Importing to INTREPID datasets (T05)   **Top**

This tool enables you to convert data from a variety of formats to INTREPID dataset files.

You can import data into vector and grid datasets. The sections following on vector dataset import and grid dataset import contain lists of the data formats from which INTREPID can import.

You can also specify the geographic registration of an existing dataset using this tool.

Note: You can identify the current datum and projection if, for some reason, INTREPID does not have them correctly recorded. For example, the import data may not explicitly identify its datum and projection. This tool will not perform datum or projection conversion in a dataset. See Datum and Projection Utility (T13) for information about that process.

Generally, at the end of this process, your data should have geographic registration (be 'geolocated'). INTREPID does, however, support unlocated and local grids. See "Data that is not geolocated (RAW)" in INTREPID's supported datums and projections (R09) and "Local projections (local grids)" in INTREPID's supported datums and projections (R09) for details.

Recent updates—please note

The Import tool can now import

· ARCVIEW Shape files into vector datasets. The procedure is similar to the one for Picodas Line and Moss Exchange data.

· LCT Grids.

· USGS Images into grid datasets. The procedure is similar to that for importing ASCII Images.

Using the Import tool

>> *To use the Import Data tool*

1   Choose Import from the File menu of the Project Manager or use the command **import.exe**. INTREPID displays the Import window.
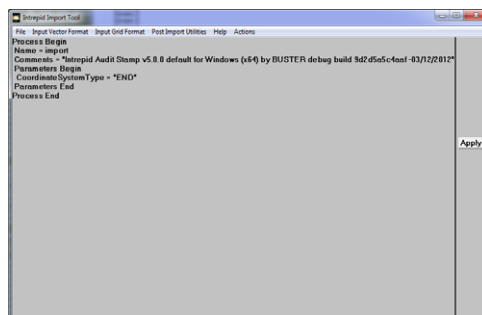
2   If you are only editing the geographic registration of an existing dataset, perform steps 3, 4 (specify output dataset only), 9, 10, 11.

3   If you have previously prepared file specifications and parameter settings for Import, load the corresponding task specification file using Load Options from the File menu. (See Specifying input files and output datasets for information about specifying files). If all of the specifications are correct in this file, go to step 7. If you wish to modify any settings, carry out the following steps as required.

4   Specify the input file (or device name for an AGSO Argus tape) and the output dataset into which you wish to import the data. Use the corresponding options from the File menu. (See Specifying input files and output datasets for information about specifying files).

5   Select the input format to be used from the Input Format menu (See Input Formats for details).

6   If INTREPID displays a dialog box for the input format you have chosen, specify the parameters required.

7   When you have made specifications according to your requirements, choose Apply in the Import window. INTREPID will to carry out the import process.

8   Edit the INTREPID standard information (`.isi`) file if necessary *(vector datasets only)*. (See Editing the aliases.)

9   Edit the geographic registration for the dataset if necessary. (See Setting Geographic Registration for vector datasets or Setting Geographic Registration for a grid dataset.)

10 If you wish to record the specifications for this process in a task specification (`.job`) file in order to repeat a similar task later or for some other reason, use Save Options from the File menu. (See Specifying input files and output datasets for information about specifying files).

11 If you wish to repeat the process, repeat steps 2–10, varying the specifications as required.

**12** To exit from Import, choose Quit from the File menu.

——

As you specify the filenames and parameters for the import process, INTREPID displays them in the Import window. See Displaying options and using task specification files for details and an example of a set of specifications.

You can view Help information by choosing options from the Help menu (See Help).

You can execute Import as a batch task using a task specification (`.job`) file that you have previously prepared. See Displaying options and using task specification files for details.

Specifying input files and output datasets

To import data you must specify the input data file and the output dataset. Choose the corresponding options from the File menu to specify these files.
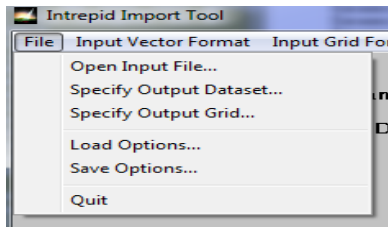

In each case INTREPID displays an Open dialog box. Use the directory and file selector to locate the file you require. (See "Specifying input and output files" in Introduction to INTREPID (R02) for information about specifying files).

Open Input File Use this to specify the file or device containing the data to be imported.

> If you are importing data from a tape under UNIX, you can specify the tape device name (e.g., **/dev/rst4**) as the input file name.

> If you are importing data into a multiband grid dataset, INTREPID will prompt you to specify the band in which to store the data.
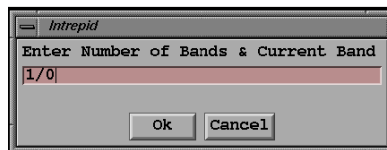
> If you are only editing geographic registration, do not specify an input file. Editing geographic registration operates only on the output dataset

Specify Output Dataset Use this to specify the INTREPID dataset that you are creating and to which you are importing data in this process.

Load Options If you wish to use an existing task specification file to specify the Import process, use this menu option to specify the task specification file required. INTREPID will load the file and use its contents to set all of the parameters for the Import process. (See Displaying options and using task specification files for information about task specification files).

Save Options If you wish to save the current Import file specifications and parameter settings as a task specification file, use this menu option to specify the file name and save the file. (See Displaying options and using task specification files for more information).

Input Formats

INTREPID can import data from a wide range of file formats.

>> *To select the input format*

Ensure that you have specified the input file and output dataset (See previous section). Choose the format you require from the Input Format menu.
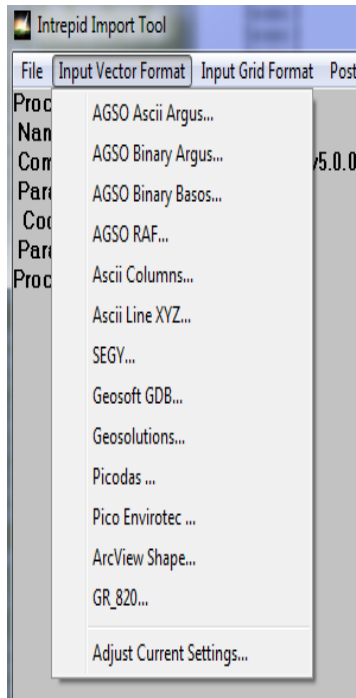
If INTREPID requires further information about the file before it can perform the import, it displays a dialog box.

If one of these dialog boxes appears, specify the import parameters required and choose the OK button in that dialog box. INTREPID will close the dialog box and use the parameters that you specified.

Importing from tape under *Windows*

If your data is in `tar` (tape archive) format you may need UNIX support software to import it under *Windows*. Software packages such as *MKS Toolkit* provide access to standard `tar` commands using UNIX device notation. See "Accessing INTREPID data from both UNIX and Windows" in Configuring and using INTREPID (R04) for more information.

