Manager / Process Owner Approval	***Ferdinand R. Hassler* Compare Grids** Standard Operating Procedures
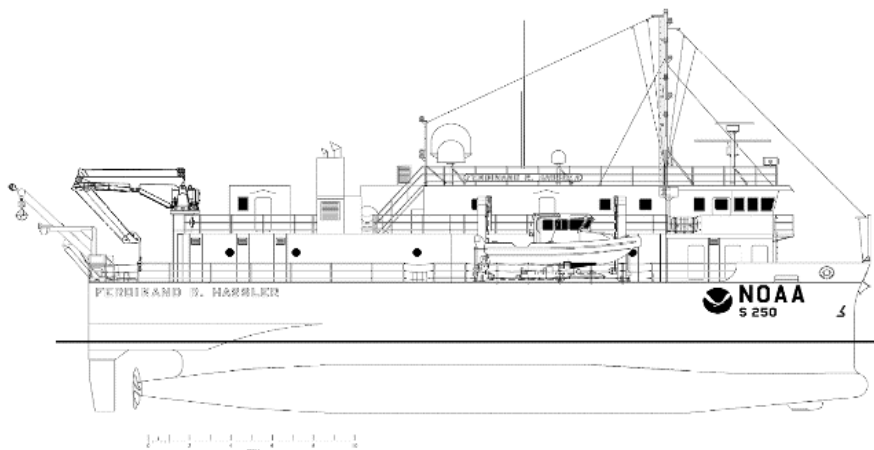
Revision History

Date	Revision Description (Reason/What)	Updated by
?	?	?
05/19/2021	Review and Adapt for FH	ST Tigges
7/27/2024	Update	LT Debroisse

Overview

This SOP is meant to serve as a set of instructions for using the Pydro tool Compare Grids. The Compare Grids tool is a module within Pydro that will produce several useful items for you that include:

1) A difference surface between your surface and the surface you are comparing it to-- this may be a surface for a junction or a crossline surface.
2) A graphic with the summary statistics from your surface difference-- this is where we get the numbers that we insert into the text paragraphs of the Survey Report.
3) The NOAA Allowable Uncertainty surface for your surface comparison.
4) A text file containing the NOAA Allowable Error values.
5) An image showing you the Node Depth vs. Allowable Error Fraction, this graphic will give you your total nodes so you can calculate an exact percentage for the total nodes that met or failed to meet NOAA Allowable Uncertainty Specifications.

Procedure

    To run Compare Grids, first open Pydro. Expand the tree next to *Surfaces* in the left sidebar. Double click *Compare Grids* to run the program.

