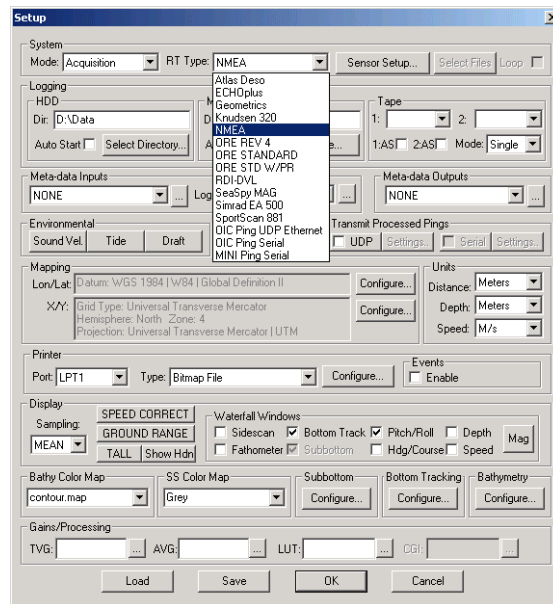


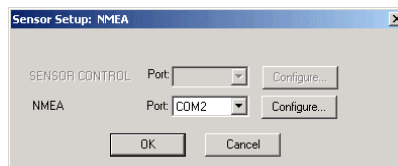
Quick Start: GeoDAS-LT with Single Beam Echo Sounder

I. Setting up GeoDAS-LT for Single Beam Echo Sounder Survey

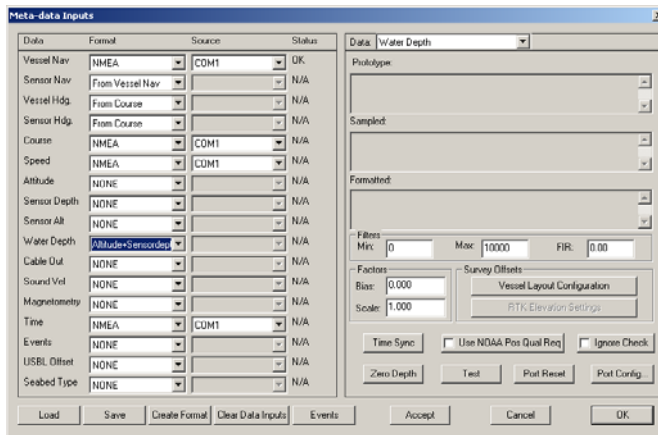
1. Connect your single beam echo sounder, GPS receiver and other sensors (e.g. gyro and motion sensor) to serial ports on your data acquisition PC.
2. Launch GeoDAS-LT by double-clicking on the GeoDAS icon on the Desktop or select **Start** → **Programs** → **GeoDAS**.
3. In the Setup window (**File** → **Setup**), set the **Mode** to **Acquisition** and **RT Type** for your single beam echo sounder. For this exercise, we set the RT Type to **NMEA**, to receive NMEA DBT string (Depth Below Transducer) from NMEA Wiz. (Set **NMEA Wiz** to output DBT string only.)



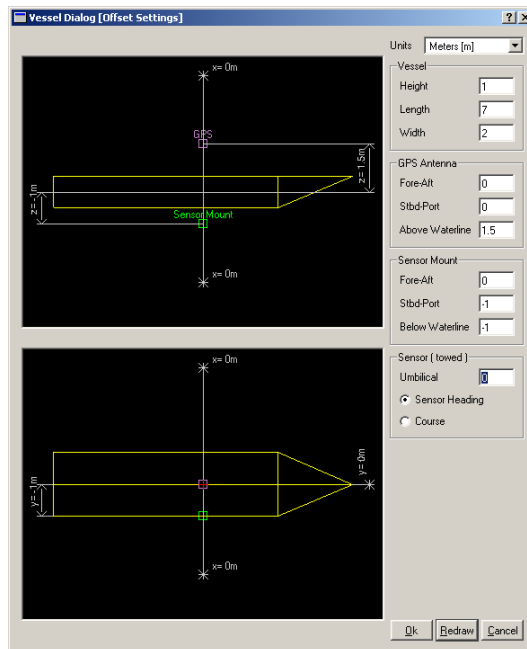
4. Click on the **Sensor Setup...** button. Configure the port setting for your sensor.



