IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

SKYLINE SOFTWARE SYSTEMS, INC.,

        Plaintiff,

    v.

KEYHOLE, INC., and
GOOGLE INC.

        Defendants.

CIVIL ACTION NO. 06-10980 DPW

REPLY BRIEF IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF ANTICIPATION BASED ON THE PUBLIC USE OF TERRAVISION

Nelson G. Apjohn (BBO No. 020373)
NUTTER McCLENNEN & FISH LLP
World Trade Center West
155 Seaport Boulevard
Boston, MA 02210
Tel. (617) 439-2000
Fax (617) 310-9000

Attorneys for Defendants and
Counterclaimants
KEYHOLE, INC. and GOOGLE INC.

Of Counsel
Darryl M. Woo, admitted *pro hac vice*
Michael J. Sacksteder, admitted *pro hac vice*
Heather N. Mewes, admitted *pro hac vice*
Carolyn Chang, admitted *pro hac vice*
Saundra L. M. Riley, admitted *pro hac vice*
FENWICK & WEST LLP
555 California Street, 12th Floor
San Francisco, CA 94104
Tel. (415) 875-2300
Fax (415) 281-1350
email: dwoo@fenwick.com

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Skyline	Plaintiff Skyline Software Systems, Inc.
'189 Patent	U.S. Patent No. 6,496,189.
Google's Noninfringement Mot.	Memorandum of Points and Authorities in support of Defendants' Motion for Summary Judgment of Noninfringement
Undisputed Facts	Separate Statement of Undisputed Material Facts in Support of Defendants' Motions for Summary Judgment of Noninfringement and Anticipation
Feiner SJ Decl	Declaration of Professor Steven K. Feiner, Ph.D., in Support of Defendants' Motions for Summary Judgment of Noninfringement and Anticipation
Chang Decl.	Declaration of Carolyn Chang in Support of Defendants' Motions for Summary Judgment of Noninfringement and Anticipation
Feiner Opp. Decl.	Declaration of Professor Steven K. Feiner, Ph.D., in Support of Defendants' Opposition to Plaintiff Skyline Software Systems, Inc.'s Motions for Summary Judgment of Infringement and Validity
Haight Decl.	Declaration of Geri L. Haight, Esq. in support of Plaintiff's Motions for Summary Judgment of Validity and Infringement and Plaintiff's Oppositions to Defendants' Motions for Summary Judgment
Skyline's Invalidity Opp.	Plaintiff Skyline Software Systems, Inc.'s Memorandum in Opposition to Defendants' Motion for Summary Judgment of Invalidity
Skyline's Rebuttal	Plaintiff Skyline Software Systems, Inc.'s Rebuttal to Defendants' Statement of Undisputed Material Facts in Support of Defendants' Motions for Summary Judgment of Noninfringement and Anticipation

TABLE OF ABBREVIATIONS
(continued)

Feiner Depo.	Deposition of Steven K. Feiner, taken on January 11, 2006 (Haight Decl., Ex. 42; Mewes Decl., Ex. 7).
Lau Depo.	Depositions of Stephen Lau, taken on June 21, 2006 and June 22, 2006 (Chang Decl., Ex. 14; Haight Decl., Ex. 9; Mewes Decl., Ex. 6).
MAGIC	Multidimensional Applications and Gigabit Internet Consortium (MAGIC Final Report at GOOG 358) or Multidimensional Applications and Gigabit Internetwork Consortium (MAGIC IEEE Article at GOOG 347).
MAGIC Final Report	Yvan G. Leclerc, "MAGIC Final Report," SRI International, Menlo Park, CA (May 1996), available at http://www.ai.sri.com/~magic/magic-final-report.html (GOOG 000358-70) (Chang Decl., Ex. 21).
MAGIC IEEE Article	Barbara Fuller & Ira Richer, "The MAGIC Project: From Vision to Reality," *IEEE Network*, Vol. 10, No. 3, pp. 15-25 (May/June 1996) (GOOG 000346-25) (Chang Decl., Ex. 22)
TerraVision Tech Note	Y.G. Leclerc & S.Q. Lau, Jr., "TerraVision: A Terrain Visualization System," Technical Note 540, SRI International, Menlo Park, CA (April 22, 1994), available at http://www.ai.sri.com/~magic/terravision.ps.gz or http://www.ai.sri.com/pubs/files/778.pdf (GOOG 000371-390) (Chang Decl., Ex. 23).
TerraVision Video	TerraVision: A High Speed Terrain Visualization System (1994) and Architecture and Initial Performance of TerraVision (1994) (G-T_0018) (Chang Decl., Ex. 24). A transcript of the TerraVision Video was made during the deposition of Stephen Lau (Lau Depo. at 164:19-167:20, 171:6-174:24).
TerraVision Source Code	Source code for TerraVision (G-T_0020) (Chang Decl., Exs. 20 (excerpts), 34).
Clinger, GraphicsNet '95	Marke Clinger, "GraphicsNet '95: Integrated voice, video, graphics and data network using asynchronous transfer mode (ATM)," *ACM SIGGRAPH Computer Graphics*, 30(1), pp. 10-18 (Feb. 1996) (Chang Decl., Ex. 26).

