THE DRAWINGS CONTAINED IN THIS RECOMMENDATION HAVE BEEN DONE IN AUTOCAD.

ANNEX A

(to Recommendation U.82)

Examples of field coding and content of MXUs for interconnection of telex SFUs when using the synchronous data network procedures

A.1 *Introduction*

This annex specifies the structure and coding of MXUs using the notation defined in Recommendation X.409.

This structure should be used when telex SFUs are interconnected with each other using the synchronous data network procedures described in § 10.3.2.

A number of data types that appear in the formal definition of MXUs are described in more detail in the following paragraphs.

The formal definition of MXUs is shown in § A.3 and examples of the coding are shown in Figures A-1/U.82 to A—4/U.82.

A.2 *Description of data types*

In general the data types are described in § 9. Certain data types are described below to provide clarification on format.

A.2.1 *Type identity*

The MXU type is identified by a type number coded in accordance with Table 2/U.82.

TypeIdentity ::= [APPLICATION 3] IMPLICIT INTEGER{

TT(1),**DN**(17),**ND**(18),**CN**(19),**SRQ**(33),**SRPT**(34)}

where

TT	Text transfer
DN	Delivery notification
ND	Non—delivery notification
CN	Combined delivery/non—delivery notification
SRQ	Status request
SRPT	Status report

A.2.2 *Message identity*

The message identity is described in § 9.2.

MessageIdentity ::= [APPLICATION 4] IMPLICIT SEQUENCE{

origCountryRef	NumericString,
origSFURef	NumericString,
messagesSerialNumber	NumericString,
origTime	DateandTime}

The originating country reference is the 2 or 3 digits F.69 country code.

The originating SFU reference is a 4 character numeric code.

Message serial number is a 6 digit number.

The originating time is defined as a date and time type and represents the local time at the originating telex SFU.

OrigTime ::= DateandTime

DateandTime ::= [UNIVERSAL 24] IMPLICIT IA5String

Thus an originating (local) time of 12.22 PM on 9 May 1983 which is represented by the value "8305091222" can be encoded as:

DateandTime	Length	Contents
18	OA	38333035303931323232
16	16	16

A.2.3 *Message code indicador*

The message code indicator describes the coding of the message text contained in the MXU message block and can be ITA2, IA5 or S.61.

MessageCodeIndicator ::= [APPLICATION 6] IMPLICIT INTEGER{

ITA(0),IA5(1),S61(2)}

It should be noted that the message code indicator only refers to the coding of the MXU message block and is not applicable to any other data types. Although the text coding is also described in the UMXU message block structure (§ A.2.4) this indicator is retained for completeness in the structure of an MXU Header.

A.2.4 *UMXU message block*

The **UMXU** message block contains the message text received from the subscriber and can be coded in ITA2, IA5 or S.61. The coding must be in accordance with the message code indicator.

UMXUMessageBlock ::= [APPLICATION 1] CHOICE{

ITA2String,

[0] IMPLICIT S61String

[1] IMPLICIT IA5String}

A.2.5 *ITA2 string*

An ITA2 String represents an ordered set of zero or more characters chosen from the set defined by Recommendation F.1 in Table 1/F.1.

The ITA2 String is formally defined below. Each octet contains a single 5 unit code. Bits 8—6 of each octet are zero and bits 5—1 correspond to element numbers 5—1 using the F1 element numbering convention.

ITA2String :: [APPLICATION 7] IMPLICIT OCTET STRING

A.2.6 *Delivery information*

The delivery information contains one data type, delivery address, that will always be present. The remaining data types are optional in the sense that they will be present if and only if the originating SFU has been supplied with the information.

DeliveryInformation ::= SEQUENCE{

deliveryAddress[0] IMPLICIT NumericString,

expectedAnswerback[1] IMPLICIT IA5String OPTIONAL,

attentionInformation[2] IMPLICIT IA5String OPTIONAL,

delayIndication[3] IMPLICIT IA5String OPTIONAL}

The delivery address is the called international telex address in the format of the F.69 country code and national number.

The format of the expected answerback and attention information should remain as provided by the calling subscriber.

