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SPECIFICATIONS OF
SIGNALLING SYSTEM No. 7

STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN) – TELESERVICES

ITU-T Recommendation Q.824.4

(Previously "CCITT Recommendation")

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 Q.824.4 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 17th of October 1995.

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NOTE

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

CONTENTS

Summary

The purpose of this Recommendation is to provide the Stages 2 and 3 description of the Q3 interface between a local exchange and the Telecommunications Management Network (TMN) for the support of configuration management functions in support of customer administration of ISDN Teleservices. Customer administration is a management activity that the network operator performs in order to exchange with the customer all the customer related management data and functions required to offer a telecommunications service and to exchange with the network all the customer related management data and functions necessary for the network to produce that telecommunications service. This Recommendation supports the administration of the customer configuration in the local exchange by the TMN. This Recommendation is part of a series of Recommendations. In this Recommendation the ISDN Teleservices specific managed objects are defined.

Recommendation Q.824.4

STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN) – TELESERVICES

(Geneva, 1995)

1 Introduction

1.1 Purpose and scope

Customer administration is a management activity that the network operator performs in order to exchange with the customer all the customer related management data and functions required to offer a telecommunications service and to exchange with the network all the customer related management data and functions necessary for the network to produce that telecommunications service.

The purpose of this Recommendation is to provide the common Stage 2 and 3 description of the Q3 interface between a local exchange and the Telecommunications Management Network (TMN) for the support of configuration management functions.

The Q3 interface is the TMN interface between network elements or Q-adapters which interface to Operations Systems (OSs) without mediation and between OSs and mediation devices as described in Recommendation M.3100.

1.2 Cross-reference

This Recommendation is based on the Stage 1 management service description given in the M.3000-Series Recommendations including Recommendation M.3400. This Recommendation provides the Stage 2 and 3 descriptions for handling customer administration services based on the service description provided in the I.240-Series Recommendations, and based on the common Stage 2 and 3 descriptions given in Recommendation Q.824.0. The information model provided by this Recommendation may be used for the customer administration purposes either over a Q3 interface or over the ISDN UNI as described in Recommendation Q.942.

1.3 Application

The management information included in this Recommendation may be exchanged by implementations of the Common Management Information Service Element (CMISE). The Transaction-Oriented class of OAM&P applications is supported in this Recommendation by defining object classes, their attributes, and their relationships. The protocol suites are given in Recommendations Q.811 and Q.812. No special requirements are identified.

1.4 General Overview

1.4.1 Information model diagrams

The following information model diagrams have been drawn for the purpose of clarifying the relations between the different object classes of customer administration. There are three different types of diagrams:

1) Entity-Relationship Model showing the relations of the different managed objects.

2) Inheritance Hierarchy showing how managed objects are derived from each other (i.e. the different paths of inherited characteristics of the different managed objects).

3) Naming Hierarchy showing the derivation of names for managed objects (i.e. the different naming paths for instances of managed objects).

These three different diagrams are only for clarification. The formal specification in terms of GDMO templates and ASN.1 type definitions are the relevant information for the implementation of this Recommendation. See Figures 1 to 3.
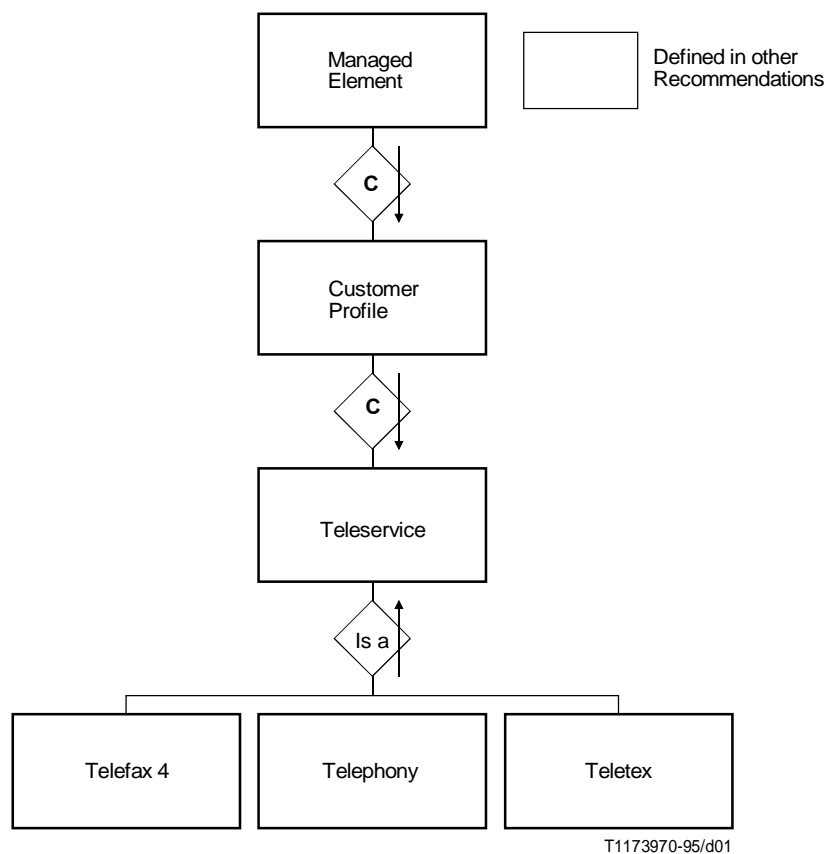
Managed
Element

