



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.790

Corrigendum 1

(03/99)

SERIES X: DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS

OSI management – Management functions and ODMA
functions

Trouble management function for ITU-T
applications

Corrigendum 1

ITU-T Recommendation X.790 – Corrigendum 1

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION X.790

TROUBLE MANAGEMENT FUNCTION FOR ITU-T APPLICATIONS

CORRIGENDUM 1

Source

Corrigendum 1 to ITU-T Recommendation X.790, was prepared by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 26th of March 1999.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the 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.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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**TROUBLE MANAGEMENT FUNCTION
FOR ITU-T APPLICATIONS**

CORRIGENDUM 1

(Geneva, 1999)

S1 This change equates to changes needed for solution for defect X790/001

Add a conditional package with a commitment time attribute to the repairActivity MANAGED OBJECT class definition as follows:

```
repairCommitmentTime PACKAGE
    ATTRIBUTES
        commitmentTime GET;
    REGISTERED AS {x790Package 107};
PRESENT IF "An instance supports it."
```

Extend CommitmentTime attribute as follows:

```
estimatedClearTime [2]GeneralizedTime
```

S2 This change equates to changes needed for solution for defect X790/004

Apply the following change to A.6.1:

On pages 95 and 96 in the module X790ASN1Module (itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)), replace the production

```
TroubleFound ::= CHOICE {
number INTEGER {
-- Integer values are to be registered in the
-- standard. Administrations may restrict
-- the values to be used.

pending (0),
cameClear (1),
centralOffice (2),
switchTrouble (3),
customerProvidedEquipment (4),
facility (5),
centralOfficeFacility (6),
iCFacility (7),
interexchangeCarrier (8),
information (9),
nonplanClassified (10),
nonplanClassifiedIC (11),
nonplanClassifiedEA (12),
noTroubleFound (13),
station (14),
stationProductData (15),
stationProductTerminal (16),
stationProductVideo (17),
stationProductVoice (18),
stationWiring (19),
otherStationEquipment (20),
foundOKStation (21),
servingBureau (22),
testOK (23),
```

```

publicServicesCoinSet          (24),
customerOperatingInstructions  (25),
testedOKVerifiedOK           (26),
coFacilityTestedFoundOK      (27),
outsideFacilityTestedFoundOK  (28),
referredOutToOtherDept       (29),
protectiveConnectingArrang    (30),
cpeCustomerResponsibility     (31),
preService                    (32),
preServiceIC                  (33),
preServiceEA                  (34),
serviceNode                   (35),
data                          (36),
customerReferredToVendor      (37),
exchangeAccess                (38),
international                  (39),
otherProvidedAccess           (40),
existingReport                 (41),
cancelExclude                 (42),
paBX                          (43),
outsideWire                    (44),
outsideTerminals              (45),
outsidePlantEquipment         (46),
outsidePlantFiberOptic       (47),
outsidePlantOther             (48),
coEquipmentOther              (49),
coEquipmentFrames            (50),
coConcentrator                (51),
receiverOffHook               (52),
cpeAuthorized                 (53),
cpeTelcoMaintained           (54),
independentCompany            (55),
cpeCalledNumber               (56),
assigningProvisioning         (57),
interServiceCenter            (58),
referredOut                   (59),
network                        (60)
...
},
identifier OBJECT IDENTIFIER
...
}

```

with the following production

```

TroubleFound ::= CHOICE {
    number INTEGER {
        -- Integer values are to be registered in the
        -- standard. Administrations may restrict
        -- the values to be used.
        pending (0),
        cameClear (1),
        centralOffice (2),
        switchTrouble (3),
        customerProvidedEquipment (4),
        facility (5),
        centralOfficeFacility (6),
        iCFacility (7),
        interexchangeCarrier (8),
        information (9),
        nonplanClassified (10),
        nonplanClassifiedIC (11),
        nonplanClassifiedEA (12),
        noTroubleFound (13),
        station (14),
        stationProductData (15),
        stationProductTerminal (16),
    }
}