The delay indication, when present, describes the type of delivery delay required. The format of this field should be:

a) D if the calling subscriber leaves the period of delay to the discretion of the Administration providing the SFU service,

b) DXY where XY are numeric characters which specify the minimum desired delay in hours from 01—23.

c) LXY where XY are numeric characters (01—24) which specify the maximum time limit for delivering the message to the address.

A.2.7 *SMXU message block*

The data values contained in the octets of both the notification and status report *SMXU* message block and the status request *SMXU* message block should be coded in accordance with the message code indicator described in § A.2.4.

A.2.8 *Notification and status report SMXU message block*

The notifications and status reports provide information about the delivery status of messages to called addresses. The optional data types will be present if and only if the SFU transmitting the SMXU message block has the required information.

NotificationandStatusReportSMXU MessageBlock ::= [APPLICATION 8 IMPLICIT SEQUENCE OF SEQUENCE{

[0] IMPLICIT **Status**,

[1] IMPLICIT **CalledAddress,**

[2] IMPLICIT **Answerback** OPTIONAL,

[3] IMPLICIT **LastAttemptTime** OPTIONAL,

CHOICE [4] IMPLICIT **Reason**,

[5] IMPLICIT **ChargeableDuration** OPTIONAL}

A.2.9 *Last attempt time*

The last attempt time represents a time of day local to the SFU which has the responsiblity for delivering the message. The format of the last attempt time is a string of characters YYMMDDHHNN,

where

YY represents two numeric characters indicating the year

MM represents two numeric characters indicating the month

DD represents two numeric characters indicating the day

HH represents two numeric characters indicating the hour

NN represents two numeric characters indicating the minute

LastAttemptTime ::= [APPLICATION 10] IMPLICIT OCTET STRING

The coding of the octet string should be in accordance with the message code indicator described in § A.2.4.

A.2.10 *Reason*

The reason indicates why a delivery attempt has failed. The reason is a string of characters forming the service code that should be returned to the subscriber.

Reason ::= [APPLICATION 11] IMPLICIT OCTET STRING

The coding of the octet string should be in accordance with message code indicator described in § A.2.4.

A.2.11 *Chargeable duration*

The chargeable duration represents the time in minutes and seconds for which the call should be charged. The chargeable duration is a string of 5 characters in the format MMM.M, where MMM represents the time in minutes (0—999) and N represents the time in tenths of minutes (0—9). The separator is a full stop.

ChargeableDuration ::= [APPLICATION 14] IMPLICIT OCTET STRING

The coding of the octet string should be in accordance with the message code indicator described in § A.2.4.

A.2.12 *Transit identities*

The transit identities format is subject to further studies on transit store and forward, but will consist of a sequence of transit identity information for each transit unit used in the order of call establishment.

A.3 *Format definition of telex SFU MXUs*

MXU ::= CHOICE{[0] IMPLICIT **UMXU**, [1] IMPLICIT **SMXU**}

UMXU ::= SEQUENCE{**UMXUHeader, UMXUMessageBlock**}

UMXUHeader ::= [APPLICATION 0] IMPLICIT SEQUENCE{
TypeIdentity,
MessageIdentity,
DestinationSFUIdentity,
MessageCodeIndicator,
[0] IMPLICIT SEQUENCE OF **DeliveryInformation**

UMXUMessageBlock ::= APPLICATION 1] CHOICE{ **ITA2String,**
[0] IMPLICIT S61String,
[1] IMPLICIT IA5String}

— message text received from subscriber, coded in accordance with message code indicator —

— various header information —

TypeIdentity ::= [APPLICATION 3] IMPLICIT INTEGER{
TT(1),**DN**(17),**ND**(18),**CN**(19),**SRQ**(33),**SRPT**(34)}

MessageIdentity ::= [APPLICATION 4] IMPLICIT SEQUENCE{
origCountryRef NumericString,
origSFURef NumericString,
messageSerialNumber NumericString,
origTime DateandTime}

