OPTIONAL FACILITIES FOR AX.25 LEVEL 3 PROTOCOL

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Description

This paper is the third in a series of papers that make up a recommendation for the AX.25 Network Sublayer protocol.

The purpose of this paper is to describe optional user facilities requested of the network or called DTE at time of a call request. Included in these facilities are standard CCITT recommended facilities, and additional amateur network facilities. The amateur facilities are suggested by the draft committee, reader suggestions or comments are invited.

Comments may be sent to the author, or sent to the AMRAD Newsletter for publication. Follow the AMRAD Newsletter for further details.

7 Procedures and formats for optional user facilities ate packet level

7.1 Procedures for optional user facilities associated with virtual call service

7.1.1 Extended packet sequence numbering

This facility is not presently allowed in AX.25.

7.1.2 Nonstandard default window sizes

Nonstandard default window sizes is an optional user facility agreed to for a period of time. This facility, if subscribed to, provides for the selection of default window sizes from the list of window sizes supported. Some networks may constrain the default window sizes to be the same for each direction of data transmission across the DTE/DCE interface. In the absence of this facility, the default window sizes are 2.

Values other than the default window sizes may be negotiated for a virtual call by means of the flow control parameter negotiation facility (see 7.2.2).

7.1.3 Default throughput classes assignment

This optional facility is not implemented in AX.25.

7.1.4 Packet retransmission

This optional facility is not implemented in AX.25.

7.1.5 Incoming calls barred

This optional facility is not implemented in AX.25.

7.1.6 Outgoing calls barred

This optional facility is not implemented in AX.25.

7.1.7 One-way logical channel outgoing

One-way logical channel outgoing is an optional user facility agreed to for a period of time. This user facility, if subscribed to, restricts the logical channel use to originating outgoing virtual calls only.

A logical channel used for virtual calls retains its full duplex capability.

The rules according to which logical channel group numbers and logical channel numbers can be assigned to one-way outgoing logical channels for virtual calls are given in Annex A.

If all the logical channels for virtual calls are one-way outgoing at a DTE/DCE interface, the effect is equivalent to the incoming calls barred facility (not implemented).

7.1.8 One-way logical channel incoming

One-way logical channel incoming is an optional user facility agreed to for a period of time. This user facility, if it is supported, restricts the logical channel use to receiving incoming virtual calls only. A logical channel used for virtual calls retains its full duplex capability.

The rules according to which logical channel group numbers and logical channel numbers can be assigned to one-way incoming logical channels for virtual calls are given in Annex A.

If all the logical channels for virtual calls are one-way incoming at a DTE/DCE interface, the effect is equivalent to the outgoing calls barred facility (not implemented).

7.1.9 Closed user group

This optional facility is not supported.

7.1.10 Closed user group with outgoing access

This optional facility is not available in AX.25.

7.1.11 Closed user group with incoming access

This optional facility is not available in AX.25.

7.1.12 Incoming calls barred within a closed user group

This optional facility is not available in AX.25.

7.1.13 Outgoing calls barred within a closed user group

This optional facility is not available in AX.25.

7.1.14 Bilateral closed user group

This optional facility is not available in AX.25.

7.1.15 Bilateral closed user group with outgoing ac cess ---

This optional facility is not available in AX.25.

7.1.16 Reverse charging

Reverse charging is an optional user facility which mav be requested by a DTE for a given virtual call (see 7.4.2.3), and only for the case of a virtual call destined for a DTE on a public data network.

7.1.17 Reverse charging acceptance

This optional facility is not available in AX.25.

7.1.18 RPOA selection

Recognized private operating agency (RPOA) selection is an optional user facility which may be requested by a DTE for a given virtual call.

When this user facility is requested, it provides for the user specification by the calling/source DTE of a particular RPOA transit network through which the call is to be routed internationally, when more than one RPOA transit network exists at a gateway (see 7.4.2.4).

