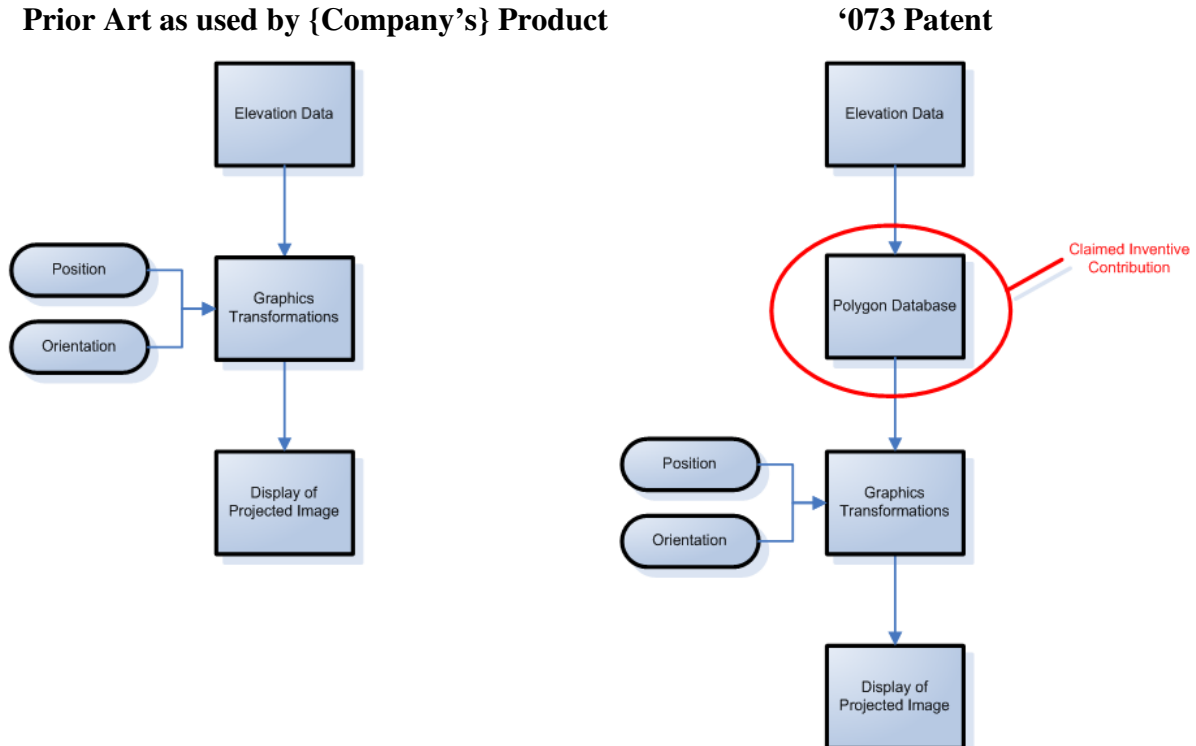


## Response to {Company's} Non-Infringement Analysis

Jed Margolin

Mr. {Person} starts out by showing a diagram which he characterizes as follows:

The following diagram illustrates the prior art method for rendering a synthetic vision environment versus the method claimed by the '073 Patent:

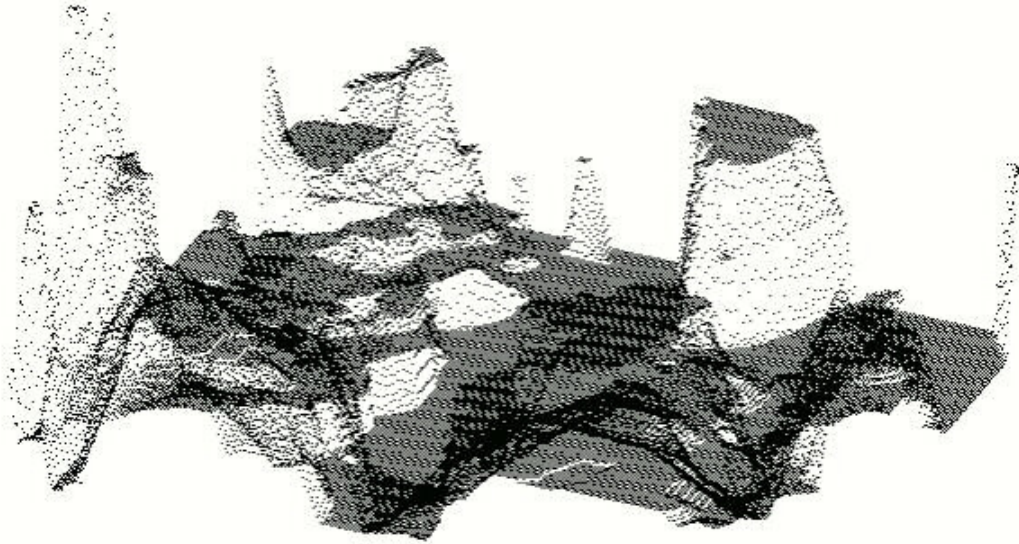


and says:

The {Company's Product} uses and has always used the prior art method. As the author of the software, I can attest to this. This can also be established by code inspection.

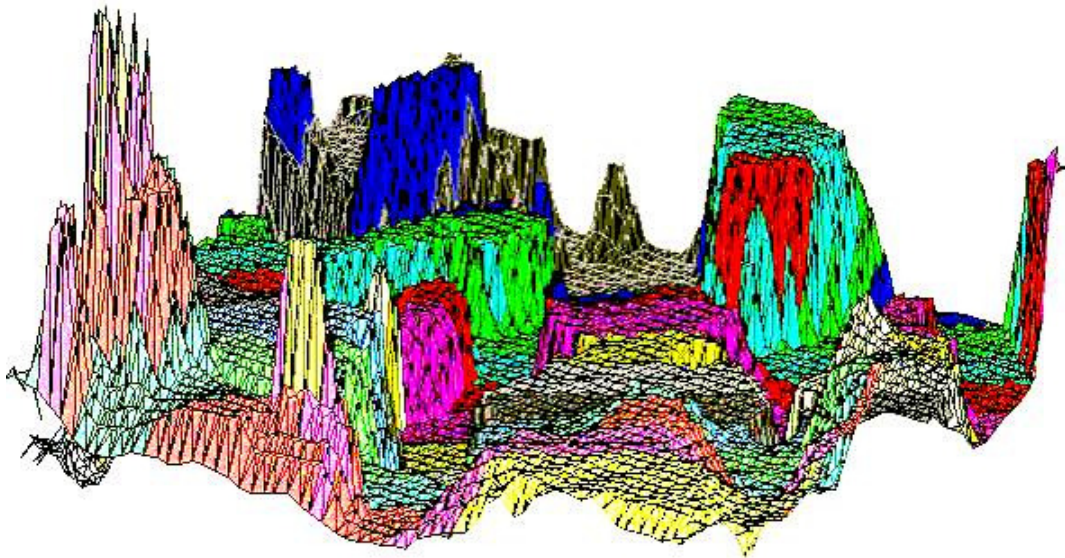
The Digital Terrain Elevation Database (DTED) is a list of points. If {Company} did not include the step of converting the points to polygons they would be displaying only points. If you display only points there is no way to remove "hidden points" because there are no surfaces to test them against. (Things can only be hidden behind surfaces.) The result is a jumble which looks like the following (the only useful features are the highest peaks):

**Figure 1**



This following picture shows the same scene rendered in polygons. (The polygons are crude because I had only a few colors to work with and there is no clipping, only polygon sorting):

