

DECLARATION OF YONATAN LAVI

1. My name is Yonatan Lavi. I live in Ra'anana, Israel. I am providing this declaration based on my personal knowledge and I am not being compensated for providing this declaration.
2. I have been informed by attorneys for Microsoft Corporation ("Microsoft") that Bradium has asserted several patents which list me as a co-inventor, along with Isaac Levanon. I understand that these patents include U.S. Patent Nos. 7,139,794 B2 ("the '794 Patent"), 7,908,343 B2 ("the '343 Patent"), 8,924,506 B2 ("the '506 Patent), and 9,253,239 B2 ("the '239 Patent"). I understand that all of these patents are related to six provisional U.S. patent applications filed on December 27, 2000, which also list myself and Mr. Levanon as co-inventors. In this declaration, I will discuss my knowledge of 3DVU, Inc. and 3DVU, Ltd. (collectively, "3DVU"),¹ which originally filed these patent applications.
3. I was first hired to work at 3DVU (then known as GACentral.com, Inc.) by Isaac Levanon in mid-1999 as a software developer. I, along with two other

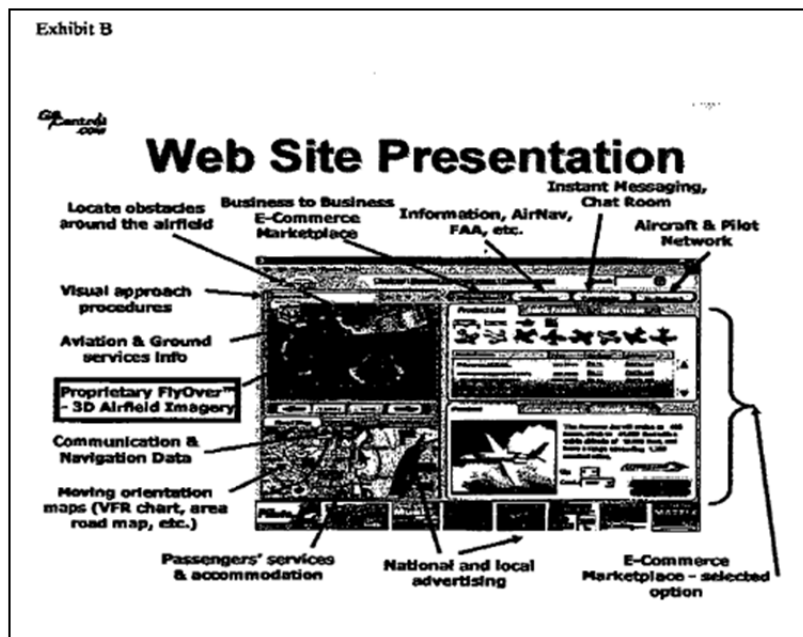
¹ 3DVU was originally formed as GACentral.com, Inc. and changed its name to FlyOver Technologies, Inc. in early 2000 before changing its name again to 3DVU. 3DVU, Ltd. was set up as a subsidiary of 3DVU, Inc., which was a US company. To avoid confusion, I will refer to all of these companies as "3DVU" unless the difference is relevant to a particular issue.

developers, Ohad Eder-Pressman and Eyal Navon, started working informally for Mr. Levanon and his company (3DVU) shortly after I graduated from high school. The three of us worked essentially as independent contractors (although there was no formal employment or other contract at the time) for a few months spanning the years 1999-2000. My recollection is that Mr. Levanon communicated mostly with Mr. Eder Pressman, although the three of us were paid individually. All three of us were offered (and I accepted) shares of stock in the company in the year 2000. Mr. Eder-Pressman and Mr. Navon were also recent high school graduates with some software development experience who were contracted by Mr. Levanon to write code for 3DVU. Mr. Levanon's role was primarily running the company, rather than in developing software. Mr. Levanon was not a computer programmer, and my recollection is that at that time and throughout the time that I worked at 3DVU he did not have the ability to write software code himself.

Original 3DVU prototype and 2000-2001 patent applications

4. When I initially worked for 3DVU in 1999 and 2000, 3DVU was primarily focused on developing a prototype of a website for visualizing aerial imagery for an area such as an airport. In particular, we wanted to develop a

website that might be used to show pilots a perspective view of the area around an airport, which was the scenario that many of our early efforts were designed around. The “GA” in the original name of the company was short for “general aviation.” Mr. Levanon wanted the prototype to offer pilots the ability to simulate flying over an aerial photograph of an airfield. For example, Ex. B to a declaration that Mr. Levanon filed on January 10, 2006 during the prosecution of Application No. 10/035,981 (which became the ‘794 Patent) shows how the “FlyOver” imagery was part of a website showing information about an airfield:



I have attached a true and correct copy of the same document to this declaration as Exhibit A.

5. The “FlyOver” imagery in the 1999-2000 prototype basically took a two-dimensional image (like an aerial or satellite photograph) and transformed it (performing trigonometric calculations to determine where pixels from the image would appear on the screen) to create a view from a simulated perspective. The process of transforming a 2D image to view it from a three-dimensional perspective was already very well-known at the time, such as in texturing in video game applications. This original prototype also did not include any elevation data or way to visualize elevation data, so any scene that a user looked at with the “FlyOver” viewer would have looked like a flat plain or plateau, even if the user was looking at satellite or aerial photographs of a place with hills and valleys or other terrain.
6. The prototype also used a technique called “MIP-mapping,” which is a basic computer graphics concept that I knew was well-known long in the industry before any work that we did at 3DVU. For example, the OpenGL software rendering library, which was developed by Silicon Graphics, used MIP-mapping extensively. In MIP-mapping, a source image is first divided up into a series of sub-images, which we sometimes referred to as image parcels or tiles. These sub-images are then down-sampled into a series of derivative images at progressively lower resolution. Progressively improving the

resolution of an image by gradually replacing lower-resolution mip-mapped versions of the image with higher-resolution versions of the image was also well-known. For example, many video games used mip-mapped textures to whose resolution would be progressively enhanced as the viewpoint approached a portion of the scenery. In fact, as I discuss further, the original 3DVU prototype used a mip-mapped file format called FXT1 which was originally developed by another company for texture compression in video games.

7. Although the overall process was not new, we did develop what we thought were some improvements to the way that image parcels in a MIP-map could be stored on a server and requested by a client. The 3DVU prototype in 1999-2000 stored the image data for a large set of tiles within a single large file (a master index file) that had a specified format. The idea of storing smaller bits of data within a larger file was also something that was well-known before we built this prototype, but most systems used a “lookup table” at the beginning of the file that listed the “offset” (distance from the start of the file, measured in bits or bytes) to the desired data. Ohad Eder-Pressman, who worked with us at 3DVU, figured that the system could skip using the lookup table if all of the tiles within the file were the same byte

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