```



```

stationProductVideo      (17),
stationProductVoice     (18),
stationWiring            (19),
otherStationEquipment   (20),
foundOKStation          (21),
servingBureau           (22),
testOK                  (23),
publicServicesCoinSet   (24),
customerOperatingInstructions (25),
testedOKVerifiedOK     (26),
coFacilityTestedFoundOK (27),
outsideFacilityTestedFoundOK (28),
referredOutToOtherDept (29),
protectiveConnectingArrang (30),
cpeCustomerResponsibility (31),
preService              (32),
preServiceIC            (33),
preServiceEA            (34),
serviceNode             (35),
data                    (36),
customerReferredToVendor (37),
exchangeAccess          (38),
international           (39),
otherProvidedAccess     (40),
existingReport           (41),
cancelExclude           (42),
paBX                    (43),
outsideWire             (44),
outsideTerminals        (45),
outsidePlantEquipment   (46),
outsidePlantFiberOptic (47),
outsidePlantOther       (48),
coEquipmentOther       (49),
coEquipmentFrames      (50),
coConcentrator          (51),
receiverOffHook         (52),
cpeAuthorized           (53),
cpeTelcoMaintained     (54),
independentCompany      (55),
cpeCalledNumber        (56),
assigningProvisioning   (57),
interServiceCenter      (58),
referredOut             (59),
network                 (60),
...
},
identifier OBJECT IDENTIFIER,
noTroubleFoundValue     NULL, -- used when Trouble Found not relevant
...
}

```

S3 This change equates to changes needed for solution for defect X790/005

Apply the following change to A.6.1:

On page 96, in the module X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}, replace the production

```

TroubleLocation ::= CHOICE {
locationAddress          [0] LocationAddress,
locationPtr              [1] ObjectInstance
...
}

```

with the following:

```

TroubleLocation::=CHOICE{
    locationAddress           [0] LocationAddress,
    locationPtr             [1] ObjectInstance,
    noTroubleLocationValue  [2] NULL, -- used when Trouble Location not relevant
    ...
}

```

S4 This change equates to changes needed for solution for defect X790/006

Accommodated by S5.

S5 This change equates to changes needed for solution for defects X790/007 and X790/013

This proposes a final solution, different from previously agreed Version 5 fixes S4 and S5 to this defect.

The approach that will result in the minimum change to class definitions, and little or no change in interoperability:

- a) Leave both attributeValueChange packages alone. Do not delete the trAttributeValueChangePkg in A.1.4.
- b) Do not change the class definition of providerTroubleReport; that is, leave it with both of these packages as mandatory.
- c) Remove the trObjectCreationDeletionPkg template defined in A.1.4. Add a comment to the providerTroubleReport class that the trObjectCreationDeletionPkg is defined in A.1.9, in line with the troubleReport class.

So, change the GDMO text to the following:

A.1.4 providerTroubleReport

```

providerTroubleReport MANAGED OBJECT CLASS
    DERIVED FROM troubleReport;
    CHARACTERIZED BY
        providerTroubleReportPkg,
        trAttributeValueChangePkg,
        trObjectCreationDeletionPkg;
        -- trObjectCreationDeletionPkg is defined in A.1.9,
        -- inline to the troubleReport class
    ...
REGISTERED AS {x790ObjectClass 4};

trAttributeValueChangePkg PACKAGE
    NOTIFICATIONS
        "Rec. X.721 | ISO/IEC 10165-2 : 1992":attributeValueChange;
REGISTERED AS {x790Package 14};

-- Systems Management Implementors Guide version 4 April 1996
-- S5 X790/007 delete definition of the
-- PACKAGE trObjectCreationDeletionPkg
-- trObjectCreationDeletionPkg PACKAGE
-- NOTIFICATIONS
-- "Rec. X.721 | ISO/IEC 10165-2 : 1992":objectCreation,
-- "Rec. X.721 | ISO/IEC 10165-2 : 1992":objectDeletion;
-- REGISTERED AS {x790Package 15};

```

A.1.9 troubleReport

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

...
CONDITIONAL PACKAGES

...
x790AttributeValueChangePkg PACKAGE
NOTIFICATIONS
"Rec. X.721|ISO/IEC 10165-2 : 1992":attributeValueChange;
REGISTERED AS {x790Package 97};
PRESENT IF "an instance supports it.",

trObjectCreationDeletionPkg PACKAGE
NOTIFICATIONS
"Rec. X.721|ISO/IEC 10165-2 : 1992":objectCreation,
"Rec. X.721|ISO/IEC 10165-2 : 1992":objectDeletion;
REGISTERED AS {x790Package 98};
PRESENT IF "an instance supports it.",
...
REGISTERED AS {x790ObjectClass 9};

S6 This change equates to changes needed for solution for defect X790/008

1) Apply the following changes to A.1.7:

1.1) On page 63, in the definition of the MANAGED OBJECT CLASS telecommunicationsTroubleReport, replace the definition of the CONDITIONAL PACKAGE:

trCancelRequestedByManagerPkg

with the following:

trCancelRequestedByManagerPkg PACKAGE
ATTRIBUTES
cancelRequestedByManager
INITIAL VALUE X790ASN1Module.troubleReportCancelRequestedByManagerInitial
GET-REPLACE troubleReportChangeDenied canNotClose;
REGISTERED AS {x790Package 30};
PRESENT IF "an instance supports it."

