Tools—menu guide (R03)

This document refers to a common INTREPID menu system. It describes the Project Manager menus specifically, but you will find that the Old Project Manager menus are similar. For details about these tools, see:

- INTREPID Project Manager (T02)
- INTREPID Old Project Manager (T01)

You can launch INTREPID tools using Project Manager menus for interactive sessions using the Project Manager menus.

See "How to start INTREPID—Overview" in Introduction to INTREPID (R02) for instructions on the alternative methods of launching INTREPID tools.

You can customise the Project Manager's menu system to include your own options. See "Customising the Project Manager menus" in Configuring and using INTREPID (R04) for full details.

In this chapter:

- File and Dataset management
- Editing your data—Spreadsheet, Profile, Flight Path editors
- INTREPID data display tools
- Levelling and Decorrugation
- Grid operations—creating and combining grids
- INTREPID Filters
- Mapping
- Gravity tools
- Radiometrics tools
- INTREPID Interpretation
- INTREPID Utilities
- Beta tools
- Help

File and Dataset management

The Project Manager performs some dataset management operations (see "Dataset management operations—Overview" in INTREPID Project Manager (T02).

The Old Project Manager performs a similar range of dataset operations. See "INTREPID File and Dataset Management" in INTREPID Old Project Manager (T01) for details of these and associated INTREPID tool operations.

Separate INTREPID tools perform Import, Export, Merge, Subsection, Append and Remove duplicates operations. You can launch these tools from the **Dataset** menu
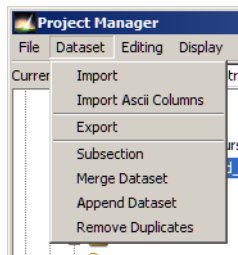
Import

Using the Import tool you can import data from a wide range of formats and store it as an INTREPID dataset. See Importing to INTREPID datasets (T05) for detailed information.

Import ASCII Columns

This tool specialises in importing from ASCII column format files. See Import ASCII Columns Wizard (T06).

Export

Using the Export tool you can export data from an INTREPID dataset to a wide range of other formats (See Exporting from INTREPID datasets (T07) for detailed information).

Subsection

See Subsections of datasets (T21).

Merge Dataset

See Merging datasets (T04).

Append Dataset

Using the Append tool operation you can append one line or point dataset to another. See Appending datasets (T03).

Remove Duplicates

See Removing duplicates (T04a)

Editing your data—Spreadsheet, Profile, Flight Path editors

INTREPID has three tools for directly editing datasets—the Spreadsheet, the Profile Editor and the Flight Path Editor. You can launch these tools using options from the Editors menu. You can also launch a text editor from the Editors menu for modifying or creating auxiliary files.
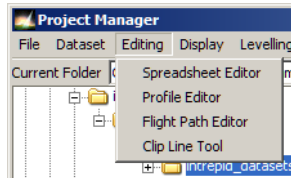
Spreadsheet Editor

The Spreadsheet tool enables you to edit datasets in a spreadsheet-type editor. (Spreadsheet Editor (T15) for detailed information).

Profile Editor

The Profile Editor tool enables you to edit your line data graphically on a time (fiducial) basis. (See Profile Editor (T17) for detailed information).

Flight Path Editor

The Flight Path Editor tool enables you to

· Visualise datasets by displaying their contents in various ways.

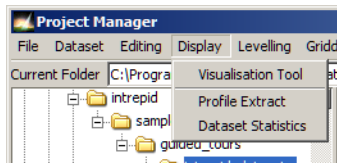· Edit a line dataset graphically on a geographical basis.

See Flight Path Editor (T19) for detailed information.

Clip Line Tool

See Clip lines (T20).

INTREPID data display tools

You can launch the Visualisation, Dataset Sampler and Histogram tools using options from the Display menu.

The Visualisation tool

The current Visualisation tool is a modified version of the Flight Path Editor tool. See Flight Path Editor (T19) for detailed documentation largely relevant to this tool.

Dataset sampler

See Dataset Sampler (T25a).

