

- **Converting ICS telecom results to vector, ASCII and other popular formats**
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Abstract

All calculations in ICS telecom are performed over three dimensional, metrically projected, raster workspaces. The visual output of ICS telecom's calculations displayed over the map interface is also a metrically projected raster grid of values. These raster result grids can be output to a variety of formats compatible with popular GIS tools such as MapInfo, ESRI products and Google Earth. This document will review how this is possible either directly through ICS telecom's vectorization features or through ICS map server's dedicated features for reprojecting these grids so that they can be loaded directly onto the exact geographic location in Google Earth.



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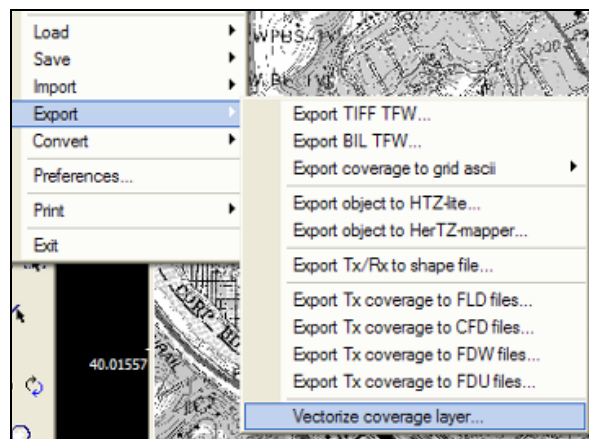


EXPORTING ATDI RESULTS TO OTHER FORMATS

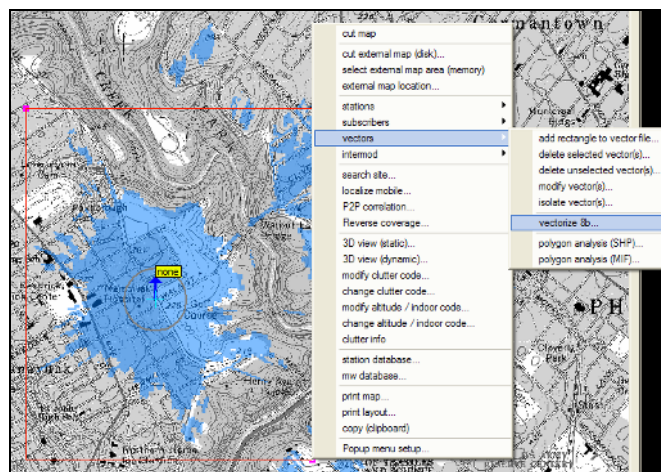
Note: all provided values are FOR INFORMATION ONLY, and can be replaced with values specific to equipment vendors

1 Vectorization

ICS telecom can capture a vector contour of a raster result grid through a process called vectorization. The entire output of a given result layer is traced and converted to a vector outline of the user's choosing. These conversions can be to popular GIS formats including MapInfo's interchange format MIF/MID, ESRI's SHP format and ATDI's own vector format VEC. Due to the fragmented nature of a result grid, it is suggested that the user simplify the results to single color raster layers. The user can access the vectorization box globally from the **Files / Export / Vectorize** coverage layer menu for all coverages or results on their map or they can specify the portion of the results they wish to convert to vector format by using ICS telecom's marquee selection tool:



