X.790	B3.10	contact-account		c:o.3	c:o.3		
5	Rec. X.790	B3.10	contact-network		c:o.3	c:o.3		
6	Rec. X.790	B3.10	contact-service		c:o.3	c:o.3		
7	Rec. X.790	B3.10	contact-system		c:o.3	c:o.3		
8	Rec. X.790	B4.10	providerTroubleReport-network		o	o		
9	Rec. X.790	B5.10	repairActivity-telecommunicationsTroubleReport		o	o		
10	Rec. X.790	B7.10	telecommunicationTroubleReport-account name binding	–	m	m		
11	Rec. X.790	B7.10	telecommunicationsTroubleReport-cnmService		m	m		
12	Rec. X.790	B7.10	telecommunicationTroubleReport-network name binding	–	m	m		
13	Rec. X.790	B3.10	telecommunicationsTroubleReport-system		m	m		
14	Rec. X.790	B3.10	troubleHistoryRecord-log		o	o		
15	Rec. X.790	B3.10	troubleReportFormatDefn-network		c:o.4	c:o.4		
16	Rec. X.790	B3.10	troubleReportFormatDefn-system		c:o.4	c:o.4		

c:o.1: One of these name bindings must be supported and if a functional unit requires it, then that name binding must also be supported.

c:o.2: One of these name bindings must be supported and if a functional unit requires it, then that name binding must also be supported.

c:o.3: One of these name bindings must be supported and if a functional unit requires it, then that name binding must also be supported.

c:o.4: One of these name bindings must be supported and if a functional unit requires it, then that name binding must also be supported.

c10: if B.5/1a then o else –.

c11: if B.4/1a then o else –.

MOCS proforma[5)]

Please refer to the main body of this Recommendation for details about MOCS proformas.

The Managed Object Conformance Statement (MOCS) proformas that follow should be used by a profile implementation to identify which features and properties of each managed object class are supported. These tables have been prepared without regard to manager or agent role, so they can be used in either situation. An implementation that supports both roles could either use one set of tables if all support details are the same, or a different set of tables for each role.

These tables were generated mechanically from the GDMO templates, with additions and clarifications added by hand.

B1 account

TABLE B1.1/X.791

account Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	account	{0 0 24 790 0 3 1}		

TABLE B1.2/X.791

account Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B1.3/X.791

account package support

Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information
1	aAccountContactAttributeListPkg	{0 0 24 790 0 4 1}	"an instance supports it and accountContactObjectListPkg is not present."	c1	c1		
2	aAccountContactObjectListPkg	{0 0 24 790 0 4 2}	"an instance supports it and accountContactAttributeListPkg is not present."	c2	c2		
3	accountPkg		Mandatory	m	m		
4	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
5	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c3	c3		
6	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		

5) **Copyright release for MOCS proforma**
Users of this Recommendation may freely reproduce the MOCS proforma in this annex so that it can be used for its intended purpose, and may further publish the completed MOCS.

TABLE B1.4/X.791

account Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	accountContactList	{0 0 24 790 0 7 1}	SET OF SEQUENCE	c1	c1		c1	c1	
2	accountName	{0 0 24 790 0 7 2}	GraphicString	m	m		m	m	
3	additionalText	{0 0 24 790 0 7 7}	GraphicString	m	m		m	m	
4	contactObjectPtrList	{0 0 24 790 0 7 31}	SET OF ObjectInstance	c2	c2		c2	c2	

TABLE B1.4/X.791 *(continued)*

Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	c1	c1		c1	c1		c1	c1	
2	–	–		–	–		–	–	
3	m	m		–	–		–	–	
4	c2	c2		c2	c2		c2	c2	

TABLE B1.4/X.791 *(concluded)*

Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		

TABLE B1.5/X.791

account Attribute group support

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

TABLE B1.6/X.791

account Action support

(There are no actions specified for this managed object class.)

TABLE B1.7/X.791

account Notification support

(There are no notifications specified for this managed object class.)

TABLE B1.8/X.791

account Parameter support

(There are no parameters specified for this managed object class.)

TABLE B1.9/X.791

account Conditions

Condition number	Condition	Reference
c1	If B1.3/1 then m else –	"an instance supports it and accountContactObjectListPkg is not present."
c2	If B1.3/2 then m else –	"an instance supports it and accountContactAttributeListPkg is not present."
c3	If B1.3/5 then m else –	"any registered package, other than this package has been instantiated."
c:o.1	If B1.9/1 or B.9/2 then m else –	At least one name binding must be supported and if a functional unit requires a particular name binding then that must be supported.

TABLE B1.10/X.791

account Name Binding support

Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	account-account	{0 0 24 790 0 6 1}	Superior class: account	c:o.1	c:o.1			1.1
								1.2
								1.3
								1.4
								1.5
								1.6
2	account-network	{0 0 24 790 0 6 2}	Superior class: "Rec. M.3100:1992": network AND SUBCLASSES	c:o.1	c:o.1			2.1
								2.2
								2.3
								2.4
								2.5
								2.6

TABLE B1.10/X.791 *(concluded)*

account Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		
2	2.1	Create support		–	–		
	2.2	Create with reference object		–	–		
	2.3	Create with automatic instance naming		–	–		
	2.4	Delete support		–	–		
	2.5	Delete only if no contained objects		–	–		
	2.6	Delete contained objects		–	–		

B2 cnmService

TABLE B2.1/X.791

cnmService Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	cnmService	{0 0 24 790 0 3 2}		

TABLE B2.2/X.791

cnmService Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B2.3/X.791

cnmService Package support

Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information
1	"Rec. M.3100:1992": administrativeOperationalStatesPackage	{0 0 13 3100 0 41}	"an instance supports it."	o	o		
2	alarmStatusPackage	{0 0 24 790 0 4 21}	"an instance supports it."	o	o		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
4	"Rec. M.3100:1992": attributeValueChangeNotificationPackage	{0 0 13 3100 0 4 4}	"The attribute ValueChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."	c1	c1		
5	cnmServicePkg	{0 0 24 790 0 4 2}	Mandatory	m	m		
6	"Rec. M.3100:1992": createDeleteNotificationPackage	{0 0 13 3100 0 4 10}	"The objectCreation and objectDeletion notifications defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 are supported by an instance of this class."	c2	c2		
7	csServiceAliasPkg	{0 0 24 790 0 4 3}	"an instance supports it."	o	o		
8	csTroubleReportFormatObjectPtrPkg	{0 0 24 790 0 4 4}	"an instance supports it."	o	o		
9	"Rec. M.3100:1992": currentProblemListPackage	{0 0 13 3100 0 4 13}	"an instance supports it."	o	o		
10	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c3	c3		
11	servicePackage	(Not registered)	Mandatory	m	m		
12	"Rec. M.3100:1992": stateChangeNotificationPackage	{0 0 13 3100 0 4 28}	"The stateChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."	c4	c4		
13	supportedByObjectListPackage	{0 0 24 790 0 4 19}	"an instance supports it."	o	o		
14	supportedServiceNameListPackage	{0 0 24 790 0 4 20}	"an instance supports it."	o	o		
15	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
16	usageStatePackage	{0 0 24 790 0 4 22}	"an instance supports it."	o	o		

TABLE B2.4/X.791

cnmService Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": administrativeStates	{2 9 3 2 7 31}	ENUMERATED	o	o		o	o	
2	"Rec. M.3100:1992": alarmStatus	(Not registered)		–	–		o	o	
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
4	"Rec. M.3100:1992": currentProblemList	{0 0 13 3100 0 7 17}	SET OF SEQUENCE	o	o		o	o	
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
6	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
7	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–	–		o	o	
8	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c3	c3	
9	serviceAliasList	{0 0 24 790 0 7 82}	SET OF GraphicString	o	o		o	o	
10	serviceDescription	{0 0 24 790 0 7 83}	GraphicString	m	m		m	m	
11	serviceID	{0 0 24 790 0 7 85}		m	m		m	m	
12	serviceLocationList	{0 0 24 790 0 7 84}	SET OF SEQUENCE	m	m		m	m	
13	serviceType	{0 0 24 790 0 7 86}	CHOICE	m	m		m	m	
14	"Rec. M.3100:1992": supportedByObjectList	(Not registered)		o	o		o	o	
15	supportedServiceNameList	{0 0 24 790 0 7 87}	ObjectList	o	o		o	o	
16	troubleReportFormatObjectPtr	{0 0 24 790 0 7 95}	ObjectInstance	o	o		o	o	
17	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": usageState	(Not registered)		–	–		o	o	

TABLE B2.4/X.791 *(continued)*

cnmService Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		–	–		–	–	
2	–	–		–	–		–	–	
3	–	–		–	–		–	–	
4				–	–		–	–	
5	–	–		–	–		–	–	
6				–	–		–	–	
7				–	–		–	–	
8				–	–		–	–	
9	–	–		–	–		–	–	
10	–	–		–	–		–	–	
11	–	–		–	–		–	–	
12	–	–		–	–		–	–	
13	m	m		–	–		–	–	
14	o	o		o	o		o	o	
15	o	o		o	o		o	o	
16	–	–		–	–		–	–	
17	–	–		–	–		–	–	

TABLE B2.4/X.791 *(concluded)*

cnmService Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–	–	–
2	–	–	–	–
3	–	–	–	–
4	–	–	–	–
5	–	–	–	–
6	–	–	–	–
7	–	–	–	–
8	–	–	–	–
9	–	–	–	–
10	–	–	–	–
11	–	–	–	–
12	–	–	–	–
13	–	–	–	–
14	–	–	–	–
15	–	–	–	–
16	–	–	–	–
17	–	–	–	–

TABLE B2.5/X.791

cnmService Attribute group support

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

TABLE B2.6/X.791

cnmService Action support

(There are no actions specified for this managed object class.)

TABLE B2.7/X.791

cnmService Notification support

						Support			
Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		c1	c1				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c2	c2				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3

TABLE B2.7/X.791 *(continued)*

cnmService Notification support

						Support			
Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c2	c2				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3
4	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": qualityofServiceAlarm	(Not registered)							
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}		c4	c4				5.1
									5.1.1
									5.1.2
									5.1.2.1
									5.1.2.2
									5.1.3
									5.1.3.1
									5.1.3.1.1
									5.1.3.1.2
									5.1.3.2
									5.1.3.3
									5.1.4
									5.1.5
									5.1.5.1
									5.1.5.2
									5.1.5.2.1
									5.1.5.2.1.1
									5.1.5.2.1.2
									5.1.5.2.2
									5.1.5.2.3
									5.1.5.2.3.1
									5.1.5.2.3.2
									5.1.6
									5.1.7
									5.1.7.1
									5.1.7.2
									5.1.7.3

TABLE B2.7/X.791 *(continued)*

cnmService Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	c1	c1		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:0	c:0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	c:0	c:0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	c:m	c:m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:o	c:o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	c:m	c:m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B2.7/X.791 *(continued)*

cnmService Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
2	2.1	ObjectInfo		Information Syntax SEQUENCE	c2	c2		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	c:o	c:o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o	c:o		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	c2	c2		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		

TABLE B2.7/X.791 *(continued)*

cnmService Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	c:o	c:o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
4								
5	5.1	StateChangeInfo		Information Syntax SEQUENCE	c4	c4		
	5.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		
	5.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	c:o	c:o		
	5.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.8	c:o.8		
	5.1.2.2	localForm	–	INTEGER	c:o.8	c:o.8		

TABLE B2.7/X.791 *(concluded)*

cnmService Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	5.1.3	stateChangeDefinition	{2 9 3 2 7 28}	SET OF SEQUENCE	c:m	c:m		
	5.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	5.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.9	c:o.9		
	5.1.3.1.2	localForm	–	INTEGER	c:o.9	c:o.9		
	5.1.3.2	oldAttributeValue	–	ANY DEFINED By identifier	c:o	c:o		
	5.1.3.3	newAttributeValue	–	ANY DEFINED By identifier	c:m	c:m		
	5.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	5.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	5.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	5.1.5.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	5.1.5.2.1	DistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.1 o	c:o.10 o		
	5.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	5.1.5.2.2	nonSpecificForm	–	OCTET STRING	c:o.1 o	c:o.10 o		
	5.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.1 o	c:o.10 o		
	5.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	5.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	5.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	5.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	5.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B2.8/X.791

cnmService Parameter support

(There are no parameters specified for this managed object class.)

