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MESSAGE HANDLING SERVICES

OPERATIONS AND DEFINITION OF SERVICE

MESSAGE HANDLING SERVICES: NAMING AND ADDRESSING FOR PUBLIC MESSAGE HANDLING SERVICES

Recommendation F.401

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation F.401 was revised by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

CCITT NOTE

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

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Recommendation F.401

MESSAGE HANDLING SERVICES: NAMING AND ADDRESSING FOR PUBLIC MESSAGE HANDLING SERVICES

(revised, 1992)

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Introduction

The establishment in various countries of message handling services in association with public networks creates the need to produce Recommendations covering the aspects of public message handling services. Naming and addressing is a key area for the application and the provision of public message handling services on a global scale.

1 Scope

This Recommendation specifies naming and addressing aspects for public message handling services which are described in other Recommendations of the F-Series. It also establishes some principles for the allocation of originator/recipient O/R addresses.

2 References

- CCITT Rec. E.164, *Numbering plan for the ISDN era*, 1991.
- CCITT Rec. F.400, *Message handling services: Message handling system and service overview*, 1992.
- CCITT Rec. F.410, *Message handling services: The public message transfer service*, 1992.
- CCITT Rec. F.415, *Message handling services: Intercommunication with public physical delivery services*, 1988.
- CCITT Rec. F.420, *Message handling services: The public interpersonal messaging service*, 1992.
- CCITT Rec. F.421, *Message handling services: Intercommunication between the IPM service and the telex service*, 1988.
- CCITT Rec. F.422, *Message handling services: Intercommunication between the IPM service and the teletex service*, 1988.
- CCITT Rec. F.423, *Message handling services: Intercommunication between the IPM service and telefax services*, 1992.
- CCITT Rec. F.435, *Message handling services: electronic data interchange messaging service*, 1991.
- CCITT Rec. F.440, *Message handling services: The voice messaging service*, 1992.
- CCITT Rec. F.500, *International public directory services*, 1992.
- CCITT Rec. T.61 (1992), *Character repertoire and coded character sets for the international teletex service*, 1988.
- CCITT Rec. X.121, *International numbering plan for public data networks*, 1992.
- Other CCITT Recs. of the X.400-Series (1993), *Message handling systems*, 1993.
- CCITT Rec. X.402, *Message handling systems: Overall architecture*, 1993.
- CCITT Recs. of the X.500-Series, *Directory systems*, 1992.
- CCITT Rec. X.660[1)], *Procedures for the operation of OSI registration authorities: General procedures*.
- ISO 3166 (1988) (plus amendments), *Codes for the representation of names of countries*, 1988.

3 Definitions

For the purposes of this Recommendation the definitions given in Recommendation F.400 apply. See also Annex A of Recommendation F.400.

4 Abbreviations

ADMD	Administration management domain
DCC	Data country code
DDA	Domain defined attribute
DL	Distribution list

1) Presently at the stage of draft.

IA5 International Alphabet No. 5

IPM Interpersonal messaging

ITA2 International Telegraph Alphabet No. 2

MD Management domain

MH Message handling

MHE Message handling environment

MHS Message handling system

MT Message transfer

O/R Originator/recipient

OU Organizational unit

PO Post office

PD Physical delivery

PRMD Private management domain

PSAP Presentation service access point

RPOA Recognized private operating agency

UPU Universal Postal Union

Abbreviations and labels used in Annex B are explained in the annex itself.

5 Conventions

In this Recommendation the expression "Administration" is used for shortness to indicate a telecommunication Administration, a recognized private operating agency (RPOA), and, in the case of intercommunication with public physical delivery service, a postal Administration.

6 Naming and addressing in message handling

Naming and addressing in message handling have to ensure that users can define the source and the destination of messages in an unambiguous way. The organizational mapping of message handling systems, and the structure of management domains (see Recommendation F.400), together with a set of naming conventions, are the means to establish a uniform and compatible environment for the exchange of messages between any users of the message handling environment. Only those attributes need appear in an O/R address that are required to reach a recipient.

Names and addresses are allocated by the responsible naming authority. These authorities are asked to notify the Director of the CCITT of the names of their ADMDs and of some additional information (name and address of the public service provider, name of the services, etc.) for subsequent publication in the ITU *Operational Bulletin* (see Annex C for the format of the notification and also Recommendation X.660).

