PACKET FORMATS OF AX.25 LEVEL 3 PROTOCOL

Terry Fox, WB4JFI
President, AMRAD
1819 Anderson Rd.
Falls Church, VA 22043

Description

This paper is part two of a series of papers that describe The Network Sublayer portion of an AX.25 data communications system.

The purpose of this paper is to describe the formats of the various types of packets used to establish, maintain, and tear down a connection between a DTE and a DCE, along with the packets necessary to control the data flow along that connection while it is operational.

This paper was generated by taking the CCITT X.25 document and adding or deleting information pertaining to amateur radio data networking.

This is a first draft, corrections and ammendments will be forthcoming. Follow the AMRAD Newsletter (see information in the first paper of this series) for further information.

6 Packet Formats

6.1 General

The possible extension of packet formats by the addtion of new fields is a subject for further study. In general any additional field would:

a) only be provided as an addition following all previously defined fields, not as an insertion between any prevrously defined fields;

b) be transmitted to a DTE only when either the DCE has been informed that the DTE is able to interpret this field and act accordingly, or when the DTE can ignore the field without adversely affecting the operation of the DTE/DCE interface;

c) not contain any information pertaining to a user facility to which the DTE has not subscribed, unless the DTE can ignore the facility without adversely affecting the operation of the DTE/DCE interface.

Bits of an octet are numbered 8 to 1 where bit 1 is the low order bit and is transmitted first. Octets of a packet are consecutively numbered starting at 1 and are transmitted in this order.

6.1.1 General format identifier

The general format identifier (GFI) field is a four bit binary coded field which is used to indicate the general format of the rest of the packet header. The GFI is located in bit positions 8, 7, 6, and 5 of octet 1, with bit 5 being the low order bit (see Table 7/AX.25). Values for the GFI not specified in Table 7/AX.25 are reserved for future use.

Bit 8 of the GFI is used for the Qualifier bit (Q bit) in data packets, and is set to 0 in all other packets.

Bit 7 of the GFI is used for delivery confirmation (D bit) in data packets. It is set to 1 in call set-up packets, and is set to 0 in all other non-data packets.

Bits 6 and 5 are encoded 0 and 1 respectively, indicating that all sequence numbering will be done modulo 8. The encoding of bits 6 and 5 to 1 and 0 is reserved for future use. Bit 6 and 5 encodings of both zero or both one are not allowed under this recommendation.

General Format Identifier (GFI)	Octet 1 bits 8 7 6 5
Call set-up packets	0 1 0 1
Clearing, flow control, interrupt, reset, restart, and diagnostic packets	0 0 0 1
Data packets	X X 0 1

Where:

a bit marked X may be either a 0 or a 1 as indicated elsewhere in the text.

Table 7/AX.25
General Format Identifier

6.1.2 Logical channel group number

The Logical channel group number (LCGN) is in all packets except for restart or diagnostic packets. It is binary encoded, and resides in bit positions 4, 3, 2, and 1 of octet 1, with bit 1 being the low order bit. For each logical channel, this number has local significance at the DTE/DCE interface.

In restart and diagnostic packets the logical channel group number is set to all zeros.

6.1.3 Logical channel number

The logical channel number (LCN) is in all packets except for restart or diagnostic packet!. It is binary encoded, and resides in all bit positions 0f octet 2, 'with bit 1 being the low order bit. For each logical channel, the LCN has local significance at the DTE/DCE interface.

In restart and diagnostic packets the logical channel number is set to all zeros.

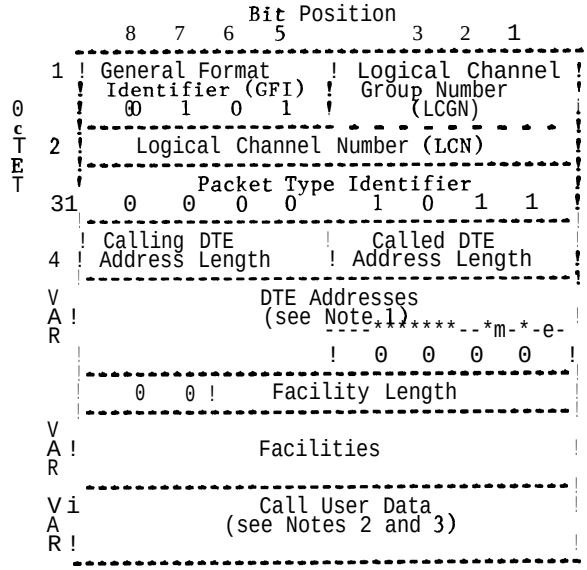
6.1.4 Packet type identifier

Each packet type will be identified by the encoding of octet 3 of the packet. This identifier takes all bit positions, and is encoded as shown in Table 8/AX.25 (Table 8/AX.25 is at the end of this paper). Packet type identifiers other than those shown in Table 8/AX.25 are reserved.