TABLE B2.9/X.791

cnmService Condition support

Condition number	Condition	Reference
c1	If B2.3/4 then m else –.	"The attribute ValueChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c2	If B2.3/6 then m else –.	"The objectCreation and objectDeletion notifications defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 are supported by an instance of this class."
c3	If B2.3/10 then m else –.	"any registered package other than this has been instantiated"
c4	If B2.3/12 then m else –.	"The stateChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		"One of these notification fields must be supported"
c:o.2		"One of these notification fields must be supported"
c:o.3		"One of these notification fields must be supported"
c:o.4		"One of these notification fields must be supported"
c:o.5		"One of these notification fields must be supported"
c:o.6		"One of these notification fields must be supported"
c:o.7		"One of these notification fields must be supported"
c:o.8		"One of these notification fields must be supported"
c:o.9		"One of these notification fields must be supported"
c:o.10		"One of these notification fields must be supported"

TABLE B2.10/X.791

cnmService Name Binding support

Index	Name binding template label	Value of object identifier for name binding	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	cnmService-account	{0 0 24 790 0 6 7}	Superior class: account	m	m			1.1
								1.2
								1.3
								1.4
								1.5
								1.6

TABLE B2.10/X.791 *(concluded)*

cnmService Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		

B3 contact

TABLE B3.1/X.791

contact Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	contact	{0 0 24 790 0 3 3}		

TABLE B3.2/X.791

contact Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B3.3/X.791

contact Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"Rec. M.3100:1992": attributeValueChangeNotificationPackage	{0 0 13 3100 0 4 4}	"The attribute ValueChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."	m	m		
3	contactCompanyPkg	{0 0 24 790 0 4 5}	"an instance supports it"	o	o		
4	contactFunctionPkg	{0 0 24 790 0 4 6}	"an instance supports it"	o	o		
5	contactNamesPkg	{0 0 24 790 0 4 7}	"an instance supports it"	o	o		
6	contactPkg	{0 0 24 790 0 4 12}	Mandatory	m	m		
7	contactTypePkg	{0 0 24 790 0 4 8}	"an instance supports it"	o	o		
8	"Rec. M.3100:1992": createDeleteNotificationPackage	{0 0 13 3100 0 4 10}	"The objectCreation and objectDeletion notifications defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 are supported by an instance of this class."	m	m		
9	electronicMailAddressPkg	{0 0 24 790 0 4 9}	"an instance supports it"	o	o		
10	facsimileTelephoneNumberListPkg	{0 0 24 790 0 4 10}	"an instance supports it"	o	o		
11	"Rec. M.3100:1992": locationNamePackage	{0 0 24 790 0 4 17}	"an instance supports it"	o	o		
12	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
13	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
14	typeTextPkg	{0 0 24 790 0 4 11}	"an instance supports it"	o	o		
15	"Rec. M.3100:1992": userLabelPackage	{0 0 13 3100 0 4 32}	"an instance supports it"	o	o		

TABLE B3.4/X.791

contact Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
2	contactCompany	{0 0 24 790 0 7 26}	GraphicString	o	o		o	o	
3	contactDetails	{0 0 24 790 0 7 27}	GraphicString	m	m		m	m	
4	contactFunction	{0 0 24 790 0 7 28}	ENUMERATED	o	o		o	o	
5	contactID	{0 0 24 790 0 7 29}	SimpleNameType	m	m		m	m	
6	contactNames	{0 0 24 790 0 7 30}	SET OF CHOICE	o	o		o	o	
7	contactType	{0 0 24 790 0 7 32}	BIT STRING	o	o		o	o	
8	electronicMailAddress	{0 0 24 790 0 7 37}	SET OF IA5String	o	o		o	o	
9	facsimileTelephoneNumberList	{0 0 24 790 0 7 41}	TelephoneNumberList	o	o		o	o	
10	"Rec. M.3100:1992": locationName	{0 0 24 790 0 4 27}	GraphicString	o	o		o	o	
11	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
12	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
13	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c1	c1	
14	TelephoneNumberList	(Not registered)		m	m		m	m	
15	typeText	{0 0 24 790 0 4 107}	IA5 STRING	o	o		o	o	
16	"Rec. M.3100:1992": userLabelPackage	{0 0 13 3100 0 7 50}	GraphicString	o	o		o	o	

TABLE B3.4/X.791 *(continued)*

contact Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		–	–		–	–	
2	o	o		–	–		–	–	
3	m	m		–	–		–	–	
4	o	o		–	–		–	–	
5	–	–		–	–		–	–	
6	o	o		o	o		o	o	
7	o	o		–	–		–	–	
8	o	o		o	o		o	o	
9	o	o		o	o		o	o	
10	o	o		–	–		–	–	
11	–	–		–	–		–	–	
12	–	–		–	–		–	–	
13	–	–		–	–		–	–	
14	m	m		m	m		m	m	
15	o	o		–	–		–	–	
16	o	o		–	–		–	–	

TABLE B3.4/X.791 *(concluded)*

contact Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		
10	–	–		
11	–	–		
12	–	–		
13	–	–		
14	–	–		
15	–	–		
16	–	–		

TABLE B3.5/X.791

contact Attribute group support

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

TABLE B3.6/X.791

contact Action support

(There are no actions specified for this managed object class.)

TABLE B3.7/X.791

contact Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		m	m				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2

TABLE B3.7/X.791 *(continued)*

contact Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c2	c2				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c2	c2				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3

TABLE B3.7/X.791 *(continued)*

contact Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	m	m		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	0	0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	0	0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	m	m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	o.2		
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	o	o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	m	m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		

TABLE B3.7/X.791 *(continued)*

contact Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o.5	c:o.5		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		

TABLE B3.7/X.791 *(concluded)*

contact Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B3.8/X.791

contact Parameter support

(There are no parameters specified for this managed object class.)

TABLE B3.9/X.791

contact Condition support

Condition number	Condition	Reference
c1	If B3.3/12 then m else –.	"any registered package other than this has been instantiated"
c2		"the objectCreation and objectDeletion notifications identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one name binding must be supported and if a functional unit requires a particular name binding then that must be supported
c:o.2		At least one notification field must be supported
c:o.3		At least one notification field must be supported
c:o.4		At least one notification field must be supported
c:o.5		At least one notification field must be supported
c:o.6		At least one notification field must be supported
c:o.7		At least one notification field must be supported

TABLE B3.10/X.791

contact Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	contact-account	{0 0 24 790 0 6 3}	Superior class: account	m	m			1.1
								1.2
								1.3
								1.4
								1.5
								1.6
2	contact-network	{0 0 24 790 0 6 4}	Superior class: "Rec. M.3100:1992": network AND SUBCLASSES	c:o.1	c:o.1			2.1
								2.2
								2.3
								2.4
								2.5
								2.6
3	contact-service	{0 0 24 790 0 6 5}	Superior class: service	c:o.1	c:o.1			3.1
								3.2
								3.3
								3.4
								3.5
								3.6
4	contact-system	{0 0 24 790 0 6 6}	Superior class: "CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": system	c:o.1	c:o.1			4.1
								4.2
								4.3
								4.4
								4.5
								4.6

TABLE B3.10/X.791 *(concluded)*

contact Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		
2	2.1	Create support		–	–		
	2.2	Create with reference object		–	–		
	2.3	Create with automatic instance naming		–	–		
	2.4	Delete support		–	–		
	2.5	Delete only if no contained objects		–	–		
	2.6	Delete contained objects		–	–		
3	3.1	Create support		–	–		
	3.2	Create with reference object		–	–		
	3.3	Create with automatic instance naming		–	–		
	3.4	Delete support		–	–		
	3.5	Delete only if no contained objects		–	–		
	3.6	Delete contained objects		–	–		
4	4.1	Create support		–	–		
	4.2	Create with reference object		–	–		
	4.3	Create with automatic instance naming		–	–		
	4.4	Delete support		–	–		
	4.5	Delete only if no contained objects		–	–		
	4.6	Delete contained objects		–	–		

B4 providerTroubleReport

TABLE B4.1/X.791

providerTroubleReport Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	providerTroubleReport	{0 0 24 790 0 3 4}		

TABLE B4.2/X.791

providerTroubleReport Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B4.3/X.791

providerTroubleReport Package support

Index	Package template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
3	providerTroubleReportPkg		Mandatory	m	m		
4	ptrUnavailableServicePtrPkg	{0 0 24 790 0 4 13}	"an instance supports it and if a service is impacted"	c2	c2		
5	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
6	trActivityDurationPkg	{0 0 24 790 0 4 86}	"an instance supports it."	o	o		
7	trAgentContactPersonAttributePkg	{0 0 24 790 0 4 87}	"an instance supports it and trAgentContactPersonObjectPkg is not present."	c3	c3		
8	trAgentContactPersonObjectPkg	{0 0 24 790 0 4 88}	"an instance supports it and trAgentContactPersonAttributePkg is not present."	c4	c4		
9	trAttributeValueChangePkg	{0 0 24 790 0 4 14}	Mandatory	m	m		
10	trCloseOutNarrPkg	{0 0 24 790 0 4 89}	"an instance supports it."	o	o		
11	trHistoryEventPkg	{0 0 24 790 0 4 99}	"an instance supports it."	o	o		
12	trManagedObjectInstanceAliasListPkg	{0 0 24 790 0 4 90}	"an instance supports it."	o	o		
13	trObjectCreationDeletionPkg	{0 0 24 790 0 4 15}	Mandatory	m	m		
14	trRelatedTroubleReportListPkg	{0 0 24 790 0 4 92}	"an instance supports it."	o	o		
15	trRepairActivityListPkg	{0 0 24 790 0 4 93}	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."	c45	c45		
16	trRestoredTimePkg	{0 0 24 790 0 4 94}	"an instance supports it."	o	o		
17	trTroubleClearancePersonAttributePkg	{0 0 24 790 0 4 95}	"an instance supports it."	o	o		
18	trTroubleReportFormatObjectPtrPkg	{0 0 24 790 0 4 96}	"an instance supports it."	o	o		
19	troubleReportPkg	(Not registered)	Mandatory	m	m		
20	x790AttributeValueChangePkg	{0 0 24 790 0 4 97}	"an instance supports it."	o	o		
21	x790NumberListPkg	{0 0 24 790 0 4 91}	"an instance supports it."	o	o		

TABLE B4.4/X.791

providerTroubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	activityDuration	{0 0 24 790 0 7 4}	SET OF SEQUENCE	–	–		o	o	
2	additionalTroubleInfoList	{0 0 24 790 0 7 8}	SET OF GraphicString	m	m		m	m	
3	agentContactObjectPtr	{0 0 24 790 0 7 12}	CHOICE	c4	c4		c4	c4	
4	agentContactPerson	{0 0 24 790 0 7 11}	SEQUENCE	c3	c3		c3	c3	
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
6	beginTime	{0 0 24 790 0 7 19}	GeneralizedTime	m	m		m	m	
7	closeOutNarr	{0 0 24 790 0 7 23}	GraphicString	o	o		o	o	
8	endTime	{0 0 24 790 0 7 38}	GeneralizedTime	m	m		m	m	
9	managedObjectInstance	{0 0 24 790 0 7 63}	ObjectInstance	m	m		m	m	
10	managedObjectInstanceAliasList	{0 0 24 790 0 7 64}	SET OF GraphicString	o	o		o	o	
11	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
12	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
13	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c1	c1	
14	receivedTime	{0 0 24 790 0 7 74}	GeneralizedTime	m	m		m	m	
15	relatedTroubleReportList	{0 0 24 790 0 7 75}	SET OF ObjectInstance	o	o		o	o	
16	repairActivityList	{0 0 24 790 0 7 77}	SET OF SEQUENCE	c5	c5		c5	c5	
17	restoredTime	{0 0 24 790 0 7 81}	CHOICE	o	o		o	o	
18	troubleClearancePerson	{0 0 24 790 0 7 90}	SEQUENCE	o	o		o	o	
19	troubleFound	{0 0 24 790 0 7 92}	CHOICE	m	m		m	m	
20	troubleLocation	{0 0 24 790 0 7 93}	CHOICE	m	m		m	m	
21	troubleReportFormatObjectPtr	{0 0 24 790 0 7 95}	ObjectInstance	x	x		o	o	
22	troubleReportID	{0 0 24 790 0 7 97}	GraphicString	m	m		m	m	
23	troubleReportNumberList	{0 0 24 790 0 7 100}	SET OF GraphicString	o	o		o	o	
24	troubleReportState	{0 0 24 790 0 7 101}	INTEGER	m	m		m	m	
25	troubleReportStatus	{0 0 24 790 0 7 102}	CHOICE	m	m		m	m	
26	troubleReportStatusTime	{0 0 24 790 0 7 103}	GeneralizedTime	m	m		m	m	
27	troubleType	{0 0 24 790 0 7 105}	CHOICE	m	m		m	m	
28	unavailableServicePtr	{0 0 24 790 0 7 108}	CHOICE	c2	c2		c2	c2	

TABLE B4.4/X.791 *(continued)*

providerTroubleReport Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		o	o		–	–	
2	–	–		m	m		–	–	
3	–	–		–	–		–	–	
4	–	–		–	–		–	–	
5	–	–		–	–		–	–	
6	–	–		–	–		–	–	
7	o	o		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	
10	–	–		–	–		–	–	
11	–	–		–	–		–	–	
12	–	–		–	–		–	–	
13	–	–		–	–		–	–	
14	–	–		–	–		–	–	
15	–	–		–	–		–	–	
16	–	–		c5	c5		–	–	
17	o	o		–	–		–	–	
18	o	o		–	–		–	–	
19	m	m		–	–		–	–	
20	–	–		–	–		–	–	
21	–	–		–	–		–	–	
22	–	–		–	–		–	–	
23	–	–		–	–		–	–	
24	m	m		–	–		–	–	
25	m	m		–	–		–	–	
26	–	–		–	–		–	–	
27	–	–		–	–		–	–	
28	–	–		–	–		–	–	

TABLE B4.4/X.791 *(concluded)*

providerTroubleReport Attribute support

	Set	to	default	
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		
10	–	–		
11	–	–		
12	–	–		
13	–	–		
14	–	–		
15	–	–		
16	–	–		
17	–	–		
18	–	–		
19	–	–		
20	–	–		
21	–	–		
22	–	–		
23	–	–		
24	–	–		
25	–	–		
26	–	–		
27	–	–		
28	–	–		

TABLE B4.5/X.791

providerTroubleReport Attribute group support

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

TABLE B4.6/X.791

providerTroubleReport Action support

(There are no actions specified for this managed object class.)