In message handling systems (MHS), the principal entity that requires naming is the user (the originator and the recipient of messages). In addition, distribution lists (DLs) have names for their own identification and use in the context of MHS. Users of MHS and DLs are identified by O/R names. (The prefix "O/R" recognizes the fact that the user can be acting as either the originator or the recipient of a message.) An O/R name comprises a directory name, an O/R address or both. Every user or DL has one or more O/R names.

6.1 *O/R addresses*

An O/R address contains information that enables the MHS to identify a user in order to deliver a message or return a notification. DLs are also identified by an O/R address.

An O/R address is comprised of a set of information called attributes. Recommendation X.402 specifies a set of standard attributes from which O/R addresses can be constructed. Standard attributes, the structure of attribute lists

and their syntax and semantics are defined in Recommendation X.402. In addition to standard attributes, and so as to cater for existing messaging systems, there are domain defined attributes whose syntax and semantics are specified by management domains. They are applicable for an interim period.

Various forms of O/R addresses are defined, each serving its own purpose. These forms and their purpose are as follows:

- *Mnemonic O/R address:* Provides a user friendly means of identifying users in the absence of a directory. It may also be used for identifying a distribution list.
- *Terminal O/R address:* Provides a means of identifying users with terminals belonging to various networks.
- *Numeric O/R address:* Provides a means of identifying users with numeric keypads.
- *Postal O/R address:* Provides a means of identifying originators and recipients of messages and notifications, for physical delivery.

It is up to the management domain concerned to decide which name forms it wants to use. Corresponding parties should be made aware of the applicable name space (i.e. the repertoire of names).

6.1.1 *Mnemonic O/R address*

This form of O/R address provides addresses that mnemonically identifies a user or a DL relative to the administration management domain (ADMD) through which the user is accessed. At least one of the conditional attributes following the domain name(s) has to be present. A PRMD name is present only if the user concerned belongs to that domain. If an organizational unit is present, the organization name has to be present as well.

The mnemonic O/R address consists of:

- Country name
- Administration domain name
- [Private domain name]
- [Organization name]
- [Organizational unit name]
- [Personal name]
- [Common name]
- [[Domain defined attributes]]

Note – Attributes in square brackets are conditional. Double square brackets indicate an attribute not belonging to the standard attribute list and may not be required for global addressing.

6.1.2 *Terminal O/R address*

This form of O/R address provides a means for addressing a terminal with its network address, conditionally with the country name, the domain name(s), a terminal identifier, the terminal type and domain defined attributes. If an organizational unit is present, the organization name has to be present as well.

The terminal O/R address consists of:

- [Country name]
- [Administration domain name]

  [Private domain name]
- Network address
- [Terminal identifier]
- [Terminal type]
- [[Domain defined attributes]]
- {Common name}

– {Organization name}

– {Organizational unit names}

– {personal name}

– {unformatted postal address}

Note 1 – Attributes in square brackets are conditional. Double square brackets indicate an attribute not belonging to the standard attribute list and may not be required for global addressing.

Note 2 – Domain defined attributes should be present only if the country name and the Administration management domain name are present.

Note 3 – Network addresses allocated by a domain need to be unambiguous and thus can only be assigned once. Country name and administration management name attributes have to be present when more than one domain is providing service for the address concerned.

Note 4 – Attributes in braces are intended to be used for rendering of the address information (making it visible) on the receiving terminal but not for addressing or routing purposes.

The network address is composed of digits from the X.121 numbering plan (including escape codes) or the E.164 numbering plan.

The conditional terminal identifier might be, for example, a telex answerback string or a teletex terminal identifier.

The conditional terminal type might be, for example, a telex, a teletex, a G3 facsimile, a G4 facsimile, an IA5, or a videotex terminal.

6.1.3 *Numeric O/R address*

This form of O/R address provides addresses that can be entered from devices equipped only with numeric keypads. It identifies numerically a user relative to the ADMD through which the user is accessed.

The numeric O/R address consists of:

– Country name

  Administration domain name

– [Private domain name]

– Numeric user identifier

– [[Domain defined attributes]]

Note 1 – Attributes in square brackets are conditional. Double square brackets indicate an attribute not belonging to the standard attribute list and may not be required for global addressing.

Note 2 – Numeric values are assumed for all attributes. Countries may be named with DCCs (see Recommendation X.121). An ADMD name would require the allocation of a numeric alias name.

Note 3 – This form could also be used for a videotex user number.

Note 4 – The numeric user identifier may use a check digit for validation purposes.

6.1.4 *Postal O/R address*

This form of O/R address provides for the identification of a user by means of his postal address, together with the country name(s), and the domain name(s), and the PD service name through which he is accessed.