6.2 Call set-up and clearing packets

6.2.1 Call request and incoming call packets

Figure l/AX.25 illustrates the format of call request and incoming call packets.



Note 1. The figure is drawn assuming the total amount of address information is not an integral number of octets. Each address sub-field is potentially of variable length, any padding necessary is added at the end, and will consist of zeros.

Note 2. Bits 8 and 7 of the first octet of the call user data field may have particluar significance (see 6.2.1).

Note 3. Maximum length of the call user data field is 16 octets.

Figure 1/AX.25
Call request and incoming packet format

6.2.1.1 General format identifier

Bit 8 (Q bit) shall be set to 0, bit 7 (D bit) shall be set to 1, and bits 6 and 5 should be set to 0 and 1 respectively.

6.2.1.2 Address lengths field

Octet 4 consists of field length indicators for the called and calling DTE address fields. Bits 4, 3, 2, and 1 indicate the called DTE address length in semi-octets (nibbles). Bits 8, 7, 6, and 5 indicate the calling DTE address length in nibbles. Each address length indicator is encoded in binary, with bits 1 and 5 being the low order bits of their respective indicators.

6.2.1.3 Address field

Octet 5 and the following octets (up to 32 octets) consist of the called DTE address, followed by the calling DTE address. These addresses are encoded as described in Annex F.

6.2.1.4 Facility length field

The octet following the DTE address fields contains the facility length field. This octet has bits 8 and 7 unassigned, and both are set to 0. Bits 6, 5, 4, 3, 2, and 1 contain the facility length information. This information is binary coded, with bit 1 being the low order bit.

6.2.1.5 Facility field

The facility field is present only when the DTE is using an optional user facility requiring some indication in the call request and incoming call packets.

The coding of the facility field is described in section 7.

The facility field must contain an integral number of octets. The actual maximum length of this field depends on the facilities which are offered by the packet switch and network. The maximum number must not exceed 63 octets at any time.

6.2.1.6 Call user data field

A call user data field may be present following the facilities field. This field may be up to 16 octets long, and must contain an integral number of octets.

If a call user data field is present, the use and format of this field are determined by bits 8 and 7 of the first octet of this field in accordance with the following:

If bits 8 and 7 are 00, a portion of the call user data field is used for protocol identification in accordance with other Recommendations (such as AX.29).

If bits 8 and 7 are set to 01, a portion of the call user data field may be used for protocol identification in accordance with specifications of networks.

If bits 8 and 7 are 10, a portion of the call user data field may be used for protocol identification in accordance with specifications of international user bodies.

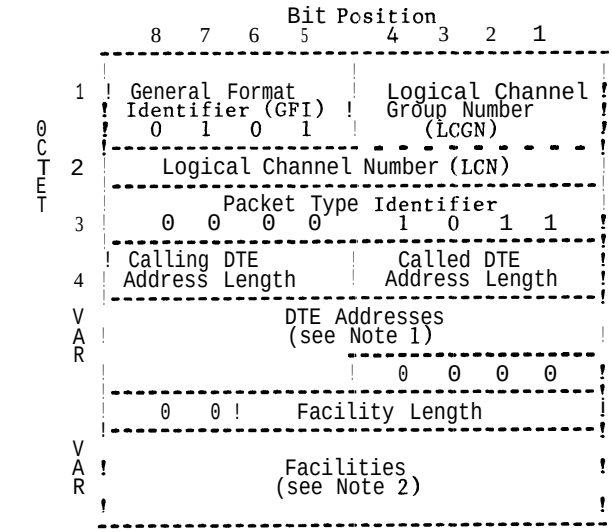
If bits 8 and 7 are set to 11, no constraints are placed on the use by the DTE of the remainder of the call user data field.

Users are cautioned that if bits 8 and 7 have a value other than 11, a protocol may be identified that is implemented within the network.

When a virtual call is established between two packet mode DTEs, the network does not act on any part of the call user data field.

6.2.2 Call accepted and call connected packets

Figure 2/AX.25 illustrates the format of call accepted and call connected packets.



Note 1. The figure is drawn assuming the total amount of address information is not an integral number of octets. Each address sub-field is potentially of variable length, any padding necessary is added at the end, and will consist of zeros.

Note 2. The facility field is not mandatory in call accepted packet (see 6.2.2).

Figure 2/AX.25
Call accepted and call connected packet format

6.2.2.1 General format identifier

Bit 8 (Q bit) shall be set to 0, bit 7 (D bit) shall be set to 1, and bits 6 and 5 should be set to 0 and 1 respectively.