The public use of the TerraVision application in the mid-1990's anticipated at least claims 1, 3, 12 and 14 of the '189 patent. While Skyline "denies" almost every one of the undisputed facts set forth in Google's Statement of Undisputed Facts in support of this Motion, these denials are based on mere allegation and conjecture, not evidence. There are no genuine disputes of material fact. The "contemporaneous documents" cited by Skyline merely confirm that, as early as 1993, the TerraVision application had the capability of rendering three-dimensional terrain by combining DEM tiles (elevation data) with OI tiles (image data) that were downloaded on an as-needed basis from a remote server in the same manner claimed by the '189 patent. These documents (and others) also confirm that these capabilities were repeatedly demonstrated on numerous occasions in 1993, 1994 and 1995.

The parties do dispute the legal issue of whether downloading additional OI tiles satisfies the Court's construction of downloading additional data blocks describing three-dimensional terrain. However, as these additional OI tiles indisputably describe or represent "terrain" and were used to render the three-dimensional terrain in the TerraVision application (in combination with the DEM tiles), there is anticipation of claims 1, 3, 12 and 14 as a matter of law.[1]

Finally, in an attempt to capture Google Earth, Skyline advances an interpretation of claims 7, 8, 18 and 22 that would render these claims anticipated as well.

A.   There Are No Genuine Disputes of Material Fact

1.   *Skyline's "Rebuttal" to Google's Statement of Undisputed Facts Relies on Mere Allegations and Conjecture*

Skyline fails to cite any evidence rebutting the undisputed facts set forth in Google's Statement of Undisputed Facts. Undisputed Facts ¶¶ 58-102; Skyline's Rebuttal ¶¶ 58-102.

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[1] The only alternative for Skyline is summary judgment of noninfringement. If a downloaded data block must include all the data describing a section of three-dimensional terrain (image, elevation and vector data), then Google Earth does not infringe. *See* Google's Noninfringement Mot. at 16-17.

"[T]o avoid summary judgment, [the nonmovant] must be able to point to specific, competent

evidence to support his claim. Mere allegations, or conjecture unsupported in the record, are

insufficient to raise a genuine issue of material fact." *August v. Offices Unlimited, Inc.*, 981 F.2d

576, 580 (1st Cir. 1992) (citations omitted); *see also Federal Deposit Ins. Corp. v. Fonseca*, 795

F.2d 1102, 1110 (1st Cir. 1986) (summary judgment affirmed where nonmovant failed to proffer

admissible evidence in opposing motion); *Finn v. Consolidated Rail Corp.*, 782 F.2d 13, 15-17

(1st Cir. 1986) (summary judgment affirmed where nonmovant failed to establish a genuine issue

of material fact by identifying any specific, admissible evidence in support of essential element

of her claim). Skyline has "denied" almost every one of Google's undisputed facts, but the

recited bases amount to mere allegations and conjecture, and cannot defeat summary judgment.

Skyline relies primarily on two mantras:

(1)   "Skyline does not have first hand knowledge of TerraVision as it existed in the 1990s" (Skyline's Rebuttal ¶¶ 62-102); and

(2)   "This statement appears to be based on a characterization [or interpretation] of TerraVision's source code" (*id.* ¶¶ 72-78, 80-81).

Neither statement is ground for a genuine dispute. For summary judgment of anticipation,

Skyline's "first hand knowledge" is completely irrelevant—there is no requirement that a

patentee have any knowledge of the prior art, let alone first hand knowledge. *See, e.g.,* 35 U.S.C.