Defined in other
Recommendations

C

Customer
Profile

C

Teleservice

Is a

Telefax 4

Telephony

Teletex

T1173970-95/d01

FIGURE 1/Q.824.4

Entity-Relationship diagram

Telefax 4

"X.721":
top

"ITU-T Rec. 824.0":
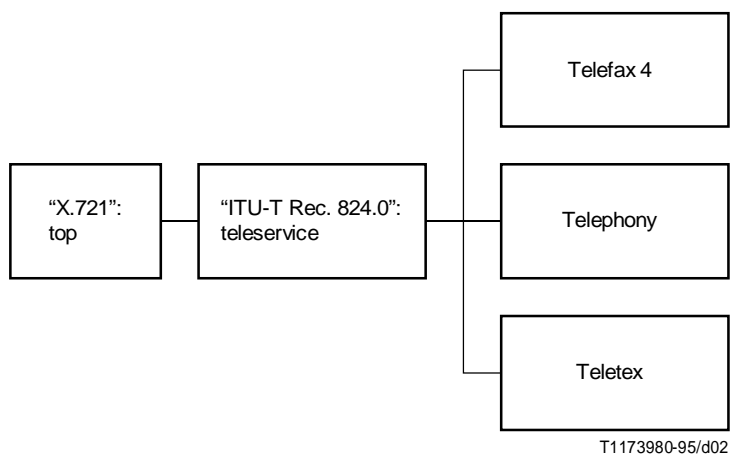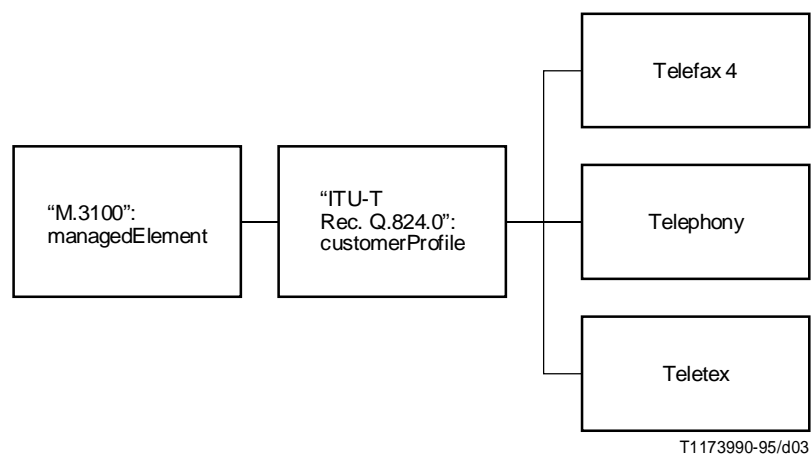teleservice

Telephony

Teletex

T1173980-95/d02

FIGURE 2/Q.824.4

Inheritance hierarchy

NOTE – The indicated naming hierarchy includes reusable name bindings defined in other Recommendations.

FIGURE 3/Q.824.4

Naming hierarchy

2 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.