6.2.2.2 Address lengths field

Octet 4 consists of field length indicators for the called and calling DTE address fields. Bits 4, 3, 2, and 1 indicate the called DTE

address length in semi-octets (nibbles). Bits 8, 7, 6, and 5 indicate the calling DTE address length in nibbles. Each address length indicator is encoded in binary, with bits 1 and 5 being the low order bits of their respective indicators.

6.2.2.3 Address field

Octet 5 and the following octets (up to 32 octets) consist of the called DTE address, followed by the calling DTE address. These addresses are encoded as described in Annex F.

6.2.2.4 Facility length field

The octet following the DTE address fields contains the facility length field. This octet has bits 8 and 7 unassigned, and both are set to 0. Bits 6, 5, 4, 3, 2, and 1 contain the facility length information. This information is binary coded, with bit 1 being the low order bit.

The use of the facility length field in call accepted packets is mandatory. It should be set to all zeros if there is no facility field.

6.2.2.5 Facility field

The facility field is present only when the DTE is using an optional user facility requiring some indication in the call accepted and call connected packets.

The coding of the facility field is described in section 7.

The facility field must contain an integral number of octets. The actual maximum length of this field depends on the facilities which are offered by the packet switch and network. The maximum number must not exceed 63 octets at any time.

6.2.3 Clear request and clear indication packets

Figure 3/AX.25 shows the format for clear request and clear indication packets.

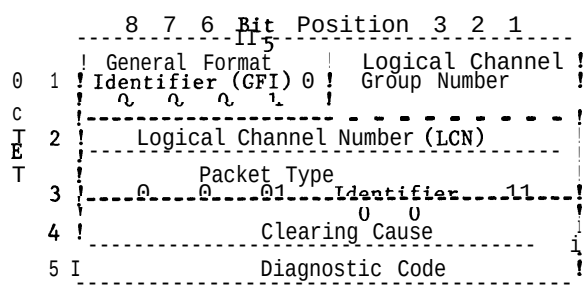


Figure 3/AX.25.
Clear request and clear indication packet format

6.2.3.1 Clearing cause field

Octet 4 is the clearing cause field, which contains the reason for the clearing of the call.

In clear request packets, the clearing cause field should be set by the DTE to one of the following values:

bit:	8	7	6	5	4	3	2	1
value1:	0	0	0	0	0	0	0	0
value2:	1	X	X	X	X	X	X	X

where X may be either 0 or 1

The DCE will prevent values other than those specified above in the clearing cause field from reaching the other end of the call by considering the clear request as an error and following the procedure described in Annex C.

The coding of the clearing cause field in clear indication packets is given in Table 9/AX.25 (Table 9/AX.25 is at the end of this paper).

6.2.3.2 Diagnostic code

Octet 5 is the diagnostic code which contains additional information on the reason for the clearing of the call.

In a clear request packet, the diagnostic code is not mandatory.

In a clear indication packet, if the clearing cause field indicates "DTE originated", the diagnostic code is passed unchanged from the clearing DTE. If the clearing DTE has not provided a diagnostic code in its clear request packet, then the bits of the diagnostic code in the resulting clear indication packet will all be zero.

When a clear indication packet results from a restart request packet, the value of the diagnostic code will be that specified in the restart request packet, or all zeros in the case where no diagnostic code has been specified in restart request.

When the clearing cause field does not indicate "DTE originated", the diagnostic code in a clear indication packet is network generated. Annex E lists the codings for network generated diagnostics. The bits of the diagnostic code are all set to zero when no specified additional information for the clearing is supplied.

The contents of the diagnostic code field do not alter the meaning of the cause field. A DTE is not required to undertake any action on the contents of the diagnostic code field. Unspecified code combinations in the diagnostic code field shall not cause the DTE to refuse the cause field.

6.2.4 DTE and DCE clear confirmation packets

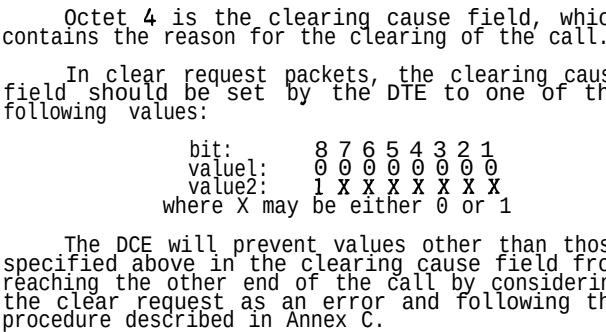
Figure 4/AX.25 shows the format of the DTE and DCE clear indication packets.

Figure 4/AX.25
DTE and DCE clear confirmation packet format

6.3 Data and interrupt packets

6.3.1 DTE and DCE data packets

Figure 5/AX.25 illustrates the format of the DTE and DCE data packets.