7.2 Procedures for optional user facilities only available with virtual call services

7.2.1 Nonstandard default packet sizes

Nonstandard default packet sizes is an optional user facility agreed to for a period of time. This facility, if subscribed to, provides for the selection of default packet sizes from the list of packet sizes supported. Some networks may constrain the packet sizes to be the same for each direction of data transmission across the DTE/DCE interface. In the absence of this facility, the default packet sizes are 128 octets. The term "packet sizes" refers to the maximum user data field lengths of DCE and DTE data packets.

Values other than the default packet sizes may be negotiated for a virtual call by means of the flow control parameter negotiation facility (see 7.2.2).

7.2.2 Flow control parameter negotiation

Flow parameter negotiation is an optional user facility agreed to for a period of time which can be used by a DTE on virtual calls. This facility, if subscribed to, permits negotiation on a per-call basis of the flow control parameters. The flow control parameters considered are the packet and window sizes at the DTE/DCE interface for each direction of data transmission.

"Packet sizes" in 7.2.2 refers to the maximum user data field lengths of DCE and DTE data packets.

In the absence of the flow control parameter negotiation facility, the flow control parameters to be used at a particular DTE/DCE interface are the default packet sizes (see 7.2.1) and the default window sizes (see 7.1.2).

When the calling DTE has subscribed to the flow control parameter negotiation facility, it may separately request packet sizes and window sizes for each direction of data transmission (see 7.4.2.5). If a particular window size is not explicitly requested in a call request packet, the DCE will assume that the default window size was requested. If a particular packet size is not explicitly requested, the DCE will assume that the default packet size was requested.

When a called DTE has subscribed to the flow control parameter negotiation facility, each incoming call packet will indicate the packet and window sizes from which DTE negotiation can start. No relationship needs to exist between the packet sizes (P) and window sizes (W) requested in the call request packet and those indicated in the incoming call packet. The called DTE may request window and packet sizes with facilities in the call accepted packet. The only valid facility requests in the call accepted packet, as a function of the facility indications in the incoming call packet, are given in Table 13/AX.25 (Table 13/AX.25 is at the end of this paper). If the facility request is not made in the call accepted packet, the DTE is assumed to have accepted the indicated values (regardless of the default values).

When the calling DTE has subscribed to the flow control negotiation facility, every call connected packet will indicate the packet and window sizes to be used at the DTE/DCE interface for the call. The only valid facility indications in the call request packet are given in Table 14/AX.25 (Table 14/AX.25 is at the end of this paper).

The network may have constraints requiring the flow control parameters used for a call to be modified before indicating them to the DTE in the incoming call packet or call connected packet; the ranges of parameter values available on various networks may differ.

Window and packet sizes need not be the same at each end of a virtual call.

The role of the DCE in negotiating the flow control parameters may be network dependant.

7.2.3 Throughput class negotiation

This parameter is not presently implemented in AX.25.

7.2.4 Fast select

Fast select is an optional user facility which may be requested by a DTE for a given virtual call.

DTEs can request the fast select facility on a per-call basis by means of an appropriate facility request (see 7.4.2.7) in a call request packet using any logical channel which has been assigned to virtual calls.

The fast select facility, if requested in the call request packet and if it indicates no restriction on response, allows this packet to contain a call user data field of up to 128 octets and authorizes the DCE to transmit to the DTE, during the DTE waiting state, a call connected packet with a called user data field of up to 128 octets or a clear indication packet with a clear user data field of up to 128 octets.

The fast select facility, if requested in the call request packet and if it indicates restriction on response, allows this packet to contain a call user data field of up to 128 octets and authorizes the DCE to send to the DTE, during the DTE waiting state, a clear indication packet with a clear user data field of up to 128 octets; the DCE would not be authorized to transmit a call connected packet.

The presence of the fast select facility indicating no restriction on response in an incoming call packet permits the DTE to issue as a direct response to this packet a call accepted packet with a called user data field of up to 128 octets or a clear request packet with a clear user data field of up to 128 octets.

