



Review of Avenza MAPublisher 4.0 for

With a revamped interface and improved import and export facilities Avenza

MAPublisher 4.0 has become an essential and easy-to-learn and apply plug-in for any mapmaker using Adobe Illustrator (version 8.0 or 9.0) graphic software within a GIS environment. MAPublisher enables the import and export of a number of well known and widely applied GIS file formats, retaining their geometric and attribute values.

Combined with the extensive design options available in Illustrator the mapmaker can unveil the whole field of graphic creativity to create appealing maps for print and/or

Web presentations.

By Jeroen van den Worm and Richard Knippers



Improved Interface:

One of the most obvious changes in MAPublisher 4.0 compared to the older versions is the improved interface for a number of essential functions such as for file import and export and the automatic grid generator. This will certainly make the program more easily accessible for novice users. The import and export filter has been extended by the facility to import/export ArcInfo.eoo files. Using the panel docking functionality of Illustrator the user is able to customise the accessibility of the different functions of the program. During the installation, which we found went smoothly without any problem, three tools will be added to your tools panel: the locator tool (that gives direct information on scale and location of any MAPublisher feature pointed at), the Map Tagger tool (for automatic text labelling) and the Make Index tool (to create a map index).

Import and Export Facilities

A number of geographic data formats can directly be imported. These include formats such as ArcInfo (.lin, .pnt, .pol and .eoo), MapInfo (.mid, .mif), ArcView (.shp, .dbf, .shx) and Autocad / Microstation (.dxf) retaining all attribute information. MapInfo and .dxf files are imported retaining their original colours,

strokes, pattern fills and layers. This may be one advantage for those cartographers who want to maintain the original GIS map appearance, but who want to use the graphic software to enable high quality hardcopy or Web output. .dxf import is still relatively slow, compared to a number of other conversion programs, but the other formats did not pose

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any problems. Any existing Illustrator map can be made suitable for export to a GIS. Using MAPublisher's MapCreation filter, the user can create a geo-reference for any graphic feature, if the geographic coordinates of at least one tie point are known and the scale of the graphic feature. By creating new tables it is possible to link existing features with attribute data. Whereas Import of files is executed through a MAPublisher window, the export formats are integrated in Illustrator's native export list. Maps can be exported in ArcInfo.eoo, MapInfo .mid, .mif and ArcView .shp format. This opens the way to export any already existing Illustrator map to any

GIS software. However, it is important to realise that most GIS software packages do not support Bezier-based curves. This may force the user to add extra points to existing paths before exporting them to maintain appropriate path curvature. At import of GIS data the opposite may be the case, namely that a path contains more points than necessary for the Bezier curve-based paths of Illustrator. In this case a grain value can be keyed in to reduce the number of points on a path during import of the data. Import and export can now be executed as batch activities, which is a real improvement to these tools compared to the older versions.

Grids and Indexes

Another improvement is the revamped grid generator: automatic grid generation is an easy task that can be performed based upon paper or map coordinates. Whereas this function in the older version created quite a lot of frustration because of the somewhat illogical sequence of steps to be taken by the cartographer, this is now a straightforward activity. Also added is a map index tool that can be used for automatic grid labelling and the creation of a map index. This appeared to work perfectly on a number of maps supplied on the CD. Unfortunately it is not yet possible to label the grid with grid numbers, which in fact would be a very useful option. Nevertheless, this could be possible by adding text attributes to the individual grid lines and then to use the text-labelling tool. The Map Tagged tool enables automatic labelling (not placement!) of features, as long as text attributes are available to them.

Arc Functions

Three new features for the manipulation of arcs are the buffer, spline and flip function. The flip function can be used to flip selected arcs. Flipping arcs may be necessary when labels placed along arcs (e.g. street names) are oriented wrongly. The spline function might be used to smooth curved lines. It transforms the selected arcs into Bezier curves. This function must be handled with care as it can seriously affect the geometry of objects. The buffer function replaces selected arcs by new polygons of a designated width around the arcs. The newly created polygons

Adobe Illustrator 8.0/9.0 (Win/Mac)

don't take the attributes or geo-referencing from the arcs. However, using the Mapcreation function this is a easy to accomplish afterwards.

Projections and Transformations

The new import filter for ArcInfo eoo, and the import filters for the formats MapInfo mid/mif and SDTS files, retain existing coordinate and projection information. This saves a lot of time in redefining a co-ordinate system and makes it easy, if desired, to change the projection of a map.

Unfortunately, it is not possible yet to import projection information of shape files, embedded in the .prj files. Another important change is the image registration filter. The registering of image data is now easier and allows the registering of GeoTIFF files.

The 4.0 CD contains the MrSID stand-alone viewer. This viewer can be used to export MrSID compression files to TIFF files (.tif) and TIFF referencing files (.tfw).

MAPublisher can read the information from the referencing files for the registering of the TIFF files.

The Map Projection Editor is newly designed and is easier to use. Many of the most important projections and ellipsoids are supported. New is that it stores imported projection parameters and projection changes. In the new version, the state plane reference systems for the USA can be directly selected. Reference systems of other countries can be defined if the correct projection parameters are known. This is required to enable a projection change.

Working with Tables

Along with your vector data MAPublisher supports the associated map attribute data. You can make your own attribute tables and join it with existing map attributes. MAPublisher provides support for the import of dBase, USGS SDTS, and ASCII comma delimited tables. One can select objects by attributes, and view, edit and update object attributes, from an imported or created table. All these options were already given in the previous version of MAPublisher. In the new version columns and attributes are presented together in a spreadsheet style window.



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Conclusion

As was already the case with the 3.5 version, MAPublisher enables the construction of maps entirely based upon the attributes of features. This applies to point and line features as well as area features. This is useful as it is possible for instance to create choropleth and chorochromatic maps based upon an available legend classification of the data.

Changing the classification will automatically update the map. Despite its simplistic appearance, the experienced user may be able to find numerous other applications for this plugin. In combination with the new design functionalities available in Adobe Illustrator 9.0 such as full transparency for any object (such as for instance hillshadings), shading tools and tools for direct raster image manipulation by the availability of built-in Photoshop plugins and tools, creative cartographers are able

now to enhance even the most dull-looking maps coming from any GIS source! Another interesting option may be to generate a series of time-related maps in your GIS, import them into your graphic software to enhance the graphic appearance of the maps and to use a vector based Web design program (such as Macromedia Flash 4/5 or Adobe GoLive) to create animated (Web) maps. It is unfortunate for the many Macromedia FreeHand users that there is not a version of MAPublisher 4.0 for FreeHand 9.0 (Win/Mac) available yet. This withholds many users to upgrade their FH8 version to FH9 (released in May of this year). Let us hope that Avenza in cooperation with the Macromedia people will soon be able to release such version. It will certainly make lots of FreeHand cartographers happy!

Jeroen van den Worm (worm@itc.nl) and Richard Knippers (knippers@itc.nl), Division of Geoinformatics, Cartography and Visualisation, International Institute for Aerospace Survey and Earth Sciences (ITC), Enschede, the Netherlands