



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.163

(04/95)

**DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS**

PUBLIC DATA NETWORKS – MAINTENANCE

**DEFINITION OF MANAGEMENT INFORMATION
FOR CUSTOMER NETWORK MANAGEMENT
SERVICE FOR PUBLIC DATA NETWORKS
TO BE USED WITH THE CNMe INTERFACE**

ITU-T Recommendation X.163

(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 X.163 was prepared by ITU-T Study Group 7 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 10th of April 1995.

NOTE

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

© ITU 1996

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS

(February 1994)

ORGANIZATION OF X-SERIES RECOMMENDATIONS

Subject area	Recommendation Series
PUBLIC DATA NETWORKS	
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 SYSTEMS INTERCONNECTION	
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	
General	X.300-X.349
Mobile Data Transmission Systems	X.350-X.369
Management	X.370-X.399
MESSAGE HANDLING SYSTEMS	X.400-X.499
DIRECTORY	X.500-X.599
OSI NETWORKING AND SYSTEM ASPECTS	
Networking	X.600-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
SECURITY	X.800-X.849
OSI APPLICATIONS	
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

CONTENTS

	<i>Page</i>
1 Scope	1
2 References	1
2.1 Identical ITU-T Recommendations International Standards.....	1
2.2 Paired ITU-T Recommendations International Standards equivalent in technical content.....	1
2.3 Additional References	2
3 Definitions.....	2
4 Abbreviations	2
5 Conventions.....	3
6 Overview of Management Information for the CNMe realisation	3
6.1 Management information representation for the CNMe realisation	3
6.2 Information model overview	4
6.3 Information model for the CNMe realisation	4
6.3.1 Information model for Fault Management.....	4
6.3.2 Information model for Configuration Management.....	5
6.3.2.1 Information model for CNM service request	5
6.3.2.2 Information model for CNM ordering service	6
6.3.2.3 Information model for CNM reconfiguration service	8
6.3.2.4 Information model for CNM cancellation service	8
6.3.2.5 Information model for CNM configuration inquiry service.....	8
6.3.3 Information model for Accounting Management.....	8
6.3.4 Information model for Performance Management.....	8
6.3.5 Information model for Security Management.....	8
7 Provision of the CNM Services.....	8
7.1 Management Information definition for Fault Management	8
7.1.1 CNM Alarm Notification Service	8
7.1.1.1 Provision of the CNM Alarm Notification Service.....	8
7.1.2 CNM Fault History Service	8
7.1.2.1 Provision of the CNM Fault History Service	8
7.1.3 CNM Trouble Report Service	9
7.1.3.1 Provision of the Trouble Report Service.....	9
7.2 Management Information definition for Configuration Management	9
7.2.1 CNM Configuration Inquiry Service	9
7.2.1.1 Functions description	9
7.2.1.2 Provision of the CNM Configuration Inquiry Service	9
7.2.2 CNM Reconfiguration Service.....	10
7.2.2.1 Provision of the CNM Reconfiguration Service	10
7.2.3 CNM Ordering Service	10
7.2.3.1 Provision of the CNM Ordering Service.....	10
7.2.4 CNM cancellation Service	10
7.2.4.1 Provision of the CNM Cancellation Service.....	10
7.2.5 CNM Inventory Inquiry Service	10
7.3 Management Information definition for Accounting Management	10
7.3.1 CNM Periodic Billing Service	10
7.3.1.1 Provision of the CNM Periodic Billing Service.....	10
7.3.2 CNM Detailed accounting service	10

7.4	Management Information definition for Performance Management	11
7.4.1	CNM Traffic Information Service	11
7.4.2	CNM Quality of Service Information Service	11
7.4.3	CNM Network statistics service.....	11
7.4.3.1	Provision of the CNM Network statistics	11
7.5	Management Information definition for Security Management	11
7.6	CNM supporting services	11
7.6.1	CNM Service Request service	11
7.6.1.1	Provision of the CNM service Request Service	11
8	The CNMe object definition	12
8.1	Object definition for CNM service request.....	12
8.1.1	Generic Object definition.....	12
8.1.1.1	CUSTOMER definition	12
8.1.1.2	CONTRACT definition.....	12
8.1.1.3	ACTION definition.....	13
8.1.1.4	Contact definition.....	13
8.1.1.5	ServiceOrder definition.....	13
8.1.1.6	Location definition.....	14
8.1.1.7	Equipment definition.....	14
8.1.1.8	Network definition	14
8.1.2	Object definition for X25 access ordering	15
8.1.2.1	X25OrderProfile definition	15
8.1.3	Object definition for X25PVC subscription.....	16
8.1.3.1	X25PvcOrderProfile definition	16
8.1.3.2	CUSTOMER definition	17
8.1.3.3	CONTRACT definition.....	17
8.1.3.4	ACTION definition.....	17
8.1.3.5	CONTACT definition	17
8.2	Object definition for reconfiguration service.....	17
8.3	Object definition for the cancellation service	17
9	EDI Message definition.....	17
9.1	Principles	17
9.2	ORDERS message.....	18
9.2.1	Message structure.....	18
9.2.2	Header section.....	19
9.2.2.1	Structure of the header section.....	19
9.2.2.2	Segment description.....	19
9.2.3	Detail Section.....	28
9.2.3.1	Principles.....	28
9.2.3.2	Detail section – Product group.....	29
9.2.3.3	Detail section – Specific characteristics group	33
9.2.4	Trailer section	37
9.2.4.1	Structure of the trailer section.....	37
9.2.4.2	Segment description.....	37
9.3	ORDRSP message	38
9.3.1	Message profile structure	38
9.3.2	Header section.....	38
9.3.2.1	Structure of the header section.....	38
9.3.2.2	Segment description.....	39
9.3.3	Detail Section.....	45
9.3.3.1	Principles.....	45
9.3.3.2	Detail section – Product group.....	46
9.3.3.3	Detail section: Specific characteristics group	50
9.3.4	Trailer section	53
9.3.4.1	Structure of the trailer section.....	53
9.3.4.2	Segment description.....	53

	<i>Page</i>
10 Conformance for the CNMe interface.....	54
Annex A – Code Lists	54
A.1 Introduction	54
A.2 LIN Line Item Code Lists	54
Annex A – Code Lists	56
B.1 Introduction	56
B.2 Fault Management	56
B.2.1 Alarm Notification (or Fault Event Handling).....	56
B.2.2 Fault History	56
B.2.3 Trouble Report	58
B.2.4 Loop set-up	58
B.2.5 Test host.....	58
B.2.6 Protocol monitoring	58
B.3 Configuration Management.....	59
B.3.1 Configuration inquiry.....	59
B.3.2 Service Reconfiguration.....	59
B.3.3 Ordering Service	59
B.3.3.1 X.25 Ordering	60
B.3.4 Inventory inquiry	60
B.3.5 Systematic call redirection	60
B.4 Accounting Services	60
B.4.1 Periodic billing.....	61
B.4.2 Detailed accounting	61
B.4.3 Quota control	61
B.4.4 Real-time charging information	61
B.5 Performance Management Service	61
B.5.1 Traffic information.....	61
B.5.1.1 Real-time traffic information	61
B.5.1.2 Traffic Statistics Service	61
B.5.2 Quality of Service	61
B.6 Security Management	61
B.6.1 Password change	61
B.6.2 Access rights	61
B.7 Service Inquiry Service.....	61
B.7.1 Identification.....	63

SUMMARY

This Recommendation defines the management information which may be provided to a customer and collectively described as Customer Network Management (CNM) via the CNMe (EDI/MHS) interface. CNM is a service which provides customers with the ability to access (and in some cases modify) management information relating to the services provided to them by the network.

This Recommendation is, in particular, concerned with the definition of information for CNM such as EDI message format.

DEFINITION OF MANAGEMENT INFORMATION FOR CUSTOMER NETWORK MANAGEMENT SERVICE FOR PUBLIC DATA NETWORKS TO BE USED WITH THE CNMe INTERFACE

(Geneva, 1995)

1 Scope

This Recommendation defines the management information for CNM as EDI forms for the CNM services specified in Recommendation X.161 (this is defined in Recommendation X.160 as the CNMe interface). It corresponds to Recommendation X.162, which specifies the format for management information to be used with the OSI Management realisation of CNM (the CNMc interface). Where possible, reference is made to other Recommendations which define management information. The relationship of this Recommendation to other Recommendations for CNM is presented in the Recommendation X.160.

A CNM service may require a contractual interaction between the customer and the service provider. As EDI is widely used in some countries as a legally recognised means of supporting contractual interaction between various organisations, this Recommendation specifies the use of EDI for CNM services.

This Recommendation is applicable to provision of the CNM Service in the Public Data Network (PDN) environment. In future, this may extend to other network technologies. The specification contained in this Recommendation is written such that it may be developed to be generic to all network technologies where the requirement for CNM is identified.

NOTE – Currently, this Recommendation only considers the definition of management information for X.25 packet-mode access to PSPDN's.

It is recognised that other types of access to PSPDN's exist; PAD's, X.32 (dial-up X.25), and other networks, i.e. ISDN, and CSPDN. The definition of Management information specifically related to each of these is for further study. Some subclauses within the current version of this Recommendation are, however, generic to all access types and networks.

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 ITU-T 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 currently valid ITU-T Recommendations is regularly published.

2.1 Identical ITU-T Recommendations | International Standards

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

2.2 Paired ITU-T Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.411 (1992), *Message handling systems – Message transfer systems: Abstract service definition and procedures*.

ISO/ICE 10021-4:1990, *Information technology – Text Communication – Message-Oriented Text Interchange Systems (MOTIS) – Part 4: Message Transfer System: Abstract Service Definition and Procedures*.

2.3 Additional References

- CCITT Recommendation M.3010 (1992), *Principles for a telecommunications management network*.
- CCITT Recommendation M.3020 (1992), *TMN interface specification methodology*.
- CCITT Recommendation F.400/X.400 (1992), *Message handling services: message handling system and service overview*.
- ISO 9735:1988, *Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT) – Application level syntax rules*.
- ITU-T Recommendation X.160 (1994), *Architecture for customer network management service for public data networks*.
- ITU-T Recommendation X.161 (1995), *Definition of customer network management services for public data networks*.

3 Definitions

This Recommendation makes use of the following terms defined in Recommendation X.160:

- CNMc;
- CNMe;
- Customer's Management System; and
- Service Provider's CNM System.

4 Abbreviations

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

CMIP	Common Management Information Protocol
CNM	Customer Network Management
CNMc	Customer Network Management using CMIP
CNMe	Customer Network Management using EDI/MHS
CSPDN	Circuit Switched Public Data Network
CUG	Closed User Group
DCE	Data Circuit Equipment
DNIC	Data Network Identification Code
DTE	Data Terminating Equipment
EDI	Electronic Data Interchange
EFD	Event Forwarding Discriminator
HG	Hunt Group
ISDN	Integrated Services Digital Network
MHS	Message Handling System
NUI	Network-User Interface
OSI	Open Systems Interconnection
PAD	Packet Assembler/Disassembler
PDN	Public Data Network
PSPDN	Packet Switched Public Data Network
RDN	Relative Distinguished Name
ROA	Recognised Operating Agency

UN	United Nations
UN/ECE	United Nations Economic Commission for Europe
UNSM	United Nations Standard Message

5 Conventions

The following conventions apply to the tables contained in this Recommendation:

M	Mandatory
O	Optional
–	Not defined
N/A	Not applicable
FS	Further study

The following conventions apply to the tables for the EDI forms contained in this Recommendation:

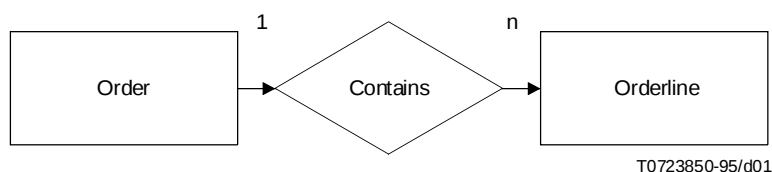
M	Mandatory
C	Customer
–	Not defined
N/A	Not applicable
FS	Further study

The tables for the EDI forms contained in this Recommendation follow the conventions for EDIFACT as defined in ISO 9735.

The entity-relationship figures contained in this Recommendation use the following conventions:

- A rectangle denotes objects or entities.
- A diamond denotes a relationship between two or more objects.
- Arrows indicate the objects that are linked by a relationship and the direction of the relationship. The numbers associated with the arrow lines indicate the cardinality, that is the number of instances of that relationship permitted. An arbitrary non-negative integer number is denoted by “n”.

For example:



indicates that an order (entity “order”) contains one or more order lines. It also indicates that an order line is associated with one, and only one, order.

6 Overview of Management Information for the CNMe realisation

This Recommendation defines a realisation of the CNM Service specified in Recommendation X.163 using sequences of generic management information structured as EDI messages. This Recommendation references other CNM Architecture and Service related Recommendations, i.e. X.160 and X.161. For providing the services, the generic definition in this Recommendation is to be used, and may be extended or refined by adding specific properties in some cases, e.g. for extended services.

6.1 Management information representation for the CNMe realisation

In the CNMe context, the management information modelling the service or the resource is exchanged via CNMe messages. UN/EDIFACT provides a range of standard messages. Profiles of UN/EDIFACT messages to support the exchange of CNM information are specified in the clause 9.

