

## Internet Protocol Encapsulation of AX.25 Frames

### Status of this Memo

This memo describes a method for the encapsulation of AX.25 (the Amateur Packet-Radio Link-Layer Protocol) frames within IP packets. This technique is an Experimental Protocol for the Internet community. Discussion and suggestions for improvement are requested. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol. Distribution of this memo is unlimited.

### The AX.25 Amateur Packet-Radio Link-Layer Protocol

The AX.25 Amateur Packet-Radio Link-Layer Protocol is described in the publication by that name [1], incorporated here by reference.

Each AX.25 packet ("frame") is encapsulated in one IP datagram. Normally no AX.25 frame will exceed 330 octets, so fragmentation at the IP layer should not be necessary. However, experiments with larger AX.25 frame sizes may require the use of standard IP fragmentation and reassembly procedures.

When an AX.25 frame is encapsulated within an IP packet, HDLC framing elements (flags and zero-stuffing) are omitted, as the IP datagram adequately delimits the beginning and end of each AX.25 frame. The 16-bit CRC-CCITT frame check sequence (normally generated by the HDLC transmission hardware) is included. In all other respects, AX.25 frames are encapsulated unaltered.

Each such IP datagram shall have a protocol number of 93.

### Reference

- [1] AX.25 Amateur Packet-Radio Link-Layer Protocol Version 2.0  
October 1984. Available from the American Radio Relay League,  
Newington CT USA 06111, and other sources.

### Security Considerations

Security issues are not discussed in this memo.

## Author's Address

Brian Kantor  
University of California at San Diego  
Network Operations C-024  
La Jolla, CA 92093-0214

Phone: (619) 534-6865

EMail: brian@UCSD.EDU