See also Recommendation F.415.

Version 1 – Unformatted postal O/R address:

– Physical delivery country name

– Country name

– Administration domain name

– [Private domain name]

– [Physical delivery service name]

– Unformatted postal address

Sufficient address components have to be supplied in the unformatted postal address in order to enable the PD service to route, distribute and deliver the physical message properly.

Version 2 – Formatted postal O/R address:

– Physical delivery country name

– Country name

– Administration domain name

– [Private domain name]

– [Physical delivery service name]

– Postal code

– Set of formatted postal address attributes

There is no defined order in the set of formatted postal O/R address attributes. These attributes are:

– *Postal O/R address components*:

  a) [Physical delivery personal name]

  b) [Physical delivery organization name]

– *Physical delivery address components:*

  a) [Street address]

  b) [P.O. box address]

  c) [Poste restante address]

  d) [Unique postal name]

– *Physical delivery office address components:*

  a) Physical delivery office name

  b) [Physical delivery office number]

  c) [Local postal attributes]

– *Other postal address components*:

  a) [Extension of postal O/R address components]

  b) [Extension of physical delivery address components]

Note – Attributes in square brackets are conditional.

Sufficient attributes have to be provided in order to enable the PD service to route, distribute and deliver the physical message properly.

For the description of formatted postal O/R address attributes, see Annex A of Recommendation F.400 and for the length see § 7 of this Recommendation.

6.2 *Distribution list names*

In the context of message handling, names of distribution lists (making use of the common name attribute) are used to identify the point of expansion of a message using a distribution list, such list containing a set of O/R addresses or further distribution list names. See Recommendation F.400.

Care should be taken in the choice of distribution list names to ensure that users are aware that they are addressing a distribution list.

Note – For naming of distribution lists, the attribute common name may be used. Names of distribution lists should clearly indicate their purpose.

6.3 *Directory names*

In the context of message handling, a directory name can be used to retrieve the required O/R address from a directory. See Recommendations F.400 and F.500. The directory may be provided by local functions.

7 Length of attributes

The coding is specified in the Recommendations of the X.400 series.

The O/R address shall allow the following information:

– *Country name*

The Alpha-2 country code listed in Annex A or the DCC from Recommendation X.121 can be used as the country name. Maximum 3 characters.

– *Physical delivery country name*

The same conditions as for *country name* apply.

– *Physical delivery service name*

Maximum 16 characters.

– *Administration domain name*

Maximum 16 characters. The Numeric O/R address form assumes allocation of numeric country and administration management domain names.

Note 1 – If the national option of to use the "space" character for all ADMDs of a country is applied, it should not have any implication on unique global addressing and on routing, accounting or other general international requirements.

Note 2 – National use of the characters "space" and "0"as ADMD name attributes may have an impact on international messaging. A domain may define the list of ADMD names or PRMD names it wants to accept, depending:

a) on the naming policy applied; and

b) on commercial considerations.

Bilateral agreements between domains may be required for the arrangement chosen.

– *Private domain name*

Maximum 16 characters.

Note 3 – Global uniqueness of the private domain name attribute can be assured by allocating values relative to the ADMD name. PRMD names may be the same even when they are used in conjunction with more than one ADMD, because the country name attribute makes the O/R addresses using these attributes unique. National practices may provide for allocation of PRMD names relative to the country name attribute (when registration is performed by the ADMD concerned or by a centralized national registration authority).

– *Organization name*

Maximum 64 characters.

– *Organizational unit(s)*

Maximum 32 characters each.

– *Personal name*

Maximum length is the sum of the maxima of the parts (64 characters).

a) *Surname* – maximum 40 characters.

b) *Given name* – maximum 16 characters.

c) *Initials* (optional) – maximum 5 characters (for further study).

d) *Generation qualifier* (optional) – maximum 3 characters.

– *Distribution list name*

Maximum lenght of the *common name* applies.

– *Common name*

Maximum 64 characters.

– *Domain defined attributes*

Maximum four separate attributes. Maximum length for "type" 8 and for "value" 128 characters.

– *Network address*

Maximum 14 + 1 digits, including the prefix (see Recommendation X.121).

Note – The classification and maximum value may change to accommodate other addressing schemes.

– *Terminal identifier*

Maximum 24 characters.

– *Numeric user identifier*

Maximum 32 digits.

– *Unformatted postal address (version 1)*

Up to 6 lines with a maximum of 30 characters in each line (see Note). In the case of transit mail, the last line is reserved for the name of the country of the final physical destination.