If you wish to import from `tar` tape under *Windows*, please contact our technical support service for information about the latest techniques and UNIX support software.

If you are importing data from a tape under UNIX, you can specify the tape device name (e.g., `/dev/rst4`) as the input file name.

Apply

When you choose Apply INTREPID will carry out the processing that you have specified. Before you choose Apply, you must have specified the input file and output dataset names and the parameters that you wish INTREPID to use.

Help

You can use the Help menu to display help text on the topics shown in the menu illustration below.
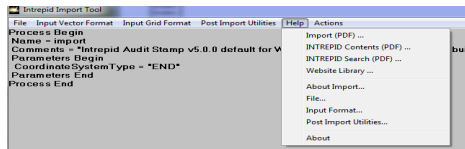
Exit

To exit from Import, choose Quit from the file menu.

Displaying options and using task specification files

Displaying options

INTREPID displays the current file specifications and parameter settings in the Import window.

Using task specification files

You can store sets of file specifications and parameter settings for Import in task specification (`.job`) files.

>> *To create a task specification file with the Import tool*

1   Specify all files and parameters.

2   If possible, execute the task (choose Apply) to ensure that it will work.

3   Choose Save Options from the File menu. Specify a task specification file (INTREPID will add the extension `.job`) INTREPID will create the file with the settings current at the time of the Save Options operation.

For full instructions on creating and editing task specification files see INTREPID task specification (`.job`) files (R06) files.

>> *To use a task specification file in an interactive Import session*

Load the task specification (`.job`) file (File menu, Load Options), modify any settings as required, then choose Apply.

>> *To use a task specification file for a batch mode Import task*

Type the command **import.exe** with the switch -**batch** followed by the name of the task specification file.

For example, if you had a task specification file called **surv329.job** in the current directory you would use the command

import.exe -batch surv329.job

Task specification file example

Here is an example of an Import task specification file.

```
Process Begin
   Name = Import
   Input = eba_Ascii
   Output = ebagoola
   Parameters Begin
      Format = AsciiColumns
      AsciiColumns Begin
         FixedLength = No
         RecordLength = 80
         SkipRecords = 0
         ReportDiagnostics=yes
         DDF = "eba.ddf"
      AsciiColumns End
   Parameters End
Process End
```

———

Importing to vector datasets

You can import to INTREPID vector datasets from a range of data formats. The
formats that INTREPID supports include

· ASCII column files described by Data Definition Files (**DDF**)

· AGSO Argus, BASOS and RAF files

· Geosoft XYZ files

· Moss files

· NetCDF XYZ files

· Picodas files

· Geosolutions Line files

'Group by' fields and field aliases

During the import process for a vector dataset, INTREPID can automatically:

- Identify 'group by' fields and

- Create and assign aliases to fields. INTREPID creates an INTREPID standard information (`.isi`) file with aliases appropriate to the output dataset type.

See "'Group by' fields" in INTREPID database, file and data structures (R05) and "Vector dataset field aliases" in INTREPID database, file and data structures (R05) for full details about these topics.

The table in this section indicates automatic or programmable 'group by' and alias assignments for each input format.

INTREPID imports data from all formats listed into line datasets unless otherwise indicated in the table.

The table contains the following codes:

Code	Meaning
A	INTREPID automatically assigns a field without your intervention.
P	You specify the assignment of a field before the import process.
Blank	INTREPID lists the alias in the INTREPID standard information (`.isi`) file, but does not assign it during the import process. You must edit the INTREPID standard information (`.isi`) file after import to assign the alias.
X	INTREPID does not list this alias in the INTREPID standard information (`.isi`) file (usually because the alias is not appropriate to the dataset type).

Automatic selection of 'group by' fields and assigning of fields to aliases for each import formats	'Group by'	X	Y	Fiducial	LineNumber	FlightNumber	LineType	Clearance	PointType	PointGroup
AGSO ASCII Argus	A	A	A	A	A				X	X
AGSO Binary Argus	A	A	A	A	A				X	X
AGSO Binary BASOS	A	A	A	A	A				X	X
AGSO RAF	A	A	A	A	A				X	X
ASCII Columns (line)	P	P	P						X	X
ASCII Columns (point)	P	P	P	X	X	X	X	X		
ASCII Columns (polygon)		P	P	X	X	X	X	X	X	X
Geosoft XYZ	A	A	A		A				X	X
Geosolutions (line)	P	A	A		P				X	X
Geosolutions (point)	A	A	A			X	X	X		
GR_820	A	A	A	A	A	A	A		X	X
Moss	A	A	A						X	X
NetCDF XYZ (line)	A	A	A						X	X
NetCDF XYZ (point)	A	A	A			X	X	X		
NetCDF XYZ (polygon)		A	A	X	X	X	X	X	X	X
Picodas	A	A	A	A	A	A	A		X	X

Traverse line type codes

Several INTREPID tools require a line type field containing a type code for each traverse line. If your imported dataset does not contain such a field you may need to create one. See "Traverse line numbers and types" in INTREPID database, file and data structures (R05) for further information.

Viewing imported line datasets as point datasets

INTREPID imports some formats to line datasets automatically. You can view these datasets as point datasets if required. See "Viewing line datasets as point datasets" in INTREPID database, file and data structures (R05) for instructions.

Importing ASCII Columns data

INTREPID can interpret most ASCII columns data. ASCII columns files consist of a number of lines of characters. You can divide each line of the file into fields based on the position of the characters in the line.

For example,

> field 1 could occupy character positions 1–5,
>
> field 2 positions 6–14,
>
> field 3 positions 15–24, etc..

If you display the file using a fixed space font, the characters will be arranged in columns as well as rows. Thus you could also substitute the word 'column' for 'character position'.

For example,

> field 1 could occupy columns 1–5,
>
> field 2 columns 6–14,
>
> field 3 columns 15–24, etc..

Note: INTREPID assumes that the columns of data in the import file are separated by spaces or tabs. If this is not the case you can specify a different delimiter in the DDF file.

If you are importing ASCII column data to a vector dataset you can create one or more multiband fields or one field for each column of data. See"Multiband fields" in The INTREPID DDF format (R08) for instructions.

Input file and device options for ASCII columns importing

You can import ASCII columns data from disc file, magnetic tape and through **stdin** (*UNIX only*—output from another task).

The advantage of direct tape input is that you can select only part of the data that you require. This is faster than copying all data to disc.

(UNIX only) You can use **stdin** in batch processing situations where you are preprocessing the data before import, piping the data directly from the preprocess to the import process. For example, you can use the UNIX **dd** utility to unblock the data from the tape and then pipe the data from it to the import process.

See Specifying input files and output datasets for details of the input file specification process.