The presence of the fast select facility indicating restriction on response in an incoming call packet permits the DTE to issue as a direct response to this packet a clear request packet with a clear user data field of up to 128 octets; the DTE would not be authorized to send a call accepted packet.

A clear request packet with a clear user data field of up to 128 octets at any time other than the DCE waiting state (p3) is not allowed.

The call user data field, the called user data field, and the clear user data field will not be fragmented for delivery across the DTE/DCE interface.

The significance of the call connected packet and the clear indication packet with the cause "DTE originated" as a direct response to the call request packet with the fast select facility is that the call request packet with the data field has been received by the called DTE.

All other procedures of a call in which the fast select facility has been requested are the same as those of a virtual call.

If a fast select clear request packet with a non-zero address length field or facility length field is received, the DCE shall discard the received packet. The DCE shall indicate clearing by sending to the DTE a clear indication packet with a cause "Local procedure error" and diagnostic #74 or #75, as appropriate. The distant DTE is also informed of the clearing by a clear indication packet, with the cause "Remote procedure error" (same diagnostic).

7.2.5 Fast select acceptance

This optional facility is not implemented in AX.25. All users should allow fast select.

7.2.6 Charging information

This optional facility is not implemented in AX.25.

7.2.7 D bit modification

This optional facility is not implemented in AX.25.

7.2.8 Hunt group

Hunt group is an optional user facility agreed to for a period of time. This user facility, if subscribed to, distributes incoming calls having an address associated with the hunt group across a designated grouping of DTE/DCE interfaces.

Selection is performed for an incoming virtual call if there is at least one idle logical channel available for virtual calls on any DTE/DCE interface in a group. Once a virtual call is assigned to a DTE/DCE interface, it is treated as a regular call.

When virtual calls are placed to a hunt group address in the case specific addresses have also been assigned to the individual DTE/DCE interfaces, the call connected or clear indication packet sent to the calling DTE will optionally contain the called address of the selected DTE/DCE interface and the called line address modified notification facility indicating the reason why the called address is different from the one originally requested.

Virtual calls may be originated on DTE/DCE interfaces belonging to the hunt group; these are handled in the normal manner. In particular, the calling DTE address transferred to the remote DTE in the incoming call packet is the hunt group unless the DTE/DCE interface has a specific address assigned. Some networks may place a limit on the number of DTE/DCE interfaces in the hunt group, and/or constrain the size of the geographic region that can be served by a single hunt group.

7.2.9 Call redirection

Call redirection is an optional facility agreed to for a period of time. This user facility, if subscribed to by a DTE, redirects incoming calls destined to this DTE, when:

1) the called DTE is out-of-order, or

2) the called DTE is busy.

Some networks may provide call redirection only in the case of 1) above.

In addition, some networks may offer:

3) systematic call redirection with prior request of the called DTE.

The basic service is limited to one call redirection. In addition, some networks may offer either one of the following (mutually exclusive) capabilities:

A) A list of alternate DTEs (c1, c2, c3, ...etc) is stored by the network of the originally called DTE (DTE B). consecutive attempts of call redirection are tried to each of these addresses, in the order of the list, up to the completion of the call;

B) Call redirections may be logically chained; if DTE C has subscribed to call redirection to DTE D, the call may be redirected to D even if it was originally addressed to B.

In any case, networks will ensure that loops are avoided and that connection establishment phase has a limited duration.

If a call is cleared by the network as a consequence of the actions taken to this effect, the clearing cause is the one generated at the last DTE/DCE interface.

When the virtual call is redirected, the call connected or clear indication packets sent to the calling DTE will contain the called address of the alternate DTE and the calling line address modified notification facility, indicating the reason why the called address is different from the one originally requested.

When the virtual call is redirected, some networks may indicate to the alternate DTE the reason for redirection and the address of the originally called DTE, using the call redirection notification facility in the incoming call packet.