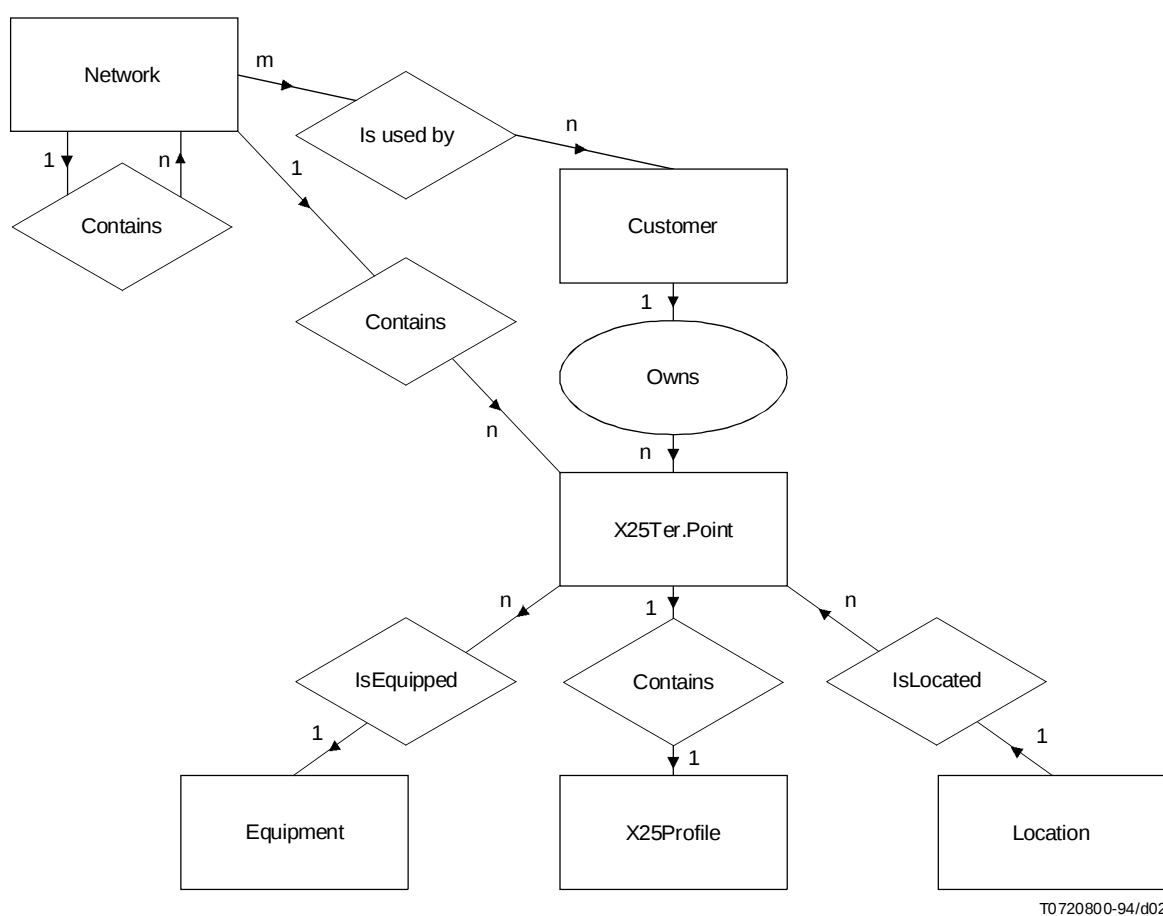
The management information is exchanged via EDI messages (CNM message) over MHS. For the time being only the CNMe messages for the CNM Service Request are defined.

As an example, a CNMe message may be sent by the customer to request a new X.25 access line (see CNM service request description), to modify subscription parameters (see service reconfiguration description), or to request configuration information (see configuration inquiry service). A CNMe message may be returned by the CNM service provider (e.g. in order to inform the availability of a requested X.25 access).

6.2 Information model overview

This subclause describes general information model used in the CNMe framework. It is important to notice that this model is compatible with the CNMc Information model specified in Recommendation X.162. The description uses an Entity relationship formalism, as also used in Recommendation M.3010 (see also clause 5 – Conventions).

For the purpose of simplification, Figure 1 only takes into account the X25TerminationPoint resource (for X.25 access representation).



T0720800-94/d02

FIGURE 1/X.163

Entity-relationship model applicable to X.25 access

6.3 Information model for the CNMe realisation

The following subclauses describe the CNM Management information model to be used to provide CNM services across the CNMe interface.

6.3.1 Information model for Fault Management

This CNM Information model is for further study.

6.3.2 Information model for Configuration Management

6.3.2.1 Information model for CNM service request

The aim of the information models described below is to describe the information base that should manage both customer's and provider's systems. The encircled parts of the schemes describe the information that must be included in the ORDERS (or ORDERS) EDIFACT messages.

The information model for CNM request service is based on two new objects:

CONTRACT: Every subscription, reconfiguration, cancellation is based on this object which describes the contractual aspect of the action.

SERVICE ORDER: The ServiceOrder object materialises the action of ordering a service in the information model. It is managed both by the provider's management system and the customer management system.

The general information model for CNM Service Request is summarised in Figure 2.

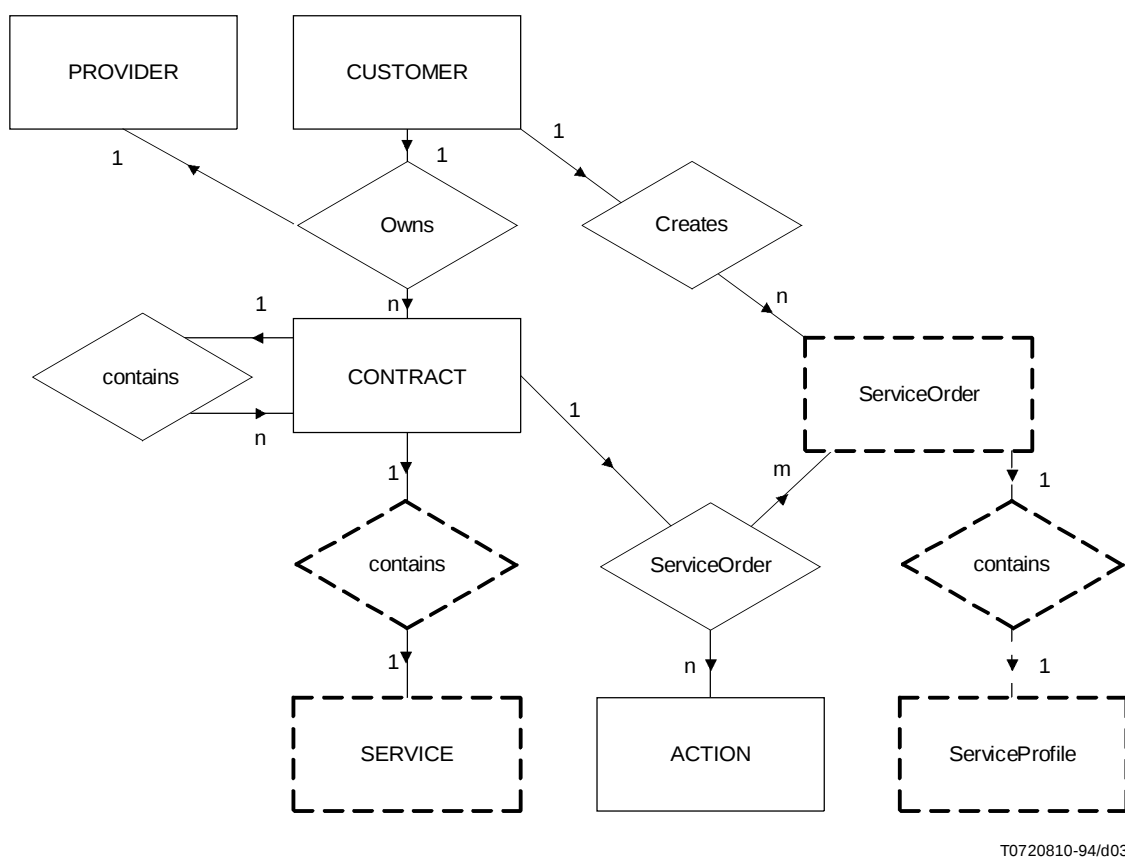


FIGURE 2/X.163

General Entity-relationship model for CNM Request service

The information to be included in the profile of the ORDERS EDIFACT message is shown in dotted outline.

The **CONTRACT** Object identifies one contract between the customer and the provider. It may be hierarchically organised. This link is represented by the contains relationship.

The **PROVIDER** object identifies the service provider to which the order is sent.

An **ACTION** may be a creation (i.e. the subscription of a new service), a modification (i.e. the reconfiguration of a service), a deletion (i.e. the cancellation of a service).

The **ServiceOrder** Object is a generic object which contains the general parameters of service order. These parameters are used to create or modify the associated SERVICE objects or its related objects (depending on the type of service).

The **ServiceProfile** Object is a generic object from which specific object should be derived to specify the information related to a specific service, such as a X25 access or a X25 PVC.

The SERVICE object is a generic object representing a service which has been previously subscribed and which administrative state is operational. All the real SERVICE objects are derived from this generic object.

The SERVICE object and the related object are created (modified or deleted) if and only if the parameters of the related Service Order are accepted by both parties.

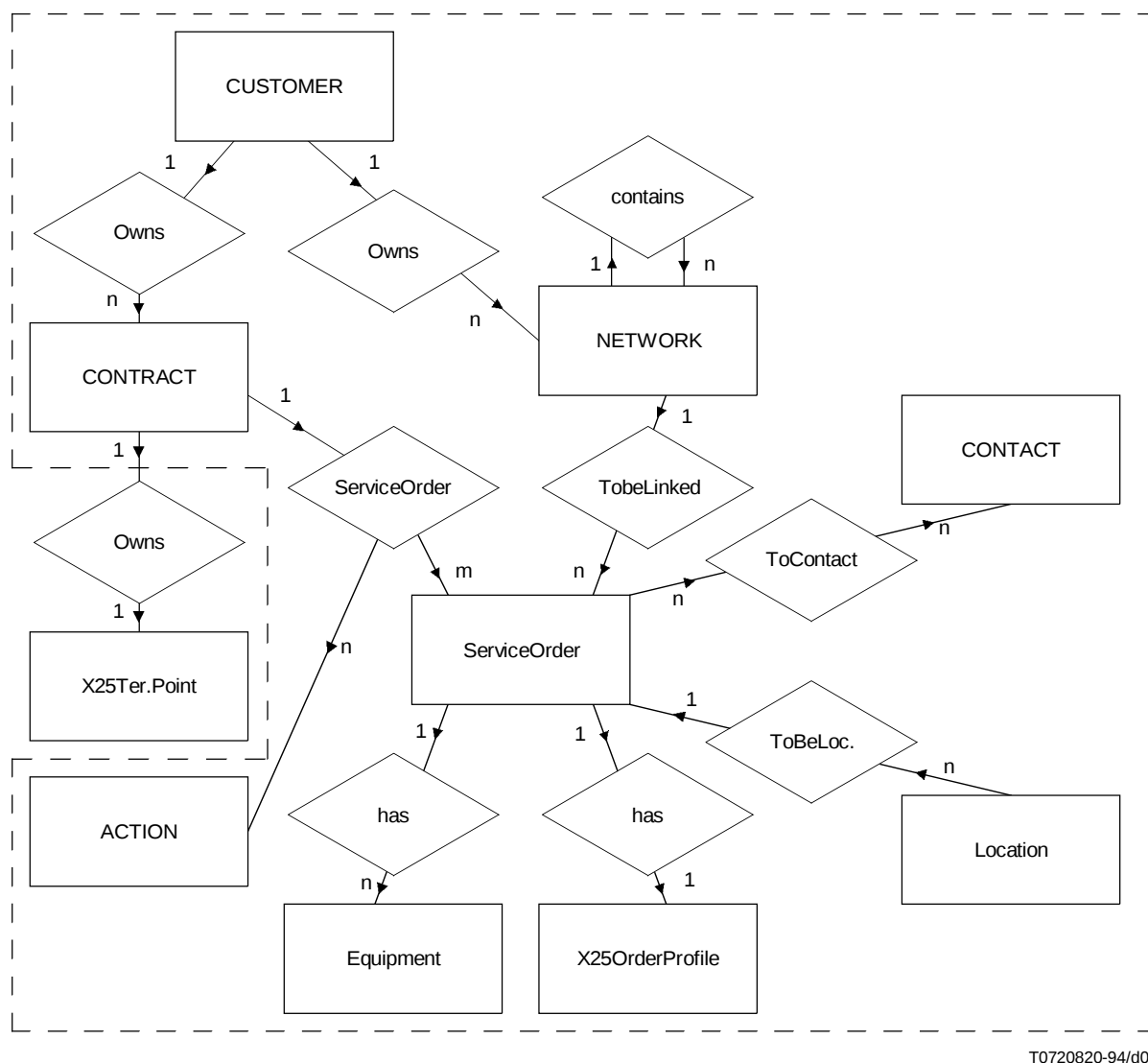
6.3.2.2 Information model for CNM ordering service

In the following subclauses, only the SERVICE and ServiceOrder objects for the different services are described.

6.3.2.2.1 X.25 access subscription

For a X25 access, the object derived from the SERVICE object is the X25TerminationPoint, as specified in the CNMc framework.

Figure 3 describes the X25Order and the related objects, derived from the ServiceOrder object.



T0720820-94/d04

FIGURE 3/X.163

Entity-relationship model for X25 Access Subscription

The **ServiceOrder** is the object describing the order of a X25TerminationPoint and the related objects (Equipment, Location, X25ServiceProfile).

The **X25OrderProfile** describes the technical parameters related to the X25 access. The parameters will be used to create the X25TerminationPoint Object, when the order is accepted by both parties.

The relationship between ServiceOrder and EQUIPMENT allows the customer to specify the equipment he wants to be installed for the X25TerminationPoint.

The relationship between ServiceOrder and LOCATION allows the customer to indicate the location where he wants the X25 access to be located.

The relationship between ServiceOrder and X25OrderProfile allows the customer to specify the X25 parameters related to the ordered X25 access.

The relationship **ToContact** allows the customer to specify one, or more, persons the provider may contact, for different purpose (commercial issues, installation issues or technical issues).

The relationship **ToBeLinked** allows the customer to indicate the element of NETWORK inside the hierarchy of the NETWORK, to which he wants the ordered X25 access to be attached.

6.3.2.2.2 X.25 PVC subscription

The Information model for X.25 PVC subscription is described in Figure 4.