Where: D is the Delivery confirmation bit
M is the More data bit
Q is the data Qualifier bit

Figure 5/AX.25. DTE and DCE data packet format

6.3.1.1 Qualifier (Q) bit

Bit 8 of octet 1 is the qualifier bit (Q bit). Q bit operation is described in section 4.3.6.

6.3.1.2 Delivery confirmation (D) bit

Bit 7 of octet 1 is the delivery confirmation bit (D bit). D bit operation is described in section 4.4.1.4.

6.3.1.3 Packet receive sequence number

Bits 8, 7, and 6 of octet 3 are used for indicating the packet receive sequence number P(R). P(R) is binary coded with bit 6 being the low order bit.

6.3.1.4 More data bit

Bit 5 in octet 3 is used for the More data mark (M bit); 0 for no more data, 1 for more data,

6.3.1.5 Packet send sequence number

Bits 4, 3, and 2 of octet 3 are used for indicating the packet send sequence number P(S). P(S) is binary coded, with bit 2 being the low order bit.

6.3.1.6 User data field

Octets following the third octet contain user data. The user data field must contain an integral number of octets.

6.3.2 DTE and DCE interrupt packets

Figure 6/AX.25 illustrates the format of the DTE and DCE interrupt packets.

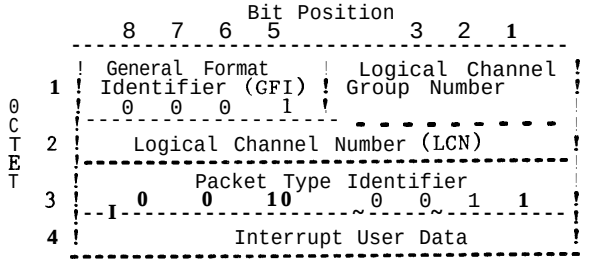


Figure 6/AX.25.
DTE and DCE interrupt packet format

6.3.2.1 Interrupt user data field

Octet 4 contains user data.

6.3.3 DTE and DCE Interrupt confirmation packets

Figure 7/AX.25 illustrates the format of the DTE and DCE interrupt confirmation packets.

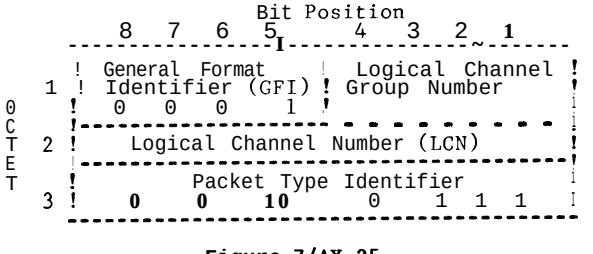


Figure 7/AX.25
DTE and DCE interrupt confirmation packet format

6.4 Datagram and datagram service signal packets

Datagrams are not implemented in AX.25.

6.5 Flow control and reset packets

6.5.1 DTE and DCE receive ready (RR) packets

Figure 10/AX.25 shows the format of the DTE and DCE receive ready (RR) packets.

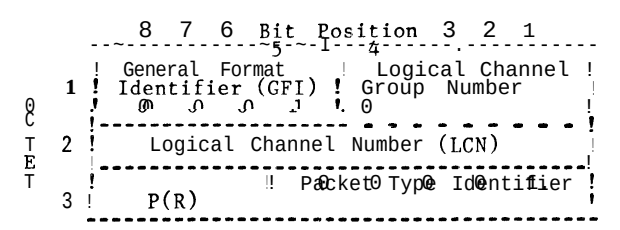


Figure 10/AX.25
DTE and DCE RR packet format

6.5.1.1 Packet receive sequence number

Bits 8, 7, and 6 of octet 3 are used for indicating the packet receive sequence number P(R). P(R) is binary coded, with bit 6 being the low order bit.

6.5.2 DTE and DCE receive not ready (RNR) packets

Figure 11/AX.25 illustrates the format of the DTE and DCE RNR packets.

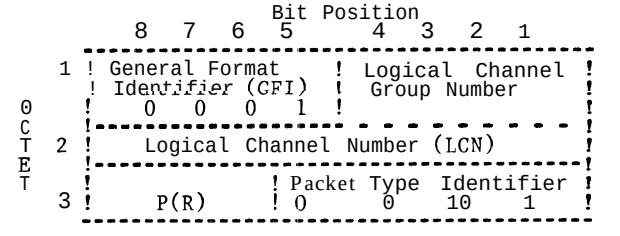


Figure 11/AX.25
DTE and DCE RNR packet formats

6.5.2.1 Packet receive sequence number

Bits 8, 7, and 6 of octet 3 are used for indicating the packet receive sequence number P(R). P(R) is binary coded, with bit 6 being the low order bit.

6.5.3 Reset request and reset indication packets

Figure 12/AX.25 illustrates the format of the reset request and reset indication packets.

