



Frequently Asked Questions for GeoMedia[®] 3D Customers

Version 2, January 4, 2011

1. Q: What is Intergraph[®] GeoMedia[®] 3D?

A: Intergraph's GeoMedia 3D provides 3D enablement for the GeoMedia desktop. However, it's not just visualization. Once you can visualize a map window in GeoMedia in 3D, you can take advantage of all the functionality of GeoMedia – in 3D. Think of it as 3D-enabling of GeoMedia functionality.

2. Q: Can GeoMedia 3D display 3D geospatial data?

A: Yes, with GeoMedia 3D, you have the ability to open a 3D map window in GeoMedia and it will display surfaces created by GeoMedia Grid, GeoMedia Terrain, Skyline TerraBuilder, and a number of common file formats in 3D. You can drape imagery, vectors, and features over the surface simply by adding them to the GeoMedia legend. You can extrude features based on Z values, elevation data, or other meaningful information available to represent the third dimension.

3. Q: How do I acquire GeoMedia 3D?

A: It is an add-on license for GeoMedia and GeoMedia Professional. It is available as a node-locked or concurrent license.

4. Q: What are the pre-requisites for GeoMedia 3D?

A: The pre-requisites are GeoMedia or GeoMedia Professional with software version 6.1.9 or better. In addition, a graphics card with a minimum of 512 MB– 1 GB or better on board memory is recommended. Although it is not a pre-requisite, you should strongly consider GeoMedia Grid for its spatial analysis capabilities. GeoMedia 3D will display the analytical results of GeoMedia Grid analysis in the 3D map window.

5. Q: Will GeoMedia 3D work with other Intergraph products?

A: Initially, GeoMedia 3D is solely for the GeoMedia desktop. We plan to bring 3D visualization to GeoMedia WebMap, G/Technology, and all Intergraph products in the future. You can find GeoMedia in configurations for utilities, public safety, and security applications, and it can be 3D-enabled in those environments. It should also be noted that GeoMedia 3D does not support video from Motion Video Analyst at this time.

6. Q: Is the 3D visualization in GeoMedia 3D similar to 3D TV?

A: No. Three-dimensional TV uses a "stereo" approach to 3D, similar to stereo collection techniques used with Intergraph's Stereo Data Collection products. This approach simulates a 3D effect by presenting two images, intended for users to view separately through the left and right eyes. Filtering glasses are used to achieve the desired effect. With stereo 3D, the display viewing angle is considered fixed and the image filtered into two different perspectives to give a sense of depth.

GeoMedia 3D allows you to manipulate the viewing angle of the image being displayed in real time (i.e., six degrees of navigation) to effectively see the object from many different perspectives, helping you comprehend the 3D nature of the image. Stereo, therefore, is not needed. With GeoMedia 3D, the viewing angle has six degrees of freedom to provide a sense of dimension to an image.

7. Q: Intergraph has been bundling Skyline's TerraExplorer Plus with GeoMedia Grid and GeoMedia Terrain to provide 3D visualization. How is GeoMedia 3D different?

A: TerraExplorer Plus provides 3D visualization, but it does so as a separate application that requires conversion to a format you can view in TerraExplorer Plus. It requires two discrete steps with two different applications. When installed, GeoMedia 3D is an integral part of GeoMedia and will add new menu commands to GeoMedia. You can view 3D directly in GeoMedia. When you open a 3D map in GeoMedia, you can work interactively in 3D. You can dynamically add imagery, vector data, or feature data through the GeoMedia legend. The response is dynamic, and in addition to the visualization that TerraExplorer Plus provided, you have access to all GeoMedia functionality in the 3D map window. In addition, you can drape any GeoMedia Grid analysis over the 3D surface and evaluate it in 3D.

8. Q: Now that GeoMedia 3D is available, what will happen to TerraExplorer Plus?

A: We will continue to bundle TerraExplorer Plus with GeoMedia Grid and GeoMedia Terrain for users who require only visualization. GeoMedia 3D provides integrated 3D functionality for those who want access to GIS tools. TerraExplorer Pro will continue to be available for existing TerraExplorer users who need additional TerraExplorer licenses. One thing to note is if you are running TerraExplorer Plus with GeoMedia Grid or GeoMedia Terrain, and then install GeoMedia 3D, when you build a surface, it will no longer use TerraExplorer Plus to visualize the surface. With GeoMedia 3D installed, you can visualize surfaces in the GeoMedia 3D map window. TerraExplorer Plus will still work as a standalone application. It should be noted that the direct link from GeoMedia Grid and GeoMedia Terrain will be disabled when GeoMedia 3D is installed.

