

# Problems Associated with Realtime Analysis of a remotely telemetered, monitored MIL-STD-1553 Data Streams

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## ABSTRACT

The unique set of problems encountered when analyzing MIL-STD-1553 Bus data acquired in realtime from a remote source are indentified and discussed and one possible approach to their solution is offered. Such problems are associated with realtime test range support using monitored (eavesdropped) 1553 bus data telemetered in its natural (asynchronous) form rather than stuffed into a traditional synchronous PCM frame map. Attached devices acting as Bus Controllers (BC) or Remote Terminals (RT) utilize a handshaking command/response protocol to communicate packets (messages) over associated 1553 bus(es). Thus attached devices are able to decode/respond to messages occurring in any of ten possible formats because they participate in handshaking. Analysis must be preceeded by data stream decoding. Monitoring (eavesdropping) is not interactive and thus eliminates handshakes as external points of reference. This forces the process of decoding a monitored data stream to rely on intrinsic (data stream content) information coupled with any externally supplied configuration information. Remote monitoring must deal with the problem of re-acquisition after drop-out being asynchronous with message occurance, thus making the decoding process assume an unknown state at both start-up and re-acquisition. The proposed solution attempts to define a minimum system made up of the component for intrinsic analysis and coupled with external configuration information necessary to accurately decode monitored 1553 data in realtime.