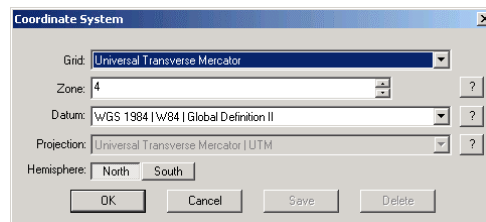
5. In the Logging panel, choose a logging directory and click the checkbox to select **Auto Start**.
6. In the Meta-data Inputs panel of the GeoDAS Setup window, select a pre-defined configuration from the list or click “...” button to create a new configuration. Set the **Vessel Nav**, **Course**, **Speed** and **Time** formats to **NMEA** (i.e. GPS) and configure the port setting. Set **Sensor Nav** to **From Vessel Nav** and the **Vessel** and **Sensor Headings** to your device or **From Course** if you do not have a heading sensor. If your GPS does not receive ZDA strings, set the **Time** format to **From System Time**.



- Set the **Water Depth** to “**Altitude+Sensordepth**”.
- Click the **Vessel Layout Configuration** button in the Survey Offsets panel. Type in the vessel and sensor mount, and GPS antenna offsets. Click **Redraw** to update the diagram.



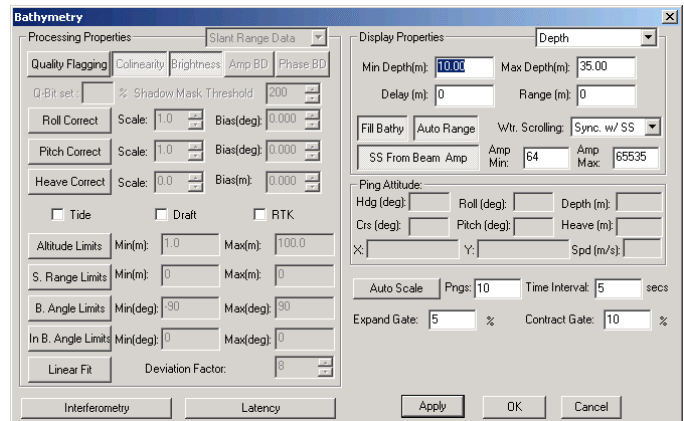
- Click **OK** when everything is set up. Make sure to save the new configuration.
- In the Mapping panel, click the **Configure...** button for X/Y and set the coordinate system for your survey area.



- If you do not have a sidescan sonar, uncheck the Sidescan checkbox in the Waterfall Windows panel.

- Click the **Configure...** button in the bathymetry panel and press the **SS From Beam Amp** button.

Next, set reasonable values for minimum and maximum depth values. To have GeoDAS automatically re-scale the depth bounds to bracket the current data, select the **Auto Scale** button. The default values should be sufficient to allow the system to re-evaluate the current data and optimally set the minimum and maximum depths.

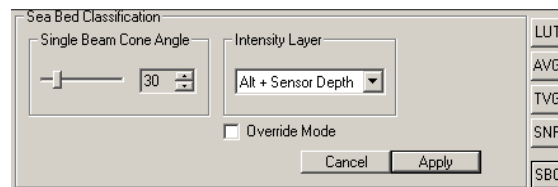


Click **Apply** or **OK**.

- Save the parameter file (***.param**) and click **OK** to dismiss the Setup window.

II. Data Acquisition and Real-time Mosaicking

- Start GeoDAS by clicking the green button on the GeoDAS GUI or selecting **File → Start System**.
- Click the **SBC** button on the right bottom corner of GeoDAS GUI, which opens the Sea Bed Classification (SBC) panel. Change the Single Beam Cone Angle to match your sensor's beam angle and select **Alt+Sensor Depth** or **Water Depth** in the Intensity Layer panel. Click **Apply**.