Dataset Statistics

The Histograms tool displays a histogram of a dataset. It can display the histogram within different ranges of the data and with your choice of data 'bin' size. It can also display histograms of individual bands of multiband grids and fields. See Histograms (T08) for detailed information.

You can also obtain dataset statistics using:

· Project Manager. See "Dataset preview and information display" in INTREPID Project Manager (T02).

· Old Project Manager. See:

    · "Viewing further information about a field or band" in INTREPID Old Project Manager (T01)

    · "Obtaining statistics reports from datasets by command" in INTREPID Old Project Manager (T01).

Other display options

You can also use the Grid Stitch tool (Grid menu) and the Hard Copy Composition tool (Printing menu) for displaying data. The HP–GL Previewer (Printing menu) enables you to view (Printing menu) files that you have output in HP–GL. The Print Hard Copy tool can preview images described by a hard copy specification (`.map`) file (using MAPCOMP language).

Levelling and Decorrugation

INTREPID has tools for line levelling (using comparison of acquisition lines with tie lines), grid decorrugation and microlevelling. You launch these tools using options from the Level menu.
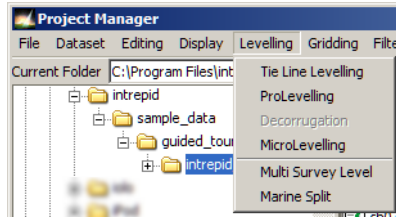
Tie Line Levelling

The Tie Line Levelling tool enables you to make automatic or manual corrections to your line data using comparison of acquisition lines with tie lines. (See Line correction and tie levelling (T30) for detailed information).

Pro Levelling

The Pro version of the Tie Line Levelling tool uses sophisticated tensor and gradient methods for altitude and heading correction and for loop levelling. It uses the same task description (job) language as the standard Tie Line Levelling tool. (See Line correction and tie levelling (T30) for detailed information. For information about the extra features of the Pro version, see "Levelling Pro" in Line correction and tie levelling (T30)).

Decorrugation

The grid Decorrugation tool removes spurious elongate anomalies (streaks) from your data. These anomalies arise from and correspond to adjacent traverse lines where the aircraft has flown in opposite directions. (See Decorrugation (T32) for detailed information).

Microlevelling

The Microlevelling tool enables you to apply corrections stored in a grid to a corresponding line dataset. For example, the results of spurious elongate anomaly Decorrugation are in a grid format, but you may wish to apply the corrections to the original line dataset. (See Microlevelling (T33) for detailed information).

Multi Survey levelling

See Moving platform correction and levelling (T58).

Marine Split

See Split cruise (T57).

Grid operations—creating and combining grids

INTREPID can derive a grid dataset from a line or point dataset using the Gridding tool. The INTREPID Grid Merge tool can smoothly combine grids that are geographically adjacent. Use options from the Grid menu to launch these INTREPID tools.
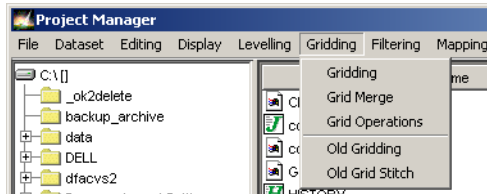
Gridding

The INTREPID Gridding tool enables you to convert point and line data to a grid. Each grid cell will contain a value derived from the raw data or interpolated from neighbouring cells. See Gridding (T22a).

See also the Old Gridding tool Old Gridding (T22).

Grid Merge

The Grid Merge tool enables you to combine grid datasets. See GridMerge—merging multiple grids (T24).

Grid Operations

The Grid Operations tool can resample grid datasets to produce data with different cell size and origin. See Grid Operations (T25) for detailed information.

Old Gridding

The INTREPID Old Gridding tool enables you to convert point and line data to a grid. We recommend that you use the current gridding tool. See Old Gridding (T22).

Old Grid Stitch

The Grid Stitch tool enables you to combine two grid datasets. The Grid Stitching tool is also useful for examining grid datasets. See Grid Stitch—combining two grids (T23) for detailed information.

