Sound Metrics

Communication Protocol

•*How does the DIDSON communicate to its host computer?*

The DIDSON - PC communication is TCP/IP using UDP (Unsigned Datagram Protocol).

•*What types of packets are there?*

The packets are always UDP protocol. The DIDSON.INI file set by the topside software gives the option of using a broadcast IP address for the communication.

The image data may be transferred either with 1 (LF) or 2 (HF) large packets called "frames", or by 25 (LF) or 49 (HF) 1024-byte packets called "packets". There is a good chance that if your communication runs through a router, media converter, etc. it will require "packet transfer" vs. "frame transfer" operation.

•*What is the minimum speed (Mbps) the communication requires?*

Each frame is 25Kb (LF) or 49Kb (HF) of data. The maximum frame rate is limited by the bandwidth of the Ethernet connection, and the minimum frame rate is currently 1/second, which would be equivalent to 500 Kbits/sec plus the Ethernet overhead. You may expect about 2 frames/sec on a 1 Mbit/sec connection, and better than 10 frames/sec on a 10 Mbit/sec connection (depending on CPU speed, etc.).

•*What are the data storage requirements for DIDSON?*

The standard DIDSON has 96 beams and acquires about 50,000 bytes per frame. If one stores 10 frames per second for one hour, 1.8 Gbytes of data are stored. If one halves the frame rate to 5 frames/sec the stored data will be halved to 0.9 Gbytes/hour. In the low frequency mode, 48 beams are used so the data storage rates are halved for a given frame rate.

•*How do you get real-time control of a DIDSON when it is operating at depths up to 3000 meters?*

Customers have used fiber optics. They have a short cable (rated for depth of interest) coming from DIDSON that goes to a housing on their underwater platform. The housing contains the converter and power for the sonar. A fiber goes up the umbilical to the surface. The Ethernet signal is then converted back to 100BaseT and sent to a laptop for control, display, and data storage.