The order of call set-up processing at the originally called DCE as well as the alternate DCE will be according to the sequence of call progress signals in Table 1/AX.96. For those networks that provide systematic call redirection with the prior request of the called DTE, the systematic call redirection request will have the highest priority in the call set-up processing sequence at the originally called DCE.

7.2.10 Called line address modified notification

Called line address modified notification is a user facility, used by the DCE in the call connected or clear indication packets to inform the calling DTE as to why the called address, if present, in these packets is different from that specified in the call request packets.

The following reasons can be indicated with the use of called line address modified notification facility:

1) Call distribution within a Hunt Group.

2) Call redirection due to originally called DTE out of order.

3) Call redirection due to originally called DTE busy.

4) Call redirection due to prior request from the originally called DTE for systematic call redirection.

7.2.11 Call redirection notification

Call redirection notification is a user facility, used by the DCE in the incoming call packet to inform the alternate DTE as to why the call is redirected, and the address of the originally called DTE.

The following reasons can be indicated with the call redirection notification facility:

1) Call redirection due to originally called DTE out of order.

2) Call redirection due to originally called DTE busy.

3) Call redirection due to prior request from the originally called DTE for systematic call redirection.

7.2.12 Amateur networking facilities

The following describes optional amateur radio networking facilities. These facilities are interim recommendations, subject to corrections.

One of the two amateur routing facilities must be provided when connections are requested outside the local network.

7.2.12.1 Amateur network facility marker

The amateur related networking optional facilities must follow the CCITT optional facilities, and shall be separated from the CCITT facilities by a special two octet amateur marker.

7.2.12.2 Amateur explicit routing facility

The amateur explicit routing facility is an optional user facility that allows the calling DTE to specify the route of a connection.

When this facility is selected, the calling DTE must provide a list of addresses which will be used by the network to route the call to the called DTE.

7.2.12.3 Amateur implicit routing facility

The amateur implicit routing facility is an optional user facility that allows the network to route the call based on geographical information supplied by the calling DTE.

When this facility is selected, the calling DTE must provide the geographical location of the called DTE.

7.2.13 Additional optional facilities

In addition to the above facilities, others may be added as necessary. Subject for further study are certain X.75 utilities, such as call control.

7.3 Procedures for optional user facilities only available with Datagram service

These facilities are not implemented in AX.25.

7.4 Formats for optional user facilities

7.4.1 General

The facility field is present only when a DTE is using an optional user facility requiring some indication in the call request, incoming call, call accepted, call connected, clear request, or clear indication.

The facility field contains one of more facility elements. The first octet of each facility element contains a facility code to indicate the facility or facilities requested.

The facility codes are divided into four classes, by making use of bits 8 and 7 of the facility code field, in order to specify facility parameters consisting of 1, 2, 3, or a variable number of octets. The general class coding of the facility code field is shown in Table 15/AX.25 (Table 15/AX.25 is at the end of this paper).

For class D the octet following the facility code indicates the length, in octets, of the facility parameter field. The facility parameter field length is binary coded, with bit 1 being the low order bit.

The formats for the four classes are shown in Table 16/AX.25.

The facility code field is binary coded and, without extension, provides for a maximum of 64 facility codes for classes A, B, and C, and 63 facility codes for class D giving a total of 255 facility codes.

Facility code 11111111 is reserved for extension of the facility code. The octet following this octet indicates an extended facility code having the format A, B, C, or D as defined above. Repetition of facility code 11111111 is permitted and thus additional extensions may result.

The coding of the facility parameter field is dependent on the facility being requested.

A facility code may be assigned to identify a number of specific facilities, each having a bit in the parameter field indicating facility requested/facility not requested. In this situation, the parameter field is binary encoded with each bit position relating to a specific facility. A 0 indicates that the facility related to the particular bit is not requested and a 1 indicates that the facility related to the particular bit is requested. Parameter bits not assigned to a specific facility are set to 0. If none of the facilities represented by the facility code are requested for a virtual call, the facility code and its associated parameter field need not be present.