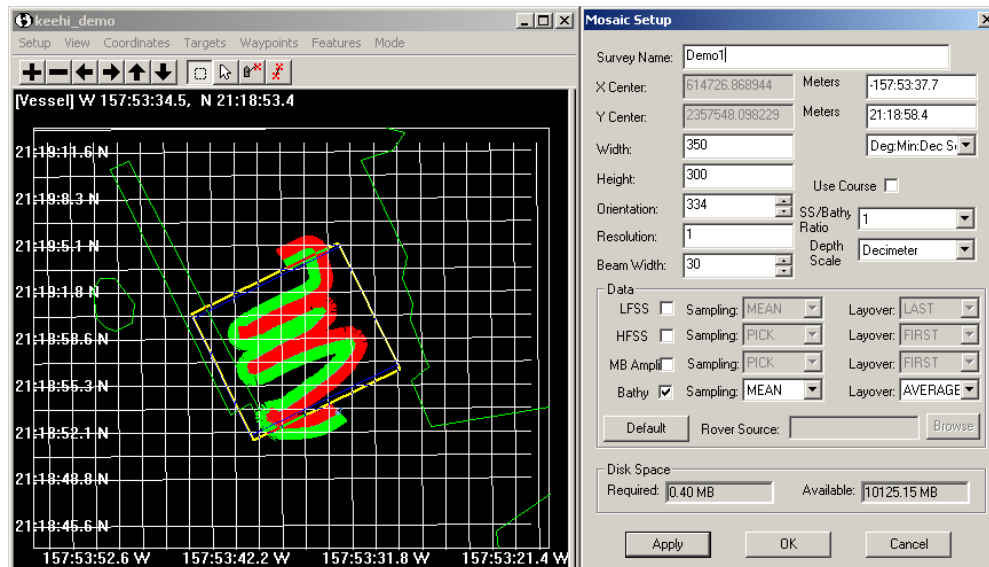


- If the auto logging is not on, begin logging by clicking the **ON** button in the media tool/logging control panel. Make sure the disk **Used** bar is in green and the ON/OFF button is pressed and showing **OFF**.

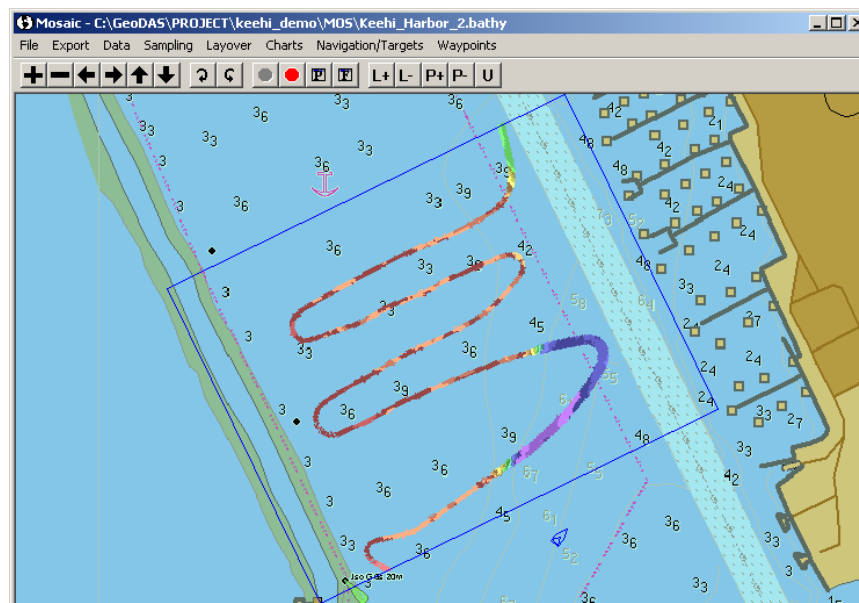
MEDIA	REMAINING	USED	ON/OFF
Disk:	28088.7 MB	46.1%	OFF
MO:	3824.3 MB	62.6%	ON
Tape 0:		0.0%	ON
Tape 1:		0.0%	ON

- The waterfall should now display a colored representation of your depth data in the bathymetry window. The sidescan window should be blank, and may be closed. Open your navigation window to view the current navigation track. To create a mosaic, select **Mosaic → Setup**. The Mosaic Setup window appear.