TABLE B4.7/X.791

providerTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		m	m				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c6	c6				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c6	c6				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3
4	troubleHistoryEventNotification	{0 0 24 790 0 10 1}		o	o				4.1
									4.1.1
									4.1.2
									4.1.3
									4.1.3.1
									4.1.3.2
									4.1.4
									4.1.4.1
									4.1.4.1.1
									4.1.4.1.2
									4.1.4.1.3
									4.1.4.1.4
									4.1.4.1.5
									4.1.4.2
									4.1.4.3
									4.1.5
									4.1.6
									4.1.6.1
									4.1.6.2
									4.1.6.3
									4.1.6.4
									4.1.6.4.1
									4.1.6.4.2
									4.1.6.4.3

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									4.1.6.4.4
									4.1.6.4.4.1
									4.1.6.4.4.2
									4.1.6.4.4.3
									4.1.6.4.4.4
									4.1.6.4.5
									4.1.6.4.6
									4.1.6.4.7
									4.1.7
									4.1.8
									4.1.9
									4.1.10
									4.1.10.1
									4.1.10.2
									4.1.11
									4.1.12
									4.1.12.1
									4.1.12.2
									4.1.13
									4.1.14
									4.1.14.1
									4.1.14.2
									4.1.14.3
									4.1.14.4
									4.1.14.4.1
									4.1.14.4.2
									4.1.14.4.3
									4.1.14.4.4
									4.1.14.5
									4.1.14.6
									4.1.14.7
									4.1.15
									4.1.16
									4.1.16.1
									4.1.16.2

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	m	m		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	0	0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	0	0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	m	m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	o	o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	m	m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o.5	c:o.5		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B4.7/X.791 *(continued)*

providerTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
4	4.1	TroubleHistoryInfo		Information Syntax SEQUENCE	o	o		
	4.1.1	managedObjectInstance	–	ObjectInstance	c:m	c:m		
	4.1.2	receivedTime	–	GeneralizedTime	c:m	c:m		
	4.1.3	troubleFound	–	CHOICE	c:m	c:m		
	4.1.3.1	number	–	INTEGER	c:o.8	c:o.8		
	4.1.3.2	identifier	–	OBJECT IDENTIFIER	c:o.8	c:o.8		
	4.1.4	activityDuration	–	SET OF SEQUENCE	c:o	c:o		
	4.1.4.1	duration	–	SEQUENCE	c:m	c:m		
	4.1.4.1.1	day	–	INTEGER	c:o	c:o		
	4.1.4.1.2	hour	–	INTEGER	c:o	c:o		
	4.1.4.1.3	minute	–	INTEGER	c:o	c:o		
	4.1.4.1.4	second	–	INTEGER	c:o	c:o		
	4.1.4.1.5	msec	–	INTEGER	c:o	c:o		
	4.1.4.2	billable	–	BOOLEAN	c:o	c:o		
	4.1.4.3	type	–	BIT STRING	c:o	c:o		
	4.1.5	additionalTroubleInfoList	–	SET OF GraphicString	c:o	c:o		
	4.1.6	authorizationList	–	SET OF SEQUENCE	c:o	c:o		
	4.1.6.1	state	–	ENUMERATED	c:m	c:m		
	4.1.6.2	type	–	BIT STRING	c:m	c:m		
	4.1.6.3	authTime	–	GeneralizedTime	c:o	c:o		
	4.1.6.4	authPerson	–	SEQUENCE	c:o	c:o		
	4.1.6.4.1	number	–	GraphicString	c:o	c:o		
	4.1.6.4.2	name	–	GraphicString	c:o	c:o		
	4.1.6.4.3	phone	–	GraphicString	c:o	c:o		
	4.1.6.4.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.6.4.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.6.4.4.2	city	–	GraphicString	c:m	c:m		
	4.1.6.4.4.3	state	–	GraphicString	c:m	c:m		
	4.1.6.4.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.6.4.5	email	–	GraphicString	c:o	c:o		
	4.1.6.4.6	fax	–	GraphicString	c:o	c:o		
	4.1.6.4.7	respon	–	GraphicString	c:o	c:o		
	4.1.7	cancelRequestedByManager	–	BOOLEAN	c:o	c:o		
	4.1.8	closeOutNarr	–	GraphicString	c:o	c:o		
	4.1.9	closeOutVerification	–	ENUMERATED	c:o	c:o		
	4.1.10	commitmentTime	–	CHOICE	c:o	c:o		
	4.1.10.1	onsiteTime	–	GeneralizedTime	c:o.9	c:o.9		
	4.1.10.2	clearedTime	–	GeneralizedTime	c:o.9	c:o.9		
	4.1.11	custTroubleTickNum	–	GraphicString	c:o	c:o		
	4.1.12	perceivedTroubleSeverity	–	CHOICE	c:o	c:o		
	4.1.12.1	number	–	INTEGER	c:o.10	c:o.10		
	4.1.12.2	identifier	–	OBJECT IDENTIFIER	c:o.10	c:o.10		
	4.1.13	restoredTime	–	GeneralizedTime	c:o	c:o		
	4.1.14	troubleClearancePerson	–	SEQUENCE	c:o	c:o		

TABLE B4.7/X.791 *(concluded)*

providerTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	4.1.14.1	number	–	GraphicString	c:o	c:o		
	4.1.14.2	name	–	GraphicString	c:o	c:o		
	4.1.14.3	phone	–	GraphicString	c:o	c:o		
	4.1.14.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.14.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.14.4.2	city	–	GraphicString	c:m	c:m		
	4.1.14.4.3	state	–	GraphicString	c:m	c:m		
	4.1.14.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.14.5	email	–	GraphicString	c:o	c:o		
	4.1.14.6	fax	–	GraphicString	c:o	c:o		
	4.1.14.7	respon	–	GraphicString	c:o	c:o		
	4.1.15	troubleReportNumberList	–	SET OF GraphicString	c:o	c:o		
	4.1.16	troubleType	–	CHOICE	c:o	c:o		
	4.1.16.1	number	–	INTEGER	c:o.11	c:o.11		
	4.1.16.2	identifier	–	OBJECT IDENTIFIER	c:o.11	c:o.11		

TABLE B4.8/X.791

providerTroubleReport Parameter support

(There are no parameters specified for this managed object class.)

TABLE B4.9/X.791

providerTroubleReport Conditions

Condition number	Condition	Reference
c1	If B4.3/2 then m else –.	"any registered package other than this has been instantiated"
c2	If B4.3/4 then m else –.	"an instance supports it and if a service is impacted"
c3	If B4.3/7 then m else –.	"an instance supports it and trAgentContactPersonObjectPkg is not present."
c4	If B4.3/8 then m else –.	"an instance supports it and trAgentContactPersonAttributePkg is not present."
c5	If B4.3/12 then m else –.	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."
c6		"an attributeValueChange notification identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one notification field must be supported
c:o.2		At least one notification field must be supported
c:o.3		At least one notification field must be supported
c:o.4		At least one notification field must be supported
c:o.5		At least one notification field must be supported
c:o.6		At least one notification field must be supported
c:o.7		At least one notification field must be supported
c:o.8		At least one notification field must be supported
c:o.9		At least one notification field must be supported
c:o.10		At least one notification field must be supported
c:o.11		At least one notification field must be supported

TABLE B4.10/X.791

providerTroubleReport Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	providerTroubleReport-network	{0 0 24 790 0 6 19}	Superior class: "Rec. M.3100:1992": network AND SUBCLASSES	0	0			1.1
								1.2
								1.3
								1.4
								1.5
								1.6

TABLE B4.10/X.791 *(concluded)*

providerTroubleReport Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		

B5 repairActivity

TABLE B5.1/X.791

repairActivity Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	repairActivity	{0 0 24 790 0 3 5}		

TABLE B5.2/X.791

repairActivity Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B5.3/X.791

repairActivity Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
3	raActivityCodePkg	{0 0 24 790 0 4 17}	"an instance supports it."	o	m		
4	raActivityPersonPkg	{0 0 24 790 0 4 16}	"an instance supports it."	o	m		
5	raObjectCreationPkg	{0 0 24 790 0 4 18}	"an instance supports it."	o	m		
6	repairActivityPkg		Mandatory	m	m		
7	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": topPackage		Mandatory	m	m		

TABLE B5.4/X.791

repairActivity Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	activityCode	{0 0 24 790 0 7 3}	CHOICE	–	–		o	o	
2	activityInfo	{0 0 24 790 0 7 5}	GraphicString	–	–		m	m	
3	activityPerson	{0 0 24 790 0 7 6}	SEQUENCE	–	–		o	o	
4	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
5	entryTime	{0 0 24 790 0 7 39}	GeneralizedTime	–	–		m	m	
6	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
7	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
8	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c2	c2	
9	repairActivityID	{0 0 24 790 0 7 76}	INTEGER	–	–		m	m	

TABLE B5.4/X.791 *(continued)*

repairActivity Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		–	–		–	–	
2	–	–		–	–		–	–	
3	–	–		–	–		–	–	
4	–	–		–	–		–	–	
5	–	–		–	–		–	–	
6	–	–		–	–		–	–	
7	–	–		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	

TABLE B5.4/X.791 *(concluded)*

repairActivity Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		

TABLE B5.5/X.791

repairActivity Attribute group support

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

TABLE B5.6/X.791

repairActivity Action support

(There are no actions specified for this managed object class.)

TABLE B5.7/X.791

repairActivity Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c3	c3				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.1.1
									1.1.2.1.2
									1.1.2.2
									1.1.3
									1.1.4
									1.1.4.1
									1.1.4.2
									1.1.4.2.1
									1.1.4.2.1.1
									1.1.4.2.1.2
									1.1.4.2.2
									1.1.4.2.3
									1.1.4.2.3.1
									1.1.4.2.3.2
									1.1.5
									1.1.6
									1.1.6.1
									1.1.6.2
									1.1.6.3

TABLE B5.7/X.791 *(continued)*

repairActivity Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	ObjectInfo		Information Syntax SEQUENCE	o	o		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		
	1.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	c:o	c:o		
	1.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	1.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.1.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	1.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	1.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	1.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		

TABLE B5.7/X.791 *(concluded)*

repairActivity Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	1.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.2	c:o.2		
	1.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	1.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.2	c:o.2		
	1.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	1.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	1.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B5.8/X.791

repairActivity Parameter support

(There are no parameters specified for this managed object class.)

TABLE B5.9/X.791

repairActivity Condition support

Condition number	Condition	Reference
c1	If B5.3/2 then m else –.	"any registered package, other than this package has been instantiated"
c3		"an attributeValueChange notification identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one notification field must be supported
c:o.2		At least one notification field must be supported

TABLE B5.10/X.791

repairActivity Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	repairActivity-telecommunicationsTroubleReport	{0 0 24 790 0 6 15}	Superior class: telecommunicationsTroubleReport	o	o			1.1
								1.2
								1.3
								1.4
								1.5
								1.6

TABLE B5.10/X.791 *(concluded)*

repairActivity Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		

B6 service

TABLE B6.1/X.791

service Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	service	{0 0 24 790 0 3 6}		

TABLE B6.2/X.791

service Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B6.3/X.791

service Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"Rec. M.3100:1992": administrativeOperationalStatesPackage	{0 0 13 3100 0 41}	"an instance supports it."	o	o		
2	alarmStatusPackage	{0 0 24 790 0 4 21}	"an instance supports it."	o	o		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
4	"Rec. M.3100:1992": attributeValueChangeNotificationPackage	{0 0 13 3100 0 4 4}	"The attribute ValueChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."	c1	c1		
5	"Rec. M.3100:1992": createDeleteNotificationPackage	{0 0 13 3100 0 4 10}	"The objectCreation and objectDeletion notifications defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 are supported by an instance of this class."	c2	c2		
6	"Rec. M.3100:1992": currentProblemListPackage	{0 0 13 3100 0 4 13}	"an instance supports it."	o	o		

TABLE B6.3/X.791 *(concluded)*

service Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
7	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c3	c3		
8	servicePackage	(Not registered)	Mandatory	m	m		
9	"Rec. M.3100:1992": stateChangeNotificationPackage	{0 0 13 3100 0 4 28}	"The astateChange notification defined in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."	c4	c4		
10	supportedByObjectListPackage	{0 0 24 790 0 4 19}	"an instance supports it."	o	o		
11	supportedServiceNameListPackage	{0 0 24 790 0 4 20}	"an instance supports it."	o	o		
12	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
13	usageStatePackage	{0 0 24 790 0 4 22}	"an instance supports it."	o	o		

TABLE B6.4/X.791

service Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": administrativeStates	{2 9 3 2 7 31}	ENUMERATED	o	o		o	o	
2	"Rec. M.3100:1992": alarmStatus	(Not registered)		–	–		o	o	
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
4	"Rec. M.3100:1992": currentProblemList	{0 0 13 3100 0 7 17}	SET OF SEQUENCE	o	o		o	o	
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
6	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
7	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": operationalState	{2 9 3 2 7 35}	ENUMERATED	–	–		o	o	
8	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c3	c3	
9	serviceID	{0 0 24 790 0 7 85}		m	m		m	m	
10	serviceType	{0 0 24 790 0 7 86}	CHOICE	m	m		m	m	
11	"Rec. M.3100:1992": supportedByObjectList	(Not registered)		o	o		o	o	
12	supportedServiceNameList	{0 0 24 790 0 7 87}	ObjectList	o	o		o	o	
13	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": usageState	(Not registered)		–	–		o	o	

TABLE B6.4/X.791 *(continued)*

service Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	o	o		–	–		–	–	
2	–	–		–	–		–	–	
3	–	–		–	–		–	–	
4	–	–		–	–		–	–	
5	–	–		–	–		–	–	
6	–	–		–	–		–	–	
7	–	–		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	
10	m	m		–	–		–	–	
11	o	o		o	o		o	o	
12	o	o		o	o		o	o	
13	–	–		–	–		–	–	

TABLE B6.4/X.791 *(concluded)*

service Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		
10	–	–		
11	–	–		
12	–	–		
13	–	–		

TABLE B6.5/X.791

service Attribute group support

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

TABLE B6.6/X.791

service Action support

(There are no actions specified for this managed object class.)

TABLE B6.7/X.791

service Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		c1	c1				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c2	c2				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3

TABLE B6.7/X.791 *(continued)*

service Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c2	c2				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3
4	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": qualityofServiceAlarm	(Not registered)							
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": stateChange	{2 9 3 2 10 14}		c4	c4				5.1
									5.1.1
									5.1.2
									5.1.2.1
									5.1.2.2
									5.1.3
									5.1.3.1
									5.1.3.1.1
									5.1.3.1.2
									5.1.3.2
									5.1.3.3
									5.1.4
									5.1.5
									5.1.5.1
									5.1.5.2
									5.1.5.2.1
									5.1.5.2.1.1
									5.1.5.2.1.2
									5.1.5.2.2
									5.1.5.2.3
									5.1.5.2.3.1
									5.1.5.2.3.2
									5.1.6
									5.1.7
									5.1.7.1
									5.1.7.2
									5.1.7.3

TABLE B6.7/X.791 *(continued)*

service Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	c1	c1		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:0	c:0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	c:0	c:0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	c:m	c:m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	c:o	c:o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	c:m	c:m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	c2	c2		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERATED	c:o	c:o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	c:o	c:o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		

TABLE B6.7/X.791 *(continued)*

service Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	c2	c2		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	c:o	c:o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		

TABLE B6.7/X.791 *(continued)*

service Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
4					m	m		
5	5.1	StateChangeInfo		Information Syntax SEQUENCE	c4	c4		
	5.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	c:o	c:o		
	5.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	c:o	c:o		
	5.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.8	c:o.8		
	5.1.2.2	localForm	–	INTEGER	c:o.8	c:o.8		
	5.1.3	stateChangeDefinition	{2 9 3 2 7 28}	SET OF SEQUENCE	c:m	c:m		
	5.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	5.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.9	c:o.9		
	5.1.3.1.2	localForm	–	INTEGER	c:o.9	c:o.9		
	5.1.3.2	oldAttributeValue	–	ANY DEFINED By identifier	c:o	c:o		
	5.1.3.3	newAttributeValue	–	ANY DEFINED By identifier	c:m	c:m		
	5.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	c:o	c:o		
	5.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c:o	c:o		
	5.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	5.1.5.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	5.1.5.2.1	DistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.10 o	c:o.10 o		
	5.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	5.1.5.2.2	nonSpecificForm	–	OCTET STRING	c:o.10	c:o.10		

TABLE B6.7/X.791 *(concluded)*

service Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	5.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.10	c:o.10		
	5.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	5.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	c:o	c:o		
	5.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c:o	c:o		
	5.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	5.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	5.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B6.8/X.791

service Parameter support

(There are no parameters specified for this managed object class.)