Global vectorization

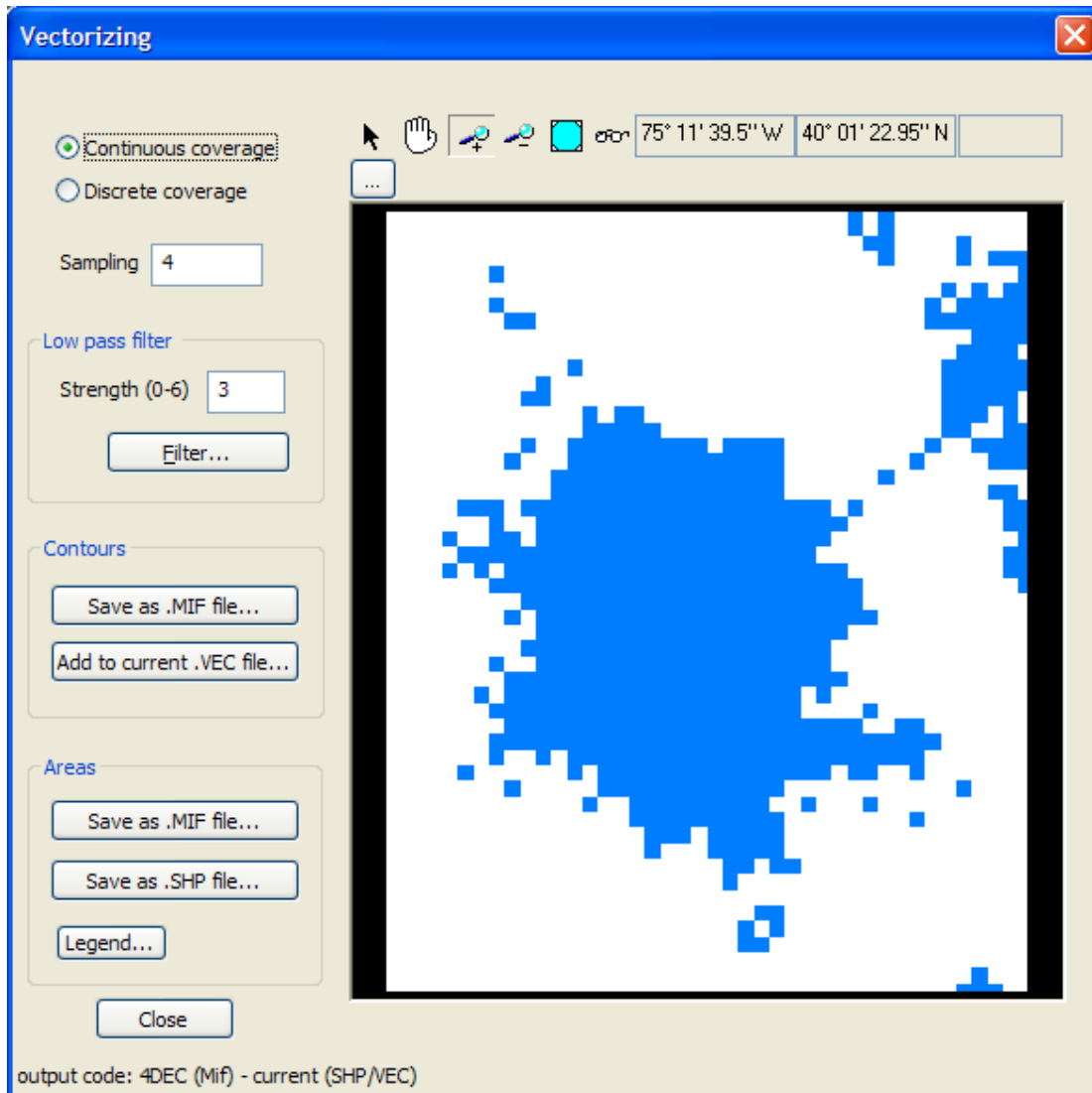


Area of interest specific vectorization



1.1 Export to MIF/MID, SHP and VEC

Through a dedicated 'Vectorization' box, the user can select to convert the result information to a vector file in one of several formats including Map Info's interchange format, MIF/MID. The MIF/MID file format is a combination vector/binary file format. The user can define the resampling factor and grid step of the vectorization that will define how fine the vector line will trace the raster result. :



The magnifying glass buttons and hand tool allow the user to center the area of their coverage plot that they desire to be exported to the center of the Vectorizing bounding box. The user can then define a Sampling factor that will multiply itself by the resolution of the grid thus reducing the number of pixels to be considered for the vectorization. They can also define a low pass filter which serves to filter out anywhere from 1 to 6 pixels in the vectorization process. In the case of exporting to MIF/MID, using the sampling and low pass filtering options can



decrease the time it takes to vectorize a raster result and simplify the contour output in the case that the raster result is heavily fragmented.