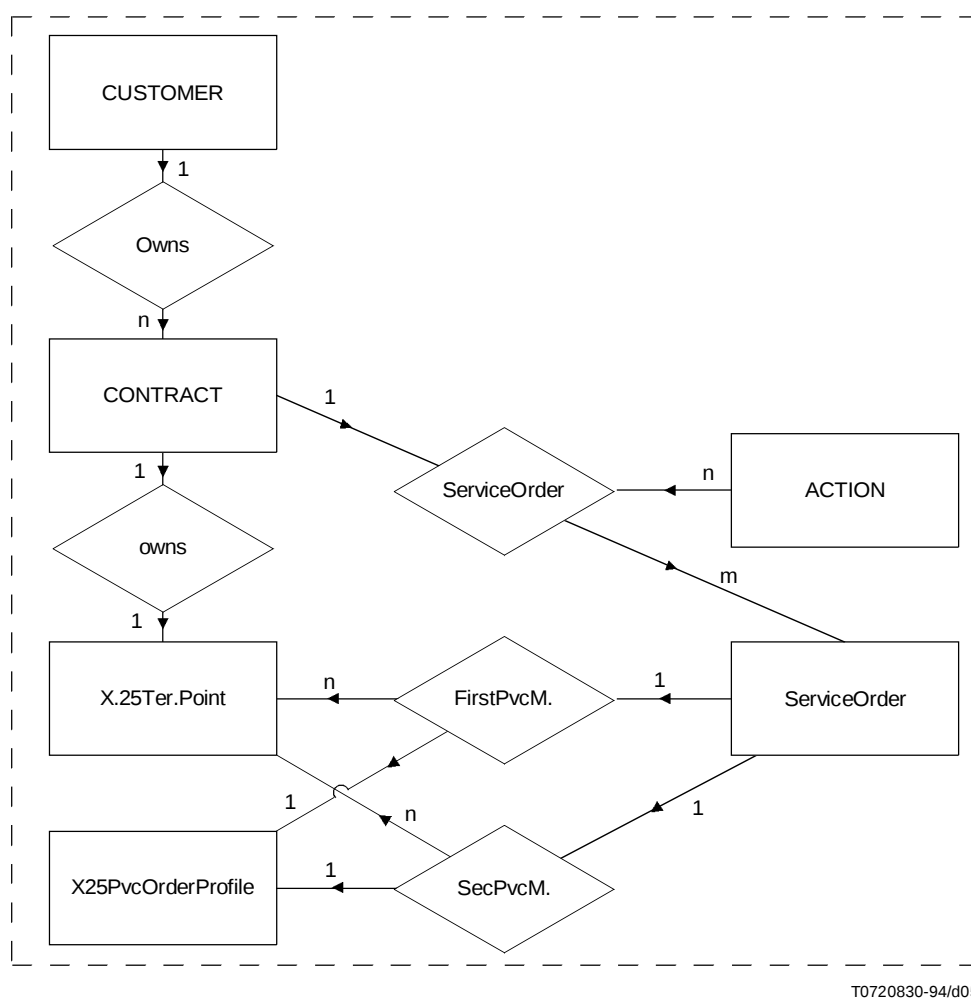


FIGURE 4/X.163
Entity-relationship model for X25 PVC Subscription

Description of the objects and relationships:

The **ServiceOrder** describes the order for a X.25 PVC.

The **X25PvcOrderProfile** describes the technical parameters of the PVC for each size of the PVC. These parameters will be used to create the X25PvcProfile when the order is accepted by both parties (i.e. customer and provider). The parameters might be different for each X.25 Termination Point depending on the parameters of the X25Profile object associated with the X25TerminationPoint Object.

The **FirstPvcM.** relationship permits the specification the first of the two X25TerminationPoint linked by the PVC and the related parameters specified in the X25PvcOrderProfile Object.

The **SecondPvcM.** relationship describes the second of the two X25TerminationPoint linked by the PVC and the related parameters specified in the X25PvcOrderProfile Object.

6.3.2.3 Information model for CNM reconfiguration service

The information models for CNM reconfiguration are identical to the information models for CNM service request service.

6.3.2.4 Information model for CNM cancellation service

The information models for CNM cancellation are identical to the information models for CNM service request service.

6.3.2.5 Information model for CNM configuration inquiry service

The information model for CNM configuration inquiry is for further study.

6.3.3 Information model for Accounting Management

This CNM Information model is for further study.

6.3.4 Information model for Performance Management

This CNM Information model is for further study.

6.3.5 Information model for Security Management

This CNM Information model is for further study.

7 Provision of the CNM Services

7.1 Management Information definition for Fault Management

7.1.1 CNM Alarm Notification Service

7.1.1.1 Provision of the CNM Alarm Notification Service

The condition alarm and state change reporting service may be provided across the CNMe interface.

This service may be provided using the service request service, across the CNMe interface, defined in this Recommendation.

Modification of alarm reporting criteria may only be done by agreement between the customer and the service provider.

This service is for further study.

7.1.2 CNM Fault History Service

7.1.2.1 Provision of the CNM Fault History Service

This service may be provided in a synchronous or an asynchronous mode:

- *Asynchronous mode* – By using the information request service described further in this Recommendation: the customer transmits via EDI/MHS a message containing the parameters of the request. The service provider's system answers by transmitting an EDIFACT message, via EDI/MHS, to the customer.

- *Synchronous mode* – The service provider's system periodically transmits to the customer a set of EDIFACT messages containing the required information .

The customer may select the objects (X25 access or PVC) and the type of information he wants to get by specifying selection criteria, either in the request message, or by agreement with the service provider.

This service is for further study.

7.1.3 CNM Trouble Report Service

7.1.3.1 Provision of the Trouble Report Service

The provision of the Trouble Report Service across the CNMe interface is for further study.

7.2 Management Information definition for Configuration Management

7.2.1 CNM Configuration Inquiry Service

The CNM Configuration Inquiry Service provides a customer with the capability to acquire and maintain information about the telecommunications services and equipment supplied by the service provider.

The information includes:

- tracking network services and equipment supplied by the service provider, allowing the customer to identify the location, and responsible person(s);
- subscription parameters for these network services and equipment;
- attachment of customer organisational information to services and equipment;
- contract number;
- telephone number;
- facsimile number; and
- contact details.

The provision of the CNM Configuration Inquiry Service via the CNMe interface is described in Table 2.

7.2.1.1 Functions description

The following functions are associated with the configuration inquiry service, some of them are optional:

a) *Full configuration inquiry*

The Customer's Management System acquires all the information needed for having a complete view of the network services that are managed.

b) *Partial configuration inquiry*

The Customer's Management System selectively acquires (a) specific part(s) of the configuration information.

c) *Configuration update*

The provider's management system automatically informs the customer's management system of a spontaneous change in the configuration. For example when a new interface has been installed.

7.2.1.2 Provision of the CNM Configuration Inquiry Service

Full inquiry and partial inquiry services may be provided using the **information request service** which is for further study.

For automatic configuration update, the service provider's system transmits to the customer the updated configuration of one or more objects that have been modified either by customer action or by the service provider, itself.

7.2.2 CNM Reconfiguration Service

The CNM Reconfiguration Service provides a customer with the capability to modify parameters associated with configurable aspects of their network services. Service reconfiguration may take effect immediately as a result of direct action by the customer or on a delayed basis as a result of actions by the service provider. In both cases security mechanisms may be implemented by the service provider.

7.2.2.1 Provision of the CNM Reconfiguration Service

The CNM Reconfiguration Service uses the CNM request service across the CNMe interface defined in this Recommendation. The CNM message used is a subset of the ORDERS message version 92.1 as registered by the UN/ECE.

7.2.3 CNM Ordering Service

CNM Ordering Service provides a customer with the capability to request and manage orders with the service provider. Capabilities include:

- creating service orders with scheduling requirements;
- receiving provisioning status;
- amending service orders (where appropriate);
- attaching customer reference information; and
- creating, modifying and deleting PVCs.

The CNM Ordering Service is provided via the CNM service request. The CNM message used is a subset of the ORDERS message version 92.1 as registered by the UN/ECE.

The CNM Ordering Service may take effect immediately as a result of direct action by the customer or on a delayed basis as a result of actions by the service provider. In both cases security may be implemented by the service provider.

7.2.3.1 Provision of the CNM Ordering Service

The EDI forms to be used for this service are specified in this Recommendation. A customer may also attach customer reference information to all the subscribed services.

The CNM Ordering Service uses the CNM service request defined in this Recommendation.

7.2.4 CNM Cancellation Service

The CNM Cancellation Service is provided via the CNM service request. The CNM message used is a subset of the ORDERS message version 92.1 as registered by the UN/ECE.

7.2.4.1 Provision of the CNM Cancellation Service

The CNM Cancellation Service uses the CNM service request defined in this Recommendation.

7.2.5 CNM Inventory Inquiry Service

This CNM service is for further study.

7.3 Management Information definition for Accounting Management

7.3.1 CNM Periodic Billing Service

This CNM service is for further study.

7.3.1.1 Provision of the CNM Periodic Billing Service

The provision of this CNM service across the CNMe interface is for further study.

7.3.2 CNM Detailed accounting service

This CNM service is for further study.

7.4 Management Information definition for Performance Management

7.4.1 CNM Traffic Information Service

This CNM service is for further study.

7.4.2 CNM Quality of Service Information Service

This CNM service is for further study.

7.4.3 CNM Network statistics service

7.4.3.1 Provision of the CNM Network statistics

The provider's management system sends periodically on or more EDIFACT messages containing the aggregated information. The period between two sending may be defined by contract.

The information may contain:

- exchanges (volume, duration, number of calls) per caller/called couple, inside the network;
- volume and duration sent and received by each access;
- engagement in number of logical channel set-up per connection;
- engagement in number of virtual circuit set-up per caller/called couple.
- etc.

This CNM service is for further study.

7.5 Management Information definition for Security Management

These CNM services are for further study.

7.6 CNM supporting services

7.6.1 CNM Service Request service

7.6.1.1 Provision of the CNM Service Request Service

This Recommendation defines EDI forms to be used for provision of this service across the CNMe interface.

In the CNMe framework, CNM Service Request may be used in every case where a contractual information exchange is needed. The financial aspect of this contractual exchange is outside the scope of this Recommendation.

The CNM Service Request service in the CNMe framework is functionally similar to the Service Request service in the CNMc framework.

Elements of procedure are specified hereafter:

a) Initiation of a service request

The Customer's management system create a ORDERS EDIFACT message and send it to the provider's management system via MHS.

In response, provider's management system creates an acknowledgement EDIFACT message which indicates whether the ORDERS EDIFACT message is correct or not:

- A negative acknowledgement indicates that the ORDERS message is syntactically incorrect. The service order procedure is abandoned.
- A positive acknowledgement indicates that the ORDERS message is syntactically correct and is being processed. This indicates that the service request was taken into account in the provider's management system.

b) *Negotiation of a service request*

After the initiation stage, the provider's management system creates and then transmits, via MHS, an ORDRSP EDIFACT message, which is the response to the ORDERS message. It may indicate:

- An **acceptance** of all the order's parameters.
- A **modification proposal** of the former order's parameters.
- A **refusal of the order** – The reasons may be linked to contractual problems or to technical problems.

In both cases, the customer's management system has to transmit and acknowledge the message which indicates whether the ORDRSP EDIFACT message is correct or not:

- a negative acknowledgement (CONTRL) indicates that the ORDRSP message is syntactically incorrect;
- a positive acknowledgement (ORDRSP) indicates that the orders message is syntactically correct and that the ORDRSP message is taken in account.

If the ORDRSP includes a modification proposal of the order's parameters, the customer management system may execute one of the following actions:

- **Accept** the modification proposal by sending an ORDRSP EDIFACT message which contains the ORDRSP parameters and the acceptance and mentions the related former ORDERS.
- **Refuse** the modification proposal – In this case the service order will not be completed.
- Propose some modifications to the parameters contained in the ORDRSP message.

The process may be iterated.

c) *Processing indication*

This element of service is for further study.

d) *Service order deletion*

The customer's management system send an ORDERS message which indicates that the related former order is cancelled.

8 The CNMe object definition

8.1 Object definition for CNM service request

8.1.1 Generic Object definition

8.1.1.1 CUSTOMER definition

The attributes of the CUSTOMER object are described in the Table 1.

TABLE 1/X.163
Customer attributes

Attribute name	Description	Status	Notes
Customer's Identifier	Number uniquely identifying the Customer	M	(Note)
Name	Name of the customer	C	
Postal address	Postal address of the customer	C	
NOTE – It might be the EAN identifier or an identifier provided by the provider.			

8.1.1.2 CONTRACT definition

See Table 2.

TABLE 2/X.163

Contract attributes

Attribute name	Description	Status	Notes
Contract identification	Unique identification of the contract. This identification may be given by the service provider	M	(Note)
NOTE – There may be many contract identifications, depending of the contractual policy of the service provider. This recursive organisation is described by the IsOrganised relationship.			

8.1.1.3 ACTION definition

See Table 3.

TABLE 3/X.163

Action attributes

Attribute name	Description	Status	Notes
TypeOfAction	Describes the type of order: – subscription – reconfiguration – cancellation	M	

8.1.1.4 Contact definition

See Table 4.

TABLE 4/X.163

Contact attributes

Attribute name	Description	Status	Notes
ContactName	Name of the contact	M	(1)
Type of contact	To describe the type of responsibility of the contact: commercial issues, technical issues, etc.	C	(2)
TelephoneNumber	Telephone number of the person or service to be contacted	C	(3)
FaxNumber	Fax number of the person or service to be contacted	C	(3)
TelexNumber	Telex number of the person or service to be contacted	C	(3)
NOTES 1 It may be the name of a person or of a service. 2 If this attribute is not specified, that indicates that the contact is responsible for each type of issue. 3 At least one of these three attributes should be specified.			

8.1.1.5 ServiceOrder definition

See Table 5.

TABLE 5/X.163

ServiceOrder attributes

Attribute name	Description	Status	Notes
OrderIdentification	This number uniquely identifies a given order	M	
RelatedOrderIdentification	Order identification of the initial order, in case of negotiation procedure	C	(Note)
DateOfOrder	Date and time when the order was created	M	
DeliveryRequiredDate	Date and time of required delivery of the service	M	
TypeOfServiceOrdered	Identifies the type of service that is ordered	M	
NOTE – This parameter is mandatory, when the current order is not the first of the negotiation procedure.			

8.1.1.6 Location definition

See Table 6.

TABLE 6/X.163

Location definition

Attribute name	Description	Status	Notes
Location name	Name of the location	M	
Address	Address of the site of location	M	

8.1.1.7 Equipment definition

See Table 7.

TABLE 7/X.163

Equipment definition

Attribute name	Description	Status	Notes
EquipmentName	Name of the equipment	M	(Note)
EquipmentProviderName	Name of the provider of the equipment	C	(Note)
NOTE – This object may be absent depending on the provider's commercial policy. The customer may not have the choice of the equipment.			

8.1.1.8 Network definition

See Table 8.

TABLE 8/X.163

Network definition

Attribute name	Description	Status	Notes
Network Identifier	Identifies the Network Object to which the service is assigned	M	(Note)
NOTE – This identifier may be the RDN of the Network object.			

8.1.2 Object definition for X25 access ordering

8.1.2.1 X25OrderProfile definition

See Tables 9 and 10.