A facility marker, consisting of a single octet pair, is used to separate requests for AX.25 facilities, as defined in this section, from requests for non-AX.25 facilities that also may be offered by a network. The first octet is a facility code and is set to zero, and the second octet is the facility parameter field.

The coding of the parameter field will be either all zeros or all ones depending on whether the facility requests following the marker refer to facilities offered calling/source or called/destination network, respectively. For intranetwork virtual calls, the parameter field should be all zeros.

Requests for non-AX.25 facilities offered by the calling/source and called/destination networks may simultaneously present within the facility field and in such cases two facility markers will be required with parameter fields coded as described above.

Within the facility field, requests for AX.25 facilities will precede-all requests for non-AX.25 facilities and facility markers need only be present when requests for non-AX.25 facilities are present.

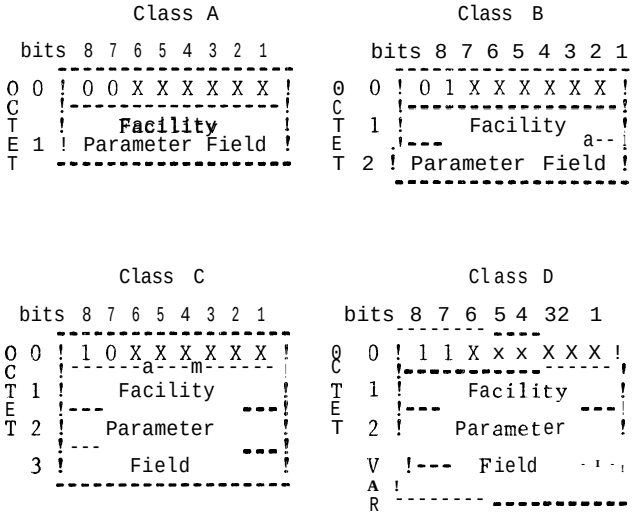

Table 16/AX.25
Facility Class Coding

7.4.2 Coding of facility field for particular facilities

7.4.2.4 Coding of RPOA selection facility

7.4.2.4.1 Facility code field

The coding of the facility code field for RPOA selection is:

bit:	8	7	6	5	4	3	2	1
code:	0	1	0	0	0	1	0	0

7.4.2.4.2 Facility parameter field

The parameter field contains the data network identification code for the requested RPOA transit network, and is in a form of four decimal digits.

Each digit is coded in a semi-octet (nibble) in binary coded decimal with bit 5 of the first octet being the low order bit of the first digit, bit 1 of the first octet being the low order bit of the second digit, bit 5 of the second octet being the low order bit of the third digit, and bit 1 of the second octet being the low order bit of the fourth digit.

7.4.2.5 Coding of flow control parameter facility negotiation

The coding of the facility code field and the format of the facility parameter field for packet sizes are the same in call request, incoming call, call accepted, and call connected packets.

7.4.2.5.1.1 Facility code field

The coding of the facility code for packet sizes is:

bit: 8 7 6 5 4 3 2 1
code: 0 1 0 0 0 0 1 0

7.4.2.5.1.2 Facility parameter field

The packet size for the direction of transmission from the called DTE is indicated in bits 4, 3, 2, and 1 of the first octet. The packet size for the direction of transmission from the calling DTE is indicated in bits 4, 3, 2, and 1 of the second octet. Bits 5, 6, 7, and 8 of each octet must be zero.

The four bits indicating each packet size are binary coded and express the logarithm base 2 of the number of octets of the maximum packet size.

Networks may offer values from 4 to 12, corresponding to packet sizes of 16, 32, 64, 128, 256, 512, 1024, 2048, or 4096, or a subset of these values. All networks should provide a packet size of 128.