TABLE B6.9/X.791

service Condition support

Condition number	Condition	Reference
c1	If B6.3/4 then m else –.	"an attributeValueChange notification identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c2	If B6.3/5 then m else –.	"the objectCreation and objectDeletion notifications identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c3	If B6.3/7 then m else –.	"any registered package, other than this package has been instantiated."
c4	If B6.3/9 then m else –.	"the stateChange notification identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one notification field must be supported
c:o.2		At least one notification field must be supported
c:o.3		At least one notification field must be supported
c:o.4		At least one notification field must be supported
c:o.5		At least one notification field must be supported
c:o.6		At least one notification field must be supported
c:o.7		At least one notification field must be supported
c:o.8		At least one notification field must be supported
c:o.9		At least one notification field must be supported
c:o.10		At least one notification field must be supported

TABLE B6.10/X.791

service Name Binding support

(There are no name bindings specified for this managed object class.)

B7 telecommunicationsTroubleReport

TABLE B7.1/X.791

telecommunicationsTroubleReport Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	telecommunicationsTroubleReport	{0 0 24 790 0 3 7}		

TABLE B7.2/X.791

telecommunicationsTroubleReport Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B7.3/X.791

telecommunicationsTroubleReport Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
4	trALocationAccessHoursPkg	{0 0 24 790 0 4 47}	"an instance supports it."	o	m		
5	trALocationAccessPersonPkg	{0 0 24 790 0 4 49}	"an instance supports it."	o	m		
6	trALocationPkg	{0 0 24 790 0 4 45}	"an instance supports it."	o	m		
7	trActivityDurationPkg	{0 0 24 790 0 4 86}	"an instance supports it."	o	m		
8	trAfterHrsRepairAuthPkg	{0 0 24 790 0 4 23}	"an instance supports it and trAuthorizationListPkg is not present."	c2	c2		
9	trAgentContactPersonAttributePkg	{0 0 24 790 0 4 87}	"an instance supports it and trAgentContactPersonObjectPkg is not present."	c3	c3		
10	trAgentContactPersonObjectPkg	{0 0 24 790 0 4 88}	"an instance supports it and trAgentContactPersonAttributePkg is not present."	c4	c4		
11	trAlarmRecordPtrListPkg	{0 0 24 790 0 4 24}	"an instance supports it."	o	o		
12	trAlternateManagerContactPersonAttributePkg	{0 0 24 790 0 4 25}	"an instance supports it and trAlternateManagerContactPersonObjectPkg is not present."	c5	c5		
13	trAlternateManagerContactPersonObjectPkg	{0 0 24 790 0 4 26}	"an instance supports it and trAlternateManagerContactPersonAttributePkg is not present."	c6	c6		

TABLE B7.3/X.791 *(continued)*

telecommunicationsTroubleReport Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
14	trAuthorizationListPkg	{0 0 24 790 0 4 27}	"an instance supports it and trAfterHrsRepairAuthPkg is not present."	c7	c7		
15	trCallBackInfoListPkg	{0 0 24 790 0 4 28}	"an instance supports it."	o	o		
16	trCalledNumberPkg	{0 0 24 790 0 4 29}	"an instance supports it."	o	m		
17	trCancelRequestedByManagerPkg	{0 0 24 790 0 4 30}	"an instance supports it."	o	m		
18	trCloseOutNarrPkg	{0 0 24 790 0 4 89}	"an instance supports it."	o	m		
19	trCloseOutVerificationPkg	{0 0 24 790 0 4 31}	"an instance supports it."	o	m		
20	trCommitmentTimePkg	{0 0 24 790 0 4 32}	"an instance supports it."	o	m		
21	trCommitmentTimeRequestPkg	{0 0 24 790 0 4 33}	"an instance supports it."	o	m		
22	trCustTroubleTickNumPkg	{0 0 24 790 0 4 35}	"an instance supports it."	o	m		
23	trCustomerWorkCenterPkg	{0 0 24 790 0 4 34}	"an instance supports it."	o	m		
24	trDialogPkg	{0 0 24 790 0 4 36}	"an instance supports it."	o	m		
25	trEscalationListPkg	{0 0 24 790 0 4 37}	"an instance supports it."	o	m		
26	trHandOffCenterPkg	{0 0 24 790 0 4 38}	"an instance supports it."	o	o		
27	trHandOffLocationPkg	{0 0 24 790 0 4 39}	"an instance supports it."	o	o		
28	trHandOffPersonNamePkg	{0 0 24 790 0 4 40}	"an instance supports it and trHandOffPersonPtrPkg is not present."	c8	c8		
29	trHandOffPersonPtrPkg	{0 0 24 790 0 4 41}	"an instance supports it and trHandOffPersonNamePkg is not present."	c9	c9		
30	trHandOffTimePkg	{0 0 24 790 0 4 42}	"an instance supports it."	o	o		
31	trHistoryEventPkg	{0 0 24 790 0 4 99}	"an instance supports it."	o	o		
32	trInitiatingModePkg	{0 0 24 790 0 4 43}	"an instance supports it."	o	m		
33	trLastUpdateTimePkg	{0 0 24 790 0 4 44}	"an instance supports it."	o	m		
34	trMaintServiceChargePkg	{0 0 24 790 0 4 54}	"an instance supports it."	o	m		
35	trMaintenanceOrgContactNamePkg	{0 0 24 790 0 4 51}	"an instance supports it and trMaintenanceOrgContactPtrPkg is not present."	c10	c10		
36	trMaintenanceOrgContactPtrPkg	{0 0 24 790 0 4 52}	"an instance supports it and trMaintenanceOrgContactNamePkg is not present."	c11	c11		
37	trMaintenanceOrgContactTimePkg	{0 0 24 790 0 4 53}	"an instance supports it."	o	o		
38	trManagedObjectAccessFromTimePkg	{0 0 24 790 0 4 56}	"an instance supports it."	o	o		
39	trManagedObjectAccessHoursPkg	{0 0 24 790 0 4 55}	"an instance supports it."	o	m		
40	trManagedObjectAccessToTimePkg	{0 0 24 790 0 4 57}	"an instance supports it."	o	o		
41	trManagedObjectInstanceAliasListPkg	{0 0 24 790 0 4 90}	"an instance supports it."	o	o		
42	trManagerContactPersonAttributePkg	{0 0 24 790 0 4 58}	"an instance supports it and trManagerContactPersonObjectPkg is not present."	c12	c12		
43	trManagerContactPersonObjectPkg	{0 0 24 790 0 4 59}	"an instance supports it and trManagerContactPersonAttributePkg is not present."	c13	c13		
44	trManagerSearchKeyListPkg	{0 0 24 790 0 4 61}	"an instance supports it and trManagerSearchKeyPkg is not present."	c14	c14		
45	trManagerSearchKeyPkg	{0 0 24 790 0 4 60}	"an instance supports it and trManagerSearchKeyListPkg is not present."	c15	c15		
46	trObjectCreationDeletionPkg	{0 0 24 790 0 4 15}	"an instance supports it."	o	o		
47	trOutageDurationPkg	{0 0 24 790 0 4 62}	"an instance supports it."	o	m		
48	trPerceivedTroubleSeverityPkg	{0 0 24 790 0 4 63}	"an instance supports it."	o	m		
49	trPreferredPriorityPkg	{0 0 24 790 0 4 64}	"an instance supports it."	o	m		

TABLE B7.3/X.791 *(concluded)*

telecommunicationsTroubleReport Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
50	trRelatedTroubleReportListPkg	{0 0 24 790 0 4 92}	"an instance supports it."	o	o		
51	trRepairActivityListPkg	{0 0 24 790 0 4 93}	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."	c16	c16		
52	trRepeatReportPkg	{0 0 24 790 0 4 65}	"an instance supports it."	o	m		
53	trResponsiblePersonNamePkg	{0 0 24 790 0 4 66}	"an instance supports it and trResponsiblePersonPtrPkg is not present."	c17	c17		
54	trResponsiblePersonPtrPkg	{0 0 24 790 0 4 67}	"an instance supports it and trResponsiblePersonNamePkg is not present."	c18	c18		
55	trRestoredTimePkg	{0 0 24 790 0 4 94}	"an instance supports it."	o	m		
56	trSuspectObjectListPkg	{0 0 24 790 0 4 68}	"an instance supports it."	o	o		
57	trTroubleClearancePersonAttributePkg	{0 0 24 790 0 4 95}	"an instance supports it."	o	m		
58	trTroubleDetectionTimePkg	{0 0 24 790 0 4 69}	"an instance supports it."	o	m		
59	trTroubleLocationPkg	{0 0 24 790 0 4 70}	"an instance supports it."	o	o		
60	trTroubleReportFormatObjectPtrPkg	{0 0 24 790 0 4 96}	"an instance supports it."	o	o		
61	trTroubleReportStatusWindowPkg	{0 0 24 790 0 4 71}	"an instance supports it."	o	m		
62	trTspPriorityPkg	{0 0 24 790 0 4 72}	"an instance supports it."	o	o		
63	trZLocationAccessHoursPkg	{0 0 24 790 0 4 48}	"an instance supports it."	o	o		
64	trZLocationAccessPersonPkg	{0 0 24 790 0 4 50}	"an instance supports it."	o	o		
65	trZLocationPkg	{0 0 24 790 0 4 46}	"an instance supports it."	o	o		
66	troubleReportPkg		Mandatory	m	m		
67	x790AttributeValueChangePkg	{0 0 24 790 0 4 97}	"an instance supports it."	o	m		
68	x790NumberListPkg	{0 0 24 790 0 4 91}	"an instance supports it."	o	o		

TABLE B7.4/X.791

telecommunicationsTroubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	aLocationAccessAddress	{0 0 24 790 0 7 50}	SEQUENCE	o	o		o	o	
2	aLocationAccessHours	{0 0 24 790 0 7 52}	SET OF SEQUENCE	o	o		o	o	
3	aLocationAccessPerson	{0 0 24 790 0 7 54}	SEQUENCE	o	o		o	o	
4	activityDuration	{0 0 24 790 0 7 4}	SET OF SEQUENCE	x	x		o	o	
5	additionalTroubleInfoList	{0 0 24 790 0 7 8}	SET OF GraphicString	m	m		m	m	
6	additionalTroubleStatusInfo	{0 0 24 790 0 7 9}	SET OF GraphicString	o	o		o	o	
7	afterHrsRepairAuth	{0 0 24 790 0 7 10}	BOOLEAN	c2	c2		c2	c2	
8	agentContactObjectPtr	{0 0 24 790 0 7 12}	CHOICE	–	–		c3	c3	
9	agentContactPerson	{0 0 24 790 0 7 11}	SEQUENCE	–	–		c4	c4	
10	alarmRecordPtrList	{0 0 24 790 0 7 13}	SET OF ObjectInstance	–	–		o	o	

TABLE B7.4/X.791 *(continued)*

telecommunicationsTroubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
11	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
12	alternateManagerContactObjectPtr	{0 0 24 790 0 7 15}	CHOICE	c6	c6		c6	c6	
13	alternateManagerContactPerson	{0 0 24 790 0 7 14}	SEQUENCE	c5	c5		c5	c5	
14	authorizationList	{0 0 24 790 0 7 18}	SET OF SEQUENCE troubleReportChangeDenied	c7	c7		c7	c7	
15	callBackInfoList	{0 0 24 790 0 7 20}	SET OF CHOICE	o	o		o	o	
16	calledNumber	{0 0 24 790 0 7 21}	GraphicString	o	o		o	o	
17	cancelRequestedByManager	{0 0 24 790 0 7 22}	BOOLEAN troubleReportChangeDenied canNotClose	o	o		o	o	
18	closeOutNarr	{0 0 24 790 0 7 23}	GraphicString	–	–		o	o	
19	closeOutVerification	{0 0 24 790 0 7 33}	ENUMERATED cannotVerifyOrDenyAtThisTime	–	–		o	o	
20	commitmentTime	{0 0 24 790 0 7 24}	CHOICE	–	–		o	o	
21	commitmentTimeRequest	{0 0 24 790 0 7 25}	CHOICE troubleReportChangeDenied	o	o		o	o	
22	custTroubleTickNum	{0 0 24 790 0 7 34}	GraphicString SET-BY-CREATE	o	o		o	o	
23	customerWorkCenter	{0 0 24 790 0 7 35}	GraphicString SET-BY-CREATE	o	o		o	o	
24	dialog	{0 0 24 790 0 7 36}	GraphicString	o	o		o	o	
25	escalationList	{0 0 24 790 0 7 40}	SET OF SEQUENCE troubleReportChangeDenied	o	o		o	o	
26	handOffCenter	{0 0 24 790 0 7 42}	GraphicString	–	–		o	o	
27	handOffLocation	{0 0 24 790 0 7 43}	GraphicString	–	–		o	o	
28	handOffPersonName	{0 0 24 790 0 7 45}	SEQUENCE	–	–		c8	c8	
29	handOffPersonPtr	{0 0 24 790 0 7 46}	CHOICE	–	–		c9	c9	
30	handOffTime	{0 0 24 790 0 7 47}	CHOICE	–	–		o	o	
31	initiatingMode	{0 0 24 790 0 7 48}	INTEGER	o	o		o	o	
32	lastUpdateTime	{0 0 24 790 0 7 49}	GeneralizedTime	–	–		o	o	
33	maintServiceCharge	{0 0 24 790 0 7 59}	BOOLEAN	–	–		o	o	
34	maintenanceOrgContactName	{0 0 24 790 0 7 56}	SEQUENCE	c10	c10		c10	c10	
35	maintenanceOrgContactPtr	{0 0 24 790 0 7 57}	CHOICE	c11	c11		c11	c11	
36	maintenanceOrgContactTime	{0 0 24 790 0 7 58}	CHOICE	o	o		o	o	
37	managedObjectAccessFromTime	{0 0 24 790 0 7 60}	GeneralizedTime	o	o		o	o	
38	managedObjectAccessHours	{0 0 24 790 0 7 61}	SET OF SEQUENCE	o	o		o	o	
39	managedObjectAccessToTime	{0 0 24 790 0 7 62}	CHOICE	o	o		o	o	
40	managedObjectInstance	{0 0 24 790 0 7 63}	ObjectInstance	m	m		m	m	
41	managedObjectInstanceAliasList	{0 0 24 790 0 7 64}	SET OF GraphicString	o	o		o	o	
42	managerContactObjectPtr	{0 0 24 790 0 7 66}	CHOICE	c13	c13		c13	c13	