TABLE 9/X.163

X25OrderProfile definition

Attribute Name	Description	Status	Notes
Data rate	Maximum speed of the modem	M	
Type of interface	X.21, V.24, V.35, etc.	M	
Single Link Procedure		C	
Parameter T1	Parameter T1 as defined in X.25	M	
Parameter T2	Parameter T2 as defined in X.25	M	
Parameter T3	Parameter T3 as defined in X.25	M	
Parameter N2	Parameter N2 as defined in X.25	M	
k parameter	k parameter as defined in X.25	M	
Multiple Link Procedure parameters		C	
Number of SLP		M	
Parameter MT1	Lost Frame Timer MT1 as defined in X.25	M	
Parameter MT2	Group busy Timer MT2 as defined in X.25	M	
Parameter MT3	MLP Reset confirmation Timer MT3 as defined in X.25	M	
Packet sizes:	Default Packet sizes	C	
<i>Incoming</i>	Non-standard default packet sizes	M	
<i>Outgoing</i>	Non-standard default packet sizes	M	
Window sizes:	Default Window sizes	C	
<i>Incoming</i>	Non-standard default Window sizes	M	
<i>Outgoing</i>	Non-standard default Window sizes	M	
Throughput Classes:	Throughput classes assignment	C	
<i>Incoming</i>	Non-standard default throughput classes assignment	M	
<i>Outgoing</i>	Non-standard default throughput classes assignment	M	
Logical channel assignments:		C	
PVC	Permanent Virtual Circuit		
<i>Incoming</i>	One-way channel incoming		
two ways	Two-ways channel		
<i>Outgoing</i>	One way channel outgoing		
Protocol version supported	Possible values: X.25 Version 80 X.25 Version 84 X.25 Version 88 X.25 Version 93	M	
Fast select acceptance	Fast select acceptance: Indicates if this service is requested	C	
Flow control parameters negotiation	Flow control parameters negotiation: indicates if this service is requested	C	
Reverse charging acceptance	Indicates if this service is requested	C	
Throughput class negotiation	Indicates if this service is requested	C	

TABLE 10/X.163

X25OrderProfile definition

Attribute Name	Description	Status	Notes
Call deflection	Call deflection / Call deflection selection: indicates if this service is requested	C	
Call redirection <i>Alternate DTE addresses</i> <i>Conditions of redirection</i>	Indicates if this service is requested X.121 DTE addresses to which the DCE may redirect the call Indicates the conditions where DCE is to activate this service	C	
Call Deflection	Indicates if this service is requested	C	
NUI Subscription	The definition of information to be transmitted is for further study	C	
ROA subscription <i>List of ROA DNIC to be possibly used</i>	ROA subscription ROA selection The definition of information to be transmitted is for further study	C	

8.1.3 Object definition for X25PVC subscription**8.1.3.1 X25PvcOrderProfile definition**

See Table 11.

TABLE 11/X.163

X25PvcOrderProfile definition

Attribute names	Description	Status	Notes
ChargingDirection	Charging direction	M	
logicalChannel	Logical channel assigned to the PVC	M	
packetSize	Packet size	M	
throughputClass	Throughput class on the PVC	M	
virtualcircuitId	Identification of the virtual circuit assigned to the PVC	M	
windowsSize	Window size on the PVC	M	

8.1.3.2 CUSTOMER definition

The description of the CUSTOMER object is given in 8.1.1.1.

8.1.3.3 CONTRACT definition

The description of the CONTRACT object is given in 8.1.1.2.

8.1.3.4 ACTION definition

The description of the ACTION object is given in 8.1.1.3.

8.1.3.5 CONTACT definition

The description of the CONTACT object is given in 8.1.1.4.

8.2 Object definition for reconfiguration service

The object definitions for reconfiguration service are identical to the objects definitions for service subscription service.

8.3 Object definition for the cancellation service

The object definitions for CNM cancellation service are identical to the objects definitions for service subscription service.

9 EDI Message definition

For the time being, CNMe messages in the CNMe context are only defined for the configuration inquiry and the CNM service request for the X.25 service.

This clause define the management information (in the CNMe context: the message) modelling a X.25 access service. This CNMe message is a subset of the ORDERS message version 92.1 as registered by the UN.

9.1 Principles

The ORDERS message and the ORDRSP message are divided in three sections:

- *The header section* – This section contains the generic information of the order, that is to say which are independent of kind of ordered service.
- *The detail section* – This section contains the information which depends on the kind of ordered services. This section is defined for each type of service (X25 access, X.25 PVC, etc.).
- *The trailer section* – This section is a control section and contains information related to the message structure and, optionally to the global monetary amount of the order.

One ORDERS message may contain one or more service subscription, reconfiguration or cancellation. The ORDRSP message, used by the service provider's system, has the same characteristics.

9.2 ORDERS message

9.2.1 Message structure

See Figure 5.

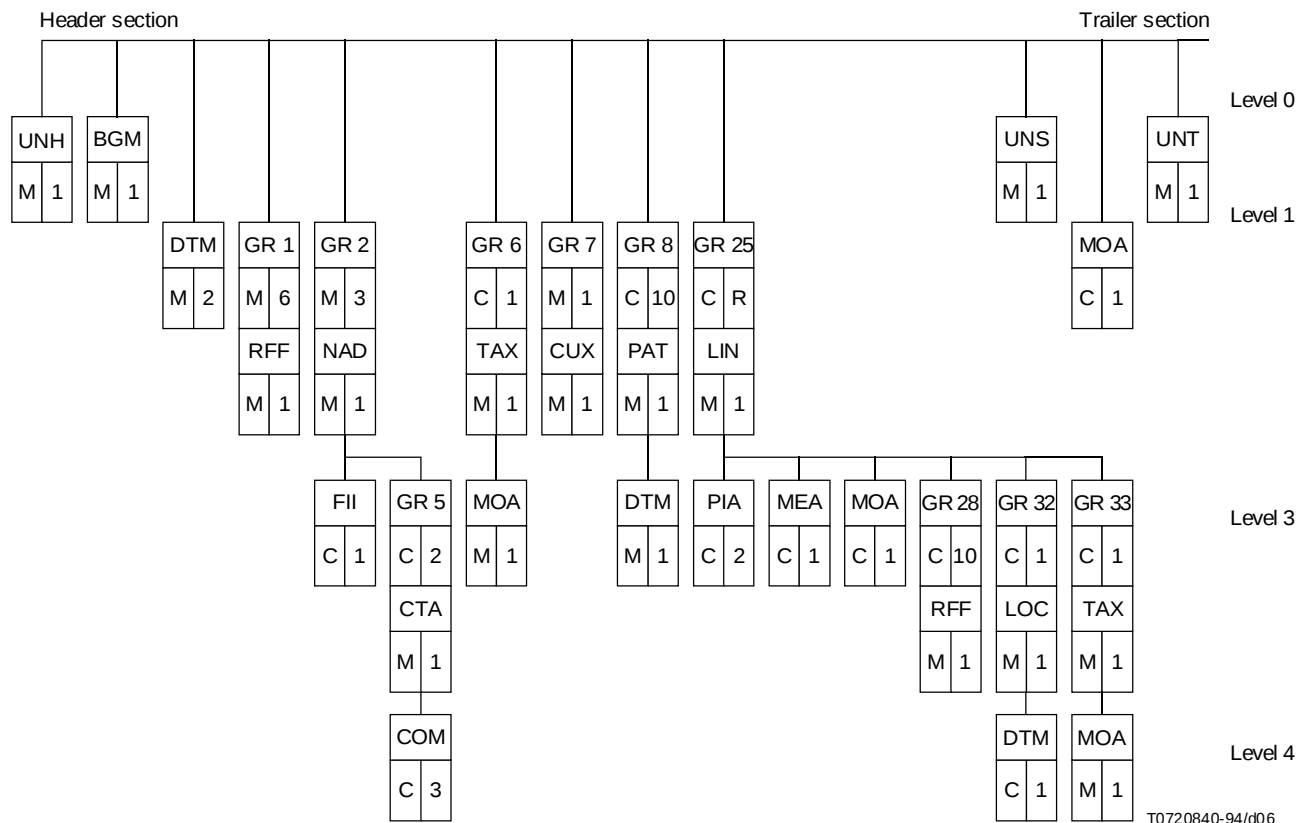


FIGURE 5/X.163
ORDERS message structure

9.2.2 Header section

9.2.2.1 Structure of the header section

HEADER SECTION	
UNH	Identification of EDIFACT message
BGM	Identifies the beginning of the message and provides with the order's number
DTM	Date of order's creation Date of delivery as required
RFF	Identification of the contract and the relevant documents like the previous order's number
NAD	Name and address of the buyer, the provider and the delivery place if required
FII	For the buyer (i.e. the customer), to identify a Bank account number and the related financial institution
CTA	To give the name of person or department to whom communication should be directed, inside the buyer's organisation
COM	To give communication numbers of the person whom communication should be directed
CUX	To specify the currency used in the transaction
PAT	To specify the date/time basis and relevant amount for payment

9.2.2.2 Segment description

See Tables 12 and 13.

TABLE 12/X.163

ORDERS Message header

UNH Message header		M	1			
Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
0062	MESSAGE REFERENCE NUMBER	M	an..14	M	an..14	
S009	MESSAGE IDENTIFIER	M		M		
0065	Message type identifier	M	an..6	M	an..6	= ORDERS
0052	Message type version number	M	an..3	M	an..3	= 1
0054	Message type release number	M	an..3	M	an..3	= 921
0051	Controlling agency	M	an..2	M	an..2	= UN
0057	Association assigned code	C	an..6	N		
0068	COMMON ACCESS REFERENCE	C		N		
S010	STATUS OF TRANSFER	C		C		
0070	Sequence message transfer number	M	n...2	M	n...2	
0073	First/last sequence message transfer	C	a1	C	a1	

TABLE 13/X.163
ORDERS Message body

BGM Beginning of message

M

1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C002	DOCUMENT/MESSAGE NAME	C			C	
1001	Document/message name, coded	C	an..3	C	an..3	= 220
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	= UN/ECE
1000	Document/message name	C	an..35	M	an..35	
1004	DOCUMENT/MESSAGE NUMBER	C	an..35	C	an..35	
1225	MESSAGE FUNCTION, CODED	C	an..3	N		(Note) 1 = Cancellation 4 = Change 9 = Original initial transmission of a service order 29 = Accepted without amendment 30 = Accepted with amendment in the detail section
4343	RESPONSE TYPE, CODED	C	an..2	N		
NOTE – The different values should be used as follows: 9: for a service order; 4: for service reconfiguration; 1: for a service cancellation. Other values: for the case of a negotiation procedure.						

DTM Date/time/period	M	2
----------------------	---	---

Function: To give the date/time of ordering

To give the requested date time of delivery

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	137 = Document/message date – time 4 = Order date/time 2 = Requested delivery date/time
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	= 101 (YYMMDD)

SEGMENT GROUP 1	M	6
-----------------	---	---

GRP N 1	RFF REFERENCE	M	1
---------	---------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C506	REFERENCE	M		M		
1153	Reference qualifier	M	an..3	M	an..3	CT Contract Number ON Order Number ACW Reference of a previous Message BC Buyer's Contract Number OP Original Purchase Order: reference to the first order of the transaction POR Purchase Order Response Number
1154	Reference number	C	an..35	C	an..35	
1156	Line number	C	an..6	N		
4000	Reference version number	C	an..35	N		

SEGMENT GROUP 2		M	2
GRP N 2	NAD NAME AND ADDRESS	M	1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3035	PARTY QUALIFIER	M	an..3	M	an..3	BY Buyer SE Seller (service provider) DP Delivery Place
C082	PARTY IDENTIFICATION DETAILS	C				
3039	Party id identification	M	an..17	M	an..17	Customer's number (Note 1)
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	UNSM code of the agency
C058	NAME AND ADDRESS	C				
3124	Name and address line	M	an..35	M	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
C080	PARTY NAME	C				(Note 2)
3036	Party name	M	an..35	M	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
C059	STREET	C	an..35	C	an..35	
3042	Street and number/PO. Box	M	an..35	M	an..35	
3042	Street and number/PO. Box	C	an..35	C	an..35	
3042	Street and number/PO. Box	C	an..35	C	an..35	
3164	CITY NAME	C	an..35	C	an..35	
3229	COUNTRY SUB-ENTITY IDENTIFICATION	C	an..9	C	an..9	
3251	POSTCODE IDENTIFICATION	C	an..8	C	an..8	
3207	COUNTRY, CODED	C	an..3	C	an..3	

NOTES

- Depending on the legal policy in force, this number may be:
 - a number provided by a government agency (e.g.: SIREN number in France);
 - a number provided by an association (e.g.: EAN);
 - a number provided by the service provider: in this case the value of the data 3055 must be “ZZZ”, which means mutually defined.
- The clear name and address description provision are optionnal, since the customer's number is provided. If used, it is recommended to use the structured way of description (use of data C080, C059, 3164, 3229) rather than the free form (data 058).

GRP N 2	FII Financial institution information
---------	---------------------------------------

C

1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3035	PARTY QUALIFIER	M	an..3	M	an..3	BB Buyer's Bank
C078	ACCOUNT IDENTIFICATION	C		C		
3194	Account holder number	C	an..17	C	an..17	
3192	Account holder name	C	an..35	C	an..35	
3192	Account holder name	C	an..35	C	an..35	
6345	Currency, coded	C	an..3	C	an..3	
C088	INSTITUTION IDENTIFICATION	C		C		
3433	Institution name identification	C	an..11	C	an..11	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3434	Institution branch number	C	an..17	C	an..17	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3432	Institution name	C	an..70	C	an..70	
3436	Institution branch place	C	an..70	C	an..70	
3207	COUNTRY, CODED	C	an..3	C	an..3	
NOTE – This segment, when present, should be only dependant of NAD segment qualified by BY (buyer).						