–   ITU-T Recommendation F.184 (1993), *Operational provisions for the international public facsimile service between subscriber stations with group 4 facsimile machines (telefax 4).*

–   CCITT Recommendation F.200 (1992), *Teletex service.*

–   CCITT Recommendation I.240 (1988), *Definition of teleservices.*

–   CCITT Recommendation I.241.1 (1988), *Telephony.*

–   CCITT Recommendation I.241.2 (1988), *Teletex.*

–   CCITT Recommendation I.241.3 (1988), *Telefax 4.*

–   CCITT Recommendation M.3010 (1992), *Principles for a telecommunications management network.*

–   CCITT Recommendation M.3020 (1992), *TMN interface specification methodology.*

–   ITU-T Recommendation M.3100 (1995), *Generic network information model.*

–   CCITT Recommendation M.3400 (1992), *TMN management functions.*

–   ITU-T Recommendation Q.811 (1993), *Lower layer protocol profiles for the Q3 interface.*

–   ITU-T Recommendation Q.812 (1993), *Upper layer protocol profiles for the Q3 interface.*

–   ITU-T Recommendation Q.824.0 (1995), *Stages 2 and 3 description for the Q3 interface – Customer administration – Common information.*

– CCITT Recommendation X.700 (1992), *Management framework for Open Systems Interconnection (OSI) for CCITT applications*.

– CCITT Recommendation X.701 (1992), *Information technology – Open Systems Interconnection – System management overview*.

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

– CCITT Recommendation X.711 (1991), *Common management information protocol specification for CCITT applications*.

– CCITT Recommendation X.720 (1992), *Information technology – Open Systems Interconnection – Structure of management information: Management information model*.

– CCITT Recommendation X.721 (1992), *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information*.

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

– ITU-T Recommendation X.723 (1993), *Information technology – Open Systems Interconnection – Structure of management information: Generic management information*.

3   Teleservices

3.1   Telefax 4

telefax4 MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.824.0":teleservice;

CHARACTERIZED BY

telefax4Pkg PACKAGE

    BEHAVIOUR

    telefax4Bhv BEHAVIOUR

DEFINED AS "Telefax 4, as defined in F.184 and I.241.3, is an international service enabling subscribers to exchange office correspondence in the form of documents containing facsimile coded information automatically via the ISDN. The Telefax 4 service provides a basic level of compatibility between all terminals participating in the service. It offers bidirectional communication between two users via the ISDN using 64 kbit/s digital signals over the B-channel. The basic element of the correspondence between users is the page which is the smallest unit of text treated as an entity. No restrictions shall exist concerning the operator procedures for generation of the text or the position of the text within the reproducible area.";;

    ATTRIBUTES

        telefaxClass   GET-REPLACE;;;

REGISTERED AS {cAISDNTSObjectClass 1};

3.2   Telephony

telephony MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.824.0":teleservice;

CHARACTERIZED BY

telephonyPkg PACKAGE

    BEHAVIOUR

    telephonyBhv BEHAVIOUR

DEFINED AS "The telephony service provides speech transmission at an audio bandwidth of 3.1 kHz as defined in I.241.1. The communication is bidirectional, with both directions continuously and simultaneously active during the speech phase. The network may use processing techniques appropriate for speech such as analogue transmission, echo cancellation and low bit rate encoding.";;

ATTRIBUTES

    maxNumOfInfoChannels   GET SET-BY-CREATE,
    maxNumOfTotalCalls   GET;;;

REGISTERED AS {cAISDNTSObjectClass 2};

3.3 Teletex

teletex MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.824.0":teleservice;

CHARACTERIZED BY

teletexPkg PACKAGE

    BEHAVIOUR

    teletexBhv BEHAVIOUR

    DEFINED AS "The basic Teletex service, as defined in F.200 and I.241.2, provides communication between equipment, which is used for the preparation, editing and printing of correspondence. A basic level of compatibility is provided between any two Teletex terminal equipments both nationally and internationally so that they may communicate formatted documents composed of character-coded information to each other.";;

    ATTRIBUTES

        teletexMode   GET SET-BY-CREATE;;;

REGISTERED AS {cAISDNTSObjectClass 3};

4 Attribute templates

This clause contains the ASN.1 definitions for all attributes in the described object classes. These definitions identify the function of the attributes and their valid characteristics, such as their valid values, interdependencies, read/write constraints, etc. The attributes are identified by their ASN.1 descriptors.

