OPUS Accumulator

Date: Sunday, December 29, 2019 Build: 97
By: Mark Silver, ms@igage.com

Plotting Enhancement

In Build 97 an optional plotting tool has been added to the OPUS Accumulator. This option graphically summarizes the compiled OPUS reports into a set of three graphs drawn into a single PNG file placed in the folder with the compiled messages.

The plot is enabled by checking the 'Build Plot' checkbox:

After the input folder is processed and the plot file has been generated, you can click the 'Show Plot' button to display the generated plot in whatever tool your machine evaluates .PNG files with.

The format of the plot:

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Includes a representation of UTM**X**, UTM**Y** and Ellipsoid **H**eight. All values are in meters.

The top right corner of the graph includes the full path and filename of the plot:

C:_TMP\OA_Test\SUMMARY.png 12/27/2019 9:08:54 PM

The remainder of the plot includes three similar sections. Each graph includes the plotted variable, the nominal and Average values (currently the same), the Range and the Standard Deviation:

The Y-axis of each graph includes text markers for the range. The amber background denotes a 4cm band (+/- 2cm) about the nominal value. The light-green band denotes a 2cm band (+/- 1cm) about the nominal value. The scale of the X, Y and Z graphs are independent and will adjust to include all data points. The nominal ranges are +/-3cm for X and Y; +/- 6cm for the Height.

The graphed range is expanded such that all points and the top and bottom of the error bars are fully plotted.

Each OPUS report's results are plotted as blue dots. The RMS/Peak-to-Peak values are shown as extended error bars about the dot:

The horizontal axis includes tick mark for each 24-hour period. Days are annotated with the year and Julian date:

In this example, the primary bar above the '9' is the 306th Julian day of 2019. Remember that January 1st is Julian day 1. Every day has a tick, every 5th day (1, 6, 11, 16…) has a major graph line.

((V98 Addtion:)) Observation File Length Indication

Orange bars at the top of each graph indicate the length of the observation file. A red horizontal tick marks 24-hours. This example:

Shows several 24-hour files, a 48 hour file and a short 8-hour file.

Because all files are weighted equally in the average computations, you may want to get rid of observation files that are significantly shorter than others.

The right-hand side of each graph includes an indication of Range and Standard Deviation:

The blue bar includes the range of all results. The yellow 'I-bar' shows +/- 1 Sigma about the Average value. This provides a quick visual representation of range, probable value, skewness and kurtosis.