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To: Mark IV Development Group
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Subject: Header Data Format

Header information bits replace the validity bits in the data stream during a break in the correlation processing which is signaled by BOCF. The details of the information bits have not been specified. In one sense, there is no hard connection of any of these bits to any function and the meaning of any part of the header need only be agreed upon by the station unit software which sets the bits and the correlator software which interprets the bits.

There are, however, constraints which are built into the correlator chips and which should be recognized in interfacing software and possibly in station unit hardware.

The first constraint is well known and is the fact that there are exactly 240 bits of information which are captured as header data.

The second constraint is that the data will be read out of the correlator chips as ten successive words of 24 bits each during ten successive reads of the 24 bit data bus. The correlator chips assume that the first bit received is the most significant bit of the first word, the 24th bit is the least significant bit of the first word, the 25th bit is the most significant bit of the second word, and so on. The 240th bit is the least significant bit of the tenth word. Recognition of this data formatting is necessary so that the interfacing software can avoid inefficient bit shuffling, particularly in the correlator where there are severe real time constraints.

The sequence diagram below illustrates the header interpretation in the vicinity of the "0" to "1" transition of BOCF. The header consists of words A,B,C,D,E,F,G,H,I, and J.

