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GS+

GeoSwath RDF Filter Flags

9-GS+ -6064/B

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GeoAcoustics GeoSwath RDF Filter Flags

General Description

The GeoSwath raw data file (extension **rdf**) is used to store the raw information acquired by the GeoAcoustics GeoSwath *Plus* wide swath bathymetry system.

Each range/angle/amplitude sample (data type RAA) also contains a series of flags that denote the condition of the sample.

RAA Data Type

```
typedef struct
{
    unsigned short time;           //Time in wavelengths
    unsigned short sine;          //Sine of return angle
    unsigned short amplitude;     //16bit amplitude value
} RAA;
```

The 16bit amplitude value is actually only 12bit,, the upper 4 bits are used for the sample filter flags which can be extracted in the following way.

```
filter_flag = raa[sample_number].amplitude & 0xf000;
```

Filter Flags

The filter flags and their meanings are as follows:-

| | | |
|-----------------|--------|--------------------------------------|
| ACQ_GOOD | 0x0000 | //The sample is unfiltered |
| ACQ_AMPLITUDE | 0x1000 | //Flagged by amplitude filter |
| ACQ_LIMITS | 0x2000 | //Flagged by limits filter |
| ACQ_ACROSS | 0x3000 | //Flagged by across track filter |
| ACQ_ALONG | 0x4000 | //Flagged by along track filter |
| ACQ_ERROR | 0x5000 | //Erroneous sample |
| ACQ_WATERCOLUMN | 0x6000 | //Flagged by the water column filter |

To flag raw data samples during acquisition the processing filters must be applied, with the exception of the water column filter which is solely an acquisition filter. Applying filters at the processing stage **will not** add filter flags to an existing RDF file.