TABLE B7.4/X.791 *(continued)*

telecommunicationsTroubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
43	managerContactPerson	{0 0 24 790 0 7 65}	SEQUENCE	c12	c12		c12	c12	
44	managerSearchKey1	{0 0 24 790 0 7 67}	CHOICE	c15	c15		c15	c15	
45	managerSearchKey2	{0 0 24 790 0 7 68}	CHOICE	c15	c15		c15	c15	
46	managerSearchKey3	{0 0 24 790 0 7 69}	CHOICE	c15	c15		c15	c15	
47	managerSearchKeyList	{0 0 24 790 0 7 70}	SET OF CHOICE	c14	c14		c14	c14	
48	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
49	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
50	outageDuration	{0 0 24 790 0 7 71}	CHOICE	–	–		o	o	
51	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c1	c1	
52	perceivedTroubleSeverity	{0 0 24 790 0 7 72}	CHOICE	o	o		o	o	
53	preferredPriority	{0 0 24 790 0 7 73}	ENUMERATED	o	o		o	o	
54	receivedTime	{0 0 24 790 0 7 74}	GeneralizedTime	m	m		m	m	
55	relatedTroubleReportList	{0 0 24 790 0 7 75}	SET OF ObjectInstance	o	o		o	o	
56	repairActivityList	{0 0 24 790 0 7 77}	SET OF SEQUENCE	–	–		c15	c16	
57	repeatReport	{0 0 24 790 0 7 78}	ENUMERATED	o	o		o	o	
58	responsiblePersonName	{0 0 24 790 0 7 79}	SEQUENCE	c17	c17		c17	c17	
59	responsiblePersonPtr	{0 0 24 790 0 7 80}	CHOICE	c18	c18		c18	c18	
60	restoredTime	{0 0 24 790 0 7 81}	CHOICE	–	–		o	o	
61	suspectObjectList	{0 0 24 790 0 7 88}	SuspectObjectList SET-BY-CREATE	o	o		o	o	
62	troubleClearancePerson	{0 0 24 790 0 7 90}	SEQUENCE	–	–		o	o	
63	troubleDetectionTime	{0 0 24 790 0 7 91}	CHOICE	o	o		o	o	
64	troubleFound	{0 0 24 790 0 7 92}	CHOICE	x	–		m	m	
65	troubleLocation	{0 0 24 790 0 7 93}	CHOICE	o	o		o	o	
66	troubleReportFormatObjectPtr	{0 0 24 790 0 7 95}	ObjectInstance	–	–		o	o	
67	troubleReportID	{0 0 24 790 0 7 97}	GraphicString	m	m		m	m	
68	troubleReportNumberList	{0 0 24 790 0 7 100}	SET OF GraphicString	o	o		o	o	
69	troubleReportState	{0 0 24 790 0 7 101}	INTEGER	x	x		m	m	
70	troubleReportStatus	{0 0 24 790 0 7 102}	CHOICE	x	x		m	m	
71	troubleReportStatusTime	{0 0 24 790 0 7 103}	GeneralizedTime	x	x		m	m	
72	troubleReportStatusWindow	{0 0 24 790 0 7 104}	SEQUENCE	o	o		o	o	
73	troubleType	{0 0 24 790 0 7 105}	CHOICE	m	m		m	m	
74	tspPriority	{0 0 24 790 0 7 106}	SET-BY-CREATE	o	o		o	o	
75	zLocationAccessAddress	{0 0 24 790 0 7 51}	SEQUENCE	o	o		o	o	
76	zLocationAccessHours	{0 0 24 790 0 7 53}	SET OF SEQUENCE	o	o		o	o	
77	zLocationAccessPerson	{0 0 24 790 0 7 55}	SEQUENCE	o	o		o	o	

TABLE B7.4/X.791 *(continued)*

telecommunicationsTroubleReport Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	o	o		–	–		–	–	
2	o	o		o	o		o	o	
3	o	o		–	–		–	–	
4	–	–		o	o		–	–	
5	–	–		m	m		–	–	
6	–	–		–	–		–	–	
7	c2	c2		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	
10	–	–		–	–		–	–	
11	–	–		–	–		–	–	
12	c6	c6		–	–		–	–	
13	c5	c5		–	–		–	–	
14	c7	c7		c7	c7		c7	c7	
15	o	o		o	o		o	o	
16	–	–		–	–		–	–	
17	o	o		–	–		–	–	
18	o	o		–	–		–	–	
19	o	o		–	–		–	–	
20	–	–		–	–		–	–	
21	o	o		–	–		–	–	
22	–	–		–	–		–	–	
23	–	–		–	–		–	–	
24	o	o		–	–		–	–	
25	–	–		o	o		–	–	
26	–	–		–	–		–	–	
27	–	–		–	–		–	–	
28	c8	c8		–	–		–	–	
29	c9	c9		–	–		–	–	
30	–	–		–	–		–	–	
31	–	–		–	–		–	–	
32	–	–		–	–		–	–	
33	–	–		–	–		–	–	
34	c10	c10		–	–		–	–	
35	c11	c11		–	–		–	–	
36	o	o		–	–		–	–	
37	o	o		–	–		–	–	
38	o	o		o	o		o	o	
39	o	o		–	–		–	–	
40	–	–		–	–		–	–	
41	–	–		–	–		–	–	
42	c13	c13		–	–		–	–	
43	c12	c12		–	–		–	–	
44	c15	c15		–	–		–	–	
45	c15	c15		–	–		–	–	
46	c15	c15		–	–		–	–	
47	c14	c14		c14	c14		c14	c14	
48	–	–		–	–		–	–	
49	–	–		–	–		–	–	
50	–	–		–	–		–	–	
51	–	–		–	–		–	–	
52	o	o		–	–		–	–	
53	o	o		–	–		–	–	
54	–	–		–	–		–	–	
55	–	–		–	–		–	–	
56	–	–		c16	c16		–	–	
57	o	o		–	–		–	–	
58	c17	c17		–	–		–	–	
59	c18	c18		–	–		–	–	
60	o	o		–	–		–	–	
61	–	–		–	–		–	–	

TABLE B7.4/X.791 *(continued)*

telecommunicationsTroubleReport Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
62	o	o		–	–		–	–	
63	o	o		–	–		–	–	
64	m	m		–	–		–	–	
65	o	o		–	–		–	–	
66	–	–		–	–		–	–	
67	–	–		–	–		–	–	
68	–	–		–	–		–	–	
69	m	m		–	–		–	–	
70	m	m		–	–		–	–	
71	–	–		–	–		–	–	
72	o	o		–	–		–	–	
73	–	–		–	–		–	–	
74	–	–		–	–		–	–	
75	o	o		–	–		–	–	
76	o	o		o	o		o	o	
77	o	o		–	–		–	–	

TABLE B7.4/X.791 *(continued)*

telecommunicationsTroubleReport Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		
10	–	–		
11	–	–		
12	–	–		
13	–	–		
14	–	–		
15	–	–		
16	–	–		
17	–	–		
18	–	–		
19	–	–		
20	–	–		
21	–	–		
22	–	–		
23	–	–		
24	–	–		
25	–	–		
26	–	–		
27	–	–		
28	–	–		
29	–	–		
30	–	–		
31	–	–		
32	–	–		
33	–	–		
34	–	–		

TABLE B7.4/X.791 *(concluded)*

telecommunicationsTroubleReport Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
35	–	–		
36	–	–		
37	–	–		
38	–	–		
39	–	–		
40	–	–		
41	–	–		
42	–	–		
43	–	–		
44	–	–		
45	–	–		
46	–	–		
47	–	–		
48	–	–		
49	–	–		
50	–	–		
51	–	–		
52	–	–		
53	–	–		
54	–	–		
55	–	–		
56	–	–		
57	–	–		
58	–	–		
59	–	–		
60	–	–		
61	–	–		
62	–	–		
63	–	–		
64	–	–		
65	–	–		
66	–	–		
67	–	–		
68	–	–		
69	–	–		
70	–	–		
71	–	–		
72	–	–		
73	–	–		
74	–	–		
75	–	–		
76	–	–		
77	–	–		

TABLE B7.5/X.791

telecommunicationsTroubleReport Attribute group support

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

TABLE B7.6/X.791

telecommunicationsTroubleReport Action support

(There are no actions specified for this managed object class.)

TABLE B7.7/X.791

telecommunicationsTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		m	m				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c19	c19				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c19	c19				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3
4	troubleHistoryEventNotification	{0 0 24 790 0 10 1}		o	o				4.1
									4.1.1
									4.1.2
									4.1.3
									4.1.3.1
									4.1.3.2
									4.1.4
									4.1.4.1
									4.1.4.1.1
									4.1.4.1.2
									4.1.4.1.3
									4.1.4.1.4
									4.1.4.1.5
									4.1.4.2
									4.1.4.3
									4.1.5
									4.1.6
									4.1.6.1
									4.1.6.2
									4.1.6.3
									4.1.6.4
									4.1.6.4.1
									4.1.6.4.2
									4.1.6.4.3
									4.1.6.4.4
									4.1.6.4.4.1
									4.1.6.4.4.2
									4.1.6.4.4.3
									4.1.6.4.4.4
									4.1.6.4.5
									4.1.6.4.6
									4.1.6.4.7
									4.1.7
									4.1.8
									4.1.9
									4.1.10

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									4.1.10.1
									4.1.10.2
									4.1.11
									4.1.12
									4.1.12.1
									4.1.12.2
									4.1.13
									4.1.14
									4.1.14.1
									4.1.14.2
									4.1.14.3
									4.1.14.4
									4.1.14.4.1
									4.1.14.4.2
									4.1.14.4.3
									4.1.14.4.4
									4.1.14.5
									4.1.14.6
									4.1.14.7
									4.1.15
									4.1.16
									4.1.16.1
									4.1.16.2
5	troubleReportProgressNotification	{0 0 24 790 0 10 2}		o					5.1
									5.1.1
									5.1.1.1
									5.1.1.2
									5.1.2

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	m	m		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	0	0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	0	0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	m	m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	o	o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	m	m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o.5	c:o.5		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMERAT-ED	o	o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B7.7/X.791 *(continued)*

telecommunicationsTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
4	4.1	TroubleHistoryInfo		Information Syntax SEQUENCE	o	o		
	4.1.1	managedObjectInstance	–	ObjectInstance	c:m	c:m		
	4.1.2	receivedTime	–	GeneralizedTime	c:m	c:m		
	4.1.3	troubleFound	–	CHOICE	c:m	c:m		
	4.1.3.1	number	–	INTEGER	c:o.8	c:o.8		
	4.1.3.2	identifier	–	OBJECT IDENTIFIER	c:o.8	c:o.8		
	4.1.4	activityDuration	–	SET OF SEQUENCE	c:o	c:o		
	4.1.4.1	duration	–	SEQUENCE	c:m	c:m		
	4.1.4.1.1	day	–	INTEGER	c:o	c:o		
	4.1.4.1.2	hour	–	INTEGER	c:o	c:o		
	4.1.4.1.3	minute	–	INTEGER	c:o	c:o		
	4.1.4.1.4	second	–	INTEGER	c:o	c:o		
	4.1.4.1.5	msec	–	INTEGER	c:o	c:o		
	4.1.4.2	billable	–	BOOLEAN	c:o	c:o		
	4.1.4.3	type	–	BIT STRING	c:o	c:o		
	4.1.5	additionalTroubleInfoList	–	SET OF GraphicString	c:o	c:o		
	4.1.6	authorizationList	–	SET OF SEQUENCE	c:o	c:o		
	4.1.6.1	state	–	ENUMERATED	c:m	c:m		
	4.1.6.2	type	–	BIT STRING	c:m	c:m		
	4.1.6.3	authTime	–	GeneralizedTime	c:o	c:o		
	4.1.6.4	authPerson	–	SEQUENCE	c:o	c:o		
	4.1.6.4.1	number	–	GraphicString	c:o	c:o		
	4.1.6.4.2	name	–	GraphicString	c:o	c:o		
	4.1.6.4.3	phone	–	GraphicString	c:o	c:o		
	4.1.6.4.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.6.4.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.6.4.4.2	city	–	GraphicString	c:m	c:m		
	4.1.6.4.4.3	state	–	GraphicString	c:m	c:m		
	4.1.6.4.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.6.4.5	email	–	GraphicString	c:o	c:o		
	4.1.6.4.6	fax	–	GraphicString	c:o	c:o		
	4.1.6.4.7	respon	–	GraphicString	c:o	c:o		
	4.1.7	cancelRequestedByManager	–	BOOLEAN	c:o	c:o		
	4.1.8	closeOutNarr	–	GraphicString	c:o	c:o		
	4.1.9	closeOutVerification	–	ENUMERATED	c:o	c:o		
	4.1.10	commitmentTime	–	CHOICE	c:o	c:o		
	4.1.10.1	onsiteTime	–	GeneralizedTime	c:o.9	c:o.9		
	4.1.10.2	clearedTime	–	GeneralizedTime	c:o.9	c:o.9		
	4.1.11	custTroubleTickNum	–	GraphicString	c:o	c:o		
	4.1.12	perceivedTroubleSeverity	–	CHOICE	c:o	c:o		
	4.1.12.1	number	–	INTEGER	c:o.10	c:o.10		
	4.1.12.2	identifier	–	OBJECT IDENTIFIER	c:o.10	c:o.10		
	4.1.13	restoredTime	–	GeneralizedTime	c:o	c:o		