SEGMENT GROUP 5		C	5
GRP N 5	CTA Contact information	M	1

Function: To give the name of the department/employee to be contacted in the NAD segment qualified by BY (buyer)

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3139	CONTACT FUNCTION, CODED	C	an..3	C	an..3	DL Delivery Contact OC Order Contact IC Information Contact
C056	DEPARTMENT OR EMPLOYEE DETAILS	C	an..17	C	an..17	
3413	Department or employee identification	C	an..17	C	an..17	
3412	Department or employee	C	an..35	C	an..35	

GRP N 5	COM: COMMUNICATION CONTACT	C	3
---------	----------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C076	COMMUNICATION CONTACT	M	M	M	M	
3148	Communication number	M	an..35	M	an..35	Telephone, telex, fax number
3155	Communication channel qualifier	M	an..3	M	an..3	TE Telephone TL Telex FX Fax XF X.400 address

SEGMENT GROUP 6		C	1
GRP N 6	TAX DUTY/TAX/FEE DETAILS	M	1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
5283	DUTY/TAX/FEE FUNCTION QUALIFIER	M	an..3	M	an..3	
C241	DUTY/TAX/FEE TYPE	C		C		
5153	Duty/tax/fee type, coded	C	an..3	C	an..3	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5152	Duty/tax/fee type	C	an..35	C	an..35	
C533	DUTY/TAX/FEE ACCOUNT DETAIL	C		C		
5289	Duty/tax/fee account identification	M	an..6	M	an..6	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5286	DUTY/TAX/FEE ASSESSMENT BASIS	C	an..15	C	an..15	
C243	DUTY/TAX/FEE DETAIL	C		C		
5279	Duty/tax/fee rate identification	C	an..7	C	an..7	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5278	Duty/tax/fee rate	C	an..17	C	an..17	
5273	Duty/tax/fee rate basis identification	C	an..12	C	an..12	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5305	DUTY/TAX/FEE CATEGORY, CODED	C	an..3	C	an..3	
3446	PARTY TAX IDENTIFICATION NUMBER	C	an..3	C	an..3	

GRP N 6	MOA MONETARY AMOUNT	M	1
---------	---------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
Data number		Format	Status	Format		
C516	MONETARY AMOUNT	M		M		
5025	Monetary amount type qualifier	M	an..3	M	an..3	58 = Fee amount
5004	Monetary amount	C	n..18	C	n..18	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
4405	Status, coded	C	an..3	N		

SEGMENT GROUP 7	M	1
-----------------	---	---

GRP 7	CUX CURRENCIES	M	1
-------	----------------	---	---

Function: To specify the currency used to calculate the order's amount

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C504	CURRENCY DETAILS	C		C		
6347	Currency details qualifier	M	an..3	M	an..3	5 = Calculation base currency
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
6348	Currency rate base	C	n..4	C	n..4	
C504	CURRENCY DETAILS	C		C		
6347	Currency details qualifier	M	an..3	M	an..3	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
6348	Currency rate base	C	n..4	C	n..4	
5402	RATE OF EXCHANGE	C	n..12	N		
6341	CURRENCY MARKET EXCHANGE, CODED	C	an..3	N		

SEGMENT GROUP 8	C	10
NOTE – The use of segment group 8 is for further study.		

GRP 8	PAT PAYMENT TERMS BASIS	M	1
-------	-------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
4279	PAYMENT TERMS TYPE QUALIFIER	M	an..3	M	an..3	See UNSM code list
C110	PAYMENT TERMS	C		C		
4277	Terms of payment identification	M	an..17	M	an..17	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
4276	Terms of payment	C	an..35	C	an..35	
4276	Terms of payment	C	an..35	C	an..35	
C112	TERMS/TIME INFORMATION	C		C		
2475	Payment time reference, coded	M	an..3	M	an..3	
2009	Time relation, coded	C	an..3	C	an..3	
2151	Type of period, coded	C	an..3	C	an..3	
2152	Number of periods	C	n..3	C	n..3	

GRP 8	DTM DATE/TIME/PERIOD	M	1
-------	----------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	

GRP 8	MOA MONETARY AMOUNT	C	1
-------	---------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
Data number		Format	Status	Format		
C516	MONETARY AMOUNT	M		M		
5025	Monetary amount type qualifier	M	an..3	M	an..3	58 = Fee amount
5004	Monetary amount	C	n..18	C	n..18	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
4405	Status, coded	C	an..3	N		

9.2.3 Detail Section

9.2.3.1 Principles

The structure and content of the detail section is divided into two parts:

- A *Product Group* which identifies the type of product to be ordered, its generic parameters and the relevant delivery conditions. This section is independant of the type of ordered product.
- A *Specific Characteristics Group* which contains parameters related to a given service or product, as defined in the Product group.

Use of the detail section

Principles

The Detail section of the ORDERS message shall be used either to:

- initiate a new service order (**Service ordering**);
- order the modification of an existing service (**service reconfiguration**);
- cancell an existing service (**service cancellation**);
- accept or refuse the modification proposed by the service provider, to previously issued service order (**negotiation procedure**).

Acceptance

In this case the ORDERS message shall contain either:

- a complete copy of the parameters issued by the customer in the Product Group Line and in the related Specific Characteristics line – the provider may add additionnal parameters, like the DTE address or in case of use of default value; or
- a partial copy of the parameters, if the information needs to be completed in case of use of default value; or
- only the copy of the Product Group Line, containing the contractual reference.

The provider's behaviour depends on the national policy in force and on the agreement between the customer and the provider.

Acceptance with amendments

In this case the ORDERS detail section shall contain either:

- A complete copy of the parameters issued by the provider in the Product Group Line and in the related Specific Characteristics line. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication “changed” (Segment LIN data 1229, value “3”). The provider may add additional parameters, like the DTE address or in case of use of default value.
- Or the list of the changed parameters. Lines of Specific Characteristic group must then bear the indication “changed” (Segment LIN data 1229, value “3”). The provider may add additional parameters, like the DTE address or in case of use of default value.

The provider’s behaviour depends on the national policy in force and on the agreement between the customer and the provider.

Refusal

In this case the ORDERS detail section shall contain either:

- A complete copy of the parameters issued by the provider in the Product Group Line and in the related Specific Characteristics line. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication “Not Accepted” (Segment LIN data 1229, value “7”). The provider may add additional parameters, like the DTE address or in case of use of default value.
- Or the list of the changed parameters. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication “Not Accepted” (Segment LIN data 1229, value “7”). The provider may add additional parameters, like the DTE address or in case of use of default value.

The provider’s behaviour depends on the national policy in force and on the agreement between the customer and the provider.

9.2.3.2 Detail section – Product group

9.2.3.2.1 Structure

The structure of the Product group is described below:

DETAIL SECTION – PRODUCT GROUP	
LIN	To identify a group of attributes related to an X25 service access
PIA	To specify additional identification of the product, such as the DTE address
MOA	To give the amount of the service described in this product line
RFF	To give contract references in case of a multiple X25 access order inside a unique EDIFACT message
LOC	To specify the delivery location if it differs from the one given in the Header section
DTM	To specify a date of delivery if it differs from the one given in the Header section
TAX	To specify the relevant duty/tax/fee information
MOA	To specify the relevant amount of tax

9.2.3.2.2 Description of segments

See Table 14.

TABLE 14/X.163

ORDERS Message body – Detail section

SEGMENT GROUP 25				C	R	
GRP 25	LIN LINE ITEM			M	1	
Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
1082	LINE ITEM NUMBER	C	n..6	M	n..6	
1229	ACTION REQUEST/ NOTIFICATION, CODED	C	an..3	C	an..3	1 = Added (Note) 2 = Deleted 3 = Changed
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C	an..35	Refer to Annex A
7143	Item number type, coded	C	an..35		an..35	TGP Telecommunication Product
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	Code for ITU-T
5495	SUB-LINE INDICATOR, CODED	C	an..3	N		
1222	CONFIGURATION LEVEL	C	n..2	C	n..2	= 0 if TGP
7083	CONFIGURATION, CODED	C	an..3	N		
NOTE – Added: enables to indicate that this line describes an order of a new telecommunication service. Changed: enables to indicate that this line describes an order which modifies an existing telecommunication service (reconfiguration service). Deleted: enables to indicate that this line describes the cancellation of an existing telecommunication service. The default value is: “Added” (1).						

GRP 25	PIA ADDITIONAL PRODUCT INFORMATION
--------	------------------------------------

C

2

This segment is used to provide additional identifications, in particular it enables to give the DTE address of an X.25 TerminationPoint.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
4347	Product Id Function qualifier	M	an..13	M	an..13	1 = Additional Identification
C212	ITEM NUMBER IDENTIFICATION	M		M		
7140	Item number	C	an..35	C	an..35	DTE address of the product, if it exists (Note)
7143	Item number type, coded	C	an..3	C	an..3	DTE = DTE address
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency	C	an..3	C	an..3	Code for ITU-T
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35	N		
7143	Item number type, coded	C	an..3	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency	C	an..3	N		
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35	N		
7143	Item number type, coded	C	an..3	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency	C	an..3	N		
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35	N		
7143	Item number type, coded	C	an..3	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency	C	an..3	N		
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35	N		
7143	Item number type, coded	C	an..3	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency	C	an..3	N		
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35	N		
7143	Item number type, coded	C	an..3	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency	C	an..3	N		
NOTE – This segment may be absent of the original order if the DTE address is provided by the service provider. In case of reconfiguration, this segment must be present.						

GRP N 25	MOA MONETARY AMOUNT
----------	---------------------

C

1

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

SEGMENT GROUP 28		M	1
GRP N 28	RFF REFERENCE	M	1

This segment is used to specify the order number if the message includes more than one TCP lines.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C506	REFERENCE	M		M		
1153	Reference qualifier	M	an..3	M	an..3	ON Order Number POR Purchase Order Response Number
1154	Reference number	C	an..35	C	an..35	
1156	Line number	C	an..6	N		
4000	Reference version number	C	an..35	N		

SEGMENT GROUP 32		C	1
GRP N 32	LOC LOCATION	M	1

The LOC segment is to be used to specify a more precise location (a department, room number, etc.) inside the name and address of delivery given in the header section.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3227	Place/location qualifier	C	an..3	C	an..3	7 = Place of delivery
C517	Location identification	C		C		
3225	Location/place identification	C	an..25	C	an..25	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3024	Place/location	C	an..17	C	an..17	
C519	Related location one identification	C		N		
3224	Related location/place one identification	C	an..25	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency, coded	C	an..3	N		
3222	Related place/location one	C	an..17	N		
C519	Related location two identification	C		N		
3224	Related location/place two identification	C	an..25	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency, coded	C	an..3	N		
3222	Related place/location two	C	an..17	N		
5479	Relation coded	C	an..3	N		

GRP N 32	DTM DATE/TIME PERIOD	C	1
----------	----------------------	---	---

Function: To give the date and time of delivery if it is different from the one given in the header section

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	2 = Requested delivery date/time
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	= 101 (YYMMDD) = 202 (YYMMDDHHMM)

SEGMENT GROUP 33	C	1
------------------	---	---

GRP N 33	TAX DUTY/TAX/FEE DETAILS	M	1
----------	--------------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify the tax information related to the line item.

GRP N 33	MOA MONETARY AMOUNT	M	1
----------	---------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

9.2.3.3 Detail section – Specific characteristics group

9.2.3.3.1 Specific characteristics group for X.25 access

The specific characteristic group specifies the different attributes related to the type of product X.25 access, described in the related Product group.

DETAIL SECTION – SPECIFIC CHARACTERISTIC GROUP	
LIN	To identify an attribute related to a product
PIA	To give more information to specify an attribute
MEA	To specify a measurement related an attribute
MOA	To specify a monatory amount related an attribute
TAX	To specify the relevant duty/tax/fee information
MOA	To specify the relevant amount of duty/tax/fee

DETAIL SECTION – SPECIFIC CHARACTERISTICS GROUP

SEGMENT GROUP 25		C	R
GRP 25	LIN LINE ITEM	M	1

Item description are linked to a general characteristic, as it is described below.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
1082	LINE ITEM NUMBER	C	n..6	M	n..6	Line number inside a given Product GROUP
1229	ACTION REQUEST/ NOTIFICATION, CODED	C	an..3	C	an..3	
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C		Refer to Annex A
7143	Item number type, coded	C	an..35		an..35	TGS Specific Characteristic
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5495	SUB-LINE INDICATOR, CODED	C	an..3	N		
1222	CONFIGURATION LEVEL	C	n..2	C	n..2	= 1 it's actually a sub-line
7083	CONFIGURATION, CODED	C	an..3	N		A Added to the configuration (Note) I Included in the configuration
NOTE – This parameter specifies if the line added is included to the price of the configuration. Default value is included to the configuration (means that the service is included in the price).						

GRP 25	PIA ADDITIONAL PRODUCT ID
--------	---------------------------

C

5

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
4347	PRODUCT ID FUNCTION QUALIFIER	M	an..3	M	an..3	
C212	ITEM NUMBER IDENTIFICATION	M		M		
7140	Item number	C	an..35	C	an..35	
7143	Item number type, coded	C	an..3	C	an..3	LCI Logical channel ID PVS Protocol Version Supported.
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
NOTES						
1 LCI (item number code) must be used only to specify a logical channel ID type, when the value of data 7140 (line number) of LIN segment is one of PCI, LIC, HIC, LTC, HTC, LOC, HOC. The value of logical channel ID is specified with the data 7140 of the segment.						
2 PVS (item number code) must be used only to specify the protocol version of physical Interface, when the value of data 7140 (line number) of LIN segment is PIT. The protocol versions specified with the data 7140 of the segment.						

GRP N 25	MEA MEASUREMENT
----------	-----------------

C

5

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
6311	Measurement application qualifier	M	an..3	M	an..3	SV Specification value
C502	Measurement details	C		C		
6313	Measurement dimension coded	C	an..3	C	an..3	
6321	Measurement significance	C	an..3	C	an..3	4 = Equal to
6155	Measurement attribute coded	C	an..3	N		
C174	Range/value	C		C		
6411	Measure unit qualifier	C	an..3			See UN/ECE Recommendation 20 NBR Number BAU Bit per Second MLS Millisecond
6314	Measurement value	C	n..18	M	n..18	
6162	Range minimum	C	n..18	N		
6152	Range maximum	C	n..18	N		
7183	Surface/layer indicator coded	C	an..3	N		
NOTE – This segment, if present, shall conform to the following rules: – Qualified by data element 6411, value NBR, if the data element 7140 of the related segment LIN has one of the following values: OWS, IWS, OPS, IPS, W1, N2, or K. – Qualified by data element 6411, value MLS, if the data element 7140 of the related segment LIN has one of the following values: T1, T2, MT1, or MT2. – Qualified by data element 6411, value BAU, if the data element 7140 of the related segment LIN has one of the following values: OTC, or ITC.						

GRP N 25	MOA MONETARY AMOUNT
----------	---------------------

C

1

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

SEGMENT GROUP 33

C

1

GRP N 33	TAX DUTY/TAX/FEE DETAILS
----------	--------------------------

C

1

NOTE – The way this segment may be used is for further study. It should be used to specify the tax information related to the line item.

GRP N 33	MOA MONETARY AMOUNT
----------	---------------------

C

1

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the tax/fee.

9.2.4 Trailer section

9.2.4.1 Structure of the trailer section

TRAILER SECTION	
UNS	To separate trailer section form detail section
MOA	To give the global amount of the order
UNT	To indicate the message trailer

9.2.4.2 Segment description

See Table 15.