>> *To specify a disc file*

Specify the path and file name in the normal way.

>> *To specify magnetic tape input*

Type the device name as the input file.

>> *To specify* **stdin**

Type **stdin** as the input filename.

DDF—Data Description Files

If you require INTREPID to interpret an ASCII columns file, you need another file which defines the fields and their column numbers. This is called a **Data Description File** (**DDF**).

If you specify ASCII Columns format import data, you must also specify or create a DDF to describe your data.

See The INTREPID DDF format (R08) for a full description of the DDF format options.

The ASCII Columns import process

If you choose ASCII Columns format for your input file, INTREPID displays the DDF Preview dialog box.
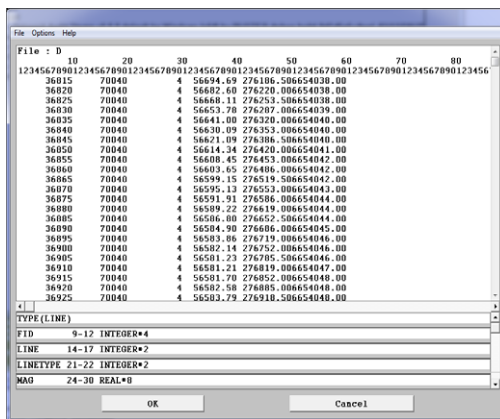
The top section of the DDF Preview dialog box contains a display of the data file you specified (See Specifying input files and output datasets). There is a column number ruler across top of the text display area to help you see the column layout of the data. The text area will probably not show all of the data. You can view more data by resizing the dialog box window or scrolling the data.

The bottom section of the dialog box contains the text of the DDF that you have selected. You can edit the DDF directly in this text area. If you edit the file and wish to keep the results, make sure you save it before dismissing the DDF Preview dialog box (See Saving DDFs).

>> *To specify the DDF format,*

1 Either

Use the File menu to load a DDF from the DDFs available in the library or the current (working) directory

or

Use the DDF editing area and/or the Skeleton DDF generator to create a new DDF.

2 Use the Options menu to turn on Fixed Length or specify Record Length if required.

3 Use Set Records to Skip in the Options menu to specify the number of header and/ or blank records at the start of the ASCII columns file.

4 Choose OK to accept the selected DDF for interpreting the import file.

Loading existing DDFs

>> *To load an existing DDF,*

1   Choose Load DDF from the File menu. INTREPID displays the From Library/
From Current Directory cascade menu.
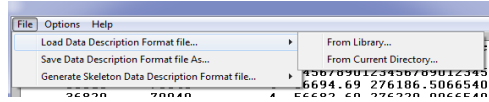
Choose From Library or From Current Directory depending on where the required
DDF resides. The Library is the directory ***install_path*/ddf**. (See The
INTREPID DDF format (R08) for more information.) INTREPID displays a file
selection dialog box.

If you choose Library INTREPID displays the DDFs from the library in the Load
Library DDF dialog box.

If you choose Current Directory INTREPID displays the DDFs from your current
working directory in the Load Local DDF dialog box.

2   Choose the file you require (See "Specifying input and output files" in Introduction
to INTREPID (R02) for information about specifying files).

ASCII Columns import options

You can use options from the Options menu to specify

·   Whether the import records are of fixed length.

·   If there is an error in the input data, whether to assign the value *null* or stop the
process and report the error.

·   Whether to produce a diagnostic report of the process.

·   The record length of the input data if it is fixed length.

·   Number of records containing header information, etc., at the start of the input
file (Records to skip)
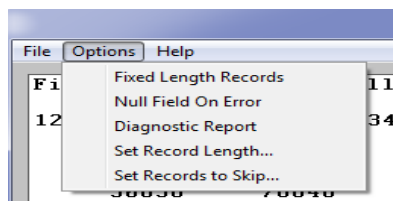
Fixed Length Records Turn on this option if the file to be imported has fixed length
records. This option is useful if there are no carriage returns or line feeds
delimiting records in the data.

Null Field on Error This option specifies INTREPID's behaviour if it encounters an error or data that it cannot interpret in the import file. If you turn this option on, INTREPID will insert the value *null* in the data whenever it cannot evaluate an item. If you turn this option off, INTREPID will halt the import process if it cannot evaluate an item and report the problem to you.

Here is an example of an error report which INTREPID displays when this option is turned off.
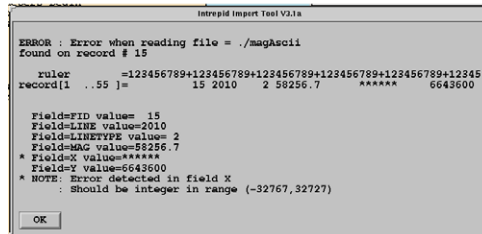

Diagnostic Report If you turn on this option INTREPID can produce a report of the import process. The report will be an ASCII (text) file in the working directory with the same name as the output dataset and the extension `.rpt`. For example, if your dataset is called `mag567`, then the report file will be `mag567.rpt`. You can also view diagnostic reporting of the process in a background window (UNIX) or a *Windows* `ntout` report file. See "Diagnostic reporting options" in Configuring and using INTREPID (R04) for more information.

Set Record Length If the import file has fixed length records, use option to specify the number of characters in each record. When you choose it INTREPID displays the Record Length input dialog box. Type the record length in the text box and choose OK.
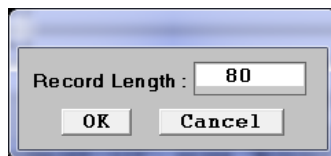
Set Records to Skip Use this to specify the number of records (rows) occupied by any header or other file description data at the start of the input file. INTREPID will skip the number of records (rows) that you specify. When you choose it INTREPID displays the Records to Skip input dialog box. Type the records to skip in the text box and choose OK.
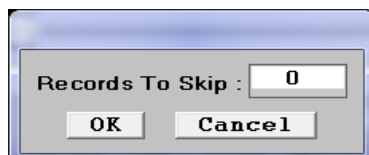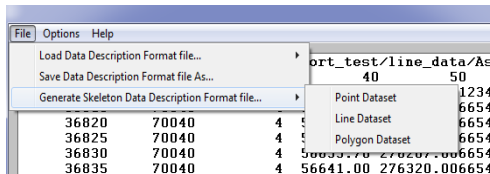

Editing the DDF in the DDF Preview dialog box

You can directly edit the DDF in the editing area in the lower half of the dialog box. To see more of the DDF use the scroll bar.

DDF skeleton generator

You can use the DDF skeleton generator to examine your data file and suggest a DDF description for the data. You can edit this skeleton to create the required DDF for the data.

>> *To create a skeleton DDF*

Choose Generate Skeleton DDF from the File menu, and select Point Dataset, Line Dataset or Polygon Dataset from the cascade menu.