1.2) On page 64, in the definition of the MANAGED OBJECT CLASS telecommunicationsTroubleReport, replace the definition of the CONDITIONAL PACKAGE:

trCloseOutVerificationPkg

with the following:

trCloseOutVerificationPkg PACKAGE
ATTRIBUTES
closeOutVerification
INITIAL VALUE X790ASN1Module.closeOutVerificationCloseOutVerificationInitial
GET-REPLACE cannotVerifyOrDenyAtThisTime;
REGISTERED AS {x790Package 31};
PRESENT IF "an instance supports it."

2) Apply the following change to A.1.9:

On page 70, in the definition of the MANAGED OBJECT CLASS troubleReport, replace the definition of the CONDITIONAL PACKAGE:

trActivityDurationPkg

with the following:

```
trActivityDurationPkg PACKAGE
BEHAVIOUR activityDurationBehaviour BEHAVIOUR
DEFINED AS "Modifications to activityDuration are required only in the service provider to service provider
interface. The CMIS error "access denied" may be issued in response to attempts to modify this attribute on any
other interface.";;
ATTRIBUTES
    activityDuration
INITIAL VALUE X790ASN1Module.activityDurationactivityDurationInitial
GET ADD;
REGISTERED AS {x790Package 86};
PRESENT IF "an instance supports it."
```

3) Apply the following changes to A.6.1:

On page 89

Replace the production

```
repairActivityListRepairActivityListInitial RepairActivityList::={{ "000000000000.0", "" }}
```

in the module

```
X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}
```

with the following production

```
repairActivityListRepairActivityListInitial RepairActivityList::={{}} -- EMPTY SEQUENCE
```

Add the production

```
activityDurationactivityDurationInitial ActivityDuration::={{}} -- EMPTY SEQUENCE
```

to the module

```
X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}
```

Replace the production

```
closeOutVerificationCloseOutVerificationDefault CloseOutVerification::= noAction
```

in the module

```
X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}
```

with the following production

```
closeOutVerificationCloseOutVerificationInitial CloseOutVerification::=noAction
```

Replace the production

```
troubleReportCancelRequestedByManagerDefault BOOLEAN::=FALSE
```

in the module

```
X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}
```

with the following production

```
troubleReportCancelRequestedByManagerInitial BOOLEAN::=FALSE
```

S7 This change equates to changes needed for solution for defect X790/009

1) Apply the following change to A.1.8:

On page 68, in the definition of the MANAGED OBJECT CLASS troubleHistoryRecord, replace the name of the ATTRIBUTE

```
managedObjectInstance
```

with the following:

```
"Rec. X.721:1992":managedObjectInstance
```

2) *Apply the following change to A.1.9:*

On page 70, in the definition of the MANAGED OBJECT CLASS troubleReport, replace the name of the ATTRIBUTE managedObjectInstance

with the following:

"Rec. X.721:1992":managedObjectInstance

3) *On page 80, delete the title and contents of A.2.63 and replace them by:*

A.2.63 This clause is not used.

4) *Apply the following change to A.6.1:*

On page 92, in the module

X790ASN1Module {itu-t(0) recommendation(0) x(24) x790(790) informationModel(0) asn1module(2)}

delete the production

ManagedObjectInstance::=ObjectInstance

S8 This change equates to changes needed for solution for defect X790/11

In the state diagram in Figure 7-4:

- 1) *Delete Create and Reject arrows associated with the Queued state and the Delete arrow associated with the Closed state.*
- 2) *In 7.1.3.1 Queued, replace both paragraphs by the text:*

A request to the agent to create a trouble report is queued in this state and the trouble resolution process has not yet been initiated. The trouble report becomes formally instantiated in the agent system when the agent has accepted the request and at that time the trouble report is given the "Open/active" state. Hence, rejection of the request can take place in the "Queued" state without a trouble report being created for the request in the agent system.