9. Q: Is GeoMedia 3D based on Skyline technology?

A: Yes, but we are not just bundling another application as we have done with TerraExplorer Plus. The Skyline technology, along with software developed by Intergraph, comprises the GeoMedia 3D product and is installed as a GeoMedia add-on component. When installed it runs natively in GeoMedia. The user can open a 3D Map Window in GeoMedia and the Skyline technology will drive it.

10. Q: What is the 3D map window?

A: The 3D map window is just like any other map window in GeoMedia, except this one is capable of 3D visualization. This means you have the choice of working in a 2D or a 3D map window. As you would expect, 3D does come with additional computational overhead. The display is more complex than a 2D view and processes more data. That's why GeoMedia 3D allows you to work in both 2D and 3D map windows and to move between them. You can achieve optimum productivity while using 3D visualization for tasks that require a better sense of the real-world characteristics. The flexibility to move between 2D and 3D environments gives you the benefit of 3D when you want it but allows you to avoid the overhead when you don't really need it.

11. Q: Can you elaborate more on working in 2D and 3D map windows?

A: When we researched how users would want to use GeoMedia 3D, two workflows emerged. One workflow is characterized by performing all tasks in the 3D map window (convert to 3D and go) and the other workflow is characterized by using the 3D map window as a supplement to a 2D map window. GeoMedia 3D can support both workflows. It coordinates between the 2D and 3D map windows for selection and location to keep the two map windows in synchronization, but it doesn't impose it on you. You can also use just one map window for all of the work. You can choose to work one way and then change at any point through the use of a 2D/3D map window conversion (toggle). This allows you to select the most appropriate workflow for the task at hand, while providing optimal productivity.

12. Q: When I first open a GeoMedia 2D map window, it is empty. What will I see in the GeoMedia 3D map window when I first open it?

A: You have the choice to load content file containing a 3D globe with low-resolution imagery draped on top of a coarse surface or content file containing a 3D globe with higher-resolution imagery draped on top of a higher resolution surface. Content files are the foundation upon which you can add your GIS data to.

13. Q: What types of terrain files does GeoMedia 3D support?

A: GeoMedia 3D supports a wide variety of standard terrain-based file formats, such as DTED, USGS DEM, USGS SDTS, ERDAS IMG, Arc/Info Binary Grid, and 32-bit data TIFF files. However, GeoMedia 3D can also use surfaces generated by GeoMedia Grid, GeoMedia Terrain, or Skyline TerraBuilder. Note: If you want to make use of a surface created by GeoMedia Grid or GeoMedia Terrain, the surface will need to be output as a 32-bit data TIFF file before it can be used by GeoMedia 3D.

14. Q: Is there a limit to the number of 3D map windows I can open simultaneously?

A: Yes, you can only open one 3D map window at a time.

15. Q: What training is available for GeoMedia 3D?

A: GeoMedia 3D includes a collection tutorials. These tutorials walk the reader through a wide variety of workflows and interactively teach users how to get started with GeoMedia 3D. Since GeoMedia 3D is a GeoMedia add-on and all the base functionality of GeoMedia is essentially the same, the learning curve for 3D is expected to be brief. The tutorial guides you through a series of exercises that exposes you to the new functionality. An experienced GeoMedia-trained operator will pick this up very quickly.

16. Q: What are the new key features of GeoMedia 3D?

A: There are a number of key features. With GeoMedia 3D, you can:

- Open a new 3D map window
- Convert 2D to 3D or 3D to 2D, toggling back and forth between 2D and 3D map windows
- Co-select and co-locate between 2D and 3D map windows
- Navigate in the 3D map window with six degrees of freedom
- Add, manage, and visualize surfaces from GeoMedia Grid, GeoMedia Terrain, and Skyline TerraBuilder
- Dynamically displays imagery, feature, and vector data in relation to the surface
- Display analytical results of GeoMedia Grid over the surface
- Fly a route, either freeform or following linear features, edit waypoints, and save as a video file
- Fully integrate within GeoMedia (i.e., the 3D map window responds to GeoMedia commands and add-on products in a similar fashion to a 2D map window)
- Import CityGML and Google 3D files

17. Q: Does GeoMedia 3D support 3D CityGML and Google files?

A: Yes, a GeoMedia 3D utility that includes a special edition of Safe Software's Feature Manipulation Engine (FME) is delivered with GeoMedia 3D to import these 3D formats for visualization. When you import files, reference information for GeoMedia will be created so you will maintain the ability to toggle between 3D and 2D if desired. Please note that some Google files may not have the geo-reference information included and may have to be manually placed. The import utility is also upgradable to the full

FME product to provide extended support for additional formats. More information on how this can be done will be available soon.