INTREPID will generate and display the skeleton DDF. You can edit it as described in Editing the DDF in the DDF Preview dialog box.
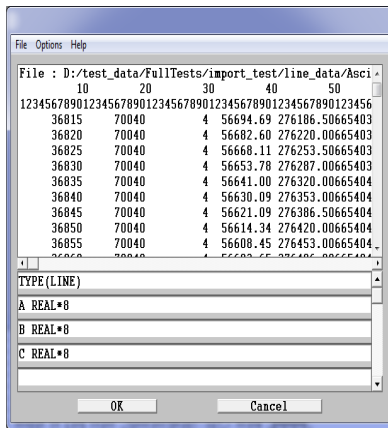
Saving DDFs

You can save a copy of the current DDF. INTREPID will normally save it in the working directory. If you wish to use it regularly, save it in or copy it to the library (*install_path***/ddf**).

>> *To save a DDF*

Choose Save DDF from the file menu. INTREPID displays a file selection dialog box. Specify and save the file. (See "Specifying input and output files" in Introduction to INTREPID (R02) for information about specifying files).

OK/Cancel

When you choose the OK button INTREPID will apply the current settings to the import process and display the results in the Import window. Choose Cancel to abandon the DDF selection/editing process.

If you choose OK without saving the DDF INTREPID will save it as *install_path***/ tmp/ddf**.

Help

You can use the Help menu to display help text on the topics shown in the menu illustration below.

Importing AGSO vector data

With the deployment of GADDS by Geosciense Australia, the need for this function becomes obsolete. INTREPID

INTREPID can import AGSO standard tapes in

· Argus format (currently used),

· BASOS format (an old format not currently used),

RAF format (AGSO internal archive storage and retrieval format—not generally available).

>> *To import AGSO data*

1 Choose AGSO Argus, AGSO BASOS or AGSO RAF from the Input Format menu. INTREPID displays an AGSO Import dialog box.

2 If you wish to have INTREPID only report on the file contents, turn on the Report Contents Only check box.

3 Choose OK.

4 Complete the import process in the normal way.

Geographic registration for AGSO vector data

AGSO vector data has two possible datums. The change occurred in 1992.

Before 1992: `AGD66`

After 1992: `WGS84`

The import data does not specify the datum. After importing the data you must check and change the datum if necessary. You can use GeoReference Output from the Utilities menu for this operation. See Modifying geographic registration for an existing dataset for instructions.

The AGSO configuration file

INTREPID keeps a configuration file for the AGSO formats called **BMRStandardChannels** in the directory ***install_path*/config**. This ASCII file contains the field names for each variety of tape including

- radiometrics only,
- radiometrics and magnetics,
- VLF,
- Doppler navigational data,
- Pressure,
- temperature and upward radiometrics,
- Navigation,
- Magnetics (new and old).

The file contains the default field names followed by a standard divisor to convert from integer to real. The divisor will normally convert the data to Real*4. You can add an optional 3rd argument to force a conversion to Real*8. All location information should be converted to Real*8.

The dataset creation process

The header of an AGSO tape contains the channel and data type information. INTREPID uses this to select the dataset field names and structure from **BMRStandardChannels**.

INTREPID automatically derives the location, line number and fiducial fields from the AGSO data and assigns the corresponding aliases.

You may wish to create a line type field for the dataset. AGSO has a line number convention which enables you to derive a line type field from the line numbers. See "Traverse line numbers and types" in INTREPID database, file and data structures (R05) for further information.

Importing AGSO Argus data from tape or disc—notes

AGSO Argus traverse line data format stores each traverse line as a separate file.

You can specify that INTREPID read the data directly from tape. This is especially useful if you have a very large multivolume ASCII dataset and only wish to extract part of it.

To read data from tape, enter the input file name containing the name of the tape device.

Examples:

Silicon Graphics:	**/dev/rmt/tps0d5nrnsv.6250**
Sun:	**/dev/rst0**[a]

a. For 6250 bpi Sun with Kennedy drive at SCSI address 5, the device name is **/dev/rst16**

As there are multiple files on the tape, you must specify no rewind after read. INTREPID will import all files on the tape.

You can also specify that INTREPID read the data from disc. The procedure for reading Argus data from disc requires you to have read the data from tape into multiple files via a tape utility such as `dd`. We can supply you with a shell script to assist in creating these files. If you are importing from disc you must have created a file containing a list of all of the file names, one per line. The file name must have the extension `.lst` In this case, specify the `.lst` file as the File To Import text box in the Import dialog box. From this file name list file INTREPID can determine the names of all of the files it must import.

If you are importing the data from disc and specify a file name with an extension other than `.lst`, INTREPID will assume that the data is in an AGSO Archive format file.

Importing BASOS data—notes

You can load BASOS data from disc or tape. This older format is not commonly found. The blocking factor is 3840 for tapes. If you read a tape to disc make sure you pad out the blocks so that they remain a constant size.

The BASOS *null* value is 10^{10}

Importing ASCII XYZ data

ASCII XYZ files consist of a number of 'columns' of data, where a column represents a field (e.g., X or Y or Z) and a row represents a data point.

INTREPID imports ASCII XYZ files to line datasets. You can view these datasets as point datasets if required. See "Viewing line datasets as point datasets" in INTREPID database, file and data structures (R05) for instructions.

>> *To import ASCII XYZ data*

1   Choose ASCII XYZ from the Input Format menu. INTREPID will examine the input file and may display the Import ASCII XYZ dialog box.
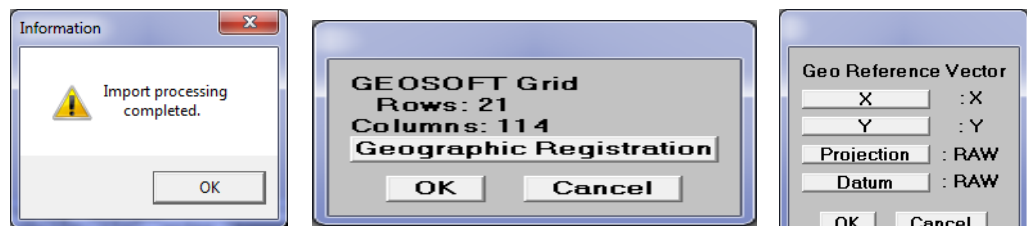
Set the Geographic Registration for the dataset by specifying its Datum and Projection. Choose the corresponding buttons and select the datum and projection accordingly from the dialog boxes that INTREPID displays. See Setting Geographic Registration for vector datasets for details of this process.

2   INTREPID will normally import the first column of data as the X field, the second as Y and the third as Z. If there are exactly three columns of data go to step 6.