    A dialogue window pops up that looks like the one below. Enter your primary surface (your mainscheme surface for crossline comparisons, or your finalized surface if you are running a junction with another sheet) where it says 1st coverage file. (To do this, click the *Browse* button to navigate to and select the desired surface.) Next to 2nd coverage file, enter the crossline surface, or the surface (.bag or finalized surface) you are junctioning with. Set your output name to whatever you would like (or leave it as default) and your output folder to where you want it. (A descriptive name that includes the names of the surfaces is a good idea) Set the Diff plot title to whatever you want the name of your summary statistics graphic to show. Then hit Compare!! It might take a while. If it doesn't work, make sure that you have the most updated version of Caris on your machine, that the Base Editor license is up to date, and that the last group of batch files have been installed.
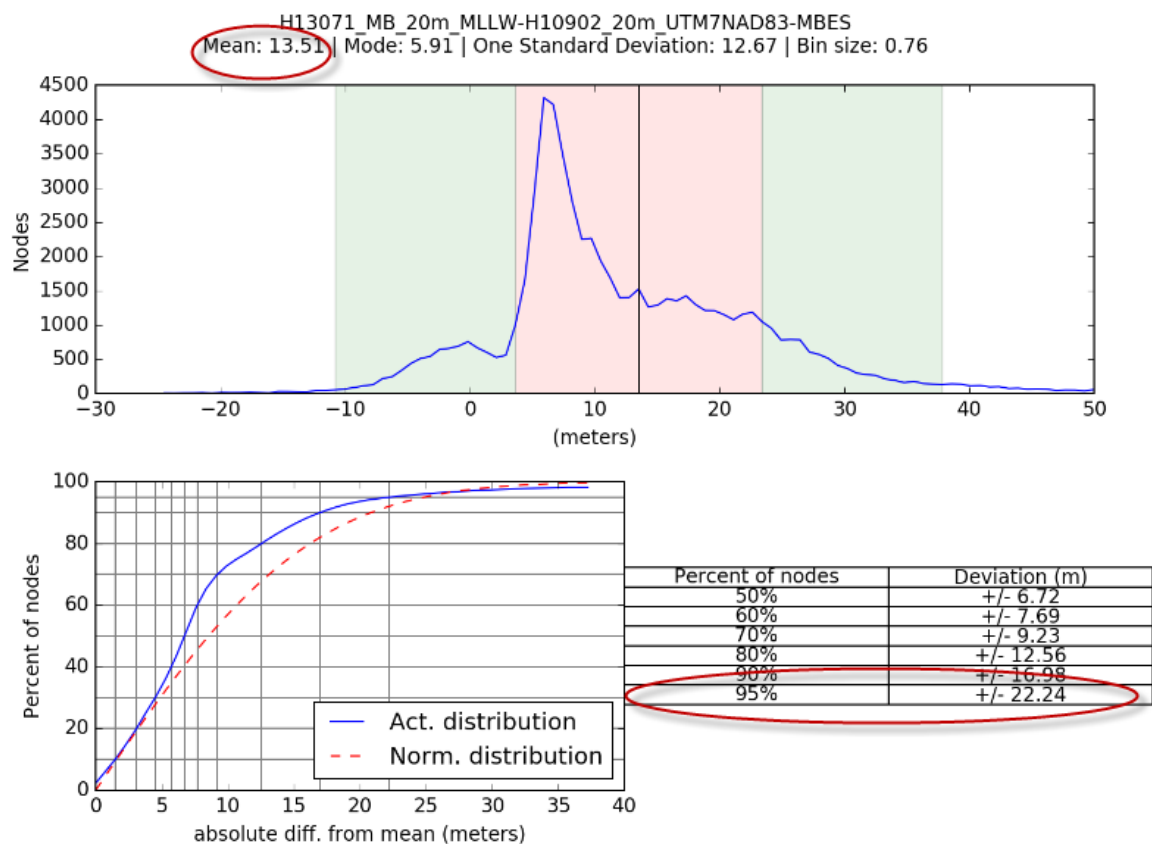