TABLE B7.7/X.791 *(concluded)*

telecommunicationsTroubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	4.1.14	troubleClearancePerson	–	SEQUENCE	c:o	c:o		
	4.1.14.1	number	–	GraphicString	c:o	c:o		
	4.1.14.2	name	–	GraphicString	c:o	c:o		
	4.1.14.3	phone	–	GraphicString	c:o	c:o		
	4.1.14.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.14.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.14.4.2	city	–	GraphicString	c:m	c:m		
	4.1.14.4.3	state	–	GraphicString	c:m	c:m		
	4.1.14.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.14.5	email	–	GraphicString	c:o	c:o		
	4.1.14.6	fax	–	GraphicString	c:o	c:o		
	4.1.14.7	respon	–	GraphicString	c:o	c:o		
	4.1.15	troubleReportNumberList	–	SET OF GraphicString	c:o	c:o		
	4.1.16	troubleType	–	CHOICE	c:o	c:o		
	4.1.16.1	number	–	INTEGER	c:o.11	c:o.11		
	4.1.16.2	identifier	–	OBJECT IDENTIFIER	c:o.11	c:o.11		
5	5.1	TroubleProgressInfo		Information Syntax SEQUENCE	o	o		
	5.1.1	troubleReportStatus	–	CHOICE	c:m	c:m		
	5.1.1.1	number	–	INTEGER	c:o.12	c:o.12		
	5.1.1.2	identifier	–	OBJECT IDENTIFIER	c:o.12	c:o.12		
	5.1.2	additionalTroubleStatusInfo	–	SET OF GraphicString	c:o	c:o		

TABLE B7.8/X.791

telecommunicationsTroubleReport Parameter support

Index	Parameter template label	Value of object identifier for parameter	Constraints and values	Status	Profile	Support	Additional information
1	troubleReportChangeDenied	{0 0 24 790 0 5 6}	SPECIFIC-ERROR				
			authorizationList	c7	c7		
2	troubleReportChangeDenied	{0 0 24 790 0 5 6}	SPECIFIC-ERROR				
			cancelRequestedByManager	o	o		
3	canNotClose	{0 0 24 790 0 5 3}	SPECIFIC-ERROR				
			cancelRequestedByManager	o	o		
4	cannotVerifyOrDenyAtThisTime	{0 0 24 790 0 5 5}	SPECIFIC-ERROR				
			closeOutVerification	o	o		
5	troubleReportChangeDenied	{0 0 24 790 0 5 6}	SPECIFIC-ERROR				
			commitmentTimeRequest	o	o		
6	SET-BY-CREATE	(Not registered)					
6	troubleReportChangeDenied	{0 0 24 790 0 5 6}	SPECIFIC-ERROR				
			escalationList	o	o		
7	SET-BY-CREATE	(Not registered)					
7	SET-BY-CREATE	(Not registered)	END PARAMETERS				

TABLE B7.9/X.791

telecommunicationsTroubleReport Conditions

Condition number	Condition	Reference
c1	If B7.3/2 then m else –.	"any registered package, other than this package has been instantiated"
c2	If B7.3/8 then m else –.	"an instance supports it and trAuthorizationListPkg is not present."
c3	If B7.3/9 then m else –.	"an instance supports it and trAgentContactPersonObjectPkg is not present."
c4	If B7.3/10 then m else –.	"an instance supports it and trAgentContactPersonAttributePkg is not present."
c5	If B7.3/12 then m else –.	"an instance supports it and trAlternateManagerContactPersonObjectPkg is not present."
c6	If B7.3/13 then m else –.	"an instance supports it and trAlternateManagerContactPersonAttributePkg is not present."
c7	If B7.3/14 then m else –.	"an instance supports it and trAfterHrsRepairAuthPkg is not present."
c8	If B7.3/28 then m else –.	"an instance supports it and trHandOffPersonPtrPkg is not present."
c9	If B7.3/29 then m else –.	"an instance supports it and trHandOffPersonNamePkg is not present."
c10	If B7.3/35 then m else –.	"an instance supports it and trMaintenanceOrgContactPtrPkg is not present."
c11	If B7.3/36 then m else –.	"an instance supports it and trMaintenanceOrgContactNamePkg is not present."
c12	If B7.3/42 then m else –.	"an instance supports it and trManagerContactPersonObjectPkg is not present."
c13	If B7.3/43 then m else –.	"an instance supports it and trManagerContactPersonAttributePkg is not present."
c14	If B7.3/44 then m else –.	"an instance supports it and trManagerSearchKeyPkg is not present."
c15	If B7.3/45 then m else –.	"an instance supports it and trManagerSearchKeyListPkg is not present."
c16	If B7.3/51 then m else –.	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."
c17	If B7.3/53 then m else –.	"an instance supports it and trResponsiblePersonPtrPkg is not present."
c18	If B7.3/54 then m else –.	"an instance supports it and trResponsiblePersonNamePkg is not present."
c19	If B7.7/29 then m else –.	" the objectCreation and objectDeletion notifications identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one notification field must be supported
c:o.2		At least one notification field must be supported
c:o.3		At least one notification field must be supported
c:o.4		At least one notification field must be supported
c:o.5		At least one notification field must be supported
c:o.6		At least one notification field must be supported
c:o.7		At least one notification field must be supported
c:o.8		At least one notification field must be supported
c:o.9		At least one notification field must be supported
c:o.10		At least one notification field must be supported
c:o.11		At least one notification field must be supported
c:o.12		At least one notification field must be supported
c:o.13		At least one name binding must be supported and if a functional unit requires a particular name binding then that must be supported

TABLE B7.10/X.791

telecommunicationsTroubleReport Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	telecommunicationsTroubleReport-account	{0 0 24 790 0 6 9}	Superior class: account	o	m			1.1
								1.2
								1.3
								1.4
								1.5
								1.6
2	telecommunicationsTroubleReport-cnmService	{0 0 24 790 0 6 10}	Superior class: cnmService	c:o.13	c:o.13			2.1
								2.2
								2.3
								2.4
								2.5
								2.6

TABLE B7.10/X.791 *(continued)*

telecommunicationsTroubleReport Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
3	telecommunicationsTroubleReport-network	{0 0 24 790 0 6 11}	Superior class: "Rec. M.3100:1992": network AND SUBCLASSES	c:o.13	c:o.13			3.1
								3.2
								3.3
								3.4
								3.5
								3.6
4	telecommunicationsTroubleReport-system	{0 0 24 790 0 6 12}	Superior class: "CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": system	c:o.13	c:o.13			4.1
								4.2
								4.3
								4.4
								4.5
								4.6

TABLE B7.10/X.791 *(concluded)*

telecommunicationsTroubleReport Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		c:m	c:m		
	1.2	Create with reference object		c:m	c:m		
	1.3	Create with automatic instance naming		c:m	c:m		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		
2	2.1	Create support		c:m	c:m		
	2.2	Create with reference object		c:m	c:m		
	2.3	Create with automatic instance naming		c:m	c:m		
	2.4	Delete support		–	–		
	2.5	Delete only if no contained objects		–	–		
	2.6	Delete contained objects		–	–		
3	3.1	Create support		c:m	c:m		
	3.2	Create with reference object		c:m	c:m		
	3.3	Create with automatic instance naming		c:m	c:m		
	3.4	Delete support		–	–		
	3.5	Delete only if no contained objects		–	–		
	3.6	Delete contained objects		–	–		
4	4.1	Create support		c:m	c:m		
	4.2	Create with reference object		c:m	c:m		
	4.3	Create with automatic instance naming		c:m	c:m		
	4.4	Delete support		–	–		
	4.5	Delete only if no contained objects		–	–		
	4.6	Delete contained objects		–	–		

B8 troubleHistoryRecord

TABLE B8.1/X.791

troubleHistoryRecord Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	troubleHistoryRecord	{0 0 24 790 0 3 8}		

TABLE B8.2/X.791

troubleHistoryRecord Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B8.3/X.791

troubleHistoryRecord Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": additionalInformationPackage	{2 9 3 2 4 18}	"The Additional Information Parameter is present in the notification or report corresponding to the instance of event record or and instance of its subclasses"	c1	c1		
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": additionalTextPackage	{2 9 3 2 4 19}	"The Additional text Parameter is present in the notification or report corresponding to the instance of event record or and instance of its subclasses"	c2	c2		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
4	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": correlatedNotificationPackage	{2 9 3 2 4 23}	"The correlatedNotification Parameter is present in the notification or event report corresponding to the instance of an event record or and instance of its subclasses"	c3	c3		
5	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": logRecordPackage		Mandatory	m	m		
6	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": eventTimePackage	{2 9 3 2 4 11}	"The eventTime Parameter was present in the received event report"	c4	c4		
7	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": eventLogRecordPackage		Mandatory	m	m		

TABLE B8.3/X.791 *(concluded)*

troubleHistoryRecord Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
8	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": notificationIdentifierPackage	{2 9 3 2 4 24}	"The notification Identifier Parameter is present in the notification or event report corresponding to the instance of an event record or and instance of its subclasses"	c5	c5		
9	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c6	c6		
10	thrActivityDurationPkg	{0 0 24 790 0 4 73}	"an instance supports it."	o	o		
11	thrAdditionalTroubleInfoListPkg	{0 0 24 790 0 4 74}	"an instance supports it."	o	o		
12	thrAuthorizationPkg	{0 0 24 790 0 4 75}	"an instance supports it."	o	o		
13	thrCancelRequestedByManagerPkg	{0 0 24 790 0 4 76}	"an instance supports it."	o	o		
14	thrCloseOutNarrPkg	{0 0 24 790 0 4 77}	"an instance supports it."	o	o		
15	thrCloseOutVerificationPkg	{0 0 24 790 0 4 78}	"an instance supports it."	o	o		
16	thrCommitmentTimePkg	{0 0 24 790 0 4 79}	"an instance supports it."	o	o		
17	thrCustTroubleTickNumPkg	{0 0 24 790 0 4 80}	"an instance supports it."	o	o		
18	thrPerceivedTroubleSeverityPkg	{0 0 24 790 0 4 81}	"an instance supports it."	o	o		
19	thrRestoredTimePkg	{0 0 24 790 0 4 82}	"an instance supports it."	o	o		
20	thrTroubleClearancePersonPkg	{0 0 24 790 0 4 83}	"an instance supports it."	o	o		
21	thrTroubleReportNumberListPkg	{0 0 24 790 0 4 84}	"an instance supports it."	o	o		
22	thrTroubleTypePkg	{0 0 24 790 0 4 85}	"an instance supports it."	o	o		
23	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
24	troubleHistoryRecordPkg		Mandatory	m	m		

TABLE B8.4/X.791

troubleHistoryRecord Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	activityDuration	{0 0 24 790 0 7 4}	ActivityDuration	–	–		o	o	
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	c1	c1		c1	c1	
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": additionalText	{2 9 3 2 7 7}	GraphicString	c2	c2		c2	c2	
4	additionalTroubleInfoList	{0 0 24 790 0 7 8}	SET OF GraphicString	–	–		o	o	
5	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
6	authorizationList	{0 0 24 790 0 7 18}	SET OF SEQUENCE	–	–		o	o	
7	cancelRequestedByManager	{0 0 24 790 0 7 22}	BOOLEAN	–	–		o	o	

TABLE B8.4/X.791 *(continued)*

troubleHistoryRecord Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
8	closeOutNarr	{0 0 24 790 0 7 23}	GraphicString	–	–		o	o	
9	closeOutVerification	{0 0 24 790 0 7 33}	ENUMERATED	–	–		o	o	
10	commitmentTime	{0 0 24 790 0 7 24}	CHOICE	–	–		o	o	
11	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	c3	c3		c3	c3	
12	custTroubleTickNum	{0 0 24 790 0 7 34}	GraphicString	–	–		o	o	
13	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": eventTime	{2 9 3 2 7 13}	GeneralizedTime	–	–		m	m	
14	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": eventType	{2 9 3 2 7 14}	CHOICE	–	–		m	m	
15	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": logRecordId	{2 9 3 2 7 3}	CHOICE	–	–		m	m	
16	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": loggingTime	{2 9 3 2 7 59}	GeneralizedTime	–	–		m	m	
17	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": managedObjectClass	{2 9 3 2 7 60}	CHOICE	–	–		m	m	
18	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": managedObjectInstance	{2 9 3 2 7 61}	CHOICE	–	–		m	m	
19	managedObjectInstance	{0 0 24 790 0 7 63}	ObjectInstance SET-BY-CREATE	–	–		m	m	
20	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{0 0 24 790 0 7 ??}	OBJECT IDENTIFIER	o	o		m	m	
21	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": notificationIdentifier	{0 0 24 790 0 7 16}	Integer	c5	c5		c5	c5	
22	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
23	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c6	c6	
24	perceivedTroubleSeverity	{0 0 24 790 0 7 72}	CHOICE	–	–		o	o	
25	receivedTime	{0 0 24 790 0 7 74}	GeneralizedTime	–	–		m	m	
26	restoredTime	{0 0 24 790 0 7 81}	CHOICE	–	–		o	o	
27	troubleClearancePerson	{0 0 24 790 0 7 90}	SEQUENCE	–	–		o	o	
28	troubleFound	{0 0 24 790 0 7 92}	CHOICE	–	–		m	m	
29	troubleReportNumberList	{0 0 24 790 0 7 100}	SET OF GraphicString	–	–		o	o	
30	troubleType	{0 0 24 790 0 7 105}	CHOICE SET-BY-CREATE	–	–		o	o	

TABLE B8.4/X.791 *(continued)*

troubleHistoryRecord Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		–	–		–	–	
2	–	–		–	–		–	–	
3	–	–		–	–		–	–	
4	–	–		–	–		–	–	
5	–	–		–	–		–	–	
6	–	–		–	–		–	–	
7	–	–		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	
10	–	–		–	–		–	–	
11	–	–		–	–		–	–	
12	–	–		–	–		–	–	
13	–	–		–	–		–	–	
14	–	–		–	–		–	–	
15	–	–		–	–		–	–	
16	–	–		–	–		–	–	
17	–	–		–	–		–	–	
18	–	–		–	–		–	–	
19	–	–		–	–		–	–	
20	–	–		–	–		–	–	
21	–	–		–	–		–	–	
22	–	–		–	–		–	–	
23	–	–		–	–		–	–	
24	–	–		–	–		–	–	
25	–	–		–	–		–	–	
26	–	–		–	–		–	–	
27	–	–		–	–		–	–	
28	–	–		–	–		–	–	
29	–	–		–	–		–	–	
30	–	–		–	–		–	–	

TABLE B8.4/X.791 *(continued)*

troubleHistoryRecord Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–			
2	–			
3	–			
4	–			
5	–			
6	–			
7	–			
8	–			
9	–			
10	–			
11	–			
12	–			
13	–			
14	–			
15	–			
16	–			
17	–			
18	–			
19	–			
20	–			
21	–			
22	–			

TABLE B8.4/X.791 *(concluded)*

troubleHistoryRecord Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
23	–			
24	–			
25	–			
26	–			
27	–			
28	–			
29	–			
30	–			

TABLE B8.5/X.791

troubleHistoryRecord Attribute group support

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

TABLE B8.6/X.791

troubleHistoryRecord Action support

(There are no actions specified for this managed object class.)