3 If there are more than three columns of data in the Geosoft XYZ file, you need to decide whether the third and subsequent columns will be single fields or bands of one multiband field.

To import the additional columns of data as a single multiband Z field, turn on the Save as Multiband Channel Z check box.

To import the additional columns of data as separate Z fields, turn off the Save as Multiband Channel Z check box. INTREPID will import the third and subsequent columns as fields Z1, Z2,...

4 Choose OK.

5 Complete the import process in the normal way.

6 Depending on the particular format of the XYZ file, the import process may create 2 extra fields, called AS_FLIGHT and AS_DATE. These fields occur in the comment line of the XYZ file, and are created within INTREPID as 'Group By' fields. The 'AS' prefix distinguishes them from 'GS' fields (eg: GS_Line), which originate within the Geosoft program.

Importing Geosolutions line/point data

Geosolutions line or point files consist of a number of fields which may be labelled.

>> *To import Geosolutions line or line data*

1 Choose Geosolutions Line/Point from the Input format menu. INTREPID will examine the input file and display the Import Geosolutions Line/Point Data dialog box.

```
┌──────────────────────────────────────────────────┐
│                                                    │
│  Geosolutions Line/Point Data  Fields: 10          │
│  LINE_NO_ GPS_TIME LOCAL_EAST LOCAL_NORTH EAST NORTH│
│  ALTIMETER FINAL_MAG SPARE SPARE                   │
│  [Line Number]                   : LINE_NO_        │
│  ⦿ Line Data                                       │
│  ○ Point Data                                      │
│       [   OK   ]           [  Cancel  ]            │
└──────────────────────────────────────────────────┘
```
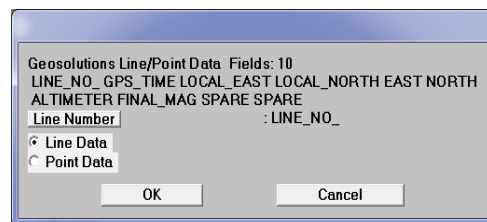
The dialog box will report the number of fields and their labels if present.

2 Specify whether to import the data to a line or point dataset using the corresponding option buttons.

3 If one of the fields is the line number field for the dataset, specify it by choosing Line Number and selecting the line number field from the file selection dialog box displayed.

4 Set the Geographic Registration for the dataset by specifying its Datum and Projection. Choose the corresponding buttons and select the datum and projection accordingly from the dialog boxes that INTREPID displays. See Setting Geographic Registration for vector datasets for more details of this process.

5 Choose OK.

6 Complete the import process in the normal way.

Importing Picodas Line data

>> *To import from Picodas Line formats*

1   Choose Picodas Line from the Input format menu. You should choose the list file, which contains a list of the binary files supplied in this format. INTREPID will examine the input file and display the corresponding dialog box.
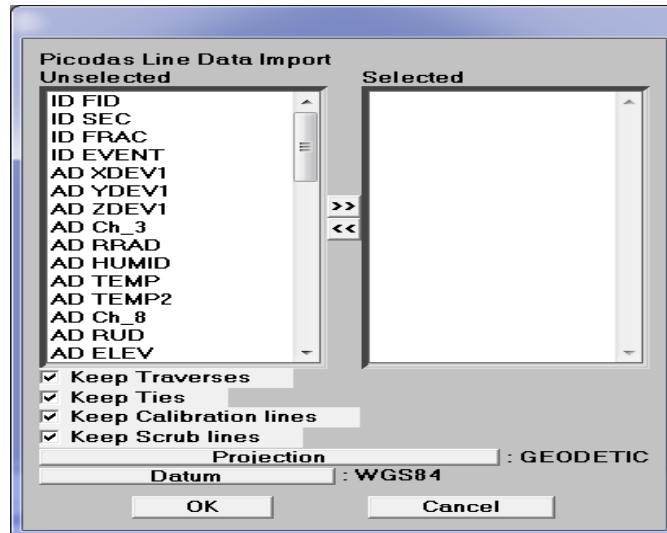
2   Choose which fields you wish to import and create an Intrepid database from.

3   Set the Geographic Registration for the dataset by specifying its Datum and Projection. Choose the corresponding buttons and select the datum and projection accordingly from the dialog boxes that INTREPID displays. See Setting Geographic Registration for vector datasets for more details of this process.

4   Choose OK.

5   Complete the import process in the normal way.

Importing NetCDF XYZ data

INTREPID can obtain all required information from the NetCDF XYZ files. If you choose this input format option, INTREPID will not display a dialog box for parameters. At V4.5/5.0, the GMT variant for GRIDS of this format is supported natively.

Importing Exploranium GR 820 data

Exploranium GR 820 data files have a binary format. INTREPID can import GR 820 binary data blocks into a predetermined vector dataset format. The binary data blocks can be alone in a file or embedded in an ASCII columns file.

You can import Exploranium GR 820 data using

•   The GR_820 option from the InputFormat menu (for standard Exploranium GR 820 binary files)

•   ASCII columns import (for Exploranium GR 820 binary data embedded in an ASCII columns file). See "Exploranium GR820 import" in The INTREPID DDF format (R08) for instructions.

Setting Geographic Registration for vector datasets

When you import to a vector dataset, part of the process is to nominate the datum and

projection for the dataset. This is called **geographic registration**. This should alswyas be done, prior to trying to use other tools within INTREPID. The ProjectManager also lets you review and set this information.

ASCII columns data

If you are importing ASCII columns data, you should incorporate geographic registration information in the DDF (See Importing ASCII Columns data).

NetCDF XYZ data

If you are importing NetCDF XYZ data (see Importing NetCDF XYZ data), the import data should include its own geographic registration information.

ASCII XYZ, Geosolutions line/point, Picodas, Exchange data

If you are importing Geosoft XYZ, Geosolutions line/point data, Picodas and Moss Exchange data (see corresponding sections above), you need to specify the datum and projection using the buttons provided in the corresponding import format dialog box.

Modifying geographic registration for an existing dataset

You can edit the geographic registration of an existing dataset using the Geo Reference Output option in the Utilities menu. This dataset can be the one just imported or some other one that you specify as the output dataset.

You can identify the datum and projection. You may wish to do this, for example, if the current datum or projection is not the correct one for the dataset, or if no datum or projection is currently recorded for the dataset.

You can also nominate the location X ,Y fields for the dataset (i.e., assign the **X** and **Y** aliases). See Editing the aliases in this chapter and "Vector dataset field aliases" in INTREPID database, file and data structures (R05) for more information.

Note: The Import tool will not perform datum or projection conversion in a dataset. See Old Datum and Projection Conversion (T12) for information about that process.

>> *To specify location information for an existing vector dataset*

1   Ensure that the existing dataset is specified as the output dataset in the Import tool window (See Specifying input files and output datasets for more information).