TABLE 15/X.163
ORDERS Message trailer section

	UNS SECTION CONTROL	M	1
--	---------------------	---	---

Function: To separate the detail section from the TRAILER SECTION

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
0081	SECTION IDENTIFICATION	M	a1	M	a1	D Detail section-summary separation

	MOA MONETARY AMOUNT	C	1
--	---------------------	---	---

Function: To specify the global amount of the order

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
Data number		Format	Status	Format		
C516	MONETARY AMOUNT	M		M		
5025	Monetary amount type qualifier	M	an..3	M	an..3	
5004	Monetary amount	C	n..18	C	n..18	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
4405	Status, coded	C	an..3	N		

	UNT MESSAGE TRAILER	M	1
--	---------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
0074	NUMBER OF SEGMENTS IN A MESSAGE	M	n..6	M	n..6	
0062	MESSAGE REFERENCE NUMBER	M	n..14	M	n..14	

9.3 ORDRSP message

9.3.1 Message profile structure

This subclause describes the structure of the profile of the ORDRSP message to be used in the CNMe context (see Figure 6).

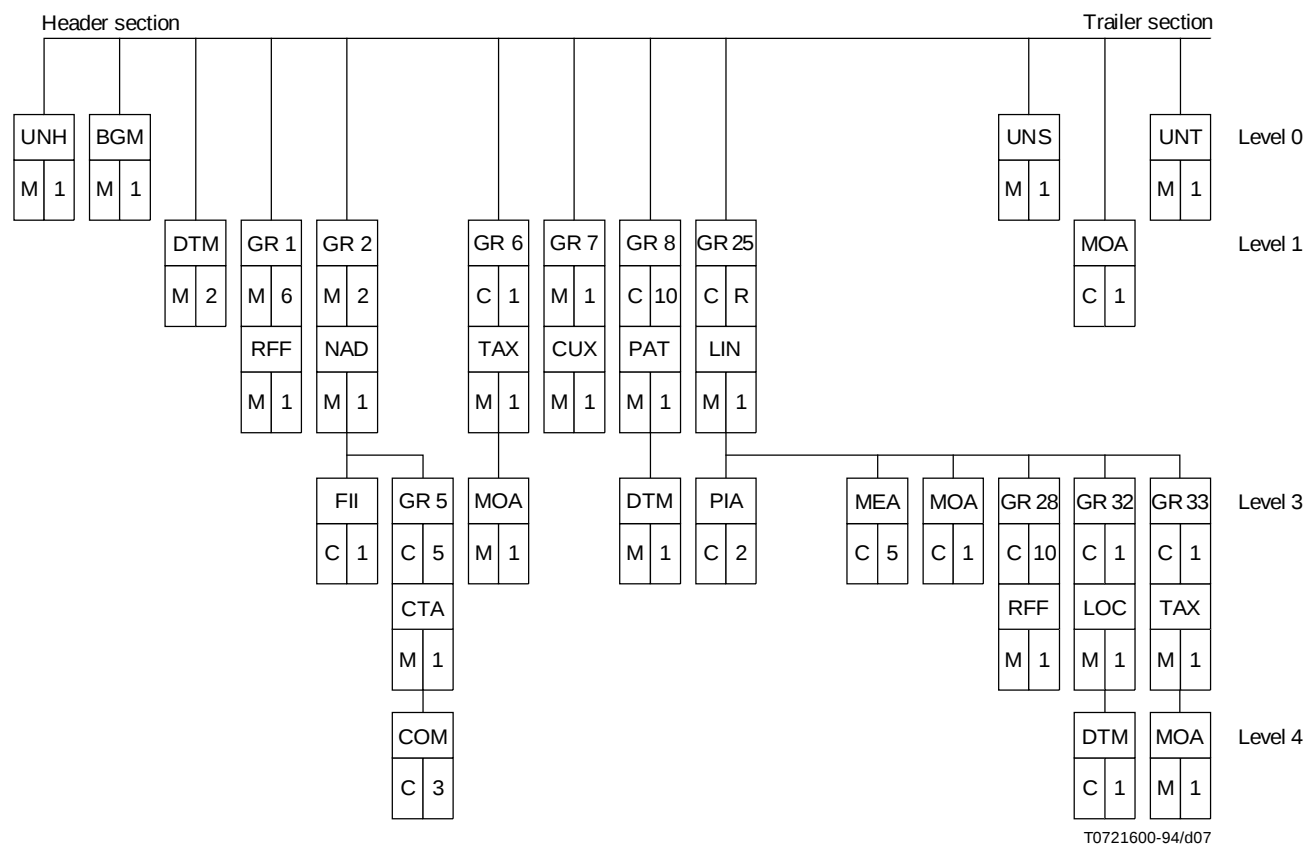


FIGURE 6/X.163
ORDRSP message structure

9.3.2 Header section

9.3.2.1 Structure of the header section

HEADER SECTION	
UNH	Identification of EDIFACT message
BGM	Identifies the beginning of the message and provides with the order's number
DTM	Date of order's creation Date of delivery as required
RFF	Identification of the contract and the relevant documents like the previous order's number
NAD	Name and address of the buyer, the provider and the delivery place if required
FII	For the buyer (i.e. the customer), to identify a Bank account number and the related financial institution
CTA	To give the name of person or department to whom communication should be directed, inside the buyer's organisation
COM	To give communication numbers of the person whom communication should be directed
CUX	To specify the currency used in the transaction
PAT	To specify the date/time basis and relevant amount for payment

9.3.2.2 Segment description

See Tables 16 and 17.

TABLE 16/X.163

ORDRSP Message header

UNH Message header		M	1			
Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
0062	MESSAGE REFERENCE NUMBER	M	an..14	M	an..14	
S009	MESSAGE IDENTIFIER	M		M		
0065	Message type identifier	M	an..6	M	an..6	= ORDRSP
0052	Message type version number	M	an..3	M	an..3	= 1
0054	Message type release number	M	an..3	M	an..3	= 921
0051	Controlling agency	M	an..2	M	an..2	= UN
0057	Association assigned code	C	an..6	N		
0068	COMMON ACCESS REFERENCE	C		N		
S010	STATUS OF TRANSFER	C		C		
0070	Sequence message transfer number	M	n..2	M	n..2	
0073	First/last sequence message transfer	C	a1	C	a1	

TABLE 17/X.163

ORDRSP Message body

BGM Beginning of message		M	1			
Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C002	DOCUMENT/MESSAGE NAME	C			C	
1001	Document/message name, coded	C	an..3	C	an..3	231 = Purchase Order Response
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	= UN/ECE
1000	Document/message name	C	an..35	M	an..35	
1004	DOCUMENT/MESSAGE NUMBER	C	an..35	C	an..35	
1225	MESSAGE FUNCTION, CODED	C	an..3	N		(Note) 4 = Change 29 = Accepted without amendment 27 = Not accepted 30 = Accepted with amendment in the detail section
4343	RESPONSE TYPE, CODED	C	an..2	N		
NOTE – The different values should be used as follows: 29: To indicate that the related order is accepted as received. 27: To indicate that the related purchase order is rejected. 30: To indicate that the related Order is accepted with some modifications in the parameters specified in the detail section. Other value: in case of negotiation procedure.						

DTM Date/time/period	M	2
----------------------	---	---

Function: To give the date/time of ordering
To give the requested date time of delivery

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	137 = Document/message date – time 4 = Order date/time 2 = Requested delivery date/time
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	= 101 (YYMMDD)

SEGMENT GROUP 1	M	2
-----------------	---	---

GRP N 1	RFF REFERENCE	M	1
---------	---------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C506	REFERENCE	M		M		
1153	Reference qualifier	M	an..3	M	an..3	CT Contract Number ACW Reference of a previous Message BO Buyer's Order Number VN Order Number affected by the seller OP Original Purchase Order: reference to the first order of the transaction POR Purchase Order Response Number
1154	Reference number	C	an..35	C	an..35	
1156	Line number	C	an..6	N		
4000	Reference version number	C	an..35	N		

SEGMENT GROUP 2		M	3
GRP N 2	NAD NAME AND ADDRESS	M	1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3035	PARTY QUALIFIER	M	an..3	M	an..3	BY Buyer SE Seller (service provider)
C082	PARTY IDENTIFICATION DETAILS	C				
3039	Party id identification	M	an..17	M	an..17	Customer's number (Note 1)
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	UNSM code of the agency
C058	NAME AND ADDRESS	C				
3124	Name and address line	M	an..35	M	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
3124	Name and address line	C	an..35	C	an..35	
C080	PARTY NAME	C				(Note 2)
3036	Party name	M	an..35	M	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
3036	Party name	C	an..35	C	an..35	
C059	STREET	C	an..35	C	an..35	
3042	Street and number/P.O. Box	M	an..35	M	an..35	
3042	Street and number/P.O. Box	C	an..35	C	an..35	
3042	Street and number/P.O. Box	C	an..35	C	an..35	
3164	CITY NAME	C	an..35	C	an..35	
3229	COUNTRY SUB-ENTITY IDENTIFICATION	C	an..9	C	an..9	
3251	POSTCODE IDENTIFICATION	C	an..8	C	an..8	
3207	COUNTRY, CODED	C	an..3	C	an..3	

NOTES

- Depending on the legal policy in force, this number may be:
 - a number provided by a government agency (e.g.: SIREN number in France);
 - a number provided by an association (e.g.: EAN);
 - a number provided by the service provider: in this case the value of the data 3055 must be “ZZZ”, which means mutually defined.
- The clear name and address description provision are optional, since the customer's number is provided. If used, it is recommended to use the structured way of description (use of data C080, C059, 3164, 3229) rather than the free form (data 058).

GRP N 2	FII Financial institution information	C	1
---------	---------------------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3035	PARTY QUALIFIER	M	an..3	M	an..3	BB Buyer's Bank
C078	ACCOUNT IDENTIFICATION	C		C		
3194	Account holder number	C	an..17	C	an..17	
3192	Account holder name	C	an..35	C	an..35	
3192	Account holder name	C	an..35	C	an..35	
6345	Currency, coded	C	an..3	C	an..3	
C088	INSTITUTION IDENTIFICATION	C		C		
3433	Institution name identification	C	an..11	C	an..11	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3434	Institution branch number	C	an..17	C	an..17	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3432	Institution name	C	an..70	C	an..70	
3436	Institution branch place	C	an..70	C	an..70	
3207	COUNTRY, CODED	C	an..3	C	an..3	
NOTE – This segment, when present, should be only dependant of NAD segment qualified by BY (buyer).						

SEGMENT GROUP 5	C	3
-----------------	---	---

GRP N 5	CTA Contact information	M	1
---------	-------------------------	---	---

Function: To give the name of the department/employee to be contacted in the NAD segment qualified by SE (Service Provider)

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3139	CONTACT FUNCTION, CODED	C	an..3	C	an..3	DL Delivery Contact OC Order Contact IC Information Contact
C056	DEPARTMENT OR EMPLOYEE DETAILS	C	an..17	C	an..17	
3413	Department or employee identification	C	an..17	C	an..17	
3412	Department or employee	C	an..35	C	an..35	

GRP N 5	COM: COMMUNICATION CONTACT	C	3
---------	----------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C076	COMMUNICATION CONTACT	M	M	M	M	
3148	Communication number	M	an..35	M	an..35	Telephone, telex, fax number
3155	Communication channel qualifier	M	an..3	M	an..3	TE Telephone TL Telex FX Fax XF X.400 address

SEGMENT GROUP 6	C	1
-----------------	---	---

GRP N 6	TAX DUTY/TAX/FEE DETAILS	M	1
---------	--------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
5283	DUTY/TAX/FEE FUNCTION QUALIFIER	M	an..3	M	an..3	
C241	DUTY/TAX/FEE TYPE	C		C		
5153	Duty/tax/fee type, coded	C	an..3	C	an..3	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5152	Duty/tax/fee type	C	an..35	C	an..35	
C533	DUTY/TAX/FEE ACCOUNT DETAIL	C		C		
5289	Duty/tax/fee account identification	M	an..6	M	an..6	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5286	DUTY/TAX/FEE ASSESSMENT BASIS	C	an..15	C	an..15	
C243	DUTY/TAX/FEE DETAIL	C		C		
5279	Duty/tax/fee rate identification	C	an..7	C	an..7	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5278	Duty/tax/fee rate	C	an..17	C	an..17	
5273	Duty/tax/fee rate basis identification	C	an..12	C	an..12	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5305	DUTY/TAX/FEE CATEGORY, CODED	C	an..3	C	an..3	
3446	PARTY TAX IDENTIFICATION NUMBER	C	an..3	C	an..3	

GRP N 6	MOA MONETARY AMOUNT	M	1
---------	---------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
Data number		Format	Status	Format		
C516	MONETARY AMOUNT	M		M		
5025	Monetary amount type qualifier	M	an..3	M	an..3	58 = Fee amount
5004	Monetary amount	C	n..18	C	n..18	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
4405	Status, coded	C	an..3	N		

SEGMENT GROUP 7	M	1
-----------------	---	---

GRP 7	CUX CURRENCIES	M	1
-------	----------------	---	---

Function: To specify the currency used to calculate the order's amount

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C504	CURRENCY DETAILS	C		C		
6347	Currency details qualifier	M	an..3	M	an..3	5 = Calculation base currency
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
6348	Currency rate base	C	n..4	C	n..4	
C504	CURRENCY DETAILS	C		C		
6347	Currency details qualifier	M	an..3	M	an..3	
6345	Currency, coded	C	an..3	C	an..3	
6343	Currency qualifier	C	an..3	C	an..3	
6348	Currency rate base	C	n..4	C	n..4	
5402	RATE OF EXCHANGE	C	n..12	N		
6341	CURRENCY MARKET EXCHANGE, CODED	C	an..3	N		

SEGMENT GROUP 8	C	10
-----------------	---	----

NOTE – The use of segment group 8 is for further study.

GRP 8	PAT PAYMENT TERMS BASIS	M	1
-------	-------------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
4279	PAYMENT TERMS TYPE QUALIFIER	M	an..3	M	an..3	See UNSM code list
C110	PAYMENT TERMS	C		C		
4277	Terms of payment identification	M	an..17	M	an..17	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
4276	Terms of payment	C	an..35	C	an..35	
4276	Terms of payment	C	an..35	C	an..35	
C112	TERMS/TIME INFORMATION	C		C		
2475	Payment time reference, coded	M	an..3	M	an..3	
2009	Time relation, coded	C	an..3	C	an..3	
2151	Type of period, coded	C	an..3	C	an..3	
2152	Number of periods	C	n..3	C	n..3	

GRP 8	DTM DATE/TIME/PERIOD	M	1
-------	----------------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	

9.3.3 Detail Section

9.3.3.1 Principles

The structure and content of the detail section is divided into two parts:

- A Product Group which identifies the type of product to be ordered, its generic parameters and the relevant delivery conditions. This section is independent of the type of ordered product.
- A Specific Characteristics Group which contains parameters related to a given service or product, as defined in the Product group.