TABLE B8.7/X.791

troubleHistoryRecord Notification support

(There are no notifications specified for this managed object class.)

TABLE B8.8/X.791

troubleHistoryRecord Parameter support

(There are no parameters specified for this managed object class.)

TABLE B8.9/X.791

troubleHistoryRecord Condition support

Condition number	Condition	Reference
c1	If B8.3/1 then m else –.	"The Additional Information Parameter is present in the notification or report corresponding to the instance of event record or and instance of its subclasses"
c2	If B8.3/2 then m else –.	"The Additional text Parameter is present in the notification or report corresponding to the instance of event record or and instance of its subclasses"
c3	If B8.3/4 then m else –.	"The correlatedNotification Parameter is present in the notification or event report corresponding to the instance of an event record or and instance of its subclasses"
c4	If B8.3/6 then m else –.	"The eventTime Parameter was present in the received event report"
c5	If B8.3/8 then m else –.	"The notification Identifier Parameter is present in the notification or event report corresponding to the instance of an event record or and instance of its subclasses"
c6	If B8.3/9 then m else –.	"any registered package other than this has been instantiated"

TABLE B8.10/X.791

troubleHistoryRecord Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	troubleHistoryRecord-log	{0 0 24 790 0 6 16}	Superior class: "CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": log	o	o			1.1
								1.2
								1.3
								1.4
								1.5
								1.6

TABLE B8.10/X.791 *(concluded)*

troubleHistoryRecord Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		c:m	c:m		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		

B9 troubleReport

TABLE B9.1/X.791

troubleReport Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	troubleReport	{0 0 24 790 0 3 9}		

TABLE B9.2/X.791

troubleReport Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B9.3/X.791

troubleReport Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
4	trActivityDurationPkg	{0 0 24 790 0 4 86}	"an instance supports it."	o	o		
5	trAgentContactPersonAttributePkg	{0 0 24 790 0 4 87}	"an instance supports it and trAgentContactPersonObjectPkg is not present."	c2	c2		
6	trAgentContactPersonObjectPkg	{0 0 24 790 0 4 88}	"an instance supports it and trAgentContactPersonAttributePkg is not present."	c3	c3		
7	trCloseOutNarrPkg	{0 0 24 790 0 4 89}	"an instance supports it."	o	o		
8	trHistoryEventPkg	{0 0 24 790 0 4 99}	"an instance supports it."	o	o		
9	trManagedObjectInstanceAliasListPkg	{0 0 24 790 0 4 90}	"an instance supports it."	o	o		
10	trObjectCreationDeletionPkg	{0 0 24 790 0 4 15}	"an instance supports it."	o	o		
11	trRelatedTroubleReportListPkg	{0 0 24 790 0 4 92}	"an instance supports it."	o	o		
12	trRepairActivityListPkg	{0 0 24 790 0 4 93}	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."	c4	c4		
13	trRestoredTimePkg	{0 0 24 790 0 4 94}	"an instance supports it."	o	o		
14	trTroubleClearancePersonAttributePkg	{0 0 24 790 0 4 95}	"an instance supports it."	o	o		
15	trTroubleReportFormatObjectPtrPkg	{0 0 24 790 0 4 96}	"an instance supports it."	o	o		
16	troubleReportPkg		Mandatory	m	m		
17	x790AttributeValueChangePkg	{0 0 24 790 0 4 97}	"an instance supports it."	o	o		
18	x790NumberListPkg	{0 0 24 790 0 4 91}	"an instance supports it."	o	o		

TABLE B9.4/X.791

troubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	activityDuration	{0 0 24 790 0 7 4}	SET OF SEQUENCE	–	–		o	o	
2	additionalTroubleInfoList	{0 0 24 790 0 7 8}	SET OF GraphicString	m	m		m	m	
3	agentContactObjectPtr	{0 0 24 790 0 7 12}	CHOICE	–	–		c3	c3	
4	agentContactPerson	{0 0 24 790 0 7 11}	SEQUENCE	–	–		c2	c2	
5	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": allomorphs	{2 9 3 2 7 50}	SET OF CHOICE	–	–		o	o	
6	closeOutNarr	{0 0 24 790 0 7 23}	GraphicString	–	–		o	o	
7	managedObjectInstance	{0 0 24 790 0 7 63}	ObjectInstance	m	m		m	m	
8	managedObjectInstanceAliasList	{0 0 24 790 0 7 64}	SET OF GraphicString	o	o		o	o	

TABLE B9.4/X.791 *(continued)*

troubleReport Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
9	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": nameBinding	{2 9 3 2 7 63}	OBJECT IDENTIFIER	o	o		m	m	
10	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectClass	{2 9 3 2 7 65}	CHOICE	–	–		m	m	
11	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": packages	{2 9 3 2 7 66}	SET OF OBJECT IDENTIFIER	o	o		c1	c1	
12	receivedTime	{0 0 24 790 0 7 74}	GeneralizedTime	m	m		m	m	
13	relatedTroubleReportList	{0 0 24 790 0 7 75}	SET OF ObjectInstance	o	o		o	o	
14	repairActivityList	{0 0 24 790 0 7 77}	SET OF SEQUENCE	–	–		c4	c4	
15	restoredTime	{0 0 24 790 0 7 81}	CHOICE	–	–		o	o	
16	troubleClearancePerson	{0 0 24 790 0 7 90}	SEQUENCE	–	–		o	o	
17	troubleFound	{0 0 24 790 0 7 92}	CHOICE	x	x		m	m	
18	troubleReportFormatObjectPtr	{0 0 24 790 0 7 95}	ObjectInstance	o	o		o	o	
19	troubleReportID	{0 0 24 790 0 7 97}	GraphicString	m	m		m	m	
20	troubleReportNumberList	{0 0 24 790 0 7 100}	SET OF GraphicString	o	o		o	o	
21	troubleReportState	{0 0 24 790 0 7 101}	INTEGER	–	–		m	m	
22	troubleReportStatus	{0 0 24 790 0 7 102}	CHOICE	–	–		m	m	
23	troubleReportStatusTime	{0 0 24 790 0 7 103}	GeneralizedTime	m	m		m	m	
24	troubleType	{0 0 24 790 0 7 105}	CHOICE	m	m		m	m	

TABLE B9.4/X.791 *(continued)*

troubleReport Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		o	o		–	–	
2	–	–		m	m		–	–	
3	c3	c3		–	–		–	–	
4	c2	c2		–	–		–	–	
5	–	–		–	–		–	–	
6	o	o		–	–		–	–	
7	–	–		–	–		–	–	
8	–	–		–	–		–	–	
9	–	–		–	–		–	–	
10	–	–		–	–		–	–	
11	–	–		–	–		–	–	
12	–	–		–	–		–	–	
13	–	–		–	–		–	–	
14	–	–		c4	c4		–	–	
15	o	o		–	–		–	–	
16	o	o		–	–		–	–	
17	m	m		–	–		–	–	
18	–	–		–	–		–	–	
19	–	–		–	–		–	–	
20	–	–		–	–		–	–	
21	m	m		–	–		–	–	
22	m	m		–	–		–	–	
23	–	–		–	–		–	–	
24	–	–		–	–		–	–	

TABLE B9.4/X.791 *(concluded)*

troubleReport Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		
7	–	–		
8	–	–		
9	–	–		
10	–	–		
11	–	–		
12	–	–		
13	–	–		
14	–	–		
15	–	–		
16	–	–		
17	–	–		
18	–	–		
19	–	–		
20	–	–		
21	–	–		
22	–	–		
23	–	–		
24	–	–		

TABLE B9.5/X.791

troubleReport Attribute group support

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

TABLE B9.6/X.791

troubleReport Action support

(There are no actions specified for this managed object class.)

TABLE B9.7/X.791

troubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992)| ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		m	m				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992)| ISO/ IEC 10165-2:1992": objectCreation	(2 9 3 2 10 6)		c5	c5				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
3	"CCITT Rec. X.721 (1992)| ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c5	c5				3.1
									3.1.1
									3.1.2
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3
4	troubleHistoryEventNotification	{0 0 24 790 0 10 1}		o	x				4.1
									4.1.1
									4.1.2
									4.1.3
									4.1.3.1
									4.1.3.2
									4.1.4
									4.1.4.1
									4.1.4.1.1
									4.1.4.1.2
									4.1.4.1.3
									4.1.4.1.4
									4.1.4.1.5
									4.1.4.2
									4.1.4.3
									4.1.5
									4.1.6
									4.1.6.1
									4.1.6.2
									4.1.6.3
									4.1.6.4
									4.1.6.4.1
									4.1.6.4.2
									4.1.6.4.3
									4.1.6.4.4
									4.1.6.4.4.1
									4.1.6.4.4.2
									4.1.6.4.4.3
									4.1.6.4.4.4
									4.1.6.4.5
									4.1.6.4.6
									4.1.6.4.7
									4.1.7
									4.1.8
									4.1.9

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									4.1.10
									4.1.10.1
									4.1.10.2
									4.1.11
									4.1.12
									4.1.12.1
									4.1.12.2
									4.1.13
									4.1.14
									4.1.14.1
									4.1.14.2
									4.1.14.3
									4.1.14.4
									4.1.14.4.1
									4.1.14.4.2
									4.1.14.4.3
									4.1.14.4.4
									4.1.14.5
									4.1.14.6
									4.1.14.7
									4.1.15
									4.1.16
									4.1.16.1
									4.1.16.2
5	troubleReportProgressNotification	{0 0 24 790 0 10 2}		o	o				5.1
									5.1.1
									5.1.1.1
									5.1.1.2
									5.1.2

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	m	m		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	0	0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	0	0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	m	m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	o	o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	m	m		

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o.5	c:o.5		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
4	4.1	TroubleHistoryInfo		Information Syntax SEQUENCE	o	o		
	4.1.1	managedObjectInstance	–	ObjectInstance	c:m	c:m		
	4.1.2	receivedTime	–	GeneralizedTime	c:m	c:m		
	4.1.3	troubleFound	–	CHOICE	c:m	c:m		
	4.1.3.1	number	–	INTEGER	c:o.8	c:o.8		
	4.1.3.2	identifier	–	OBJECT IDENTIFIER	c:o.8	c:o.8		

TABLE B9.7/X.791 *(continued)*

troubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	4.1.4	activityDuration	–	SET OF SEQUENCE	c:o	c:o		
	4.1.4.1	duration	–	SEQUENCE	c:m	c:m		
	4.1.4.1.1	day	–	INTEGER	c:o	c:o		
	4.1.4.1.2	hour	–	INTEGER	c:o	c:o		
	4.1.4.1.3	minute	–	INTEGER	c:o	c:o		
	4.1.4.1.4	second	–	INTEGER	c:o	c:o		
	4.1.4.1.5	msec	–	INTEGER	c:o	c:o		
	4.1.4.2	billable	–	BOOLEAN	c:o	c:o		
	4.1.4.3	type	–	BIT STRING	c:o	c:o		
	4.1.5	additionalTroubleInfoList	–	SET OF GraphicString	c:o	c:o		
	4.1.6	authorizationList	–	SET OF SEQUENCE	c:o	c:o		
	4.1.6.1	state	–	ENUMER-ATED	c:m	c:m		
	4.1.6.2	type	–	BIT STRING	c:m	c:m		
	4.1.6.3	authTime	–	Generalize dTime	c:o	c:o		
	4.1.6.4	authPerson	–	SEQUENCE	c:o	c:o		
	4.1.6.4.1	number	–	GraphicString	c:o	c:o		
	4.1.6.4.2	name	–	GraphicString	c:o	c:o		
	4.1.6.4.3	phone	–	GraphicString	c:o	c:o		
	4.1.6.4.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.6.4.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.6.4.4.2	city	–	GraphicString	c:m	c:m		
	4.1.6.4.4.3	state	–	GraphicString	c:m	c:m		
	4.1.6.4.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.6.4.5	email	–	GraphicString	c:o	c:o		
	4.1.6.4.6	fax	–	GraphicString	c:o	c:o		
	4.1.6.4.7	respon	–	GraphicString	c:o	c:o		
	4.1.7	cancelRequestedByManager	–	BOOLEAN	c:o	c:o		
	4.1.8	closeOutNarr	–	GraphicString	c:o	c:o		
	4.1.9	closeOutVerification	–	ENUMER-ATED	c:o	c:o		
	4.1.10	commitmentTime	–	CHOICE	c:o	c:o		
	4.1.10.1	onsiteTime	–	Generalize dTime	c:o.9	c:o.9		
	4.1.10.2	clearedTime	–	Generalize dTime	c:o.9	c:o.9		
	4.1.11	custTroubleTickNum	–	GraphicString	c:o	c:o		
	4.1.12	perceivedTroubleSeverity	–	CHOICE	c:o	c:o		
	4.1.12.1	number	–	INTEGER	c:o.10	c:o.10		
	4.1.12.2	identifier	–	OBJECT IDENTIFIER	c:o.10	c:o.10		
	4.1.13	restoredTime	–	Generalize dTime	c:o	c:o		
	4.1.14	troubleClearancePerson	–	SEQUENCE	c:o	c:o		
	4.1.14.1	number	–	GraphicString	c:o	c:o		
	4.1.14.2	name	–	GraphicString	c:o	c:o		
	4.1.14.3	phone	–	GraphicString	c:o	c:o		
	4.1.14.4	loc	–	SEQUENCE	c:o	c:o		
	4.1.14.4.1	civicAddress	–	GraphicString	c:m	c:m		
	4.1.14.4.2	city	–	GraphicString	c:m	c:m		
	4.1.14.4.3	state	–	GraphicString	c:m	c:m		
	4.1.14.4.4	zip	–	GraphicString	c:m	c:m		
	4.1.14.5	email	–	GraphicString	c:o	c:o		
	4.1.14.6	fax	–	GraphicString	c:o	c:o		
	4.1.14.7	respon	–	GraphicString	c:o	c:o		

TABLE B9.7/X.791 *(concluded)*

troubleReport Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	4.1.15	troubleReportNumberList	–	SET OF GraphicString	c:o	c:o		
	4.1.16	troubleType	–	CHOICE	c:o	c:o		
	4.1.16.1	number	–	INTEGER	c:o.11	c:o.11		
	4.1.16.2	identifier	–	OBJECT IDENTIFIER	c:o.11	c:o.11		
5	5.1	TroubleProgressInfo		Information Syntax SEQUENCE	o	o		
	5.1.1	troubleReportStatus	–	CHOICE	c:m	c:m		
	5.1.1.1	number	–	INTEGER	c:o.12	c:o.12		
	5.1.1.2	identifier	–	OBJECT IDENTIFIER	c:o.12	c:o.12		
	5.1.2	additionalTroubleStatusInfo	–	SET OF GraphicString	c:o	c:o		

TABLE B9.8/X.791

troubleReport Parameter support

(There are no parameters specified for this managed object class.)

