MetaVR Terrain Tools for ArcGIS

MetaVR has developed a suite of terrain generation tools to complement its PC image generator. MetaVR Terrain Tools extension for ESRI® ArcGIS® Desktop leverages the significant infrastructure of Geographical Information Systems (GIS) technology. MetaVR's set of Terrain Tools enables users to turn their geospatial data into real-time 3D terrain from within their GIS software.

Building on the industry standard ArcGIS platform, the Terrain Tools extension combines powerful 3D terrain building functionality with an accessible and intuitive interface that can be easily understood by anyone with a general understanding of geospatial data concepts, regardless of experience with ArcGIS. With this product, MetaVR can focus on the terrain composition while taking advantage of the significant GIS functionality provided by the ESRI product line.

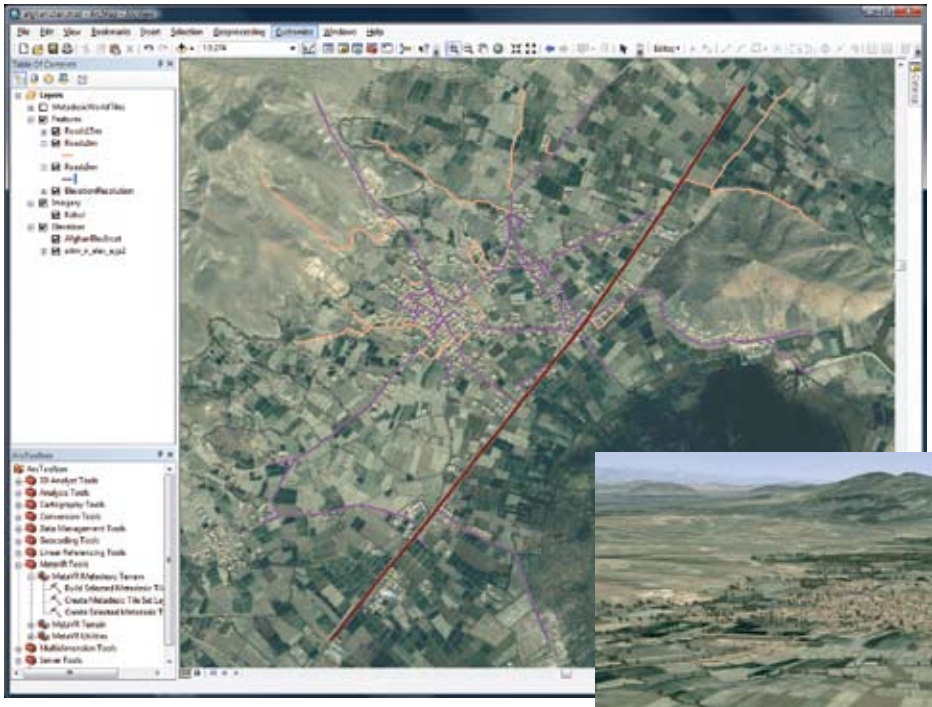
Core features

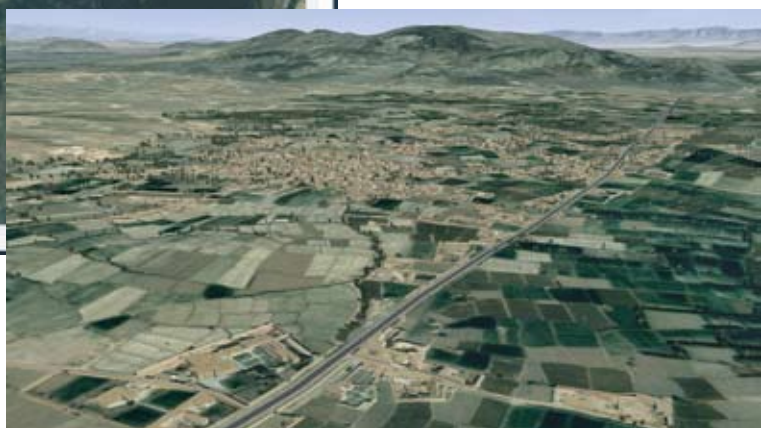
In addition to creating real-time terrain for rendering in MetaVR's Virtual Reality Scene Generator™ (VRSG™), the key features of MetaVR Terrain Tools for ArcGIS include:

- Live compositing display of raster imagery and elevation data in a WYSIWYG interface.
- Support for any format of source data supported by ArcGIS.
- Raster display capabilities such as pan-sharpening, custom band order, multiple re-sampling techniques, histogram stretching, contrast and brightness control, masking, and edge blending.
- Ability to supply vector data to define linear and areal features. Generate road networks, fine tune elevation with polygon or point data, or create crisp boundaries between compiled terrain and VRSG-generated water representation.
- Distributed build system with a browser user interface. Optionally, use ArcGIS Engine for lower-cost headless build machines.
- Ingests 3D content built upstream as part of the art pipeline.

All features integrate seamlessly with the industry's leading GIS platform.

Within the ArcGIS interface, coastlines and road networks can be digitized and cut out from geospecific imagery using Terrain Tools. At runtime, VRSG generates multi-textured, animated, normal-mapped water surfaces in the regions identified as water, or blends road textures with underlying imagery. The terrain tiles seamlessly match complete water tiles generated by VRSG.





These screen captures show MetaVR's Terrain Tools extension within ESRI ArcGIS, and a portion of the resulting 3D terrain in MetaVR's image generator, VRSG.

The 2D geospecific terrain imagery is of a portion of the southern part of Kabul province, Afghanistan, and the area of the road network is the village of Khairabad, located approximately 10-15 kilometers south of Kabul city center.

The 3D scene is of the resulting virtual terrain in VRSG. The 3D geospecific models on the terrain were built externally in Autodesk 3ds Max as part of the art pipeline.

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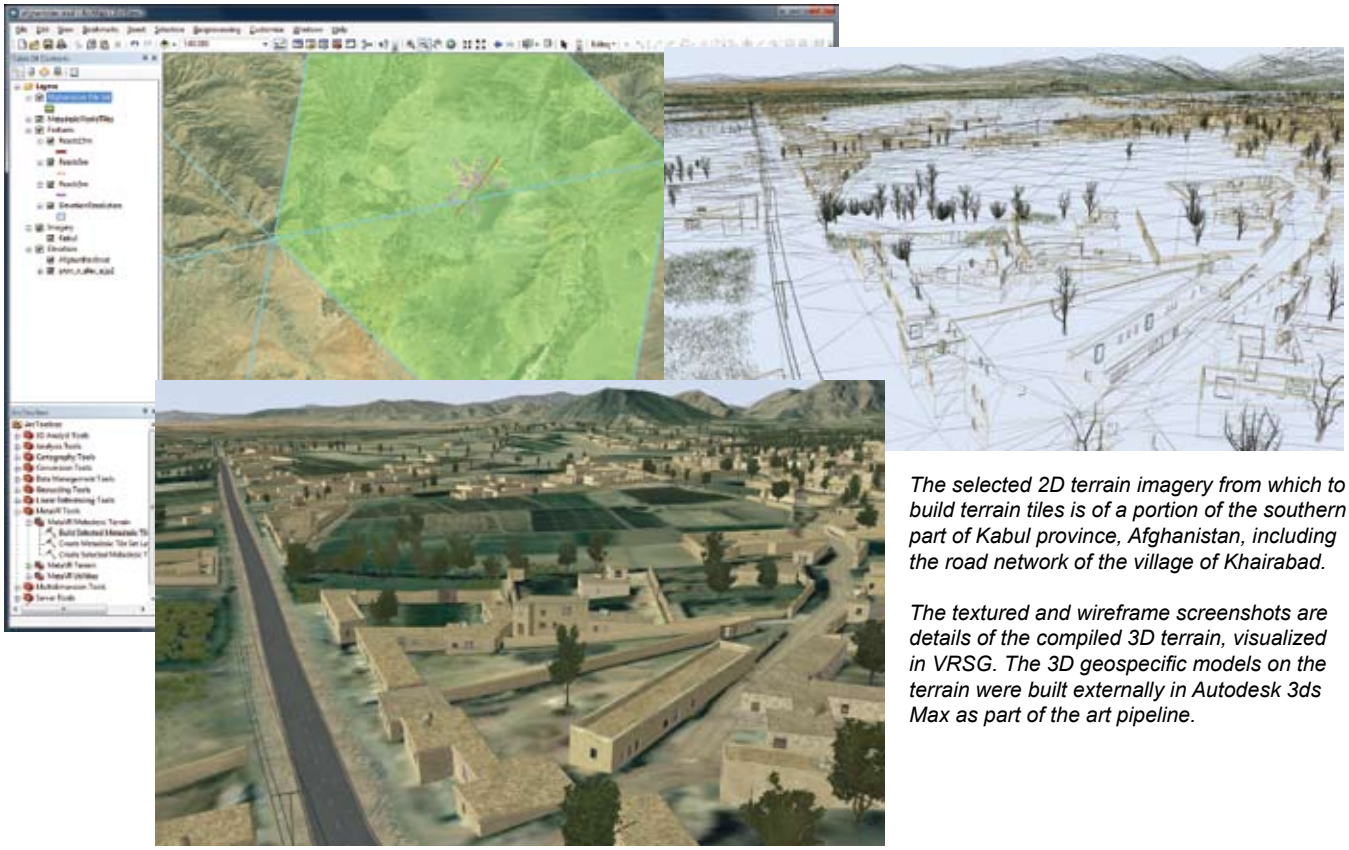