2   Choose Geo Reference Output from the Utilities menu of the Import window.
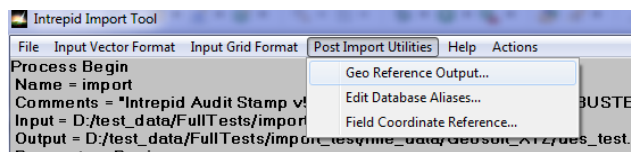
INTREPID displays the Set Geographic Registration dialog box.
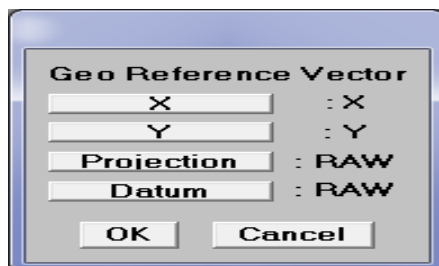
3   Specify the Datum and the Projection by choosing the corresponding buttons. INTREPID displays a datum or projection selection dialog box accordingly. Select the datum/projection you require, then choose OK. See Specifying the datum and projection for a vector dataset for full instructions.

4   If you wish to nominate different fields as the X and Y location fields, choose X. INTREPID displays a file selection dialog box. Select the new X field. Repeat the process for the Y field. (See "Specifying input and output files" in Introduction to INTREPID (R02) for information about specifying files)

5   Choose OK in the Geographic Registration dialog box. INTREPID will close the
Set Geographic Registration dialog box and apply the settings to the dataset you
are creating. If you chose new X and Y fields INTREPID will modify the aliases
accordingly.

Specifying the datum and projection for a vector dataset

>> *To specify the datum and projection for a vector dataset*

Choose Datum or Projection in turn from the dialog box you are using. See
"Specifying datums and projections" in INTREPID's supported datums and
projections (R09) for detailed instructions.

Editing the aliases

The importing process creates a INTREPID standard information (`.isi`) file for the
dataset. If you wish to change the aliases assignment of the output dataset after an
import operation you can edit its INTREPID standard information (`.isi`) file.

(When you set geographic registration for a dataset you have an opportunity to assign
the **X** and **Y** aliasese. See Setting Geographic Registration for vector datasets for
details.)

See "Vector dataset field aliases" in INTREPID database, file and data structures
(R05) for more information.

>> *To edit the aliases of the output dataset*

1   Choose Edit Dataset Aliases from the Post Import Utilities menu.
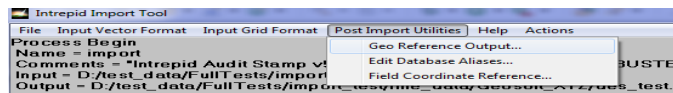
See "Vector dataset field aliases" in INTREPID database, file and data structures
(R05) for further instructions.

You can also use a text editor to directly edit the INTREPID standard information
(`.isi`).

———

Importing to grid datasets

INTREPID can import data from the following grid formats

- ASCII image files

- Binary image files (including *ERMapper*[1], *ARC/INFO* and ERDAS *IMAGINE*)

- AGSO ASCII and Binary image files

- ASEG GXF files

- Encom Image

- Zmap grid

- ECS gridfile and GRDUTE files

- GEOPAK files

- Geosoft grid files

- NetCDF Grid files

- Geosolutions (previously Newcrest) Grid files

Examining input grid dimensions (UNIX)

The octal dump UNIX command is sometimes useful for determining the size of a header or the dimensions of a grid.

od -b filename (Binary grids)

od -c filename (ASCII (character) grids)

1.There is generally no need to import *ERMapper* files. *ERMapper* files are 100% INTREPID compatible and can just be loaded as datasets without any importing process. If you wish to import *ERMapper* files, treat them as binary image files.

Importing ASCII Image data

An ASCII image file consists of a sequence of numbers in ASCII text format separated by spaces. Each number represents the value of a cell of the image.

>> *To import ASCII image data*

1   Choose ASCII Image from the InputFormat menu. INTREPID displays the Import ASCII Image dialog box.
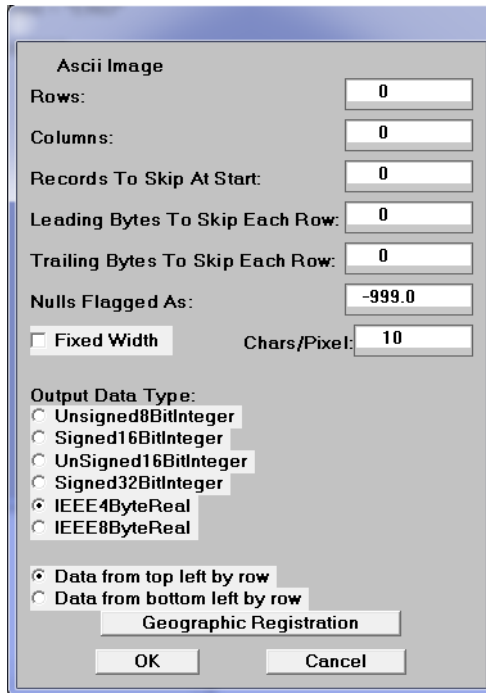
2   Set the parameters and options according to your requirements.

  Notes:

• There are no end of row markers in the data, so you need to specify the number of columns and rows of cells there are in the image.

• The file may have some header data at the beginning. If so, you need to specify the number of rows of data to skip in order to find the start of the image. Each row may also have some unwanted data at the start or end. If this exists you need to specify the number of bytes at the beginning and end.

• If the numbers in the ASCII file are not separated by spaces you will need to specify this and say how many characters represent one cell.

• You need to specify the precision of the data (byte, integer, floating point).

• If there are *null*s in the data, you will need to specify the notation used for them in the import file.

  An explanation of each parameter or set of options appears below.

3   Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

4   Choose OK and complete the import process in the normal way.

Rows and Columns Use these text boxes to specify the dimensions of the grid dataset. Enter the number of rows of data values and the number of values in each row (i.e., the number of columns).

Characters to skip at start Use this text box to specify the size in characters of any header or other file description data occurring at the start of the image file. INTREPID will skip the number of rows that you specify.

Leading/Trailing Bytes to Skip Each Row Use these text boxes to specify the number of bytes of unwanted data occurring at the start and/or end of each row. INTREPID will skip the data that you specify.

Nulls Flagged as Use this text box to specify the notation in the import file that INTREPID should interpret as *null*.

Fixed Width and Chars/Pixel If your ASCII file has no spaces between cell values there must be a fixed number of characters to be interpreted as the data for each cell. If your data is of this type turn on the Fixed Width text box and specify the number of characters that represent each cell's value.

Precision of the data to be processed Use these option buttons to specify the precision of the saved dataset.