Note – The number of characters specified refers to characters to be printed (including spaces).

– *Formatted postal address (version 2)*

The formatted postal address attributes and their constraints are (for the description of these attributes see Annex A of Recommendation F.400).

– *Postal O/R address components* (see Note 2)

Physical delivery personal name (see Note 3): 30 characters (see Note 1).

Physical delivery organization name (see Note 3): 30 characters (see Note 1).

– *Physical delivery address components* (see Note 2)

Street address: 30 characters (see Note 1).

P.O. box address: 30 characters (see Note 1).

Poste restante address: 30 characters (see Note 1).

Unique postal name: 30 characters (see Note 1).

– *Physical delivery office address components*

Physical delivery office name: x number of characters (see Notes 1 and 4).

Physical delivery office number: y number of characters (see Notes 1 and 4).

Local postal attributes: z number of characters (see Notes 1 and 4).

– *Other postal address components*

Extension of O/R address components (see Note 5): 30 characters (see Note 1).

Extension of physical delivery address components (see Note 6): 30 characters (see Note 1).

The overall constraints are 6 lines of attributes with a maximum of 30 characters in each line (see Note 1). In the case of transit mail, the last line is reserved for the name of the receiving country of the final physical destination.

Note 1 – The number of characters specified refers to characters to be printed (including spaces).

Note 2 – At least one of the following attributes should be used.

Note 3 – Physical delivery personal name and physical delivery organization name are free form names and have different length from personal name and organization name.

Note 4 – These attributes have to be printed in one line, in some countries together with the postal code. Thus x + y + z is a maximum of 30 characters including the delimiting spaces and the postal code if printed on the same line.

Note 5 – May be used to extend the postal O/R address components.

Note 6 – May be used to extend the physical delivery address components.

8 Principles for the allocation of O/R names and O/R addresses

8.1 The naming authority of the country responsible for administration managment domain names will ensure the designation of an unambiguous name to each ADMD of message handling services in that country.

8.2 Each ADMD is responsible for the administration of names of private management domains associated with it.

Note – For PRMDs intercommunicating with more than one ADMD, registration with each ADMD will assure uniqueness of O/R addresses used. National practices may provide for registration on a country level.

8.3 Each management domain (MD) is responsible for allocating unambiguous addresses to users below the level of the MD name(s) for the purpose of using message handling services.

8.4 A distribution list shall only be given a name which is clearly indicating to the user its intent. Names or O/R addresses shall only be included in a publicly accessible distribution list when the permission of the owner of the information is given and national rules for security are respected.

9 Use of O/R names

9.1 *General*

With the help of O/R names a user can send messages via the MHS. Users may get support from their user agent in the use of O/R names. The latter is a local matter.

9.2 *Character repertoires*

The character repertoire allowed in O/R names are either printable, numeric or teletex repertoires (for more detail see Recommendation X.402).

The printable character repertoire is shown in Table 1/F.401.

The numeric character repertoire comprises the digits 0 to 9 and space, and is a subset of the printable character repertoire (see Table 1/F.401).

For the teletex repertoire see Recommendation T.61. In general the teletex repertoire may also be used internationally.

The use of an extended character repertoire within a management domain is a local matter.

TABLE 1/F.401

Printable character repertoire for O/R names

Designation	Graphic representation
Uppercase letters	A, B ..... Z
Lowercase letters	a, b ..... z
Digits	0, 1 9
Space	(space)
Apostrophe	'
Left parenthesis	(
Right parenthesis	)
Plus sign	+
Comma	,
Hyphen	-
Full stop	.
Solidus	/
Colon	:
Equals sign	=
Question mark	?

Note – According to Recommendation X.208, this repertoire is called a printable string type. All these characters are available in ITA2 (as far as letters are concerned, only in uppercase or lowercase).

9.3 *Specific rules*

Rules for postal O/R addresses, see §§ 2 and 3 and Recommendation F.415.

Management domains will not allow O/R names, that differ only by the number of "space" characters, either at the beginning or the end of any of their attributes, to identify different users.

Additionally MDs will consider the occurrence of contiguous space characters in an O/R address attribute value to be the same as a single space character.

MDs will not allow O/R names, that differ only by small letter/capital letter distinctions, to identify different users.

9.4 *Support of forms of O/R addresses*

Each MHS shall support all the name address forms in the incoming direction for transitting purposes. It is the decision of the management of a domain which name forms are allocated to the users of that domain. In the outgoing direction the originating domain needs to use the name forms the destination domain applies. The way in which names are inputted by, or presented to, the subscriber is a local matter.