DestinationSFUIdentity ::= [APPLICATION 5] IMPLICIT SEQUENCE{
destinationCountryRef NumericString,
destinationSFURef NumericString}

MessageCodeIndicator ::= [APPLICATION 6] IMPLICIT INTEGER{
ITA2(0),**IA5**(1),**S‘1**(2)}

DeliveryInformation ::= SEQUENCE{
deliveryAddress[0] IMPLICIT NumericString,
expectedAnswerback[1] IMPLICIT IA5String OPTIONAL,
attentionInformation[2] IMPLICIT IA5String OPTIONAL,
delayIndication[3] IMPLICIT IA5String OPTIONAL}

ITA2String ::= [APPLICATION 7] IMPLICIT OCTET STRING

```
SMXU                                    ::= SEQUENCE{
                                            SMXUHeader, MXUMessageBlock}
SMXUHeader                              ::= [APPLICATION 2] IMPLICIT SEQUENCE{
                                            TypeIdentity,
                                            MessageIdentity,
                                            DestinationSFUIdentity,
                                            MessageCodeIndicator,
                                            TransitIdentities OPTIONAL}
SMXUMessageBlock                        ::= CHOICE{
                                            NotificationandStatusReportSMXUMessageBlock,
                                            StatusRequestSMXUMessageBlock}
NotificationandStatusReportSMXU         ::= [APPLICATION 8] IMPLICIT SEQUENCE OF SEQUENCE{
MessageBlock
                                            [0] IMPLICIT Status,
                                            [1] IMPLICIT CalledAddress,
                                            [2] IMPLICIT Answerback OPTIONAL,
                                            [3] IMPLICIT LastAttemptTime OPTIONAL,
                                            CHOICE [4] IMPLICIT Reason,
                                            [5] IMPLICIT ChargeableDuration OPTIONAL}
StatusRequestSMXUMessageBlock::  =      [APPLICATION 9] IMPLICIT SEQUENCE{
                                            requestType [0] IMPLICIT INTEGER{
                                            requestAllAddresses (0),
                                            requestNonDeliveryAddresses (1),
                                            requestSpecifiedAddresses (2)},
                                            specifiedAddresses [1] IMPLICIT AddressList OPTIONAL}
                                            AddressList OPTIONAL}
                                              — transit identities —
                                    — transit identities are for further study —
TransitIdentities                       ::= SEQUENCE{
                                            firstTrId [0] IMPLICIT NumericString OPTIONAL,
                                            secondTrId [1] IMPLICIT NUMERICString OPTIONAL,
                                            thirdTrId [2] IMPLICIT NumericString OPTIONAL,
                                            fourthTrId [3] IMPLICIT NumericString OPTIONAL,
                                            fifthTrId [4] IMPLICIT NumericString OPTIONAL}
                                    —SMXU Message Block Information —
                                — all octets are coded in accordance with the message code indicator —
Status                                  ::  INTEGER{ delivery (0), nonDelivery (1)}
CalledAddress                           ::= OCTET STRING
                                    — called address is restricted to numeric characters —
```

Answerback ::= OCTET STRING

LastAttemptTime ::= [APPLICATION 10] IMPLICIT OCTET STRING

Reason ::= [APPLICATION 11] IMPLICIT OCTET STRING

ChargeableDuration ::= [APPLICATION 12] IMPLICIT OCTET STRING

AddressList ::= SET {specifiedAddress IMPLICIT OCTET STRING}

Figure A—1/U.82 - CCITT 60611

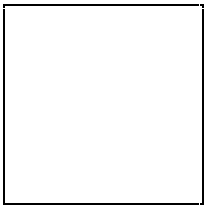


Figure A—2/U.82 - CCITT 60621

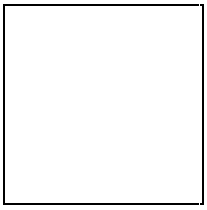


Figure A—3/U.82 - CCITT 60630

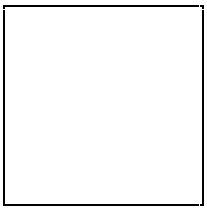
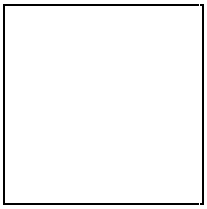