Option button	Precision
Unsigned8bitInteger	byte
Signed16BitInteger	integer (2 byte)
Signed32BitInteger	integer (4 byte)
IEEE4ByteReal	real (4 byte)
IEEE8ByteReal	real (8 byte)

Geographic Registration Use this button to set the geographic registration of the data (datum, projection, cell size and location of the top left corner cell) See Setting Geographic Registration for a grid dataset for details of this operation.

Importing Binary Image data

A Binary image file consists of a sequence of binary encoded numbers. Each number represents the value of a cell of the image and occupies 1–8 bytes, depending on the precision of the data.

>> *To import binary image data*

1 Choose Binary Image from the InputFormat menu. INTREPID displays the Import Binary Image dialog box.

2 Set the parameters and options according to your requirements.

Notes:

• If you are importing *ERMapper* data you normally do not need to alter any of the parameters in this dialog box (See Importing ERMapper files).

• There are no end of row markers in the data, so you need to specify the number of columns and rows of cells there are in the image.

• The file may have some header data at the beginning. If so, you need to specify the number of bytes of data to skip in order to find the start of the image.

• Each row may have some unwanted data at the beginning and the end. If so, you need to specify the number of bytes of data to skip in order to find the beginning and end of the image data in each row.

• Each row may also have some unwanted data at the start or end. If this exists you need to specify the number of bytes at the beginning and end.

• You need to specify the precision of the data (byte, integer, floating point).

• If there are *null*s in the data, you will need to specify the value used for them in the import file.

An explanation of each parameter or set of options appears below.

3 Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

4 Choose OK.

5 Complete the import process in the normal way.

Rows and Columns Use these text boxes to specify the dimensions of the grid dataset. Enter the number of rows of data values and the number of values in each row (i.e., the number of columns).

Bytes to skip at start Use this text box to specify the size in bytes of any header or other file description data occurring at the start of the image file. INTREPID will skip the number of rows that you specify.

Leading/Trailing Bytes to Skip Each Row Use these text boxes to specify the number of bytes of unwanted data occurring at the start and/or end of each row. INTREPID will skip the data that you specify.

Nulls Flagged as Use this text box to specify the value in the import file that INTREPID should interpret as *null*.

Binary generated on Opposite Endian machine Have this check box turned on if the binary image data was generated on a computer that uses 'least significant byte first' (LSB) format   Have it turned off if the binary image data was generated on a computer that uses 'most significant byte first' (MSB) format. In general PCS (e.g., Intel, *Windows*, DOS,LINUX) use LSB and UNIX computers (e.g., Sun) use MSB. An exception to this rule is the DEC UNIX, which uses LSB. INTREPID will automatically convert the image data as necessary.

Precision of the data to be processed Use these option buttons to specify the precision of the saved dataset.

Option button	Precision
Unsigned8bitInteger	byte
Signed16BitInteger	integer (2 bytes)
Signed32BitInteger	integer (4 bytes)
IEEE4ByteReal	real (4 bytes)
IEEE8ByteReal	real (8 bytes)

Geographic Registration Use this button to set the geographic registration of the data (projection, datum, cell size and location of the top left corner cell) See Setting Geographic Registration for a grid dataset for details of this operation.

Importing *ERMapper* files

If you are importing *ERMapper* grid data, INTREPID automatically sets all parameters from information stored in the *ERMapper* grid header file.

Importing ECS gridfile data

>> *To import ECS gridfile data*

1 Choose ECS gridfile from the InputFormat menu. INTREPID will examine the import file and identify the individual grids within the ECS database.

2 INTREPID displays the ECS Grid Selection dialog box.
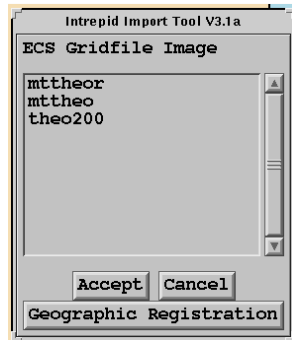
3 Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

4 Choose the grid you wish to import, then choose OK.

5 Complete the import process in the normal way.

Importing ASEG GXF data

INTREPID Import supports the following GXF (Grid Exchange File) formats:

- The standard ASCII GXF format
- The base 90 compressed ASCII GXF format

INTREPID automatically recognises all specifications in GXF, such as 'by row or by column'.

There is no need to import this format, as it is also a native supported format.

To import GXF data

1 Choose ASEG GXF from the InputFormat menu. INTREPID displays the Import ASEG GXF dialog box.
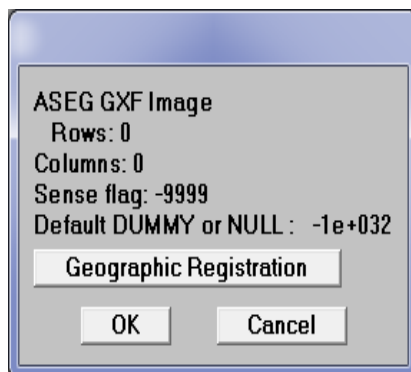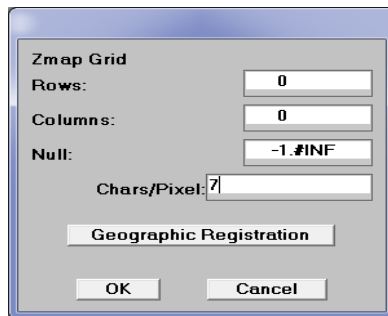

2 Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

3   Choose OK.

4   Complete the import process in the normal way.

Importing Zmap data

>> *To import Zmap (ZYCOR or Landmark grids) data*

1   This is a native supported format at V4.5/5.0, so try that first.

2   Choose Zmap from the InputFormat menu. INTREPID will examine the header of the input file and display the Import Zmap dialog box.

```
Zmap Grid
Rows:                    0
Columns:                 0
Null:              -1.#INF
      Chars/Pixel: 7
      Geographic Registration
      OK            Cancel
```

3   The Import Zmap dialog box reports the dimensions of the grid in the input file obtained from its header. Modify the Rows, Columns and/or Chars/Pixel (characters per cell) parameters if required.