7.4.2.5.2 Coding for window sizes

The coding of the facility code field and the format of the facility parameter field for window sizes are the same in call request, incoming call, call accepted, and call connected packets.

7.4.2.5.2.1 Facility code field

The coding of the facility code field for window sizes is:

bit: 8 7 6 5 4 3 2 1
code: 0 1 0 0 0 0 1 1

7.4.2.5.2.2 Facility parameter field

The window size for the direction of transmission from the called DTE is indicated in bits 7 to 1 of the first octet. The window size for the direction of transmission from the calling DTE is indicated in bits 7 to 1 of the second octet. Bit 8 of each octet must be zero.

The bits indicating each window size are binary coded and express the size of the window. A value of zero is not allowed.

Window sizes of 8 to 128 are not allowed in AX.25. All networks will provide a window size of 2.

7.4.2.7 Coding of fast select facility

The coding of the facility code and parameter fields for fast select is the same in call request and incoming call packets.

7.4.2.7.1 Facility code field

The coding of the facility code field for fast select is:

bit: 8 7 6 5 4 3 2 1
code: 0 0 0 0 0 0 0 1

7.4.2.7.2 Facility parameter field

The coding of the facility parameter field is:

Bit 8=0 and bit 7=0 or 1 for fast select not requested.

Bit 8=1 and bit 7=0 for fast select requested with no restriction on response.

Bit 8=1 and bit 7=1 for fast select requested with restriction on response.

Bits 6, 5, 4, 3, and 2 may be used for other facilities. If not they are set to zero. Use of bit 1 is described in section 7.4.2.3.

7.4.2.11 Coding of called line address modified notification

7.4.2.11.1 Facility code field

The coding of the facility code field for called line address modified notification is:

bit: 8 7 6 5 4 3 2 1
code: 0 0 0 0 1 0 0 0

7.4.2.11.2 Facility parameter field

The coding of the facility parameter field for called line address modified notification is:

bits: 8 7 6 5 4 3 2 1	
0 0 0 0 0 1 1 1	Call distribution within a Hunt Group.
0 0 0 0 0 0 0 1	Call redirection due to originally called DTE busy.
0 0 0 0 1 0 0 1	Call redirection due to originally called DTE out of order.
0 0 0 0 1 1 1 1	Call redirection due to prior request from originally called DTE for systematic call redirection.

7.4.2.12 Coding of call redirection notification

7.4.2.12.1 Facility code field

The coding of the facility code field for call redirection notification is:

bit: 8 7 6 5 4 3 2 1
code: 1 1 0 0 0 0 1 1

7.4.2.12.2 Facility parameter field

The octet following the facility code field indicates the length in octets of the facility parameter field and has the value n+2 where n is the number of octets necessary to hold the originally called DTE address.

The second octet indicates the reason for the call redirection and has one of the following values:

bits: 8 7 6 5 4 3 2 1	
0 0 0 0 0 0 0 1	Originally called DTE busy
0 0 0 0 1 0 0 1	Originally called DTE out of order
0 0 0 0 1 1 1 1	Systematic call redirection

The third octet indicates, in bits 4, 3, 2, and 1, the number of nibbles in the originally called DTE address. This address Length indicator is binary coded, with bit 1 being the low order bit. Bits 8, 7, 6, and 5 of this octet are set to zero.

The following octets (up to eight) contain the originally called DTE address, coded identically to the called DTE address field in the call request packet (see 6.2.1.3).

7.4.13 Coding of amateur network facilities

7.4.13.1 Coding of the amateur network facilities marker

The amateur network facilities marker field consists of two octets and is coded as folows:

bits: 8 7 6 5 4 3 2 1
octet1: 0 0 0 0 0 0 0 0
octet2: 1 1 1 1 1 1 1 0

7.4.13.2 Coding of amateur network explicit routing facility

7.4.13.2.1 Facility code field

The coding of the facility code field for the amateur network explicit routing is:

bits: 8 7 6 5 4 3 2 1
code: 1 1 0 0 0 0 0 0

7.4.13.2.2 Facility parameter field

The coding of the facility parameter field in the amateur network explicit routing facility is as follows:

The first octet is called the explicit length octet., and contains the total length of the facility, including the code field and the length octet. This length octet is binary coded, and cannot be zero.