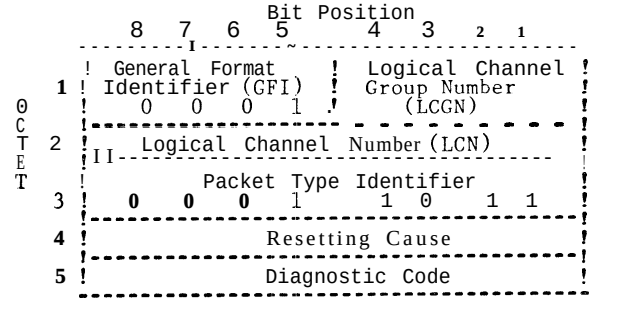


Figure 12/AX.25
Reset request and reset indication packet format

6.5.3.1 Resetting cause field

Octet 4 is the resetting cause field, which contains the reason for the reset.

In reset request packets, the resetting cause field should be set by the DTE to one of the following values:

bit:	8	7	6	5	4	3	2	1
valuel:	0	0	0	0	0	0	0	0
value2:	1	X	X	X	X	X	X	X

where X may be either 0 or 1

The DCE will prevent values other than those specified above in the resetting cause field from reaching the other end of the call by considering

the reset request as an error and following the procedure described in Annex C.

The coding of the resetting cause field in the reset indication packets is given in Table 11/AX.25 (Table 11/AX.25 is at the end of this paper).

6.5.3.2 Diagnostic code

Octet 5 is the diagnostic code which contains additional information on the reason for the reset.

In a reset indication packet, if the **resetting cause field** indicates "DTE originated", the diagnostic code is passed unchanged from the resetting DTE. If the DTE requesting a reset has not provided a diagnostic code in its reset request packet, then the bits of the diagnostic code in the resulting reset indication packet will all be zero.

When a reset indication packet results from a restart request packet, the value of the diagnostic code will be that specified in the restart request packet, or all zeros in the case where there is no diagnostic code has been specified in restart request packet.

When the resetting cause field does not indicate "DTE originated", the diagnostic code in a reset indication packet is network generated. Annex E lists the codings for network generated diagnostics. The bits of the diagnostic code are all set to zero when no specified additional information for the reset is supplied.

The contents of the diagnostic code field do not alter the meaning of the cause field. A DTE is not required to undertake any action on the contents of the diagnostic code field. Unspecified code combinations in the diagnostic code field shall not cause the DTE to refuse the cause field.

6.5.4 DTE and DCE reset confirmation packets

Figure 13/AX.25 shows the format of the DTE and DCE reset confirmation packets.

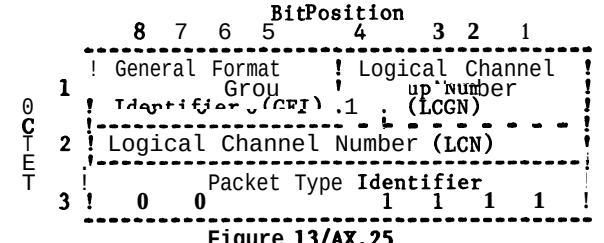


Figure 13/AX.25
DTE and DCE reset confirmation packets

6.6.1 Restart request and restart indication Packets

Figure 14/AX.25 illustrates the format of the restart request and restart indication packets.

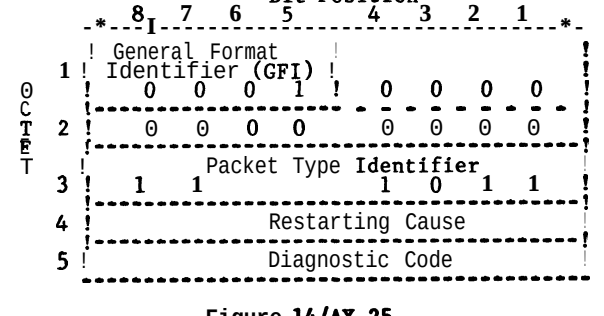


Figure 14/AX.25
Restart request and restart indication packet format

6.6.1.1 Restarting cause field

Octet 4 is the restarting cause field, which contains the reason for the restart.

In restart request packets the restarting cause field should be set by the DTE to one of the following values:

	bit 8	7	6	5	4	3	2	1
value1:	0	0	0	0	0	0	0	0
value2:	1	X	X	X	X	X	X	X

where X may be either 0 or 1

The DCE will prevent values other than those specified above in the restarting cause field from reaching the other end of the **call by** considering the restart request as an error and **following the** procedure described in Annex C.

The coding of the restarting cause field in the restart indication packets is given in Table **12/AX.25.**

	8	7	6	5	4	3	2	1
Local procedure error	0	0	0	0	0	0	0	1
Network congestion	0	0	0	0	0	0	1	1
Network operational	0	0	0	0	0	1	1	1

Table 12/AX.25
Coding of the restarting cause field in restart indication packets

6.6.1.2 Diagnostic code

Octet 5 is the diagnostic code which contains additional information on the reason for the restart.