The selected 2D terrain imagery from which to build terrain tiles is of a portion of the southern part of Kabul province, Afghanistan, including the road network of the village of Khairabad.

The textured and wireframe screenshots are details of the compiled 3D terrain, visualized in VRSG. The 3D geospecific models on the terrain were built externally in Autodesk 3ds Max as part of the art pipeline.

MetaVR Metadesic terrain

MetaVR's Metadesic™ round-earth (MDS) terrain format is ideal for aerial applications, which require vast areas of terrain. Terrain Tools is currently used to build terrain for many manned and unmanned aircraft simulators. The round-earth terrain format has many benefits; most importantly, the terrain models the earth to a high degree of accuracy over its entire surface in contrast to a local approximation that is only valid over a relatively small range. This level of accuracy is vital for targeting applications and determining intervisibility. Another critical advantage of the Metadesic format is its segmented database representation. Terrain built in Metadesic format is comprised of relatively small, self-contained terrain tiles that fit together seamlessly but can be built separately. This property enables a high degree of parallel processing of terrain since many different machines licensed for ArcGIS and Terrain Tools can build tiles for a given area at the same time.

What's new in the latest release

MetaVR's TerrainTools version 1.2 introduces linear feature processing, and has significantly improved elevation feature processing capabilities. Linear features can define roadways, which are cut into the terrain and blended with surrounding terrain imagery. For elevation, 3D areal features can now be used to define the slope of a cut-out region for creating accurate airfields, while 2D point and polygon features can be used to introduce survey points for increased geometry resolution.

This release also introduces a new distributed build system, allowing asynchronous build processes across multiple machines to collaborate in building the same set of tiles. The build can be monitored and administered via a dynamic browser-based user interface from any machine on the local network.

All the advancements in the latest ArcGIS Desktop version 10.0, including the new Mosaic Dataset functionality, are supported in Terrain Tools version 1.2.

Version 1.2 of MetaVR Terrain Tools for ESRI ArcGIS requires any license level of ArcGIS Desktop or ArcGIS Engine version 10.0 and above (ArcView, ArcEditor, or ArcInfo), ESRI's 3D Analyst Extension, and ArcGIS Service Pack 2. Terrain generated with Terrain Tools can be visualized in VRSG version 5.6 or higher.

Additional terrain-building machines can use either ArcGIS Desktop or ArcGIS Engine version 10.0 and above. Note that at least one full license of ArcGIS Desktop is required to run Terrain Tools. In addition, Terrain Tools must be installed on each machine on which terrain will be built.

For more product information, pricing, and ordering, see MetaVR's web site at www.metavr.com or contact sales@metavr.com.

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