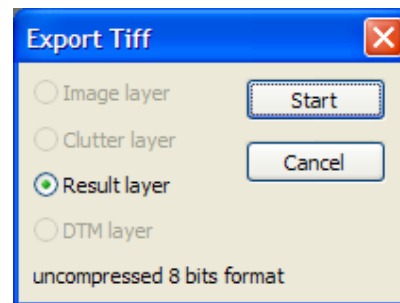
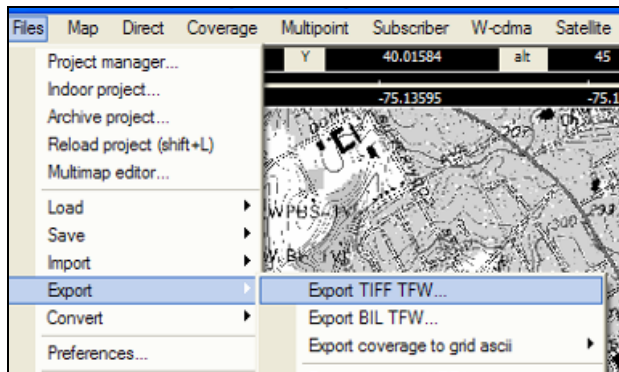
In the case of converting result grids to ESRI's SHP format, the output will not be simply a contour of the result but an area wide polygon representation of field strength values that a user can associate with a legend. The output result will be three files compatible with ESRI tools: *.SHP, *.DBF, *.SHX.

The user also has the option to convert their raster grid based results to ATDI's own ASCII format known as .VEC file. This format can be read and manipulated with any word processing or spreadsheet application including NotePad™ and Excel™.

2 Image exports

2.1 TIF/TFW

A very common geographic output of the image of the result layer is an export to TIF/TFW. This option will output simply the result layer to a non LZW compressed geocoded TIF file that can be imported to any GIS interface. The user can access this option from the *Files / Export / Export TIF TFW...*:



2.2 BIL/TFW

A very common geographic output of the image of the result layer is an export to BIL/TFW. This option will output simply the result layer to a geocoded BIL file that can be imported to any GIS interface. The user can access this option from the *Files / Export / Export BIL TFW...*. In this case however, the user can also choose to output the clutter and terrain model layers as well as the result layer.

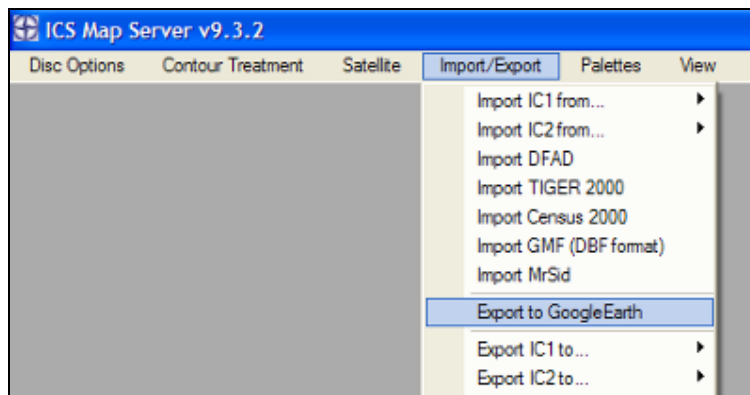


2.3 Google Earth (PNG)

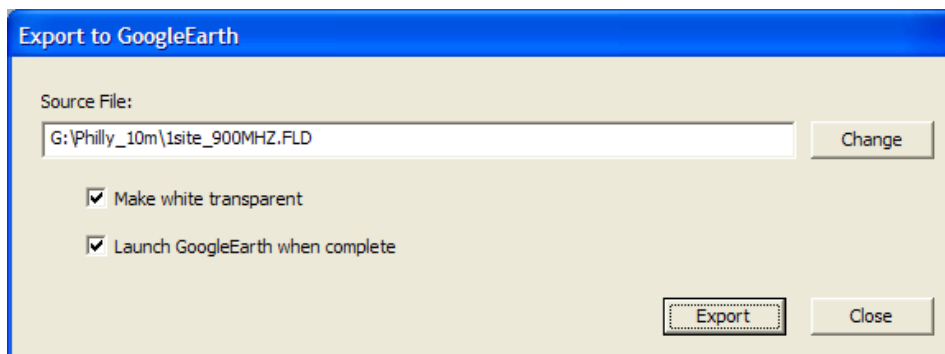
Via ICS map server, ATDI's GIS tool, the user can output their result layer to a file format compatible with the basic edition of Google Earth. This file format, known as the PNG, is a web compatible format that allows the user to make the background of the image output transparent – an option that is not available in the TIF TFW and BIL TFW outputs.