The diagnostic code is passed to the corresponding **DTEs** as the diagnostic code of a clear **indication** packet for virtual calls.

The coding in a restart indication packet is given in Annex E. The bits of the diagnostic code are all set to zero when no specified additional information for the restart is supplied.

The contents of the diagnostic code field do not alter the meaning of the cause field. A DTE is not required to undertake any action on the contents of the diagnostic code field. Unspecified code combinations in the diagnostic code field shall not cause the DTE to refuse the cause field.

6.6.2 DTE and DCE restart confirmation packets

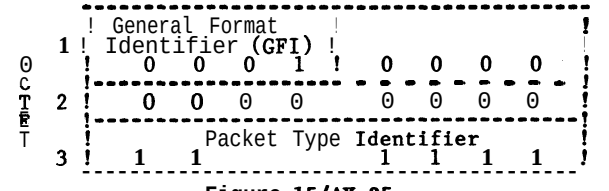
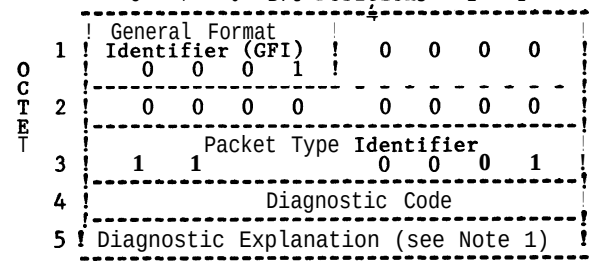


Figure 15/AX.25
DTE and DCE restart confirmation packet format

6.7 Diagnostic packet

Figure 16/AX.25 shows the format of the diagnostic packet.



Note 1: The figure drawn assumes an integral number of octets in the diagnostic explanation

Figure 16/AX.25 Diagnostic packet format

6.7.1 Diagnostic code field

Octet 4 is the diagnostic code and contains information on the error condition that caused the transmission of the diagnostic packet. The coding of the diagnostic field is given in Annex E.

6.7.2 Diagnostic explanation field

When the diagnostic packet is issued as a result of the reception of an erroneous packet from the DTE (see Table C-1/AX.25), this field contains the first three octets of header information from the erroneous DTE packet. If the packet contains less than 3 octets, this field contains whatever bits were received.

When the diagnostic packet is issued as a result of a DCE time-out (see Table D-1/AX.25), the diagnostic explanation field contains 2 octets coded as follows:

bits 8, 7, 6, and 5 of the first octet contain the general format identifier for the interface;

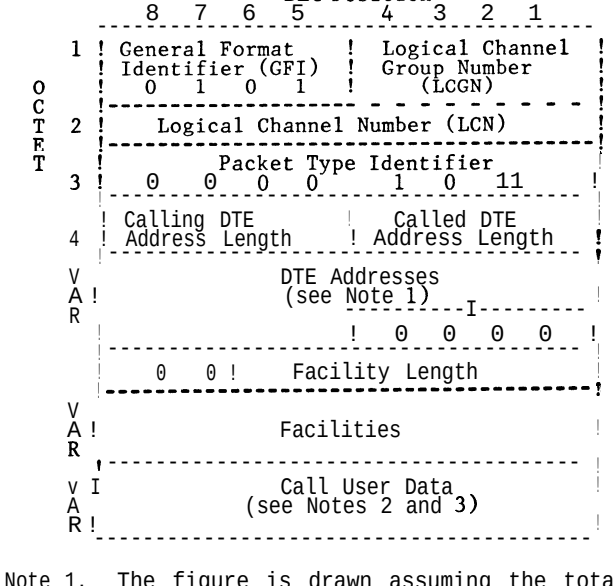
bits 4 to 1 of the first octet and bits 8 to 1 of the second octet are all zero for the expiration of time-out T10 and give the number of the logical channel on which the time-out occured for expiration of time-out T12 or T13.

6.8.2 set-up and clearing packets for the fast select facility and fast select acceptance facility

6.8.2.1 Call request and incoming call packets

Figure 18/AX.25 illustrates the format of call request and incoming call packets used in conjunction with the fast select facility described in section 7.2.4.

The description in section 6.2.1 applies here, except that the length of the call user data field has a maximum length of 128 octets, and should contain an integral number of octets.



Note 1. The figure is drawn assuming the total amount of address information is not an integral number of octets. Each address sub-field is potentially of variable length, any padding necessary is added at the end, and will consist of zeros.