The octets following the length octet contain the packet switch identifier(s) that indicate which switches the call should progress through.

The packet switch identifier consists of the six unshifted ASCII characters of the amateur callsign (upper case alpha and numeric characters only) of the packet switch, followed by an additional octet that contains a five-bit station subaddress. The station subaddress information is contained in bits 5, 4, 3, 2, and 1 of the seventh octet. Bits 8, 7, and 6 of the subaddress octet are reserved, and set to zero. If the callsign contains less than six ASCII characters, the callsign will be padded with trailing ASCII spaces between the last callsign character and the subaddress.

Up to 38 packet switch identifiers are allowed, the first identifier will identify the first packet switch in the chain. Additional switch identifiers following the first in order of call progress from the calling DTE to the called DTE.

Other methods of explicit routing are a subject for further study.

7.4.13.3 Coding of amateur network implicit routing-facility

7.4.13.3.1 Facility code field

The coding of the facility code field for the amateur network implicit routing facility is:

continued next column....

bits: 8 7 6 5 4 3 2 1
code: 1 0 0 0 0 0 0 1

7.4.13.3.2 Facility parameter field

The coding of the facility parameter field for the amateur network implicit routing facility consists of three octets.

The coding of this parameter is a subject for further study. The following information is one suggested method of coding this information, based on the geographical location of the called DTE.

The first octet contains the Longitude in degrees of the called station, from 0 to 180 based on Greenwich, England. This octet is binary encoded, with bit 8 being the most-significant bit, and bit 1 the least-significant bit.

The second octet contains the Latitude of the called station in degrees. Bit 8 indicates whether the called DTE is north or south of the equator (zero equals north, one equals south). Bits 7 to 1 contain the Latitude in degrees, from 0 to 89. This data is binary coded, with bit 7 being the MSB, and bit 1 is the LSB.

The third octet contains an east/west marker bit, and grid information within the Latitude/Longitude specified.

Bit 8 of the third octet contains the east/west marker for the Longitude information. If bit 8 is a zero, the Longitude information is west of Greenwich, while a one indicates the information is east of Greenwich.

The remaining seven bits contain information on where within the square (resulting from the Latitude/Longitude information above) the station is located. Actual coding of this field is a subject for further study.

Other methods of encoding the amateur network implicit routing facility are subject to further study. One method might be to use National Traffic System abbreviations. Comments or suggestions are welcome.

Facility indication	Valid facility request	
W(indicated) =>2	W(indicated) =>W(requested) =>2	
W(indicated) = 1	W(requested) = 1 or 2	
P(indicated) =>128	P(indicated) =>P(requested)=>128	
P(indicated) < 128	128 =>P(requested) =>P(indicated)	

Table 13/AX.25
Valid facility requests in call accepted packets
in response to facility indications in incoming call packets

Facility request	Valid facility indication	
W(requested) =>2	W(requested) =>W(indicated) =>2	
W(requested) = 1	W(indicated) = 1 or 2	
P(requested) =>128	P(requested) =>P(indicated)=>128	
P(requested) < 128	128 =>P(indicated) =>P(requested)	

Table 14/AX.25
Valid facility indications in call connected packets
in response to facility requests in call requests packets

Class	! 8 7 6 5 4 3 2 1 !	parameter
Class A	0 0 X X X X X X	for single octet parameter
Class B	0 1 X X X X X X	for double octet parameter
Class C	1 0 X X X X X X	for triple octet parameter
Class D	1 1 X X X X X X	for variable lenght param.

Where X can be either a zero or one.

Table 15/AX.25
Facility Class Coding