18. Q: Does GeoMedia 3D support OpenFlight files?

A: Not in the initial release, but it is something that is in the product plan.

19. Q: Can GeoMedia 3D make use of 3D symbol/model files?

A: Yes. GeoMedia 3D allows you to attach 3D models stored in formats such as X files (*.x, *.xpc, *.xpl), and Google SketchUp COLLADA files (*.dae) to point features (similar to how symbols files are attached to a point feature in GeoMedia today).

20. Q: Can GeoMedia 3D make use of native Google SketchUp (*.skp) files with georeferencing?

A: Yes, these files can be imported using the Import Utility that comes with GeoMedia 3D.

21. Q: Can I hover objects above a surface?

A: Yes. GeoMedia 3D includes offset options so you can place points, lines, and areas (hovered above) a surface. For example, you can attach a 3D symbol representing a helicopter to a point feature and in turn use the Z value, user-supplied value, or numeric attribute to offset this feature from the surface. You can also make use of a linear feature class to hover lines above the surface to represent utilities, such as electrical wire.

22. Q: When displaying a linear feature class, are the Z values honored?

A: Yes. GeoMedia 3D includes placement options so you can create vertical runs. For example, if you want to have a pipe run up the side of a building and the linear feature class has a Z value, it can be accomplished.

23. Q: Can I display a linear feature as a wall/fence?

A: No. Linear features are treated as conduits and therefore only have a diameter. However, you can make use of the commands in GeoMedia to create a buffer around a linear feature, which can be extruded to create an object that represents a fence.

24. Q: Can I use GeoMedia 3D to display data on the Internet?

A: No. GeoMedia 3D targets desktop users. However, Intergraph is working on solutions for enabling 3D visualization over the Internet.

25. Q: Can I use GeoMedia 3D to create and design highly detailed (LOD 3) 3D objects?

A: No. GeoMedia 3D is designed for enabling connectivity to your GIS data and, therefore, allows you to effectively interact and ask questions of your GIS data in a 3D environment. There is really no need to develop 3D design tools for GeoMedia 3D when there are a wide variety of free tools available for creating sophisticated 3D models. These free tools save your work to an intermediate file format that you can use in GeoMedia 3D. For example, if you cannot locate a suitable 3D model of a fire hydrant, you can

use a free application to design your own fire hydrant and save it to one of the file formats supported by GeoMedia 3D.

26. Q: Can I use GeoMedia 3D to look inside a building?

A: Yes. GeoMedia 3D can import 3D models, and if the 3D model contains this level of detail, this detail will be visible.

27. Q: Can I visualize features that are below the surface?

A: Yes. GeoMedia 3D allows you to toggle the 3D view between above-surface and below-surface viewing.

28. Q: Does GeoMedia 3D require any specialized hardware?

A: No. However, a good quality video card with ample video RAM is highly recommended.

29. Q: If my organization makes use of a Skyline TerraGate server to stream 3D data, will GeoMedia 3D allow me to continue to leverage this product?

A: Yes. With GeoMedia 3D, you can reference a fly file or an MPT file. For example, if you use GeoMedia 3D to reference a fly file that contains a connection to a TerraGate server, GeoMedia 3D will honor this connection and stream the features within the connection to the 3D window. Alternatively, if you use GeoMedia 3D and reference an MPT file that is on a TerraGate server, the software will honor the connections within the MPT and stream the items within these connections to the 3D window.

30. Q: Can I digitize in the 3D map window?

It is not recommended.

31. Q: Can I process .LAS formatted LiDAR files?

A: GeoMedia 3D cannot ingest LAS formatted LiDAR files directly. However, GeoMedia Grid version 6.1.2 which will be released in the first half of 2011 will include a new set of commands specifically for processing large collections of LAS formatted LiDAR files. The user will be able to interactively query LAS formatted LiDAR files and, in turn, efficiently create DEMs (using Z values) and/or images using Intensity values. These layers can then be incorporated into GeoMedia 3D as draped layers or as surfaces.