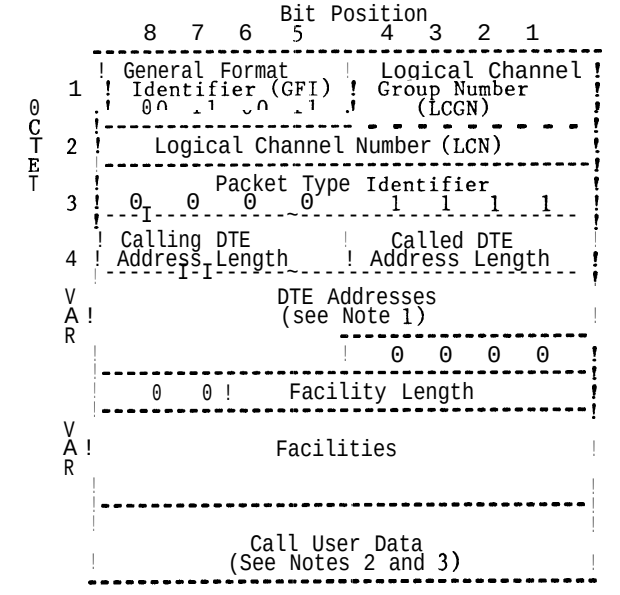
Note 2. Bits 8 and 7 of the first octet of the call user data field ma have particluar significance (see 6.2.13

Note 3. Maximum length of the call user data field is 128 octets.

Figure 18/AX.25
Call request and incoming call packet format for the fast select facility

6.8.2.2 Call accepted and call connected packets

Figure 19/AX.25 illustrates the format of call accepted and call connected packets used in conjunction with the fast select facility described in section 7.2.4.



Note 1. The figure is drawn assuming the total amount of address information is not an integral number of octets. Each address sub-field is potentially of variable length, any padding necessary is added at the end, and will consist of zeros.

Note 2. Bits 8 and 7 of the first octet of the call user data field may have particluar significance (see 6.8.2.2).

Note 3. Maximum length of the call user data field is 128 octets.

Figure 19/AX.25
Call accepted and call connected packet format for the fast select facilitp

The description in section 6.2.2 applies here. In addition, a call user data field may be present. If a call user data field is present, it can contain up to a maximum of 128 octets, and must contain an integral number of octets.

If a call user data field is present the use and format of this field are determined by bits 8 and 7 of the first octet of this field in accordance with the following:

If bits 8 and 7 are 00, a portion of the call user data field is used for protocol identification in accordance with other Recommendations (such as AX.29).

If bits 8 and 7 are set to 01, a portion of the call user data field may be used for protocol identification in accordance with specifications of networks.

If bits 8 and 7 are 10, a portion of the call user data field may be used for protocol identification in accordance with specifications of international user bodies.

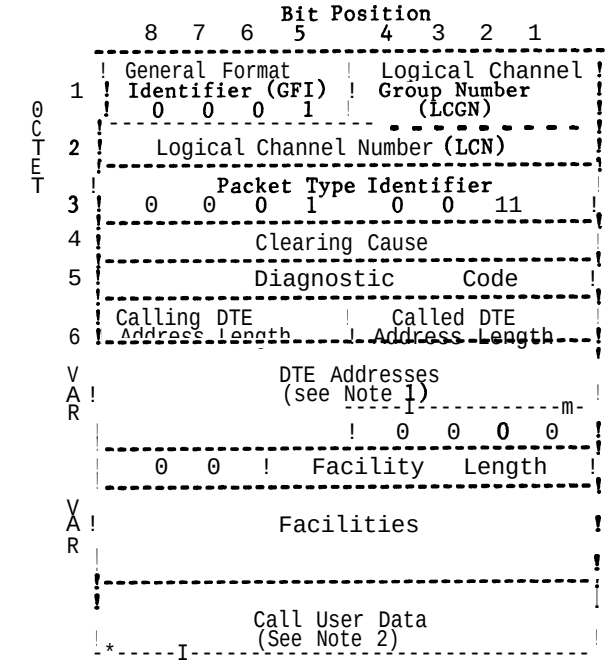
If bits 8 and 7 are set to 11, no constraints are placed on the use by the DTE of the remainder of the call user data field.

Users are cautioned that if bits 8 and 7 have a value other than 11, a protocol may be identified that is implemented within the network.

When a virtual call is established between two packet mode DTEs, the network does not act on any part of the call user data field.

6.8.2.3 Clear request and clear indication packets

Figure 20/AX.25 illustrates the format of clear request and clear indication packets used in conjunction with the fast select facility and fast select acceptance facility described in sections 7.2.4 and 7.2.5.



Note 1. The figure is drawn assuming the total amount of address information is not an integral number of octets. Each address sub-field is potentially of variable length, any padding necessary is added at the end, and will consist of zeros.

Note 2. Maximum length of the call user data field is 128 octets.