ANNEX A

(to Recommendation F.401)

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

List of Alpha-2 country codes

Note – Source: ISO 3166. Current edition (1988) at time of printing. The latest published edition from ISO should be applied.

Afghanistan	AF	Comoros	KM
Albania	AL	Congo	CG
Algeria	DZ	Cook Islands	CK
American Samoa	AS	Costa Rica	CR
Andorra	AD	Côte d'Ivoire	CI
Angola	AO	Cuba	CU
Anguilla	AI	Cyprus	CY
Antarctica	AQ	Czechoslovakia	CS
Antigua and Barbuda	AG		
Argentina	AR	Denmark	DK
Aruba	AW	Djibouti	DJ
Australia	AU	Dominica	DM
Austria	AT	Dominican Republic	DO
Bahamas	BS	East Timor	TP
Bahrain	BH	Ecuador	EC
Bangladesh	BD	Egypt	EG
Barbados	BB	El Salvador	SV
Belgium	BE	Equatorial Guinea	GQ
Belize	BZ	Ethiopia	ET
Benin	BJ		
Bermuda	BM	Falkland Islands (Malvinas)	FK
Bhutan	BT	Faeroe Islands	FO
Bolivia	BO	Fiji	FJ
Botswana	BW	Finland	FI
Bouvet Island	BV	France	FR
Brazil	BR	French Guiana	GF
British Indian Ocean Territory	IO	French Polynesia	PF
British Virgin Islands	VG	French Southern Territories	TF
Brunei Darussalam	BN		
Bulgaria	BG	Gabon	GA
Burkina Faso	BF	Gambia	GM
Burma	BU	Germany, Federal Republic of	DE
Burundi	BI	Ghana	GH
Byelorussian SR	BY	Gibraltar	GI
		Greece	GR
Cameroon	CM	Greenland	GL
Canada	CA	Grenada	GD
Cape Verde	CV	Guadeloupe	GP
Cayman Islands	KY	Guam	GU
Central African Republic	CF	Guatemala	GT
Chad	TD	Guinea	GN
Chile	CL	Guinea-Bissau	GW
China	CN	Guyana	GY
Christmas Islands	CX		
Cocos (Keeling) Islands	CC	Haiti	HT
Colombia	CO	Heard and Mc Donald Islands	HM

Honduras	HN
Hong Kong	HK
Hungary	HU
Iceland	IS
India	IN
Indonesia	ID
Iran, Islamic Republic of	IR
Iraq	IQ
Ireland	IE
Israel	IL
Italy	IT
Jamaica	JM
Japan	JP
Jordan	JO
Kampuchea, Democratic	KH
Kenya	KE
Kiribati	KI
Korea, Democratic People's Republic of	KP
Korea, Republic of	KR
Kuwait	KW
Lao People's Democratic Republic	LA
Lebanon	LB
Lesotho	LS
Liberia	LR
Libyan Arab Jamahiriya	LY
Liechtenstein	LI
Luxembourg	LU
Macau	MO
Madagascar	MG
Malawi	MW
Malaysia	MY
Maldives	MV
Mali	ML
Malta	MT
Marshall Islands	MH
Martinique	MQ
Mauritania	MR
Mauritius	MU
Mexico	MX
Micronesia	FM
Monaco	MC
Mongolia	MN
Montserrat	MS
Morocco	MA
Mozambique	MZ
Namibia	NA
Nauru	NR
Nepal	NP
Netherlands	NL
Netherlands Antilles	AN
Neutral Zone (between Saudia Arabia and Iraq)	NT
New Caledonia	NC
New Zealand	NZ
Nicaragua	NI
Niger	NE
Nigeria	NG
Niue	NU
Norfolk Island	NF
Northern Mariana Islands	MP
Norway	NO
Oman	OM
Pakistan	PK
Palau	PW
Panama	PA
Papua New Guinea	PG
Paraguay	PY
Peru	PE
Philippines	PH
Pitcairn	PN
Poland	PL
Portugal	PT
Puerto Rico	PR
Qatar	QA
Réunion	RE
Romania	RO
Rwanda	RW
St. Helena	SH
Saint. Kitts-Nevis	KN
Saint Lucia	LC
St. Pierre and Miquelon	PM
Saint Vincent and the Grenadines	VC
Samoa	WS
San Marino	SM
Sao Tome and Principe	ST
Saudi Arabia	SA
Senegal	SN
Seychelles	SC
Sierra Leone	SL
Singapore	SG
Solomon Islands	SB
Somalia	SO
South Africa	ZA
Spain	ES
Sri Lanka	LK
Sudan	SD
Suriname	SR
Svalbard and Jan Mayen Islands	SJ
Swaziland	SZ
Sweden	SE
Switzerland	CH
Syrian Arab Republic	SY
Taiwan, Province of China	TW
Tanzania, United Republic of	TZ
Thailand	TH
Togo	TG
Tokelau	TK
Tonga	TO
Trinidad and Tobago	TT
Tunisia	TN
Turkey	TR