- Drag a box around the survey area, as indicated by the active coverage plot, or your CO. Provide a survey name, refine the width, height and orientation as desired, and set the resolution to one or two meters, and the beam width to 30 degrees, or a value approximately equal to that of your survey echo sounder. It is probably best to leave the **Depth** scale set to **Decimeter**. Make sure that only the **Bathy** data layer is selected, and that you have selected **AVERAGE** for sampling and layover. Select **Apply**, and then **OK**.



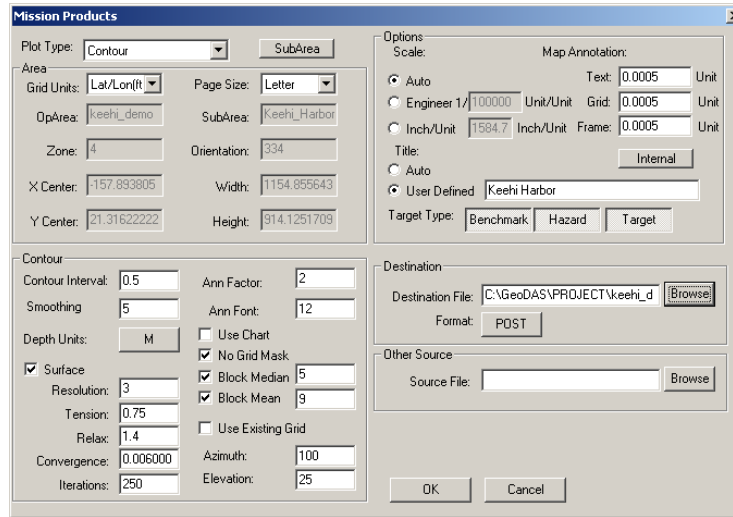
- GeoDAS allocates space for the mosaic, and opens a window to show you your real-time mosaic, with the option of loading BSB, S-57 DNC charts (if available on your system).



- At the end of the survey, select the red **STOP:** button on the mosaic panel to stop the mosaicking, and then proceed to the creation of mission products.

III. Creating a Mission Product

1. In the Mosaic window, select **Export → Mission Products**, to open the Mission Products window. There are six plot types you can create: (**Sidescan, Contour, Color Contour, Target, Contour & Target, 3D Color Contour**). For this example, we create a contour map from the single beam echo sounder data.



2. Select **Contour** for the **Plot Type**. Set the **Grid Units** and the **Page Size** in the Area panel.
3. In the Contour panel, specify contour properties such as contour interval and annotation factor.
4. Check the **Surface** checkbox to smooth the bathymetry data. For the first time, it is best to use the default values and change them later depending on the results. Note that the **Tension** level has to be between 0 and 1 and the **Relax** level between 1 and 2. For more details, refer to the GMT manual.
5. Check the **No Grid Mask** checkbox; this fills in the unsurveyed areas and draws continuous contour lines.
6. In the **Options** panel, set the **Scale, Map Annotation, Title** and **Target Type**.
7. Select the destination file name. Make sure that the **Format** is set to **“POST”**. Click **OK**.
8. Click **Yes** when a popup message asks if you want to add marginal data.
9. After selecting **Yes**, a text editor pops up. Type marginal data you wish to include. Close the editor when finished.

```

MarginalDataUser.txt - Notepad
File Edit Format Help
Survey Name: Keehi Harbor
Hydrographic survey performed by:
    Oceanic Imaging Consultants, Inc.
    1144 10th Ave. Suite 200,
    Honolulu, HI, 96816
Phone number: (808)539-3706
POC FOR THIS SURVEY IS:
DATE PERFORMED: 02/26/2003
TIME PERFORMED: 14:20
DEPTH UNIT: METER
CONTOUR INTERVAL: 0.5
ELLIPSOID: WGS84
PROJECTION: UTM North Zone 4
VERTICAL DATUM: WATER SURFACE