Since the create request to the agent may contain submission of a manager-initiated trouble report, it is possible that the manager may subsequently request a cancellation of the trouble report while the request is in the queued state, i.e. before the agent has decided whether to accept or reject the request. The agent on receiving such a cancellation will attempt to close the trouble report.

S9 This change equates to changes needed for solution for defect X790/14

In A.2.85, Service Id

Change "serviceId" to "serviceID".

S10 This change equates to changes needed for solution for defect X790/15

In A.2.106, Tsp priority

Replace incorrect

WITH ATTRIBUTE SYNTAX X790ASN1Module.tspPriority;

with:

WITH ATTRIBUTE SYNTAX X790ASN1Module.TspPriority;

S11 This change equates to changes needed for solution for defect X790/16

Replace incorrect

WITH ATTRIBUTE SYNTAX X790ASN1Module.typeText;

with:

WITH ATTRIBUTE SYNTAX X790ASN1Module.TypeText;

S12 This change equates to changes needed for solution for defect X790/17

In A.5, remove line break in document string

**SUBORDINATE OBJECT CLASS "Rec. X.721|ISO/IEC 10165-2 :
1992":eventForwardingDiscriminator;**

to read:

**SUBORDINATE OBJECT CLASS "Rec. X.721|ISO/IEC 10165-2 : 1992":
eventForwardingDiscriminator;**

S13 This change equates to changes needed for solution for defect X790/18

In A.6, Abstract syntax, replace

**AttributeId, ObjectClass, ObjectInstance, GraphicString64
FROM CMIP-1 {joint-iso-itu-t(2) ms(9) cmip(1) modules(0) protocol(3)}**

with:

**AttributeId, ObjectClass, ObjectInstance
FROM CMIP-1 {joint-iso-itu-t(2) ms(9) cmip(1) modules(0) protocol(3)}**

And after GraphicString128, add:

GraphicString64::=GraphicStringBase(SIZE(0..64))

S14 This change equates to changes needed for solution for defect X790/19

In A.6, Abstract syntax, add the following statements

**SuspectObjectList
FROM
Q821-ASN1Module {ccitt(0) recommendation(0) q(17) q821(821)
asn1Module(2) q821ASN1Module(0) }**

S15 This change equates to changes needed for solution for defect X790/20

In A.6, Abstract syntax, replace

**ObjectList, AlarmStatus, CurrentProblemList, SupportedByObjectList
FROM ASN1DefinedTypesModule {itu-t recommendation m(13) gnm(3100)}**

with:

**ObjectList, AlarmStatus, CurrentProblemList
FROM ASN1DefinedTypesModule {itu-t recommendation m(13) gnm(3100)}**

S16 This change equates to changes needed for solution for defect X790/21

In A.6, Abstract syntax, remove Extensibility marker "... " from end of BIT STRING in the following type definitions:

**ActivityType
ContactType**

S17 This change equates to changes needed for solution for defect X790/22

In A.6, Abstract syntax, remove Extensibility marker "... " from the end of INTEGER in the following type definitions:

ActivityCode : number
CanNotClose
InitiatingMode
OrgLevel
PerceivedTroubleSeverity : number
TroubleFound : number
TroubleReportState
TroubleReportStatus : number
TroubleType : number
WeekMask : daysOfWeek

S18 This change equates to changes needed for solution for defect X790/23

In A.6, Abstract syntax, insert a comma (,) before Extensibility marker "... " in the following type definitions:

ActivityCode : identifier
ActivityDuration
ActivityInfo
AgentContactObjectPtr
AlternateManagerContactObjectPtr
AuthorizationList
CallBackInfoList
ChangeDeniedReason
CloseOutVerification
CommitmentTime
ContactFunction
EscalationList
FallBackReporting
HandOffPersonPtr
LocationAddress
MaintenanceOrgContactPtr
MaintenanceOrgContactTime
ManagerContactObjectPtr
ManagerSearchKey
ManagerSearchKeyList
NameType
Name(twice)
OutageDuration
PerceivedTroubleSeverity : identifier
PersonReach
PreferredPriority
PremisesAddress
RelatedObject
RepairActivityList
RepeatReport
RequestState
ResponsiblePersonPtr
RestoredTime
ServiceLocationList
ServiceType
SimpleNameRange
StopTime
TroubleDetectionTime
TroubleFound : identifier
TroubleHistoryInfo
TroubleLocation
TroubleProgressInfo
TroubleReportAlreadyExists