Turks and Caicos Islands	TC	Venezuela	VE
Tuvalu	TV	Viet Nam	VN
		Virgin Islands, U.S.	VI
Uganda	UG		
Ukrainian SSR	UA	Wallis and Futuna Islands	WF
United Arab Emirates	AE	Western Sahara	EH
United Kingdom	GB		
United States	US	Yemen	YE
United States Minor Outlying Islands	UM	Yemen, Democratic	YD
Uruguay	UY	Yugoslavia	YU
USSR	SU		
		Zaire	ZR
Vanuatu	VU	Zambia	ZM
Vatican City State (Holy See)	VA	Zimbabwe	ZW

ANNEX B

(to Recommendation F.401)

Representation of O/R addresses for human usage[1)]

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

B.1 *Purpose*

An O/R address consists of a set of attribute values taken from a total of 31 possible attributes. In order to represent visually an address to a human user, and to enable the user to enter the address into a user interface, each attribute value needs to be associated with the correct attribute type. Many of the full attribute types given in Recommendation X.402 are too long for convenient usage on paper or a screen. There is a need for a format which allows attributes to be represented concisely, e.g. on a business card.

This annex specifies how addresses can be expressed concisely using labels to represent the attribute types. There are three categories of attributes: those standard mnemonic attributes which are most likely to be found in O/R addresses represented for human exchange (e.g. on business cards), those used in physical delivery addresses, and other specialized attributes (including domain defined attributes). In order to provide a format which is as concise as possible, many of the labels are single characters. This also makes them less language dependent.

Subsection B.3 specifies the format for the representation of addresses, and § B.4 specifies the characteristics necessary for user interfaces which are intended to be used in conjunction with this format.

B.2 *Scope*

A labelled format for the communication of O/R addresses to human users is specified. The format consists of a set of pairs of labels and attribute-values. The characteristics of a user interface which are necessary to accept addresses given in this format are also specified.

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1) This Annex is aligned with ISO/IEC 10021-2, Annex F(DAM) and is referenced in Recommendation X.402

In addition, a self-explanatory format suitable for use where there is more space, e.g. in printed material and in the user interface, is specified.

B.3 *Format*

B.3.1 *General*

Some systems are capable of accepting messages when certain optional attributes of the recipient's O/R address [e.g. organizational units (OUs)] are omitted by the originator. In these circumstances it is normally preferable to use the shortest acceptable form of the address when representing the address for human usage.

Note 1 – OUs should only be used to disambiguate users with the same surname if this cannot be achieved by the use of other name attributes (given name, initials, or generation qualifier). The use of additional OUs for this purpose has the disadvantage that the user's O/R name will change if the naming of the OUs changes, or if the user moves to a different OU.

Where national usage permits a single space value for the ADMD in an address, this may be represented in the address either by omitting the ADMD attribute, or showing the ADMD attribute with no value or the value of a space.

Note 2 – When sending messages internationally, there may be difficulties in reaching a recipient if a single space ADMD name is specified.

If the attributes of an O/R address include characters from an extended character set, human users who do not normally use the same extended character set may have difficulty representing the O/R address or entering it into their messaging system.

B.3.2 *Labelled format*

B.3.2.1 *Syntax*

O/R addresses in labelled format consist of delimited pairs of labels and values in the syntax <label>"="<value>. The labels for each attribute are specified in Tables B-1/F.401, B-2/F.401 and B-3/F.401. (The physical delivery attributes in Table B-2/F.401 are included for completeness.) The label and its value are either separated by the character "=", or by the space between two columns in a table. The value is supplied by the human user and is case insensitive.

If label-value pairs appear in sequence on a line, they are separated by delimiters. The delimiter character may be either ";" or "/", but only one of these can be used in one O/R address. If the value of any attribute contains the delimiter character, this is represented by a pair of delimiter characters. If the value of the first attribute contains the alternate delimiter character, this is represented by a pair of alternate delimiter characters.

Note – When the label-value pairs appear in sequence on a line, the use of upper case for labels and lower case for the values makes the format clearer for the user.