INTREPID Filters

You can launch the INTREPID Filter tools using options from the Filtering menu.
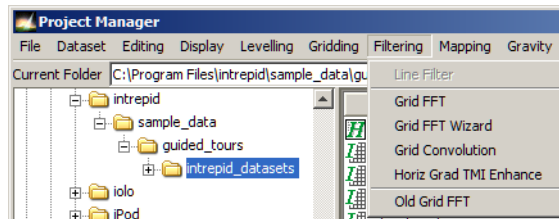
Line Filter

The Line Filter tool enables you to view a line dataset, filter some or all lines from it with spatial and/or spectral domain filters and save the results. (See Line Filtering (T31) for detailed information)

Grid FFT (Spectral domain grid filter)

The spectral domain filters tool enables you to transform grid datasets to the spectral domain (using FFT), use filters to enhance the data, then transform it back to the spatial domain. See Spectral domain grid filters tool (GridFFT) (T40)

Grid FFT Wizard

The Grid FFT Wizard provides an alternative user interface for applying spectral domain grid filters. It is particularly used with INTREPIDLynx, but is also available for general use. See Spectral domain grid filters (GridFFT) wizard (T39)

Grid Convolution (Spatial domain grid filter)

The Spatial Convolution tool modifies a grid by processing each cell using a combination of the values of its neighbours (See Spatial Convolution Grid Filters (T34)).

Horizontal Gradient TMI Enhancement

See Horizontal Gradient TMI Enhancement (T41).

Old Grid FFT (Spectral domain grid filter)

The old spectral domain filters tool enables you to transform grid datasets to the spectral domain (using FFT), use filters to enhance the data, then transform it back to the spatial domain. See Old spectral domain grid filters (OldGridFFT) (T38). We recommend the current Grid FFT tool.

Mapping

Using the INTREPID Map Composition tool you can prepare data for hard copy. The INTREPID Print Map tool prints your hard copy to a device or to a file for later printing. The HP–GL Previewer (not available from menus) enables you to view files that you have output in HP–GL.
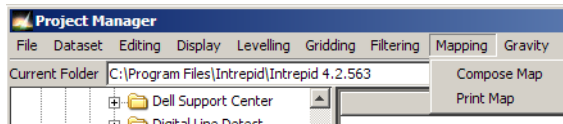
Compose Map

The Map Composition tool enables you to prepare hard copy including both draft hard copy for internal use and professional standard maps representing INTREPID datasets. See:

- Map composition—introduction (T45a)
- Including datasets in a map composition (T45b)
- Including and editing map annotations (T45c)
- Working with objects in maps—advanced operations (T45d)
- Specifying map attribute values (T45e)

Print Map

The Print Map tool will output the image described by a hard copy specification (`.map`) file in MAPCOMP language produced using the Hard Copy Composition tool or by direct editing. Print Hard Copy can output the image to a file in PostScript or HP–GL. Under *Windows*, Print Hard Copy can print directly to a device using Print Manager. (See Map printing (T46)).

Gravity tools

INTREPID has two gravity tools described in the sections below.
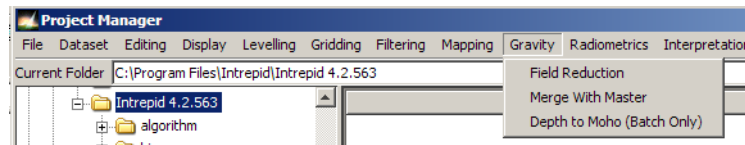
Field reduction
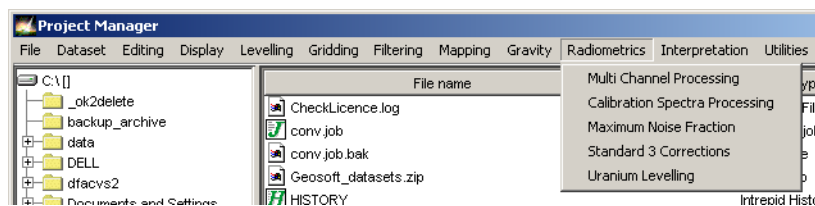
See Gravity corrections (T54)

Merge with Master

See Merging gravity datasets (T56).