32. Q: Can I do shadow analysis?

A: No. You cannot use GeoMedia 3D to perform shadow analysis; however, this functionality is planned for an up-and-coming release.

33. Q: Can I do 3D line of sight analysis natively within GeoMedia 3D?

A: No. GeoMedia 3D cannot be used to perform 3D line of sight analysis; however, this functionality is planned for an up-and-coming release. Please note that should you have GeoMedia Grid, you can use the existing surface analytic tools to perform this type of analysis, then in turn display the results in GeoMedia 3D.

34. Q: Can I drape my imagery over my existing surface data?

A: Yes, GeoMedia 3D does allow users to "interactively" add imagery and terrain data to a 3D window, and therefore allow users to iteratively visualize this data in context of one another.

35. Q: What considerations are there if I am working with large collections of terrain files covering a large area?

A: The TerraBuilder product from Skyline, available through Intergraph sales channels, should be considered. TerraBuilder will construct a single surface that can most efficiently be served up for 3D display in GeoMedia 3D. TerraBuilder generated files do not allow users to interactively swap data in and out of a 3Dview, but they are specifically designed to efficiently serve extremely large collections of data to GeoMedia 3D users as base content upon which Geospatial features can be placed in proper context. TerraBuilder enhances the performance of a GeoMedia 3D environment when handling a large number of terrain files, covering a large geographical area, or both.

36. Q: What considerations are there for multiple 3D workstations?

A: The TerraGate server, also available through Intergraph sales channels, can be used in tandem with TerraBuilder to create and deliver base content to multiple GeoMedia 3D clients. TerraBuilder can be used to assemble all of your imagery and terrain data into a cohesive data source. Once this cohesive data source has been created and stored on a TerraGate server, it can then be streamed to any number of GeoMedia 3D clients. TerraGate technology provides high-performance 3D streaming data to support workgroup and enterprise configurations.

37. Q: Does GeoMedia 3D support Attribute Based Symbology (ABS)?

A: Yes. ABS is extremely important and is critical to understanding your GIS data as it can be used to drive the appearance of your data. For example, if you had a map of alarm locations, you could use the status attribute to drive the visual components of each alarm type (such as, color an alarm symbol red if the alarm status equals triggered). Once you have the map set up, the contents of your map are dynamic in that the contents will update to reflect the underlying data. Please note that not all aspects of ABS are supported (i.e. you will not be able to use every ABS function that is currently available in GeoMedia today in the initial release). However, with time, more and more dynamic properties will be supported.

38. Q: How do I create a flight path?

A: The ability to fly a predefined route within a 3D environment can prove extremely useful. For instance, urban planners can evaluate proposed utility corridors or review the aesthetic effects of introducing new buildings into an environment; or intelligence public safety officers may want to visually inspect an area of interest. With flight paths, users can re-fly the exact same path repeatedly. Given this, GeoMedia includes a number of methods for creating flight paths, namely users can make use of existing linear features or interactively fly a route and record it. Once a flight path has been created, each waypoint that makes up a flight path can be edited on an individual basis or as a collection.

39. Q: When does it make sense to use the 2D window instead of the 3D window?

A: Users have become accustomed to working in a 2D window. A 2D window allows users to *visualize* (using Styles and Properties), *analyze* (using ABS, spatial queries, and attribute queries), and *capture* GIS data (using digitizing with construction aids). The 3D window allows users to perform all of the same tasks; however, it is best to use the 3D window for tasks that are related to *visualization*.

40. Q: What if I have surfaces with mixed resolutions?

A: If you have surfaces of mixed resolution, you can manage them using the Surfaces command in GeoMedia 3D. Namely, the display order can be controlled, so that the lower-resolution surfaces can be layered below higher-resolution surfaces. In short, lower-resolution surfaces can be placed lower in the stack, thereby allowing higher-resolution surfaces to take precedence. With this approach of stacking surfaces in ascending order by resolution, the higher-resolution data is always used to represent a surface wherever possible.

41. Q: Where is the GeoMedia Product Sheet located?

www.intergraph.com/cgi/downloads.aspx?assetid=138

42. Q: Is there a whitepaper available?

It will be available soon. You will find it at:

www.intergraph.com/geomedia3d

43. Q: Where can I find product videos?

www.intergraph.com/geomedia3d