



# HESTA data sent to DAQ / LAL orsay - Jehanno - Rev. B - 04/04/05

|  |    |    |    |    |    |    |    |                                  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |                                  |   |   |   |   |   |   |   |                                      |  |  |  |                              |
|--|----|----|----|----|----|----|----|----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|----------------------------------|---|---|---|---|---|---|---|--------------------------------------|--|--|--|------------------------------|
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 0 : HEADER</b>               |  |  |  |                              |
| 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0                                | 0  | 0  | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | 0  | <b>General Status</b><br>Bit 0 : Status PC Com OK (RS232 I/O)<br>Bit 1 : Status Set OK | <b>IF ERROR : 0x00000000</b> |
| <b>Magic Number : 0xAA</b>                     |    |    |    |    |    |    |    | <b>Size of Longs : 10 (0x0A)</b> |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   | <b>LONG 1 : Indexer X Status</b> |   |   |   |   |   |   |   |                                      |  |  |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 2 : Indexer X Values (1)</b> |  |  |  |                              |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                                | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | Bit 9 : Out Fault<br>Bit 10 : Limit Plus<br>Bit 11 : Limit Minus<br>Bit 12 : Local Mode On<br>Bit 13 : Console X Right Button On<br>Bit 14 : Console X Left Button On<br>Bit 15 : Console X Home Button On<br>Bit 16 : Console X Set Home Button On<br>Bit 17 : User Lamp On<br>Bits 18 to 31 : spare<br>Bit 0 : Indexer Status OK<br>Bit 1 : Motor is Moving<br>Bit 2 : Composite Fault<br>Bit 3 : Current Fault<br>Bit 4 : Supply Fault<br>Bit 5 : Ambient Temp. Fault<br>Bit 6 : Drive Fault<br>Bit 7 : Config Fault<br>Bit 8 : High Voltage Fault                |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 3 : Indexer X Values (2)</b> |  |  |  |                              |
| 0  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 0                                | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1 | 0 | 0                                | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0                                    | <b>Motor Standby : 70% (0x46)</b><br><b>Motor Current : 100% (0x64)</b><br><b>Major Rev. : 2 (0x02)</b><br><b>Minor Rev. : 18 (0x12)</b> |  |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 4 : Indexer X Values (3)</b> |  |  |  |                              |
| 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0                                | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | <b>Motor Res. /100 : 40 (0x28)</b><br><b>Motor Vel. x100 : 20 (0x14)</b><br><b>Stand Position (X) [ 2500 (0x09C4) , 5500 (0x157C) ]</b>  |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 5 : Indexer Y Status</b>     |  |  |  |                              |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                                | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | Bits 16 to 31 : spare<br>Bit 0 to 14 : Abs. Beam Position (X) < 1500 (0x05DC)<br>Bit 15 : Sign (0 = + / 1 = -)   |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 6 : Indexer Y Values (1)</b> |  |  |  |                              |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                                | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | Bit 9 : Out Fault<br>Bit 10 : Limit Plus<br>Bit 11 : Limit Minus<br>Bit 12 : Brake Uncoupled Switch On<br>Bit 13 : Brake Uncoupled On<br>Bit 14 : Console Y Up Button On<br>Bit 15 : Console Y Down Button On<br>Bit 16 : Console Y Home Button On<br>Bit 17 : Console Y Set Home Button On<br>Bits 18 to 31 : spare<br>Bit 0 : Indexer Status OK<br>Bit 1 : Motor is Moving<br>Bit 2 : Composite Fault<br>Bit 3 : Current Fault<br>Bit 4 : Supply Fault<br>Bit 5 : Ambient Temp. Fault<br>Bit 6 : Drive Fault<br>Bit 7 : Config Fault<br>Bit 8 : High Voltage Fault |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 7 : Indexer Y Values (2)</b> |  |  |  |                              |
| 0  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 0                                | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1 | 0 | 0                                | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0                                    | <b>Motor Standby : 70% (0x46)</b><br><b>Motor Current : 100% (0x64)</b><br><b>Major Rev. : 2 (0x02)</b><br><b>Minor Rev. : 18 (0x12)</b> |  |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 8 : Indexer Y Values (3)</b> |  |  |  |                              |
| 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0                                | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | <b>Motor Res. /100 : 40 (0x28)</b><br><b>Motor Vel. x10 : 40 (0x28)</b><br><b>Stand Position (Y) [ 1000 (0x03E8) , 3000 (0x0BB8) ]</b>   |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 9 : Checksum</b>             |  |  |  |                              |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                                | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 | 0                                | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                                    | 0  | Bits 16 to 31 : spare<br>Bit 0 to 14 : Abs. Beam Position (Y) < 1500 (0x05DC)<br>Bit 15 : Sign (0 = + / 1 = -)   |  |                              |
| 31   | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23                               | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7                                | 6 | 5 | 4 | 3 | 2 | 1 | 0 | <b>LONG 9 : Checksum</b>             |  |  |  |                              |
| •  | •  | •  | •  | •  | •  | •  | •  | •                                | •  | •  | •  | •  | •  | •  | •  | •  | •  | •  | •  | •  | •  | • | • | •                                | • | • | • | • | • | • | • | •                                    | •  |  |  |                              |
| <b>Bits 0 to 31 : checksum, modulo 32 bits</b> |    |    |    |    |    |    |    |                                  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |                                  |   |   |   |   |   |   |   |                                      |  |  |  |                              |