Depth to Moho

See Estimating depth to Moho and Isostatic correction (T55).

Radiometrics tools

INTREPID has three radiometrics tools described in the sections below. You can launch the tools using the options in the Radiometrics menu.

Multichannel spectra processing and correction (MSPC)

This tool enables you to adjust a radiometric spectra dataset for dead time, energy calibration, aircraft and cosmic and radon backgrounds, then produce the standard 3 (K, U and Th) channel fields. See Multi-channel gamma ray spectrometric processing (C07) for detailed information.

Calibration Spectra Processing

See Radiometric Spectra Calibration (T49).

Maximum Noise Fraction

See Maximum Noise Fraction (T50).

Standard 3 Corrections

Standard 3 gamma spectrometer corrections enables you to make height and stripping corrections to the standard K, U, Th and Total Count gamma ray spectrometer channels in a radiometrics dataset. (See Multi-channel gamma ray spectrometric processing (C07) for detailed information)

Uranium Levelling

The Uranium Levels corrections tool enables you to enhance uranium data by comparing two separate uranium frequencies. (See Uranium levelling (T53) for detailed information).

INTREPID Interpretation
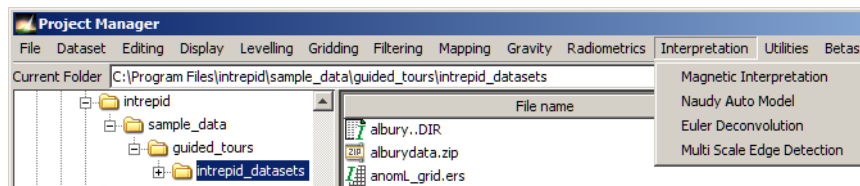
Magnetic Interpretation

The Magnetic Interpretation tool (Magnetic interpretation (MagMage) (T42)) can

- Produce a 'worm' diagram on grids to map high and lows (see also the new special purpose 'worm' tool—Multi-scale edge detection wizard (T44a)).
- Identify incoherencies in your data as an aid to studying regions with rapid changes. You can use variance coherence or minimum curvature methods for this process.

The Magnetic Interpretation tool was developed for the MAGMAGE project.

Naudy Automatic Model

The Naudy Automatic Model tool uses line profiles to estimate the depth of sources. It creates a model then refines it to 'explain' your data. See Naudy Automatic Model interpretation (T43) for details about this tool.

Euler Deconvolution
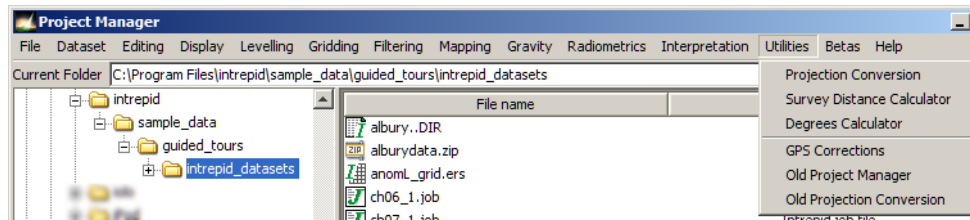
The Euler Deconvolution tool can calculate source depth estimations and rate them for reliability. See Euler Deconvolution (T44) for detailed information.

Multi-Scale Edge Detection

See Multi-scale edge detection wizard (T44a).

INTREPID Utilities

You can launch utilities using the options in the Utility menu.

Projection Conversion

The Projection Conversion tool enables you to transform data from one datum to another and from one projection to another. (See Datum and Projection Utility (T13) for detailed information).

Survey Distance calculator

The Survey Distance Calculator enables you to compute the distance traversed in a survey. See Survey distance calculation (T10) for detailed information).

Degrees calculator

See Degrees Calculator (T14).