4.1 Max Number Of Info Channels

maxNumOfInfoChannels ATTRIBUTE

WITH ATTRIBUTE SYNTAX
    CATeleserviceAttributeModule.MaxNumber;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    maxNumOfInfoChannelsBhv BEHAVIOUR

    DEFINED AS "This attribute determines the maximum number of Information channels to be used by the Telephone teleservice as defined in I.241.1.";;
REGISTERED AS {cAISDNTSAttribute 1};

4.2 Max Number Of Total Calls

maxNumOfTotalCalls ATTRIBUTE

WITH ATTRIBUTE SYNTAX
    CATeleserviceAttributeModule.MaxNumber;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    maxNumOfTotalCallsBhv   BEHAVIOUR
    DEFINED AS "This attribute determines the maximum number of simultaneous calls to be used by the Telephone teleservice as defined in I.241.1.";;
REGISTERED AS {cAISDNTSAttribute 2};

4.3   Telefax Class

telefaxClass   ATTRIBUTE

WITH ATTRIBUTE SYNTAX
        CATeleserviceAttributeModule.TelefaxClass;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
        telefaxClassBhv   BEHAVIOUR
        DEFINED AS "The Telefax Class attribute defines the class of telefax teleservice as described in F.184
        and I.241.3.";;
REGISTERED AS {cAISDNTSAttribute 3};

4.4   Teletex Mode

teletexMode   ATTRIBUTE

WITH ATTRIBUTE SYNTAX
        CATeleserviceAttributeModule.TeletexMode;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
        teletexModeBhv   BEHAVIOUR
        DEFINED AS "The teletex mode attribute defines the mode of teletex teleservice as described in F.200
        and I.241.2.";;
REGISTERED AS {cAISDNTSAttribute 4};

5   Name bindings

No new name bindings are defined in this Recommendation. All teleservices currently defined use the name binding defined in Recommendation Q.824.0 for the teleservice super-class. The teleservice class is named in terms of Customer Profile. This name binding is defined for teleservices and its subclasses.

6   Type definitions

CAISDNTSModule {itu-t(0) recommendation(0) q(17) ca(824) dot(127) isdnts(4) informationModel(0) ans1Modules(2) cAISDNTSModule(0)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

-- EXPORTS Everything;

IMPORTS

ObjectInstance, ObjectClass
FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)}

AlarmStatus, Boolean, NameType, ObjectList, Pointer, PointerOrNull
FROM ASN1DefinedTypesModule {ccitt recommendation m(13) gnm(3100)
informationModel(0) asn1Modules(2) asn1DefinedTypesModule(0)}

q824-4InformationModel OBJECT IDENTFIER ::= {itu-t(0) recommendation(0) q(17) ca(824)
dot(127) isdnts(4) informationModel(0)}
cAISDNTSObjectClass OBJECT IDENTIFIER ::= {q824-4InformationModel
managedObjectClass(3)}
cAISDNTSPackage OBJECT IDENTIFIER ::= {q824-4InformationModel package(4)}
cAISDNTSAttribute OBJECT IDENTIFIER ::= {q824-4InformationModel attribute(7)}
cAISDNTSNameBinding OBJECT IDENTIFIER ::= {q824-4InformationModel nameBinding(6)}
cAISDNTSAction OBJECT IDENTIFIER ::= {q824-4InformationModel action(9)}

-- default value definitions --

false Boolean ::= FALSE
true Boolean ::= TRUE
null NULL ::= NULL
one INTEGER ::= 1
zero INTEGER ::= 0
minusOne INTEGER ::= –1
emptySet NULL ::= NULL

-- supporting productions --

DetailedNumber ::= SEQUENCE {

incoming INTEGER,
outgoing INTEGER,
bothWay INTEGER }

MaxNumber ::= CHOICE {

detailed   [1] DetailedNumber,
total   [2] INTEGER }

TelefaxClass ::=

ENUMERATED {   telefaxClassI   (1),
telefaxClassII   (2),
telefaxClassIII (3) }

TeletexMode ::=

BIT STRING {virtualDialogueMode   (1),
processableMode   (2),
mixedMode   (3) }

END *-- Type definitions --*