In order to simplify the output PNG format, ICS map server must export a reprojected grid output of the result layer. The way to accomplish this is to simply output the result grid to a file through ICS telecom.

This result file (*.FLD) can then be exported through ICS map server version 9.3.2 and above to the Google Earth compatible *.PNG format:

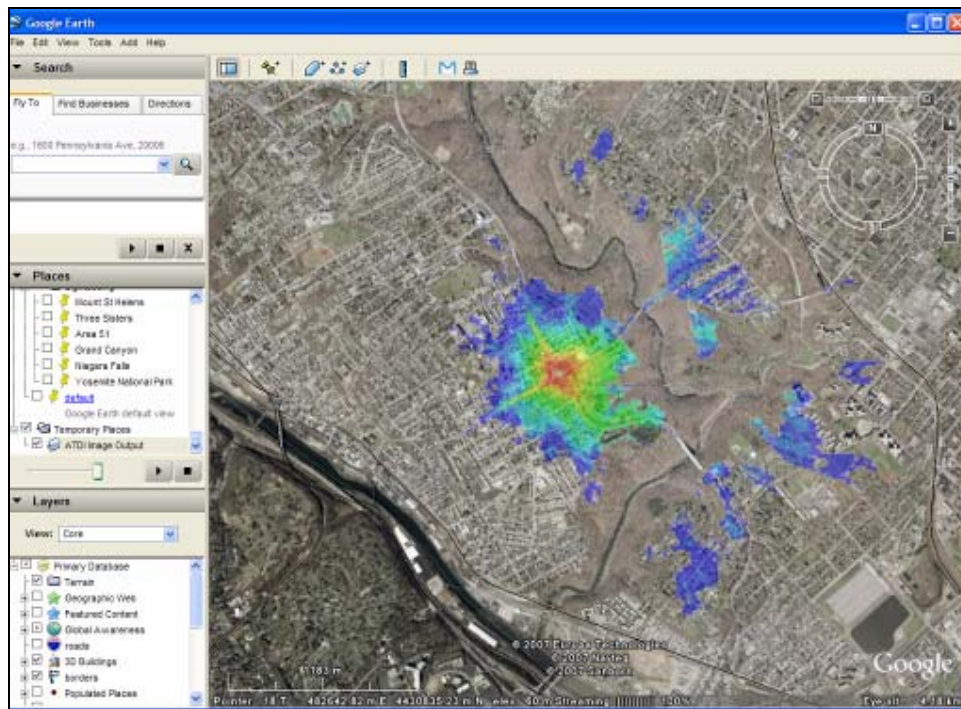
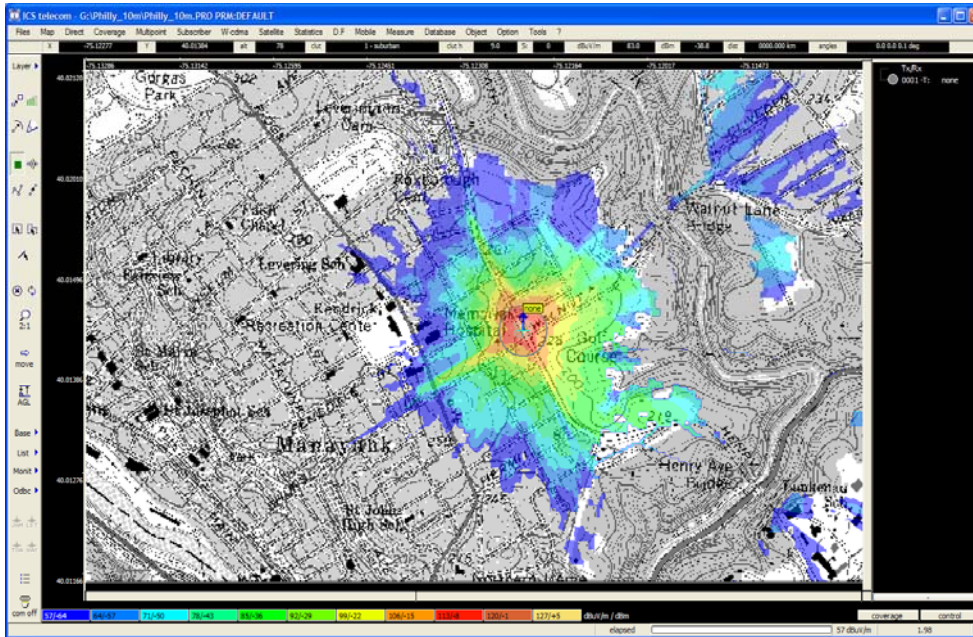