4   Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

5   Choose OK.

6   Complete the import process in the normal way.

Importing other grid formats

INTREPID can import GEOPAK, ECS GRDUTE grid, Geosoft Image (GIPSI), Geosolutions Image and AGSO ASCII grid data

>> *To import data with a grid format listed above:*

1   Choose the format as required from the InputFormat menu. INTREPID displays the corresponding Import dialog box.
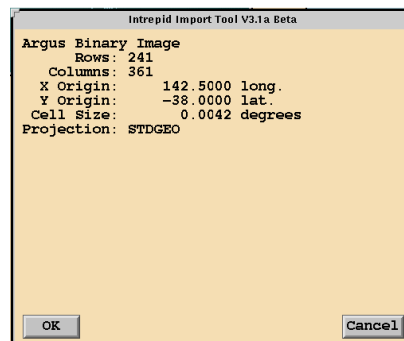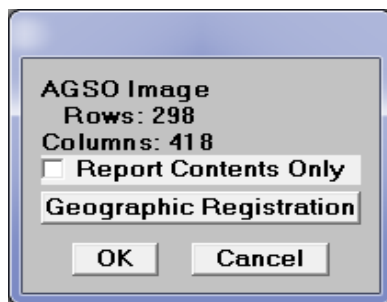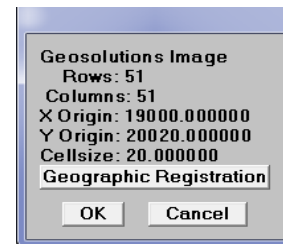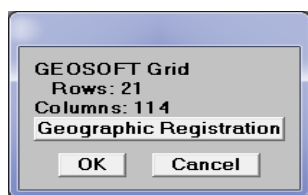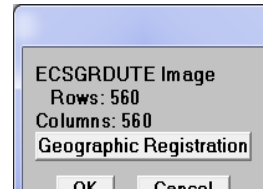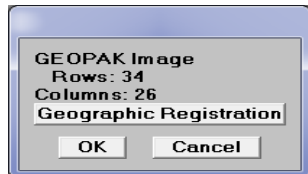
Notes:

* If you are importing Geosoft (GIPSI) INTREPID will automatically detect whether the grid is in GIPSI (UNIX) format or Geosoft (DOS) format.

* If you are importing AGSO ASCII Image data you can use the Report Contents Only check box to choose whether to

   * View a report of the input file contents only (Turn on the check box) or

   * Perform the import. (Turn off the check box).

* Geosolutions image data already has coordinates for the registration cell ('origin') and cell size. You only need to specify the datum and projection.

* AGSO Binary Image data already has geographic registration which INTREPID can interpret. Omit step 2 for this input format.

2   Set the Geographic Registration for the dataset. See Setting Geographic Registration for a grid dataset for instructions.

3   Choose OK.

4   Complete the import process in the normal way.

Importing NetCDF Grid data

INTREPID can obtain all required information from the NetCDF grid files. If you choose this input format option, INTREPID will not display a dialog box for parameters. Note GMT files automatically OK in most tools now.

Importing Encom Image data

Encom Image files have binary grid format.

>> *To import an Encom Image file*

Choose Encom Image from the InputFormat menu. INTREPID will examine the input file header and display the Import Binary Image dialog box, reporting the grid dimensions it finds in the header.

Use the Import Binary Image procedure as described above (see Importing Binary Image data).

Setting Geographic Registration for a grid dataset

Image import files often contain only values without proper location information. If the image file you are importing has no location information, you can specify it using the Set Geographic Registration dialog box.

You can edit the geographic registration of an existing dataset using the Geo Reference Output option in the Utilities menu. This dataset can be the one just imported or some other one that you specify as the output dataset.

>> *To specify location information.*

1 If you are about to import an image and have displayed an input parameters dialog box, choose Geographic Registration from the input format dialog box.

If you are modifying the geographic registration of an existing grid dataset, ensure that the existing dataset is specified as the output dataset in the Import tool window (See Specifying input files and output datasets for more information). Choose Geo Reference Output from the Utilities menu.

INTREPIDdisplays the Set Geographic Registration dialog box.
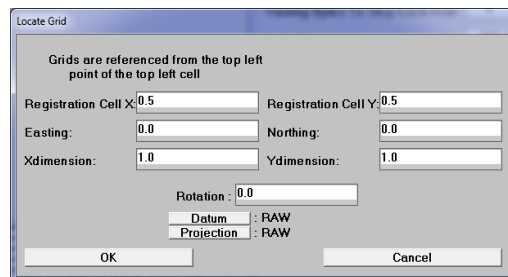
2 Specify

· Column and row of registration cell

· X and Y coordinates of the registration cell

· X and Y dimensions of the grid cells

· Rotation

· Datum (See below)

· Projection (See below)

3   Choose OK when you have finished. INTREPID will close the Set Geographic Registration dialog box.

If you are about to import to a new dataset, INTREPID will apply the settings to the dataset you are about to create.

If you are modifying the geographic registration of an existing dataset, choose Apply to save the new information to the dataset.

Registration Cell X, Y You must specify geographic reference coordinates for one cell in the grid (the **registration cell**). Use these text boxes to specify which cell in the grid is to be the registration cell. Enter the cell's row and column numbers.

Easting, Northing Use this text box to specify the Easting and Northing coordinates of the reference cell. The coordinates must correspond with the datum and projection you are choosing.

Xdimension, Ydimension Use this text box to specify dimensions (in projection distance units) of a grid cell.

Rotation Use this text box to specify the orientation of the grid lines away from North–South. Enter the rotation in degrees clockwise from North.

Specifying the datum and projection for a grid dataset

>> *To specify the datum and projection for a grid dataset*

Choose Datum or Projection in turn from the dialog box you are using. See "Specifying datums and projections" in INTREPID's supported datums and projections (R09) for detailed instructions.

Customised import from your aircraft or ship

We can assist you to create a customised INTREPID import tool to import data from your aircraft (or ship) to an INTREPID dataset according to your practices and specifications. Please contact us for further information.

As described in this manual, INTREPID directly supports many common acquisition hardware, such as Picodas and Exploranium GR 820. We invite instrumentation providers to share formats, so that we can then in-turn, offer support for your equipment that you can feel at ease with.

We are in the process of sharing many more of the languages and Geophysical file formats that we support, via the GOOGLE protobuf language facilities. This is a V5.0 deliverable. So far we have successfully integrated many standard airborne systems, plus special one-off or experimental acquisition systems with INTREPID.

The extensibility of the object-orienteed database and also the abstraction of primary processing tools, levelling, gridding, filtering, allows for rapid extensions to existing workflows incorporting aspects of measured fields that have alluded "conventional" or one size fits all approaches.

A good example is the support for the IPHT magnetic tensor instrument, using SQUID technology. This system measures 22 quantities, including mixed gradients, accelerations, temperatures, pressures, roll, pitch and yaw. Decimation from 1000 Hz to a required, sensible value is easily accomplished, as well as the task of establishing a located dataset, by time sync all the various input devices.

The point about an object oriented database framework, is that tensors, vectors, decay curves etc, can have all their observations stored in an appropriately designed

"field" type within the database, preserving the unique physical nature of the measurements, and ensuring the correct mathenmatics and error analysis can be properly appplied at all stages of the processing.

For those who wish to claim that EXCELL or ACCESS among the possible tools, can do all that is required to provide an excellent and optimum solution - think again!