If an identifier is required to preface a labelled address, it is recommended that "X.400" be used.

If an address is entirely composed of attributes contained in Table B-1/F.401, it is recommended that the sequence of attributes in the address be that given in Table B-1/F.401. If this sequence is incompatible with normal cultural conventions, an alternative sequence may be adopted for representations of addresses which are primarily intended for use within that culture.

TABLE B-1/F.401

Standard attributes of the mnemonic address form

Attribute type	Abbreviation	Label (where necessary)
Given name	Given name	G
Initials	Initials	I
Surname	Surname	S
Generation qualifier	Generation	Q
Common name	Common name	CN
Organization	Organization	O
Organizational unit 1	Org.Unit.1	OU1
Organizational unit 2	Org.Unit.2	OU2
Organizational unit 3	Org.Unit.3	OU3
Organizational unit 4	Org.Unit.4	OU4
Private management domain name	PRMD	P
Administration management domain name	ADMD	A
Country	Country	C

TABLE B-2/F.401

Physical delivery attributes

Attribute type	Abbreviation	Label (where necessary)
Physical delivery personal name	PD-PN	PD-PN
Extension of postal O/R address components	PD-ext.delivery	PD-EA
Extension of physical delivery address components	PD-ext.address	PD-ED
Physical delivery office number	PD-office number	PD-OFN
Physical delivery office name	PD-office	PD-OF
Physical delivery organization name	PD-O	PD-O
Street address	PD-street	PD-S
Unformatted postal address	PD-address	PD-A
Unique postal name	PD-unique	PD-U
Local postal attributes	PD-local	PD-L
Postal restante address	PD-restante	PD-R
Post office box address	PD-box	PD-B
Postal code	PD-code	PD-PC
Physical delivery service name	PD-service	PD-SN
Physical delivery country name	PD-C	PD-C

TABLE B-3/F.401

Other attributes

Attribute type	Abbreviation	Label (where necessary)
X.121 network address	X.121	X.121
E.164 network address	E.164	E.164
PSAP network address	PSAP	PSAP
User agent numeric ID	N-ID	N-ID
Terminal identifier	T-ID	T-ID
Terminal type	T-TY	T-TY
Domain defined attribute	DDA:<type> a)	DDA:<type> a)

a) The notation <type> identifies the type of domain defined attribute.

Example – X.400: G=john; S=smith; O=a bank ltd; P=abl; A=snomail; C=aq

This address may also be laid out as a table:

G John

S Smith

O A Bank Ltd

P ABL

A Snomail

C AQ

B.3.2.2 *Terminal type*

There are currently six terminal types, and if international consistency is required, the following specific abbreviations should be used to represent the values for these types: tlx, ttx, g3fax, g4fax, ia5 and vtx.

B.3.2.3 *Domain defined attribute*

The label for a domain defined attribute (DDA) consists of "DDA:" followed by the DDA type. If an address includes more than one DDA of the same type, it is assumed that the DDAs are intended to be processed in the sequence in which they are represented.

Example – DDA:RFC-822=fred(a)widget.co.uk; O=gateway; P=abc; C=gb

If the <type> of a DDA type includes the character "=", it is represented by "==".

B.3.3 *Self-explanatory format*

The self-explanatory format may be used when space is available. It consists of a list of the attribute types, either in full or abbreviated. The attribute types or abbreviations may be in any language, but each attribute type or abbreviation in Table B-1/F.401 is followed by the specified label. If English language abbreviations are used, they should be those given in Tables B-1/F.401, B-2/F.401 and B-3/F.401.

If an address is entirely composed of attributes contained in Table B-1/F.401, it is recommended that the sequence of attributes in the address is that given in Table B-1/F.401. If this sequence is incompatible with normal cultural conventions, an alternative sequence may be adopted for representations of addresses which are primarily intended for use within that culture.

Example 1 – Using *attribute types in the Norwegian language*

Fornavn (G)	Per
Etternavn (S)	Hansen
Organisasjon (O)	Teledir
Organisasjonsenhet (OU1)	Forskning
Privat domene (P)	Tele
Administrasjonsdomene (A)	Telemax
Land (C)	NO

Example 2 – Using attribute types and abbreviations in the English language

Given name (G)	John
Surname (S)	Smith
Organization (O)	A Bank Ltd
Org. Unit (OU1)	IT Dept
Org. Unit (OU2)	MSG Group
PRMD (P)	ABL
ADMD (A)	Snomail
Country (C)	AQ

B.4 *User interface*

This subsection specifies the characteristics of a user interface which are necessary to enable a user to input O/R addresses represented in either of the formats specified in § B.3.