Use of the detail section

Principles

The ORDRSP message is related to an ORDERS messages issued by the customer and is the provider's response to the order.

For each order (creation, reconfiguration or cancellation), included in the message (corresponding to a Product Group Line in the related ORDERS) the provider's response shall be one and only one of this:

- Acceptance of the service order, which means that the service required will be completed as ordered without any change.
- Acceptance with amendment, which means that the provider accepts the service order but proposes some changes in the parameters of the order.
- A refusal, which means that the provider rejects the service order for some reasons.

Acceptance

In this case the ORDRSP message shall contain one of this:

- A complete copy of the parameters issued by the customer in the Product Group Line and in the related Specific Characteristics line. The provider may add additionnal parameters, like the DTE address or in case of use of default value.
- A partial copy of the parameters, if the information needs to be completed in case of use of default value.
- Only the copy of the Product Group Line, containing the contractual reference.

The provider's behaviour depends on the national policy in force and on the agreement between the customer and the provider.

Acceptance with amendment

In this case the ORDRSP detail section may contain:

- Either a complete copy of the parameters issued by the customer in the Product Group Line and in the related Specific Characteristics line. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication "changed" (Segment LIN data 1229, value "3"). The provider may add additionnal parameters, like the DTE address or in case of use of default value.
- Or the list of the changed parameters. Lines of Specific Characteristic group must then bear the indication "changed" (Segment LIN data 1229, value "3"). The provider may add additionnal parameters, like the DTE address or in case of use of default value.

The provider's behaviour depends on the national policy in force and on the agreement between the customer and the provider.

Refusal

In this case the ORDRSP detail section shall contain:

- Either a complete copy of the parameters issued by the customer in the Product Group Line and in the related Specific Characteristics line. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication "Not Accepted" (Segment LIN data 1229, value "7"). The provider may add additionnal parameters, like the DTE address or in case of use of default value.
- Or the list of the changed parameters. Lines of Specific Characteristic corresponding to the refused parameters must bear the indication "Not Accepted" (Segment LIN data 1229, value "7"). The provider may add additionnal parameters, like the DTE address or in case of use of default value.

The provider's behaviour depends on the national policy in force and on the agreement between the customer and the provider.

9.3.3.2 Detail section – Product group

9.3.3.2.1 Structure

The structure of the Product group is described below:

DETAIL SECTION – PRODUCT GROUP	
LIN	To identify a group of attributes related to an X.25 service access
PIA	To specify additional identification of the product, such as the DTE address
MOA	To give the amount of the related amount of the required in this line
RFF	To give contract references in case of a multiple X.25 access order inside a unique EDIFACT message
LOC	To specify the delivery location if it differs from the one given in the Header section
DTM	To specify a date of delivery if it differs from the one given in the Header section
TAX	To specify the relevant duty/tax/fee information
MOA	To specify the relevant amount of tax

9.3.3.2.2 Description of segments

See Table 18.

TABLE 18/X.163

ORDRSP Message body – Detail section

SEGMENT GROUP 25		C	R
GRP 25	LIN LINE ITEM	M	1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
1082	LINE ITEM NUMBER	C	n..6	M	n..6	
1229	ACTION REQUEST/ NOTIFICATION, CODED	C	an..3	C	an..3	5 = Accepted without amendment (Note) 6 = Accepted with amendment 7 = Not accepted
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C	an..35	Refer to Annex A
7143	Item number type, coded	C	an..35		an..35	TGP Telecommunication Product
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	Code for ITU-T
5495	SUB-LINE INDICATOR, CODED	C	an..3	C	an..3	
1222	CONFIGURATION LEVEL	C	n..2	C	n..2	= 0 if TGP
7083	CONFIGURATION, CODED	C	an..3	N		

NOTE – Accepted without amendment – Enables to indicate that provision of the related service is accepted as described in the service order.

Accepted with amendment – Enables to indicate that provision of the related service is accepted with some modifications regarding to the service order. Modifications are described in the related Specific Characteristic Group.

Not Accepted – Enables to indicate that the provision of the related service is refused by the provider. The Specific Characteristic Group contains the parameters which causes the refusal.

The default value is: “Accepted without amendment” (“5”).

GRP 25	PIA ADDITIONAL PRODUCT INFORMATION	C	2
--------	------------------------------------	---	---

This segment is used to provide additional identifications, in particular it enables to give the DTE address of an X.25 TerminationPoint. The description of this segment is the same as in the ORDERS message.

GRP N 25	MOA MONETARY AMOUNT	C	1
----------	---------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

SEGMENT GROUP 28	M	1
------------------	---	---

GRP N 28	RFF REFERENCE	M	1
----------	---------------	---	---

This segment is used to specify the order number if the message includes more than one TCP lines.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C506	REFERENCE	M		M		
1153	Reference qualifier	M	an..3	M	an..3	ON Order Number POR Purchase Order Response Number
1154	Reference number	C	an..35	C	an..35	
1156	Line number	C	an..6	N		
4000	Reference version number	C	an..35	N		

SEGMENT GROUP 32		C	1
GRP N 32	LOC LOCATION	M	1

The LOC segment is to be used to specify a more precise location (a department, room number, etc.) inside the name and address of delivery given in the header section.

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
3227	Place/location qualifier	C	an..3	C	an..3	7 = Place of delivery
C517	Location identification	C		C		
3225	Location/place identification	C	an..25	C	an..25	
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
3024	Place/location	C	an..17	C	an..17	
C519	Related location one identification	C		N		
3224	Related location/place one identification	C	an..25	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency, coded	C	an..3	N		
3222	Related place/location one	C	an..17	N		
C519	Related location two identification	C		N		
3224	Related location/place two identification	C	an..25	N		
1131	Code list qualifier	C	an..3	N		
3055	Code list responsible agency, coded	C	an..3	N		
3222	Related place/location two	C	an..17	N		
5479	Relation coded	C	an..3	N		

GRP N 32	DTM DATE/TIME PERIOD	C	1
----------	----------------------	---	---

Function: To give the date and time of delivery if it is different from the one given in the header section

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C507	DATE/TIME/PERIOD	M		M		
2005	Date/time/period qualifier	M	an..3	M	an..3	17 = Estimated delivery date/time
2380	Date/time/period	C	an..35	M	an..35	
2379	Date/time/period format qualifier	C	an..3	M	an..3	= 101 (YYMMDD) = 202 (YYMMDDHHMM)

SEGMENT GROUP 33		C	1
GRP N 33	TAX DUTY/TAX/FEE DETAILS	M	1

NOTE – The way this segment may be used is for further study. It should be used to specify the tax information related to the line item.

GRP N 33	MOA MONETARY AMOUNT	M	1
----------	---------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

9.3.3.3 Detail section: Specific characteristics group

9.3.3.3.1 Specific characteristics group for X.25 access

The specific characteristic group specifies the different attributes related to the type of product X.25 access, described in the related Product group.

DETAIL SECTION – SPECIFIC CHARACTERISTIC GROUP	
LIN	To identify an attribute related to a product
PIA	To give more information to specify an attribute
MEA	To specify a measurement related to an attribute
MOA	To specify a monetary amount related to an attribute
TAX	To specify the relevant duty/tax/fee information
MOA	To specify the relevant amount of duty/tax/fee

DETAIL SECTION – SPECIFIC CHARACTERISTICS GROUP

SEGMENT GROUP 25		C	R
GRP 25	LIN LINE ITEM	M	1

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
1082	LINE ITEM NUMBER	C	n..6	M	n..6	Line number inside a given Product GROUP
1229	ACTION REQUEST/ NOTIFICATION, CODED	C	an..3	C	an..3	5 = Accepted without amendment (Note 1) 6 = Accepted with amendment 7 = Not accepted
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C	an..35	Refer to Annex A
7143	Item number type, coded	C	an..35		an..35	TGS Specific Characteristic
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
5495	SUB-LINE INDICATOR, CODED	C	an..3	N		
1222	CONFIGURATION LEVEL	C	n..2	C	n..2	= 1 it's actually a sub-line
7083	CONFIGURATION, CODED	C	an..3	N		A Added to the configuration (Note 2) I Included in the configuration

NOTES

1 Accepted without amendment – Enables to indicate that provision of the related service is accepted as described in the service order.

Accepted with amendment – Enables to indicate that provision of the related service is accepted with some modifications regarding to the service order. Modifications are described in the related Specific Characteristic Group.

Not Accepted – Enables to indicate that the provision of the related service is refused by the provider. The Specific Characteristic Group contains the parameters which causes the refusal.

The default value is: “Accepted without amendment” (“5”).

2 This parameter specifies if the line added is included to the price of the configuration. Default value is included to the configuration (means that the service is included in the price).

GRP 25	PIA ADDITIONAL PRODUCT ID
--------	---------------------------

C

2

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
4347	PRODUCT ID FUNCTION QUALIFIER	M	an..3	M	an..3	
C212	ITEM NUMBER IDENTIFICATION	M		M		
7140	Item number	C	an..35	C	an..35	
7143	Item number type, coded	C	an..3	C	an..3	LCI Logical channel ID PVS Protocol Version Supported
1131	Code list qualifier	C	an..3	C	an..3	
3055	Code list responsible agency, coded	C	an..3	C	an..3	
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
C212	ITEM NUMBER IDENTIFICATION	C		N		
7140	Item number	C	an..35			
7143	Item number type, coded	C	an..3			
1131	Code list qualifier	C	an..3			
3055	Code list responsible agency, coded	C	an..3			
NOTES						
1 LCI (item number code) must be used only to specify a logical channel ID type, when the value of data 7140 (line number) of LIN segment is one of PCI, LIC, HIC, LTC, HTC, LOC, HOC. The value of logical channel ID is specified with the data 7140 of the segment.						
2 PVS (item number code) must be used only to specify the protocol version of physical Interface, when the value of data 7140 (line number) of LIN segment is PIT. The protocol versions are specified with the data 7140 of the segment.						

GRP N 25	MEA MEASUREMENT	C	5
----------	-----------------	---	---

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
6311	Measurement application qualifier	M	an..3	M	an..3	SV Specification Value
C502	Measurement details	C		C		
6313	Measurement dimension coded	C	an..3	C	an..3	
6321	Measurement significance	C	an..3	C	an..3	4 = Equal to
6155	Measurement attribute coded	C	an..3	N		
C174	Range/value	C		C		
6411	Measure unit qualifier	C	an..3			See UN/ECE Recommendation 20 NBR Number BAU Bit per Second MLS Millisecond
6314	Measurement value	C	n..18	M	n..18	
6162	Range minimum	C	n..18	N		
6152	Range maximum	C	n..18	N		
7183	Surface/layer indicator coded	C	an..3	N		
NOTE – This segment, if present, shall conform to the following rules: – Qualified by data element 6411, value NBR, if the data element 7140 of the related segment LIN has one of the following values: OWS, IWS, OPS, IPS, W1, N2, or K. – Qualified by data element 6411, value MLS, if the data element 7140 of the related segment LIN has one of the following values: T1, T2, MT1, or MT2. – Qualified by data element 6411, value BAU, if the data element 7140 of the related segment LIN has one of the following values: OTC, or ITC.						

GRP N 25	MOA MONETARY AMOUNT	C	1
----------	---------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the line item.

SEGMENT GROUP 33	C	1
------------------	---	---

GRP N 33	TAX DUTY/TAX/FEE DETAILS	C	1
----------	--------------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify the tax information related to the line item if this line is added (and not included) in the configuration.

GRP N 33	MOA MONETARY AMOUNT	C	1
----------	---------------------	---	---

NOTE – The way this segment may be used is for further study. It should be used to specify a monetary amount related to the tax/fee.

9.3.4 Trailer section

9.3.4.1 Structure of the trailer section

The structure of the trailer section is identical to the ORDERS trailer section.

9.3.4.2 Segment description

The segment description of the trailer section is identical to the ORDERS trailer section.

10 Conformance for the CNMe interface

An implementer of an implementation for which conformance to this Recommendation is claimed, shall state:

- 1) that the implementation meets the compliance requirements of Recommendation X.161;
which service sets of Annex B/X.161 are supported, if any;
- 2) which services of Recommendation X.161 are supported;
- 3) that the required EDI forms can be correctly encoded using 7-bit IA5 code for origination, and correctly decoded and interpreted on reception; and
- 4) whether any additional encoding/decoding rules are supported.

An implementation for which conformance to this Recommendation is claimed shall:

- 5) support the exchange of information electronically as specified in this Recommendation and Recommendation X.161;
for each service supported, implement, at least, the mandatory parts of the service as defined in Recommendation X.161;
- 6) for each service supported, implement the origination or reception, or both, of the profiles of UN/EDIFACT messages as specified or referenced in this Recommendation; and
- 7) for each UN/EDIFACT message profile supported, implement origination or reception or both, in 7-bit IA5 code.

With respect to 3), 6), and 7) an implementation shall not originate data items marked as “not applicable” in the profiles specified in this Recommendation, or those that are present in the UNSM message specification but omitted from this Recommendation. It is an implementers choice whether the reception of any such data item is ignored or treated as an error.

Annex A

Code Lists

(This annex does not form an integral part of this Recommendation)

A.1 Introduction

EDI messages make use of “Code Lists” so that a data item can be used to convey different sets of information. This annex gives the code lists that are specified in this Recommendation, where there are more than a few codes in the list. They are referenced from the message profile tables in the main body of this Recommendation.

A.2 LIN Line Item Code Lists

See Tables A.1 and A.2.

TABLE A.1/X.163

LIN Line Item Code Lists – For 7143 Item number type = TGP = Product Characteristic

For 7143 Item number type = TGP = Product Characteristic

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C	an..35	X25TT X.25 access
7143	Item number type, coded	C	an..35		an..35	TGP Product Characteristic

TABLE A.2/X.163

LIN Line Item Code Lists – For 7143 Item number type = TGS = Specific Characteristic

For 7143 Item number type = TGS = Specific Characteristic

Data number	Data name	Status UNSM	Format UNSM	Profile status	Profile format	Notes/Code list
C212	ITEM NUMBER IDENTIFICATION	C		C		
7140	Item number	C	an..35	C		DRT Data rate PIT Type of physical interface T1 T1 parameter T2 T2 parameter N1 N1 parameter N2 N2 parameter NSL Number of Physical Lines MT1 MT1 parameter MT2 MT2 parameter MT3 MT3 parameter IWS Incoming Window Size OWS Outgoing Window Size WS Window Size (Note) IPS Incoming Packet Size OPS Outgoing Packet Size PS Packet Size (Note) ITC Incoming Throughput Class OTC Outgoing Throughput Class TC Throughput Class (Note) FAC Fast Select Acceptance FCN Flow Control Parameters Negotiation RVA Reverse Charging Acceptance CDF Call Deflection CRD Call Redirection PCI Permanent Channel LIC Lowest Incoming Channel HIC Highest Incoming Channel LTC Lowest Two-way Channel HTC Highest Two-way Channel LOC Lowest Outgoing Channel HOC Highest Outgoing Channel
7143	Item number type, coded	C	an..35		an..35	TGS Specific Characteristic
NOTE – This parameter may be used if and only if the outgoing values are equal to the incoming value.						