Figure 20/AX.25
Clear request and clear indication packet format for the fast select facility and clear indication packet format to the calling DTE for the called called line address modified notification facility

The descriptions of the clearing cause field and the diagnostic code field in section 6.2.3 apply here. In addition, the following fields may follow the diagnostic code field (the use of the diagnostic field itself is mandatory).

6.8.2.3.1 Address length field

This field is coded with all zeros.

6.8.2.3.2 Address field

This field is not present.

6.8.2.3.3 Facility length field

This field is coded with all zeros.

6.8.2.3.4 Facility field

This field is not present.

6.8.2.3.5 Clear user data field

Following the facility field, a clear user data field may be present, and if present, it may be up to a maximum of 128 octets. The clear user data field is required to contain an integral number of octets.

6.8.4 Clear indication packet for called line address modified notification facility

Figure 20/AX.25 illustrates the format of clear indication packet used in conjunction with the called line address modified notification facility described in section 7.2.10.

The description in section 6.8.2.3 applies here, except the notes attached to sections 6.8.2.3.1 and 6.8.2.3.3 and all of sections 6.8.2.3.2, 6.8.2.3.4, and 6.8.2.3.5.

Address field

The addess field is present only when the call is redirected and then cleared by the network or by the alternate DTE without the transmission of the call accepted packet. It consists of the alternate DTE address.

The coding of the address field is described in section 6.2.1.3.

Facility field

The facility field is present only when the call is redirected and then cleared by the network or by the alternate DTE without the transmission of the call accepted packet.

The coding of the facility field is defined in section 7.

Packet Type		Octet 3 Bits
From DCE to DTE	From DTE to DCE	8 7 6 5 4 3 2 1
Call set-up and clearing		
Incoming call	Call request	0 0 0 0 1 0 1 1
Call connected	Call accepted	0 0 0 0 1 1 1 1
Clear indication	Clear request	0 0 0 1 0 0 1 1
DCE clear confirmation	DTE clear confirmation	0 0 0 1 0 1 1 1
Data and interrupt		
DCE data	DTE data	x x x x x x x 0
DCE interrupt	DTE interrupt	0 0 1 0 0 0 1 1
DCE interrupt	DTE interrupt confirmation	0 0 0 1 0 1 1 1
Flow control and reset		
DCE RR	DTE RR	x x x 0 0 0 0 1
DCE RNR	DTE RNR	x x x 0 0 1 0 1
Reset indication	Reset request	0 0 0 1 1 0 1 1
DCE reset confirmation	DTE reset confirmation	0 0 0 1 1 1 1 1
Restart		
Restart indication	Restart request	1 1 1 1 1 0 1 1
DCE restart confirmation	DTE restart confirmation	1 1 1 1 1 1 1 1
Diagnostic		
Diagnostic		1 1 1 1 0 0 0 1

Note: an x bit may be either a 0 or 1

Table 8/AX.25. Packet type identifier encodings

	Bits 8 7 6 5 4 3 2 1
DTE originated	0 0 0 0 0 0 0 0
DTE originated (b)	1 x x x x x x x
Number busy	0 0 0 0 0 0 0 1
Out of order	0 0 0 0 1 0 0 1
Remote procedure error	0 0 0 1 0 0 0 1
Reverse charging acceptance not subscribed (d)	0 0 0 1 1 0 0 1
Incompatible destination	0 0 1 0 0 0 0 1
Fast select acceptance not subscribed	0 0 1 0 1 0 0 1
Destination absent	0 0 1 1 1 0 0 1
Invalid facility request	0 0 0 0 0 0 1 1
Access barred	0 0 0 0 1 0 1 1
Local procedure error	0 0 0 1 0 0 1 1
Network congestion	0 0 0 0 0 1 0 1
Not obtainable	0 0 0 0 1 1 0 1
RPOA out-of-order (a)	0 0 0 1 0 1 0 1

Where :

(a) May be received only if the corresponding optional user facility is used.

(b) When bit 8 is set to 1, the bits represented by Xs are those included by the remote DTE in the clearing or restarting cause field of the clear or restart request packet.

(d) Used for amateur to public data network internetworking only.

Table 9/AX.25

Coding of clearing cause field in clear indication packet

	Bits 8 7 6 5 4 3 2 1
DTE originated	0 0 0 0 0 0 0 0
DTE originated (d)	1 x x x x x x x
Remote procedure error	0 0 0 0 0 0 1 1
Incompatible destination	0 0 0 1 0 0 0 1
Local procedure error	0 0 0 0 0 0 1 0 1
Network congestion	0 0 0 0 0 1 1 1

Where:

(d) When bit 8 is set to 1, the bits represented by Xs are those indicated by the remote DTE in the resetting cause field of the reset request packet.

Table 11/AX.25

Coding of resetting cause field in reset indication packet