GPS Correction

The GPS Corrections tool merges Global Positioning Satellite (GPS) data with GPS differential data and applies corrections to give final navigation data for a line dataset. See GPS navigation corrections (T11).
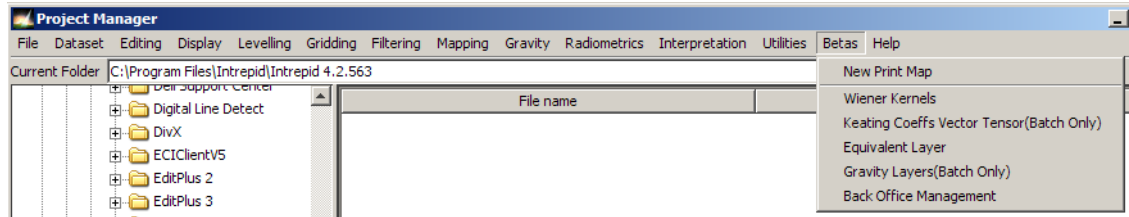
Old Project Manager

See INTREPID Old Project Manager (T01)

Old Projection Conversion

See Old Datum and Projection Conversion (T12). We recommend the new tool for this process—see Datum and Projection Utility (T13).

Beta tools

The **Beta** menu has commands to launch the INTREPID beta tools.

New Print Map

New interactive and batch map composition tool with XML schema. For schema details see http://www.geomodeller.com/geo/Geomodeller3D_Project/ mapprintSchema.xsd

Wiener Kernels

If you input sample source and results data, the Wiener Kernels tool can create a convolution kernel that will produce the results from the source. You can then use this convolution kernel to process other data in the same way.

See Spatial Convolution Grid Filters (T34) for information about using convolution kernels. See Creating Weiner convolution kernels (T35) for details about the Wiener Kernels tool.

Keating Coefficients Vector Tensor

This tool is based on the algorithm by Pierre Keating for creating theoretical gravity and magnetic models of kimberlite pipes (vertical chimneys). It creates a representative model of a vertical pipe for a diameter and buried depth that you can set. A cross-correlation kernel is then passed over your observed geophysical grid comparing every cell with the measured signal.   The calculated correlation coefficient is stored in an output grid. This tool is available in batch mode. We provide the algorithm and calibration dataset by courtesy of the Geological Survey of Canada.

Extensions to this idea include the use of observed gradients of both gravity and magnetic, as well a gravity tensor gradiometer.

See Keating coefficients (T59).

Equivalent Layer

The Equivalent Layer tool performs height corrections in acquisition data processing. See Equivalent Layer corrections (T36) for detailed information.

Gravity Layers (Batch only)

Use this tool for stripping the effects of a known depth of sedimentary cover. It performs forward modelling for 'layer cake' geology. It can predict the response of shallow sedimentary layers. This predicted response can be stripped from observed gravity to reveal deeper gravity anomalies. See Gravity layers forward modelling (T60) for more information.

Back Office Management

Launches our Geophysical Data Archive and Distribution System (GDADS). See Introduction to GDADS (D01).

Help
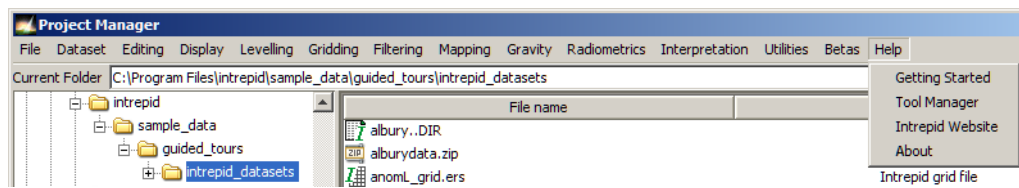
Getting Started

This option opens the INTREPID manual. See Overview of INTREPID documentation (R01) for a summary of manuals and on-line help in INTREPID.

Tool Manager

The Tool Manager enables you to manage your INTREPID licence and to view a list of the tools for which you have a licence.

Intrepid website

This is a link to the Intrepid Geophysics website.

About

If you choose **About**, INTREPID displays version information.