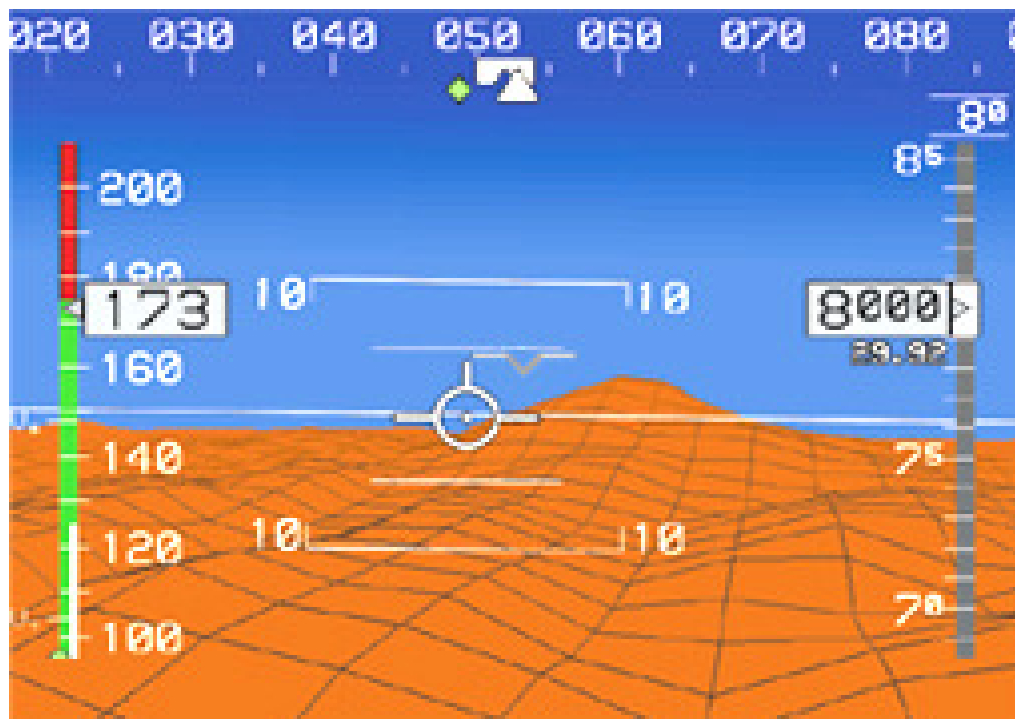
**Figure 2**



After you have used the digital elevation points to produce polygons you can shade and blend the polygons to improve their appearance.

The following picture is from {Company's} web site promoting their {Product} system.

### Primary Flight Display



Aside from the obvious use of polygons, notice that the polygons behind the hill in the background are hidden. {Company} does not show a point display as in Figure 1. {Company} shows polygons as in Figure 2.

Either Mr. {Person} has combined the step of converting the points to polygons with the *Graphics Transformations* element or he has simply left it out of his diagram. He didn't leave it out of his code.

The '073 patent is not about rendering computer graphics. Indeed, from Column 8, lines 7 – 9: “The math for the present invention has been used in the field of coin-operated video games and in traditional computer graphics.” It's about a *Pilot Aid using a Synthetic Environment*. It meets the FAA's current definition of *Synthetic Vision* in **FAA Title 14 Part 1** {Reference 1}:

Synthetic vision means a computer-generated image of the external scene topography from the perspective of the flight deck that is derived from aircraft attitude, high-precision navigation solution, and database of terrain, obstacles and relevant cultural features.

The elements of position and orientation that Mr. {Person} attributes to prior art in his diagram did not exist at the time the invention taught by '073 was made, at least not the position and orientation of a real physical aircraft used with an elevation database to provide a 3D view of the terrain. There were only simulators then.

Mr. {Person} has set up a straw man and then knocked him down.

If Mr. {Person} wants to argue that any invention that uses computer graphics is obvious (and therefore, invalid) he will be challenging the patent system itself. It would be a tough sell in any Federal Court.

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**Reference 1** - **FAA Title 14 Part 1** (Contains FAA current definition of Synthetic Vision)

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=41b1c51ea8ec4c9d1c5ebb94bbf28138&rgn=div8&view=text&node=14:1.0.1.1.1.0.1.1&idno=14>