    After the comparison is complete, check the output folder for your goodies. It should look something like what is shown below.
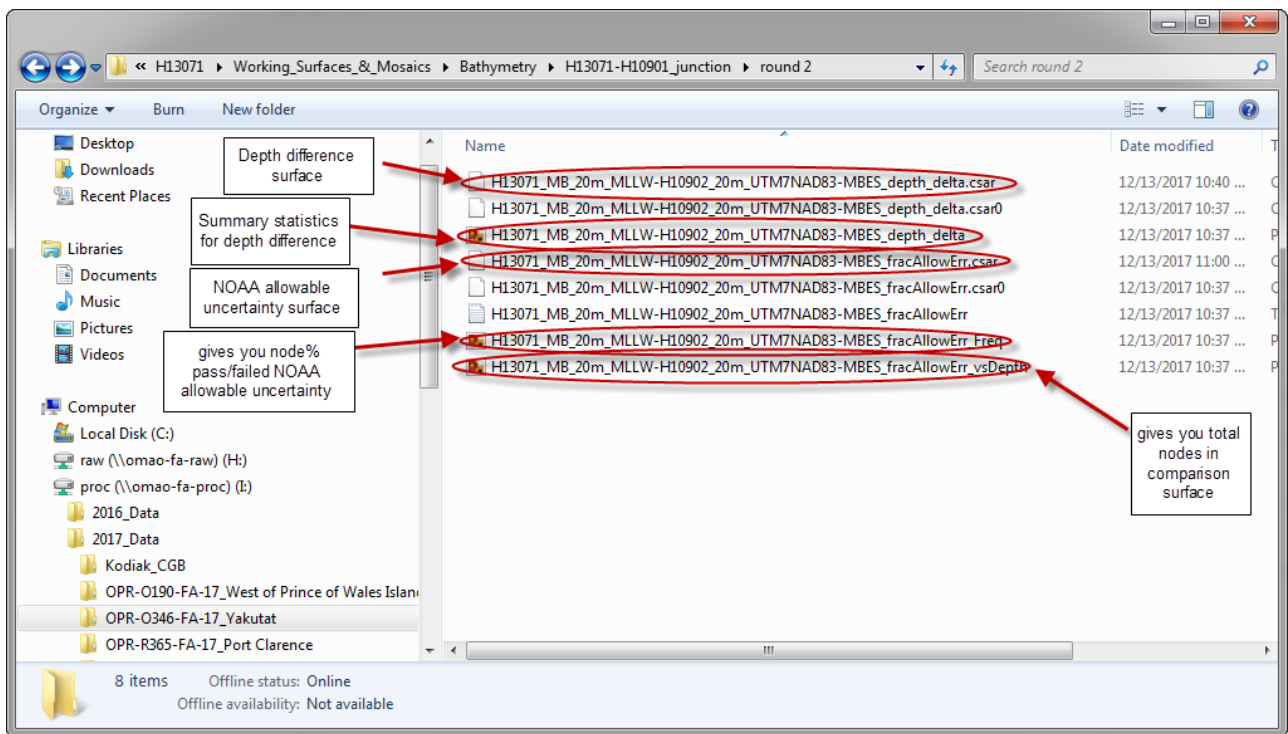
Open the summary statistics graphic. You will pull your "mean difference (m)" and the value that 95% of your nodes fall within, which is the value that describes the spread of your data distribution (see below).

H13071_MB_20m_MLLW-H10902_20m_UTM7NAD83-MBES
Mean: 13.51 | Mode: 5.91 | One Standard Deviation: 12.67 | Bin size: 0.76

Percent of nodes	Deviation (m)
50%	+/- 6.72
60%	+/- 7.69
70%	+/- 9.23
80%	+/- 12.56
90%	+/- 16.98
95%	+/- 22.24

Next, open the image labeled HXXXXX_fracAllowErr_vsDepth. This will list your total nodes within your surface where it says "total comparisons." Record this number.
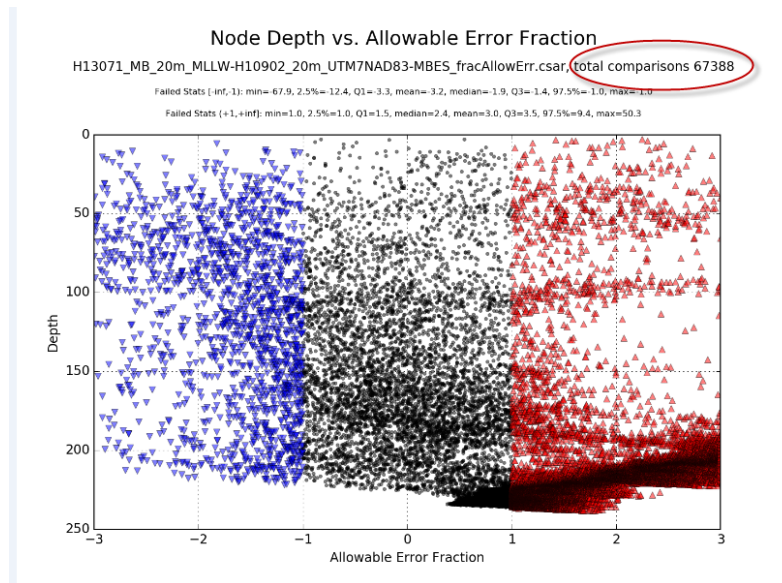
Insert these values and graphics into the appropriate spots in your Survey Report. Congratulations, you did it!