TroubleReportChangeDenied
TroubleReportStatus : identifier
TroubleType : identifier
SuspectObject
TimeInterval
WeekMask

S19 This change equates to changes needed for solution for defect X790/24

In A.6, Abstract syntax, add identifiers to the following types:

```
AgentContactObjectPtr ::= CHOICE{  
noContact NULL,  
contact ObjectInstance,  
...  
}
```

```
AlternateManagerContactObjectPtr ::= CHOICE{  
noContact NULL,  
contact ObjectInstance,  
...  
}
```

```
FallBackReporting ::= CHOICE{  
null NULL,  
reporting GraphicString,  
...  
}
```

```
HandOffPersonPtr ::= CHOICE{  
null NULL,  
person ObjectInstance,  
...  
}
```

```
HandOffTime ::= CHOICE{  
null NULL,  
time GeneralizedTime,  
...  
}
```

```
LocationAddress ::= SEQUENCE{  
name PremisesName,  
address PremisesAddress,  
...  
}
```

```
MaintenanceOrgContactPtr ::= CHOICE{  
null NULL,  
contact ObjectInstance,  
...  
}
```

```
MaintenanceOrgContactTime ::= CHOICE{  
null NULL,  
contact GeneralizedTime,  
...  
}
```

```
ManagerContactObjectPtr ::= CHOICE{  
null NULL,  
contact ObjectInstance,  
...  
}
```

```
ManagerSearchKey ::= CHOICE{  
searchString ManagerSearchString,  
objectInstance ObjectInstance,  
...  
}
```

```
ManagerSearchKeyList ::= SET OF CHOICE{  
searchString ManagerSearchString,  
objectInstance ObjectInstance,  
...  
}
```



```

OutageDuration::=CHOICE{
null NULL,
time TimeInterval,
...
}
RelatedObject::=CHOICE{
noObject NULL,
object ObjectInstance,
...
}
ResponsiblePersonPtr::=CHOICE{
null NULL,
objectInstance ObjectInstance,
...
}
RestoredTime::=CHOICE{
null NULL,
time GeneralizedTime,
...
}
ServiceLocationList::=SET OF SEQUENCE{
name PremisesName,
address PremisesAddress,
...
}
ServiceType::=CHOICE{
int INTEGER,
string PrintableString,
oid OBJECT IDENTIFIER,
...
}
SimpleNameRange ::= CHOICE{
number INTEGER,
string GraphicString64,
...
}
StopTime::=CHOICE{ specific GeneralizedTime, continual NULL,
...
}
TroubleDetectionTime::=CHOICE{
null NULL,
time GeneralizedTime,
...
}

```

S20 This change equates to changes needed for solution for defect X790/25

In A.6, Abstract syntax, modify CommitmentTime type (as extended by Systems Management Implementors Guide version 4 April 1996 S1) to:

```

CommitmentTime::=CHOICE{
onsiteTime [0] GeneralizedTime,
clearedTime [1] GeneralizedTime,
...,
estimatedClearTime [2] GeneralizedTime,
...
}

```

S21 This change equates to changes needed for solution for defect X790/26

In A.6, Abstract syntax, remove definition

SuspectObjectList TelephoneNumber::=SET OF SuspectObject

and add definition

TelephoneNumberList ::=SET SIZE(0..64) OF TelephoneNumber

S22 This change equates to changes needed for solution for defect X790/27

In A.6, Abstract syntax, replace troubleType circuitDead (622), with:

circuitDeadNoActivity (622),

S23 This change equates to changes needed for solution for defect X790/28

In A.6, Abstract syntax, remove extensibility "... " marker from:

WeekMask intervalsOfDay

S24 This change equates to changes needed for solution for defect X790/33

In A.5, Name Bindings

Add a Namebinding of PTR to an Account object as it is currently missing. X.790 GDMO modified. Change TR, TTR object definitions to include their subclasses for this.

S25 This change equates to changes needed for solution for defect X790/35

In A.1.6, service

Complete reference is to be used consistently for each occurrence of the reference to "X.721".

S26 This change equates to changes needed for solution for defect X790/42

In A.6, Abstract syntax, page 92, in the escalationList, extend the RequestState to include the following:

denied [3]

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