|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bot Uplink Msg Data Segment**  **Bit Map** | | **Element Name** | **Range/Format** | **Description/Notes** |
| **Bytes 0-3 (32-bit integer)** | **0-2**  (3 bits) | *segid* | [ 0 - 7 ] | **Segment ID**  (identifies the segment type; 0=reserved, 1=status, 2=meta, etc.; higher numbers reserved primarily for upload requests, alarms, etc.; guaranteed to be first field in segment) |
| **3-15**  (13 bits) | *dpid* | [ 0 - 8191 ]  ***mod 2\*\*13*** | **Data Product Record ID**  (the ‘primary key’ or ‘rowid’ that uniquely identifies this Data Product Record in the ‘data’ Table of the Float’s embedded database; this built-in SQLite field can range from 0 - 264-1 on the Float; must anticipate rollover) |
| **16-31**  (16 bits) | *heading* | [ 0 - 36,000 ]  ***centidegrees*** | **Heading**  (magnetic north) |
| **Bytes 4-10 (56-bit integer)** | **0-24**  (25 bits) | *timestamp* | Unix Epoch Time  ***1 sec resolution*** | **Timestamp**  (time when data collected; may be different from the timestamp of the associated ‘status’ record; dated from Jan. 1 of the current year; must anticipate 1-year rollover) |
| **25**  (1 bit) | *change* | [ 0 | 1 ] | **Change Bit**  (indicates whether or not this Data Product segment contains a “Change’ component; if “0,” no ‘change’ data information is appended to this segment; if “1,” chg component is appended ) |
| **26-38**  (13 bits) | *statid* | [ 0 - 8191 ]  ***mod 2\*\*13*** | **Status Record ID**  (the ‘primary key’ or ‘rowid’ that uniquely identifies this Status Record in the ‘status’ Table of the Float’s embedded database; this built-in SQLite field can range from 0 - 264-1 on the Float; must anticipate rollover) |
| **39-50**  (12 bits) | *std\_size* | [ 0 - 4095 ] | **Size of “Standard” Data Product Component**  (the total number of bytes of ‘standard’ data product information that follows immediately after this 64-bit block; intended as a compromise between Iridium’s limited messaging payload and that of other comm methods) |
| **51-56**  (6 bits) | *type* | [ 0 - 63 ] | **Node Type ID**  (integer value from a table lookup matching the 3-character type identifier component of the *node\_id* in the filename ) |
| **Std Data Component** | **0-4**  (5 bits) | *rows* | [ 0 - 31 ] | **Rows** |
| **5-9**  (5 bits) | *cols* | [ 0 - 31 ] | **Columns** |
| **10-15**  (6 bits) | *dt* | [ 0 - 64 ] | **DT** |
| **16 ->**  (see notes) | *data* | [ *std\_size* ] | **Standard Data**  (a base-64 data stream of “std\_size” bytes; the stream starts at bit 16 and ends at bit [std\_size\*8]+15 ) |
| **Chg Data Component** | **0-11**  (12 bits) | *chg\_size* | [ 0 - 4095 ] | **Size of “Change” Data Product Component**  (the total number of bytes of ‘change’ data product information that follows immediately after the next block; intended as a compromise between Iridium’s limited messaging payload and that of other comm methods) |
| **12-16**  (5 bits) | *rows* |  | **Rows** |
| **17-21**  (5 bits) | *cols* |  | **Columns** |
| **22-27**  (6 bits) | *dt* |  | **DT** |
| **28-32**  (5 bits) | *res* |  | **Reserved** |
| **33 ->**  (see notes) | *data* |  | **Change Data** |

TOTAL META COMPONENT SIZE: 11 bytes (88 bits) - 0 bits unused.

TOTAL STD DATA COMPONENT SIZE: 2 bytes (16 bits) + *std\_size* bytes

TOTAL CHG DATA COMPONENT SIZE: 12 bits + TBD