TABLE B9.9/X.791

troubleReport Conditions

Condition number	Condition	Reference
c1	If B9.3/2 then m else –.	"any registered package other than this has been instantiated."
c2	If B9.3/5 then m else –.	"an instance supports it and trAgentContactPersonObjectPkg is not present."
c3	If B9.3/6 then m else –.	"an instance supports it and trAgentContactPersonAttributePkg is not present."
c4	If B9.3/12 then m else –.	"an instance supports it and no RepairActivity object is contained in an instance of this object class or its subclasses."
c5		"the objectCreation and objectDeletion notifications identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1	At least one notification field must be supported	
c:o.2	At least one notification field must be supported	
c:o.3	At least one notification field must be supported	
c:o.4	At least one notification field must be supported	
c:o.5	At least one notification field must be supported	
c:o.6	At least one notification field must be supported	
c:o.7	At least one notification field must be supported	
c:o.8	At least one notification field must be supported	
c:o.9	At least one notification field must be supported	
c:o.10	At least one notification field must be supported	
c:o.11	At least one notification field must be supported	
c:o.12	At least one notification field must be supported	

TABLE B9.10/X.791

troubleReport Name Binding support

(There are no name bindings specified for this managed object class.)

B10 troubleReportFormatDefn

TABLE B10.1/X.791

troubleReportFormatDefn Managed object class support

Index	Managed object class template label	Value of object identifier for the managed object 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	troubleReportFormatDefn	{0 0 24 790 0 3 10}		

TABLE B10.2/X.791

troubleReportFormatDefn Actual class support

Index	Managed object class template label for actual class	Value of object identifier for managed object class definition of actual class	Additional information

TABLE B10.3/X.791

troubleReportFormatDefn Package support

Index	Package template label	Value of object identifier for package	Constraints and values	Status	Profile	Support	Additional information
1	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": allomorphicPackage	{2 9 3 2 4 17}	"an instance supports allomorphism"	o	o		
2	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": packagesPackage	{2 9 3 2 4 16}	"any registered package other than this has been instantiated"	c1	c1		
3	"CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992": topPackage		Mandatory	m	m		
4	trfdApplicableManagedObjectClassListPkg	{0 0 24 790 0 4 100}	"an instance supports it."	o	o		
5	trfdApplicableManagedObjectInstanceListPkg	{0 0 24 790 0 4 101}	"an instance supports it."	o	o		
6	trfdAttributeValueChangePkg	{0 0 24 790 0 4 105}	"an instance supports it."	o	o		
7	trfdObjectCreationDeletionPkg	{0 0 24 790 0 4 106}	"an instance supports it."	o	o		
8	trfdTrConstrainedToSingleValueAttrIDListPkg	{0 0 24 790 0 4 102}	"an instance supports it."	o	o		
9	trfdTrMayBePresentAttrIDListPkg	{0 0 24 790 0 4 103}	"an instance supports it."	o	o		
10	trfdTrMustBePresentAttrIDListPkg	{0 0 24 790 0 4 104}	"an instance supports it."	o	o		
11	troubleReportFormatDefnPkg	(Not registered)	Mandatory	m	m		

TABLE B10.4/X.791

troubleReportFormatDefn Attribute support

				Set by create			Get		
Index	Attribute template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Status	Profile	Support
1	applicableManagedObjectClassList	{0 0 24 790 0 7 16}	SET OF ObjectClass	o	o		o	o	
2	applicableManagedObjectInstanceList	{0 0 24 790 0 7 17}	SET OF ObjectInstance	o	o		o	o	
3	tRConstrainedToSingleValueAttrIDList	{0 0 24 790 0 7 94}	SET OF AttributeId	o	o		o	o	
4	tRFormatID	{0 0 24 790 0 7 96}	INTEGER	m	m		m	m	
5	tRMayBePresentAttrIDList	{0 0 24 790 0 7 99}	SET OF AttributeId	o	o		o	o	
6	tRMustBePresentAttrIDList	{0 0 24 790 0 7 98}	SET OF AttributeId	o	o		o	o	

TABLE B10.4/X.791 *(continued)*

troubleReportFormatDefn Attribute support

	Replace			Add			Remove		
Index	Status	Profile	Support	Status	Profile	Support	Status	Profile	Support
1	–	–		–	–		–	–	
2	–	–		–	–		–	–	
3	–	–		–	–		–	–	
4	–	–		–	–		–	–	
5	–	–		–	–		–	–	
6	–	–		–	–		–	–	

TABLE B10.4/X.791 *(concluded)*

troubleReportFormatDefn Attribute support

	Set to default			
Index	Status	Profile	Support	Additional information
1	–	–		
2	–	–		
3	–	–		
4	–	–		
5	–	–		
6	–	–		

TABLE B10.5/X.791

troubleReportFormatDefn Attribute group support

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

TABLE B10.6/X.791

troubleReportFormatDefn Action support

(There are no actions specified for this managed object class.)

TABLE B10.7/X.791

troubleReportFormatDefn Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
1	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": attributeValueChange	{2 9 3 2 10 1}		m	m				1.1
									1.1.1
									1.1.2
									1.1.2.1
									1.1.2.2
									1.1.3
									1.1.3.1
									1.1.3.1.1
									1.1.3.1.2
									1.1.3.2
									1.1.3.3
									1.1.4
									1.1.5
									1.1.5.1
									1.1.5.2
									1.1.5.2.1
									1.1.5.2.1.1
									1.1.5.2.1.2
									1.1.5.2.2
									1.1.5.2.3
									1.1.5.2.3.1
									1.1.5.2.3.2
									1.1.6
									1.1.7
									1.1.7.1
									1.1.7.2
									1.1.7.3
2	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectCreation	{2 9 3 2 10 6}		c2	c2				2.1
									2.1.1
									2.1.2
									2.1.2.1
									2.1.2.1.1
									2.1.2.1.2
									2.1.2.2
									2.1.3
									2.1.4
									2.1.4.1
									2.1.4.2
									2.1.4.2.1
									2.1.4.2.1.1
									2.1.4.2.1.2
									2.1.4.2.2
									2.1.4.2.3
									2.1.4.2.3.1
									2.1.4.2.3.2
									2.1.5
									2.1.6
									2.1.6.1
									2.1.6.2
									2.1.6.3
3	"CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": objectDeletion	{2 9 3 2 10 7}		c2	c2				3.1
									3.1.1
									3.1.2

TABLE B10.7/X.791 *(continued)*

troubleReportFormatDefn Notification support

						Support			
Index	Notification type template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Confir-med	Non-con-firmed	Additional information	Subindex
									3.1.2.1
									3.1.2.1.1
									3.1.2.1.2
									3.1.2.2
									3.1.3
									3.1.4
									3.1.4.1
									3.1.4.2
									3.1.4.2.1
									3.1.4.2.1.1
									3.1.4.2.1.2
									3.1.4.2.2
									3.1.4.2.3
									3.1.4.2.3.1
									3.1.4.2.3.2
									3.1.5
									3.1.6
									3.1.6.1
									3.1.6.2
									3.1.6.3

TABLE B10.7/X.791 *(continued)*

troubleReportFormatDefn Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
1	1.1	AttributeValueChangeInfo		Information Syntax SEQUENCE	m	m		
	1.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	0	0		
	1.1.2	attributeIdentifierList	{2 9 3 2 7 8}	SET OF CHOICE	0	0		
	1.1.2.1	globalForm	–	OBJECT IDENTIFIER	c:o.1	c:o.1		
	1.1.2.2	localForm	–	INTEGER	c:o.1	c:o.1		
	1.1.3	attributeValueChangeDefinition	{2 9 3 2 7 10}	SET OF SEQUENCE	m	m		
	1.1.3.1	attributeID	–	CHOICE	c:m	c:m		
	1.1.3.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.2	c:o.2		
	1.1.3.1.2	localForm	–	INTEGER	c:o.2	c:o.2		
	1.1.3.2	oldAttributeValue	–	ANY DEFINED BY attributeID	o	o		
	1.1.3.3	newAttributeValue	–	ANY DEFINED BY attributeID	m	m		
	1.1.4	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	1.1.5	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	1.1.5.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	1.1.5.2	sourceObjectList	–	CHOICE	c:o	c:o		

TABLE B10.7/X.791 *(continued)*

troubleReportFormatDefn Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	1.1.5.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.5.2.2	nonSpecialForm	–	OCTET STRING	c:o.3	c:o.3		
	1.1.5.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.3	c:o.3		
	1.1.5.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.5.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	1.1.6	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	1.1.7	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	1.1.7.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	1.1.7.2	significance	–	BOOLEAN	c:o	c:o		
	1.1.7.3	information	–	ANY DEFINED By identifier	c:m	c:m		
2	2.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	2.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	2.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	2.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	2.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.4	c:o.4		
	2.1.2.1.2	localForm	–	INTEGER	c:o.4	c:o.4		
	2.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	2.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	2.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	2.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	2.1.4.2	sourceObjectList	–	CHOICE	c:o	c:o		
	2.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o.5	c:o.5		
	2.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.5	c:o.5		
	2.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	2.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	2.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	2.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	2.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		

TABLE B10.7/X.791 *(concluded)*

troubleReportFormatDefn Notification support

Index	Subindex	Notification field name label	Value of object identifier of attribute type associated with field	Constraints and values	Status	Profile	Support	Additional information
	2.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	2.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		
3	3.1	ObjectInfo		Information Syntax SEQUENCE	m	m		
	3.1.1	sourceIndicator	{2 9 3 2 7 26}	ENUMER-ATED	o	o		
	3.1.2	attributeList	{2 9 3 2 7 9}	SET OF SEQUENCE	o	o		
	3.1.2.1	attributrId	–	CHOICE	c:m	c:m		
	3.1.2.1.1	globalForm	–	OBJECT IDENTIFIER	c:o.6	c:o.6		
	3.1.2.1.2	localForm	–	INTEGER	c:o.6	c:o.6		
	3.1.2.2	attributeValue	–	ANY DEFINED By attributeID	c:m	c:m		
	3.1.3	notificationIdentifier	{2 9 3 2 7 16}	INTEGER	o	o		
	3.1.4	correlatedNotifications	{2 9 3 2 7 12}	SET OF SEQUENCE	o	o		
	3.1.4.1	correlatedNotifications	{2 9 3 2 7 12}	SET OF INTEGER	c:m	c:m		
	3.1.4.2	sourceObjectInst	–	CHOICE	c:o	c:o		
	3.1.4.2.1	distinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.1.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.1.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.4.2.2	nonSpecialForm	–	OCTET STRING	c:o	c:o		
	3.1.4.2.3	localDistinguishedName	–	SEQUENCE OF SET OF SEQUENCE	c:o.7	c:o.7		
	3.1.4.2.3.1	AttributeType	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.4.2.3.2	AttributeValue	–	ANY	c:m	c:m		
	3.1.5	additionalText	{2 9 3 2 7 7}	GraphicString	o	o		
	3.1.6	additionalInformation	{2 9 3 2 7 6}	SET OF SEQUENCE	o	o		
	3.1.6.1	identifier	–	OBJECT IDENTIFIER	c:m	c:m		
	3.1.6.2	significance	–	BOOLEAN	c:o	c:o		
	3.1.6.3	information	–	ANY DEFINED By identifier	c:m	c:m		

TABLE B10.8/X.791

troubleReportFormatDefn Parameter support

(There are no parameters specified for this managed object class.)

TABLE B10.9/X.791

troubleReportFormatDefn Condition support

Condition number	Condition	Reference
c1	B10.9/2	"any registered package, other than this package has been instantiated."
c2		" the objectCreation and objectDeletion notifications identified in CCITT Rec. X.721 (1992) | ISO/IEC 10165-2:1992 is supported by an instance of this class."
c:o.1		At least one notification field must be supported
c:o.2		At least one notification field must be supported
c:o.3		At least one notification field must be supported
c:o.4		At least one notification field must be supported
c:o.5		At least one notification field must be supported
c:o.6		At least one notification field must be supported
c:o.7		At least one notification field must be supported
c:o.8		At least one name binding must be supported and if a functional unit requires a particular name binding then that must be supported

TABLE B10.10/X.791

troubleReportFormatDefn Name Binding support

Index	Name binding template label	Value of object identifier for attribute	Constraints and values	Status	Profile	Support	Additional information	Subindex
1	troubleReportFormatDefn-network	{0 0 24 790 0 6 17}	Superior class: "Rec. M.3100:1992": network AND SUBCLASSES	c:o.8	c:o.8			1.1
								1.2
								1.3
								1.4
								1.5
								1.6
2	troubleReportFormatDefn-system	{0 0 24 790 0 6 18}	Superior class: "CCITT Rec. X.721 (1992) | ISO/ IEC 10165-2:1992": system	c:o.8	c:o.8			2.1
								2.2
								2.3
								2.4
								2.5
								2.6

TABLE B10.10/X.791 *(concluded)*

troubleReportFormatDefn Name Binding support

Index	Subindex	Operation	Constraints and values	Status	Profile	Support	Additional information
1	1.1	Create support		–	–		
	1.2	Create with reference object		–	–		
	1.3	Create with automatic instance naming		–	–		
	1.4	Delete support		–	–		
	1.5	Delete only if no contained objects		–	–		
	1.6	Delete contained objects		–	–		
2	2.1	Create support		–	–		
	2.2	Create with reference object		–	–		
	2.3	Create with automatic instance naming		–	–		
	2.4	Delete support		–	–		
	2.5	Delete only if no contained objects		–	–		
	2.6	Delete contained objects		–	–		

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Telephone network and ISDN
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media
Series H	Transmission of non-telephone signals
Series I	Integrated services digital network
Series J	Transmission of sound-programme and television signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound-programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminal equipments and protocols for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	**Data networks and open system communication**
Series Z	Programming languages