The user can define if they wish to make the white background of the resulting PNG file transparent and if they wish to launch Google Earth upon completion with the result already imported into the Google Earth interface:





The user will receive a message saying the export is completed. Upon clicking 'Ok', ICS map server will have exported the result grid to the PNG format and, if requested, automatically launch Google Earth while simultaneously placing the results over the correct geographic location in the Google Earth.



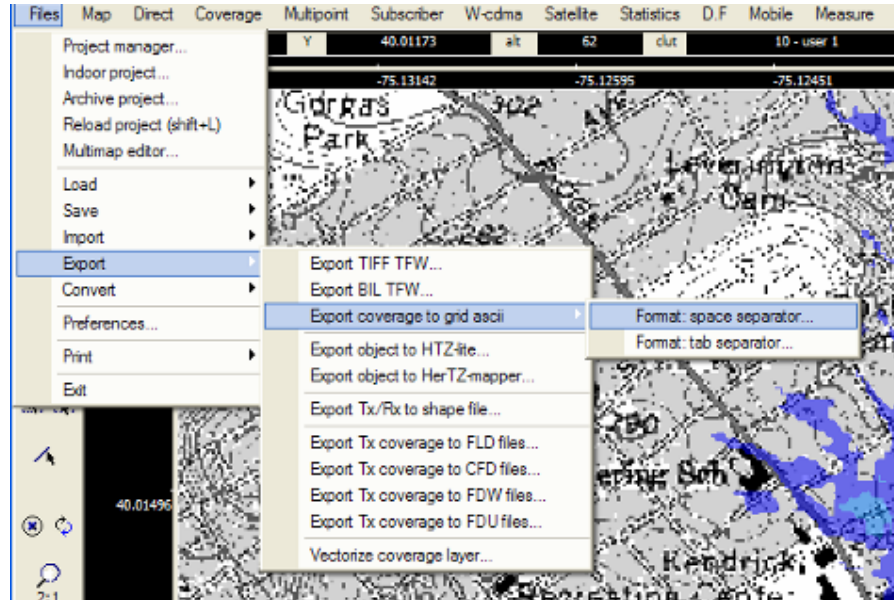


3 GRID exports

3.1 ASCII grid (ASC)

ICS telecom and ICS map server offer exports to ASCII GRID format (ASC) for not just results but also terrain and clutter. This format is compatible with most any GIS tool. With MapInfo specifically, this format is compatible with the Vertical Mapper add-on module sold by MapInfo. The result will be a text grid of the entire matrix of interest with values (terrain altitudes in meters, clutter codes or result values) in the appropriate places in the grid. This output allows the user to retain the gradient of values as well so it will reappear in MapInfo as a result output similar to what is in ICS telecom and not simply a contour representation. In the case of a coverage it will retain the coverage values of the entire coverage and reintroduce them into MapInfo very much the same way they appear in ICS telecom:

Please note that if your map is >> than your coverage area of interest, you may want to cut the map to limit the size of the grid you are exporting to .ASC format.



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