Figure A—4/U.82 - CCITT 60641



APPENDIX I

(to Recommendation U.82)

Examples of field coding and content of MXUs for interconnection of telex SFUs when using the telex network, direct circuits and circuit switched data networks using asynchronous transmission

Example of UMXU — TT

Field description	Content
Type identity	01 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Delivery address expected answerback	41994531 + / 994531 FUG D (Attention line), D
Delivery address expected answerback	41662724 + / 662724 SPEER D (Attention line)
Delivery address expected answerback	41246178 + / 246178 ADAC D (Attention line)
Delivery address expected answerback	41823590 + / 823590 SEB D (Attention line)
End of address line	BT
Message text	Message text
End of MXU indicator	+ + + +

Note 1 — Delay indicator:

D Delay at discretion of Administration

DXYXY specifies minimum delay in hours

LXY XY specifies maximum time limit.

Note 2 — Message code indicator:

0 ITA2

1 IA5

2 S.61.

Note 3 — The expected answerback, attention line information and delay indicator may be optional fields. Each address line is delimited by CRLF.

Note 4 — The message text is the customer text and should not include the input end of message or end of transaction signals.

Example of SMUX — DN

Field description	Content
Type identity	11 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Transit identities	+
Delivery status	0 +
Address	41994531 +
Received answerback	994531 FUG D +
Delivery date/time	82—12—12 + 13—24 +
Chargeable duration	006.3 +
Delivery status	0 +
Address	41246178 +
Received answerback	246178 ADAC D +
Delivery date/time	82—12—12 + 12—58 +
Chargeable duration	006.3 +
End of MXU indicator	+ + + +

Note 1 — Transit identity field is for future use.

Note 2 — Chargeable duration is in minutes and tenths of minutes.

Example of SMUX — NDN

Field description	Content
Type identity	12 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Transit identities	+
Delivery status	1 +
Address	41662724 +
Received answerback	662724 SPDDR D +
Date/limit of last attempt	82—12—12 + 13—20 +
Reason	A/B +
Delivery status	1 +
Address	41823590 +
Received answerback	+
Date/time of last attempt	82—12—12 + 12—49 +
Reason	DER +
End of MXU indicator	+ + + +

Note 1 — Wrong answerback received for first address.

Note 2 — No answerback received for second address.

Example of SMXU — CN

Field description	Content
Type identity	13 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Transit identities	+
Delivery status	0 +
Address	41994531 +
Received answerback	994531 FUG D +
Delivery date/time	82—12—12 + 13—24 +
Chargeable duration	006.3 +
Delivery status	1 +
Address	41662724 +
Received answerback	662724 SPDDR D +
Date/time of last attempt	82—12—12 + 13—20 +
Reason	A/B +
Delivery status	1 +
Address	41823590 +
Received answerback	+
Date/time of last attempt	82—12—12 + 12—49 +
Reason	DER +
Delivery status	0 +
Address	41246178 +
Received answerback	246178 ADAC D +
Delivery date/time	82—12—12 + 12—58 +
Chargeable duration	006.3 +
End of MXU indicator	+ + + +

Example of SMXU — SRQ

Field description	Content
Type identity	21 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Transit identities	+
Request type: 0	0 +
(see Note)	+ + + +
or 1	1 +
+ + + +	
or 2	2 +
Specified address	41994531 +
End of MXU indicator	+ + + +

Note — Request type indicators:
0 — Request all
1 — Request non—delivery reports only
2 — Request report on specified address(es).

Example of SMXU — SRPT

Field description	Content
Type identity	22 +
Message identity	51 + 0001 + MSG NO. + 82—12—12 + 12—22 +
Destination SFU identity	41 + 0002 +
Message code indicator	0 +
Transit identities	+
Delivery status	0 +
Address	41994531 +
Received answerback	994531 FUG D +
Date/time of delivery or last attempt	82—12—12 + 13—24 +
Chargeable duration	006.3 +
End of MXU indicator	+ + + +