It is necessary for the user interface to be able to accept any valid combination of attributes from Tables B-1/F.401, B-2F.401 and B-3/F.401.

If the user interface lists the attributes given in Table B-1/F.401, it is recommended that either the sequence used in Table B-1/F.401 should be used, or if this sequence is incompatible with normal cultural conventions, an alternative sequence may be adopted for representations of addresses which are primarily intended for use within that culture.

If the user omits the ADMD attribute, or omits the value for the ADMD attribute, the ADMD value to be used is a single space provided that the country specified in the O/R address permits use of the single space value for ADMDs.

Where an interface accepts an O/R address as a single string (e.g. in a command line interface), it is necessary to accept any valid labelled format address allowing the user to enter either of the valid delimiters. The interface should not require the attributes to be specified in any particular order.

Note – For some existing command line interfaces, it may be necessary to enclose the whole labelled format address in quotes.

If any other type of interface is provided (e.g. a prompting or form-fill interface), it is necessary to provide a means which enables the user to easily associate the identity of each attribute with the labels specified in Tables B-1/F.401, B-2/F.401 and B-3/F.401.

Note 1 – One way to associate the identity of each attribute with the labels is to follow the name or abbreviation for each attribute with the label in brackets, for example:

Given name (G)

Initials (I)

Surname (S)

Generation qualifier (Q)

Common name (CN)

Organization (O)

Organizational unit 1 (OU1)

Organizational unit 2 (OU2)

Organizational unit 3 (OU3)

Organizational unit 4 (OU4)

Private management domain name (P)

Administration management domain name (A)

Country (C)

Note 2 – Many users may have difficulty copying an address presented as a table (either in labelled or self-explanatory format) into a command line interface which uses delimiters.

Note 3 – For form-fill style interfaces, user performance will be optimized when the interface most closely resembles the format of the supplied address with the same sequence of attributes using the same attribute types or labels.

B.4.1 *Examples of application*

Example 1 – The Norwegian user of a command line interface receives a business card containing the following O/R address:

G=john; S=smith; O=a bank ltd; P=abl; A=snomail; C=aq

The command line interface enables the user to type in the address exactly as presented on the card.

Example 2 – The Norwegian user of a form-fill interface receives the same business card. The form on the screen includes the following field names:

Fornavn (G)

Etternavn (S)

Organisasjon (O)

Privat domene (P)

Administrasjonsdomene (A)

Land (C)

The user is able to fill in the form by associating the single letter labels on the business card with the same labels in brackets after the Norwegian names of the attributes on the screen. (For form-fill input, the delimiters are not used.)

Example 3 – The English speaking user of a command line interface receives a document quoting the following O/R address:

Fornavn (G)	Per
Etternavn (S)	Hansen
Organisasjon (O)	Teledir
Organisasjonsenhet (OU1)	Forskning
Privat domene (P)	Tele
Administrasjonsdomene (A)	Telemax
Land (C)	NO

The user has been trained how to use the interface, and can correctly enter the address either as:

g=per;s=hansen;o=teledir;ou1=forskning;p=tele;a=telemax;c=no

or as:

g=per/s=hansen/o=teledir/oul=forskning/p=tele/a=telemax/c=no

(The input supplied by the human user is not case sensitive.)

ANNEX C

(to Recommendation F.401)

Format for notification of ADMD names

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

<Address of the organization providing the information>

To be sent to: Director
CCITT
Place des Nations
1211 GENEVA 20
Switzerland

C.1 *Notification of X.400 ADMD name*

The information is provided for the purpose of making ADMD names available for reference, and for potential service providers to obtain contact addresses for interconnection arrangements on a bilateral basis.

Provision of X.400 message handling services			
Service name (MT):			As appropriate
Service name (IPM):			
Service name (...):			
ADMD name:			
Country [a]			
Contact address: (Postal address)			
Telephone:			
Telefax:			
Telex:			
X.400:			
HELPDESK available? [b] (check one)	Yes	No	
AUTOANSWER available? [b] (check one)	Yes	No	

[a] Use Alpha-2 country codes of Annex A.

[b] It is proposed to provide two O/R-addresses, namely HELPDESK and AUTOANSWER (together with no other attributes than country and domain names).

Example 1 – S=helpdesk; A=arcom; C=ch;

Example 2 – S=autoanswer; A=dbp; C=de

Note – National practices may impose coordination before sending notification to the ITU.