

MISS Introduction

Local application diagnostic
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In the Linac control system, most Acnet device data is collected via a server node. A single request message is sent to the server node, which then sees to collecting the data requested from all contributing nodes. It knows which nodes hold the data requested, because the second word of the SSDN for each device-property in the request is always the node#. As a go-between, the server node is in a good position to watch for missing replies from the contributing nodes, and the MISS local application is designed to take advantage of this. This note merely serves as an introduction to the utility of MISS. More complete information can be obtained from the note, *Missing Datagrams*, and the note, *Missing BRF Replies*. The first describes the evolution of MISS design, and the second illustrates an actual case analysis.

The monitoring logic that is part of the RETDAT or GETS32 protocol support checks for timely replies from contributing nodes referenced in the request message. A missing reply from a contributing node is considered an error and is denoted as such in the status word(s) returned in the full reply message that is sent to the original requester. Each time an error-laden reply message is sent, a 16-byte record of such is made in the ACNETERR data stream, including the missing node# of the first (or only) device data that is marked in error.

It is this ACNETERR data stream that MISS monitors. When it detects a new entry, it gathers network diagnostic data as well as clock event data and logs a 2K-byte record internally. It has room for up to 8 such diagnostic records. The breakdown of the portions of each 2048-byte diagnostic record is as follows:

- ACNETERR entry from server node (16 bytes)
- Recent Booster reset clock events from node executing MISS (16)
- Recent EVTLOG data stream clock events from missing node (32)
- Recent 4 RETDLOG data stream entries from missing node (64)
- Recent 24 NETFRAME data stream entries from missing node (384)
- Recent 192 NETFRAME data stream entries from server node (1536)

Such records can be printed out via the Print Memory page application PAGEPMEM. At 16 bytes per line, they can be easily formatted in blocks as listed above. Find out where the 8 diagnostic records are located by using Page E to find the MISS instance static memory block. The 2K-byte records begin at offset 256 bytes in this block.

Each MISS instance allows several parameters, as follows:

- ENABLE B Usual enable Bit# for this instance
- SNODE Server node#, such as 0600 used in Linac
- RNODE Filter on requesting node#, 0=any
- MSIZE Size of missing datagram to detect, 0=any
- MSTAT Error status to monitor, 0=any
- MNODE Missing node# to monitor, 0=any

It is common not to specify any of the filter parameters, but only specify the server node whose ACNETERR data stream is to be monitored.

Under normal conditions, one can expect that only seldom will a diagnostic record be built. Hours might pass between them. Ideally, none would be built.