```

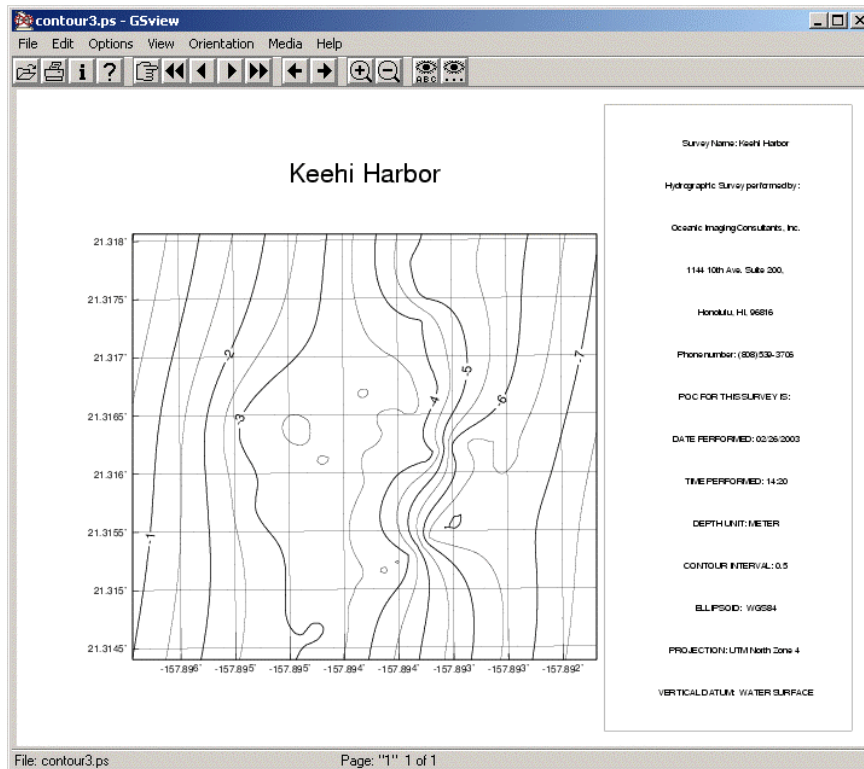
10. The Command Prompt window opens, and runs the GMT commands to create a plot.

```

C:\WINNT\system32\cmd.exe
C:\GeoDAS\TMP>del mask.grd
Could Not Find C:\GeoDAS\TMP\mask.grd
C:\GeoDAS\TMP>del surface.grd
C:\GeoDAS\TMP>grdinage "C:\GeoDAS\TMP\Keehi_Harbor_2bathy.grd" -R614507.868944/2357345.098229/614945.868944/2357751.098229r -Jx0.013699 -C"C:\GeoDAS\TMP\temp.cpt" -X1.500000 -Y1.094178 -K 1>"C:\GeoDAS\PROJECT\keehi_just_a_test\MOS\contour.ps"
C:\GeoDAS\TMP>grdcontour "C:\GeoDAS\TMP\Keehi_Harbor_2bathy.grd" -C0.500000 -Jx0.013699 -Y1.094178 -L-8.000000/-2.500000 -S5 -R614507.868944/2357345.098229/614945.868944/2357751.098229r -X0 -Y0 -K 0 1>"C:\GeoDAS\PROJECT\keehi_just_a_test\MOS\contour.ps"
C:\GeoDAS\TMP>psscale -D1.0i/7.205822i/2.0i/0.2ih -C"C:\GeoDAS\TMP\temp.cpt" -B1.000000/9/:Meters: -0 -0 -K 1>"C:\GeoDAS\PROJECT\keehi_just_a_test\MOS\contour.ps"
psscale: Reading CPT file C:\GeoDAS\TMP\temp.cpt. CPT range from -8 to -2.5
C:\GeoDAS\TMP>psbasemap -R-157.895931/21.314402/-157.891680/21.318042r -JU4/6.000000 -Ba0.000379f0.000379g0.000379: "Lon (Deg)":/: "Lat (Deg)":/:."keehi_just_a_test\Keehi_Harbor_2":WeSn -X0 -Y0 -K 1>"C:\GeoDAS\PROJECT\keehi_just_a_test\MOS\contour.ps"

```

11. Press any key when the plot has been created to show the resulting plot in Gsview (a PostScript viewer).



12. You can print out the plot from Gsview (**File** → **Print**).