Annex B

Typical sequences of CNM services

(This annex does not form an integral part of this Recommendation)

B.1 Introduction

The CNM Service is divided into five main service Groups as follows:

- Fault Management;
- Accounting Information;
- Configuration Management;
- Security Management;
- Ordering.

Each of these service groups is divided into specific functions that are themselves provided by elementary services. This annex gives typical sequences of these elementary services for each function.

B.2 Fault Management

The Fault Management service group is divided into the following functions:

- Alarm Notification;
- Fault History;
- Trouble Report;
- Loop set-up;
- Test host;
- Protocol monitoring.

This service group can also be divided into functions that concern loss of service (e.g. line down), and functions that concern performance trouble (e.g. connect time exceeds agreed level).

B.2.1 Alarm Notification (or Fault Event Handling)

The typical information flows of elementary services are shown in Figure B.5.

A fault event is one that prevents the provision of the expected service. The event, therefore, may be in the customers or the providers network. The usual work flow is notification → identification → analysis → resolution.

B.2.2 Fault History

Fault histories could be provided periodically or on request as shown pictorially in Figures B.2 and B.3:

The fault history request message could include information such as:

- period;
- level of reporting;
- particular fault numbers.

The fault history report message could include information such as:

- period covered;
- faults or no faults in period.

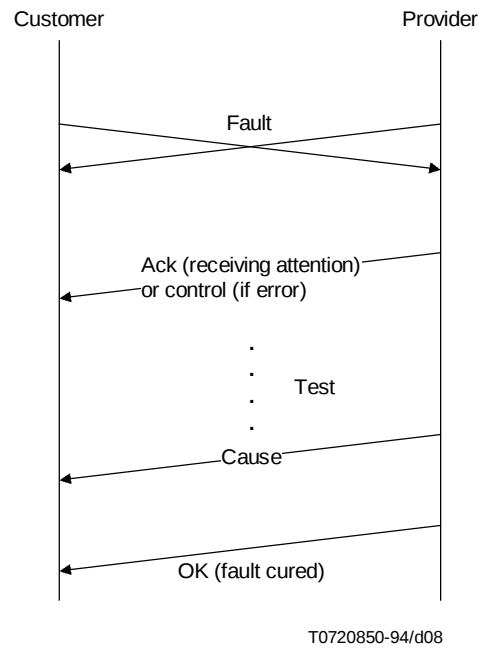


FIGURE B.1/X.163
Fault event information flow

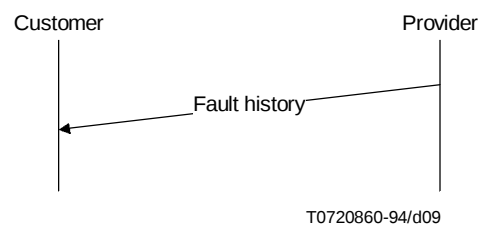


FIGURE B.2/X.163
Periodic fault history information flow

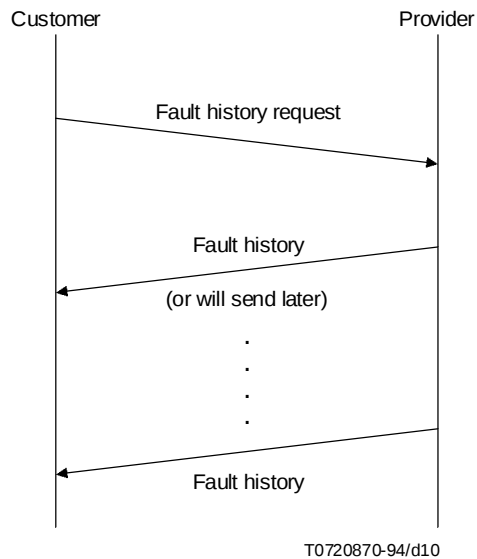


FIGURE B.3/X.163
Requested fault history information flow

If there are faults, then for each:

- identification of object;
- severity;
- service below agreed level or not;
- duration of fault;
- outstanding or resolved;
- perceived course;
- responsibility;
- date and time of occurrence;
- date and time of resolution or expected date of resolution;
- status (open, closed, in process).

To this would be added standard information such as Customer identification. Actions taken to resolve the problem could include a visit to the customer site that the customer will be charged for, or is covered in the service agreement.

Summary information could be included which would provide information such as number of faults if each gravity level, total down-time, and so on.

B.2.3 Trouble Report

This function is for further study.

B.2.4 Loop set-up

This function is for further study.

B.2.5 Test host

This function is for further study.

B.2.6 Protocol monitoring

This function is for further study.

B.3 Configuration Management

The Configuration Management service group is divided into the following functions:

- Configuration inquiry.
- 2 subsets are planned: full inquiry (all information) and partial. The latter is more difficult as it requires filtering criteria.
- Service Reconfiguration (within the terms of the contract).
- Service Ordering (change to the terms of the contract).
- Service Inventory inquiry.
- Systematic call redirection.

These services could cover all sorts of matters such as X.25 line, speech line, window size, packet size, closed user groups and so on.

B.3.1 Configuration inquiry

A configuration inquiry may be for a complete set of information related to a particular customer or for a partial set (according to some selection criteria). It would also be possible to have an automatic configuration update service.

The information flows for these services are likely to be simple request/response pairs as depicted in Figure B.4:

Refer also to the Service Inquiry service clause.

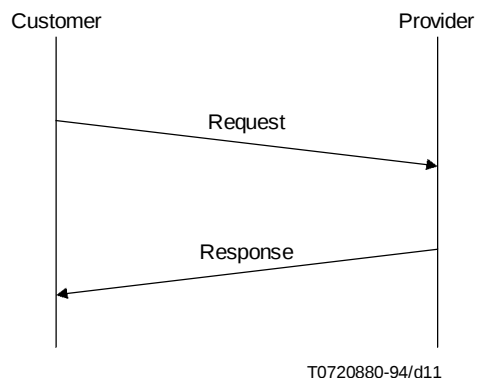


FIGURE B.4/X.163
Service inquiry information flow

B.3.2 Service Reconfiguration

This function is for further study.

B.3.3 Ordering Service

This may be divided into the following functions:

- service subscription;
- service reconfiguration (implying change to the contract);
- service cancellation.

B.3.3.1 X.25 Ordering

This is a specific example. Entity-relationship techniques can be used to model the basic data that could then be mapped to EDIFACT data items. Business process rules can be used to define the flow of information. A pictorial example for an order for an X.25 line is given in Figure B.5.

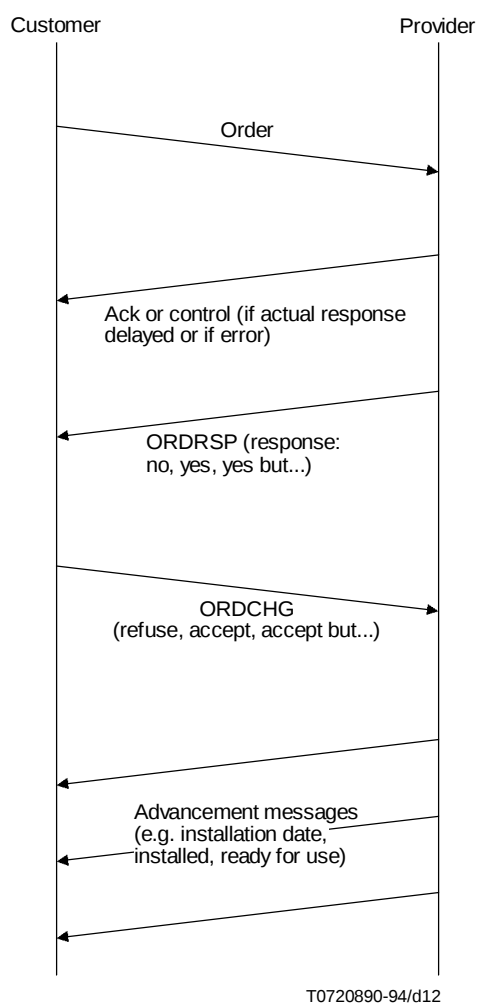


FIGURE B.5/X.163
Information flow for an X.25 line

B.3.4 Inventory inquiry

This function is for further study. Refer also to the Service Inquiry service clause.

B.3.5 Systematic call redirection

This function is for further study.

B.4 Accounting Services

The Account Management service group is divided into the following functions:

- periodic billing;
- detailed accounting, such as tariff communications (e.g. price lists);
- Quota control;
- Real-time charging information.

B.4.1 Periodic billing

This function is for further study.

B.4.2 Detailed accounting

This function is for further study.

B.4.3 Quota control

This function is for further study.

B.4.4 Real-time charging information

This function is for further study.

B.5 Performance Management Service

The Performance Management service group is divided into the following functions:

- traffic information;
- quality of service information.

B.5.1 Traffic information

The Traffic information function may be further divided into the following functions:

- Real-time traffic information;
- traffic statistics.

B.5.1.1 Real-time traffic information

This function is for further study.

B.5.1.2 Traffic Statistics Service

The Traffic Statistics function is divided into the following elementary functions:

- statistics of access (at a port);
- statistics of performance;
- network statistic (overall pattern of calls – get from billing system).

Information for the first two items would come from the network itself and concern statistics such as volume transmitted, duration, number of calls on a line, number of rejected calls and so on.

B.5.2 Quality of Service

This function is for further study.

B.6 Security Management

This whole service group is for further study. At present it is intended to provide the following functions.

B.6.1 Password change

This function is for further study.

B.6.2 Access rights

This function is for further study.

B.7 Service Inquiry Service

The Service Inquiry service group is divided into the following functions:

- configuration inquiry;
- inventory inquiry.

Each of these could be complete inquiries or partial inquiries (according to some selection criteria). It would also be possible to have an automatic configuration update service.

The information flows for these services are likely to be simple request/response pairs as depicted in Figure B.6:

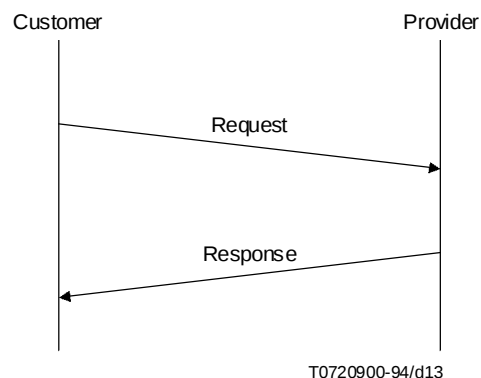


FIGURE B.6/X.163
Service inquiry information flow

The situation is complicated by the fact that the customer could be using more than one network as shown in Figure B.7. Thus, there will be a need for an identification scheme for networks, network elements, services, physical items, data rates, and so on.

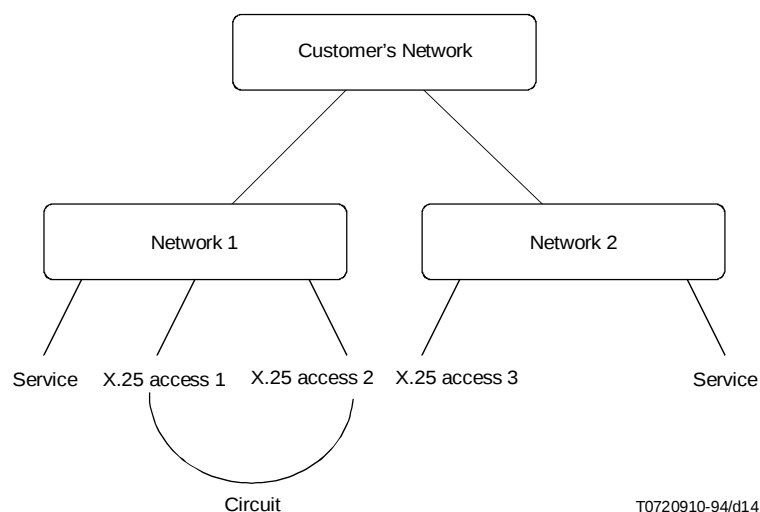


FIGURE B.7/X.163
Customer's network view

Partial inquiries require the specification of criteria for the selective retrieval of information. In general this requires means of specifying and communicating “and”, “or”, nesting relationships, and so on. One way of supporting these requirements could be to reveal some of the Service Provider’s database structure. A “catalogue” elementary service could be used so long as this supports nesting and logical relationships.

The logical division of service inquiries according to the user's view is depicted in Figure B.8.

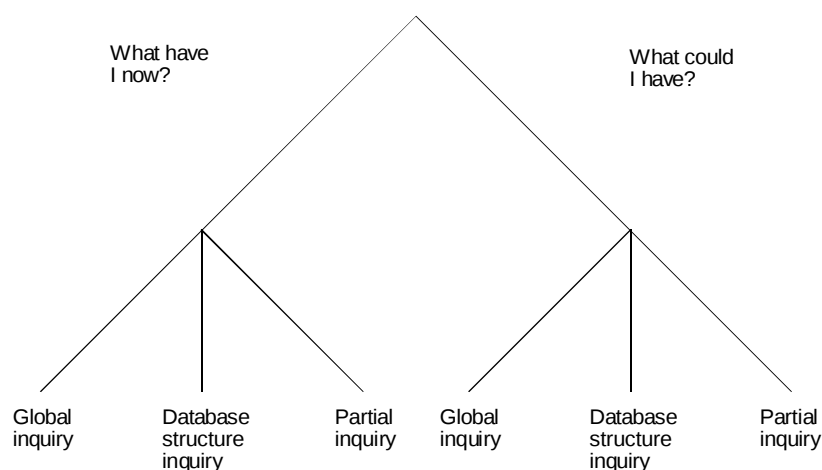


FIGURE B.8/X.163
Inquiry relationships

T0720920-94/d15

B.7.1 Identification

Directory Relative Distinguished Names (RDN) can be used as an hierarchical naming mechanism. It is for further study as to whether this is inadequate to meet all the demands for names required in the CNM-Series of Recommendations. The applicability of Directory Relative Distinguished Names (RDN) to the CNMe realisation and the place of other naming schemes is for further study.