§ 102; *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). Further,

simply because a statement is "based on a characterization of TerraVision's source code" does

not mean that it is wrong or even disputed. To assist the Court, Google provided expert

testimony from Dr. Steven Feiner explaining how the relevant functions in the TerraVision

source code operated. *See* Feiner SJ Decl. ¶¶ 53-61. This included an explanation of how the

renderer in TerraVision provided one or more coordinates in the terrain along with indication of

a respective resolution to another object, and how this renderer also received a first data block

from another object including data corresponding to the one or more coordinates. *Id.* ¶¶ 64-65,

69-75*; see also* Undisputed Facts

¶¶ 73-78, 80-81. Deriding this testimony as "characterization" or "interpretation" does not create

a genuine dispute of material fact.

Skyline further argues that "contemporaneous documents" create a dispute of fact. *See*

Skyline's Rebuttal ¶¶ 62-65, 69-70. Again, this is not a ground for a genuine dispute. By

"contemporaneous documents," Skyline appears to be referring to the quarterly reports

describing the development of the TerraVision application as well as the TerraVision Tech Note.

See id.

The quarterly reports for periods prior to January 1995 do describe an earlier version of

TerraVision in which DEM (elevation data) tiles were obtained from local disk. Haight Decl.,

Exs. 12-17. But such facts are not inconsistent with Google's invalidity arguments and neither

do they create a genuine dispute of fact. These same documents also confirm that by 1993 this

earlier version of TerraVision had the capability of rendering three-dimensional terrain by

combining the DEM tiles from local disk with OI (image data) tiles that were downloaded on an

as-needed basis from a remote server in the same manner claimed by the '189 patent. *Id.*

Furthermore, quarterly reports for periods after December 1994 (and the TerraVision

Tech Note) describe a later version of TerraVision in which "the DEM tiles are requested from

the ISS [remote server]." *Id.*, Ex. 18 at GOOG 26479; *see also id.*, Ex. 10 at GOOG 373, 388 &

Ex. 24 at GOOG 26612. This is a timeline, not an inconsistency.[2] Public demonstrations of

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[2] All of the "contemporaneous documents" are also consistent with the undisputed facts actually recited
in paragraphs 62-65 and 69-70, which do not even mention downloading. *See* Undisputed Facts ¶¶ 62-65,
69-70 (referencing evidence from the TerraVision source code, Dr. Feiner's declaration, the Lau
deposition, the Manocha deposition, the MAGIC Final Report and the MAGIC IEEE Article); *see also*
Haight Decl., Ex. 10 (TerraVision Tech Note at GOOG 373) & Exs. 14-18, 24 (quarterly reports
describing TerraVision application then under development in similar terms).

TerraVision in 1993 and 1994 no doubt demonstrated the earlier version of TerraVision;

however, public demonstrations in 1995 (including demonstrations at SIGGRAPH '95,

Supercomputing '95 and the 1995 MAGIC symposium) all took place after this later version of

the TerraVision application was developed. *See, e.g.,* Chang Decl., Ex. 21 at GOOG 368-69

(describing demonstrations in 1995); *see also id.,* Exs. 25-26, 30-31, 33.

Skyline appears to also object to some of the same "contemporaneous documents" as

"hearsay" or "double hearsay." Skyline's Rebuttal ¶¶ 63-65. However, these documents have

independent legal significance as corroborating evidence of the prior public use of the

TerraVision application. *See Hewlett-Packard Co. v. Mustek Sys.*, 340 F.3d 1314, 1326 (Fed.

Cir. 2003) (operation of actual prior art device corroborated oral testimony regarding public use);

Sandt Tech., Ltd. v. Resco Metal & Plastics Corp., 264 F.3d 1344, 1350-51 (Fed. Cir. 2001)

("Documentary or physical evidence that is made contemporaneously with the inventive process

provides the most reliable proof that the inventor's testimony has been corroborated."). As such

evidence is required under Federal Circuit case law, it cannot also be inadmissible. *See, e.g.,*

United States v. Hicks, 848 F.2d 1, 7 (1st Cir. 1988); *Knorr v. Pearson*, 671 F.2d 1368, 1372-73

(C.C.P.A. 1982) (admitting corroborating evidence as "verbal act"); *cf. Joy Techs. v. Manbeck*,

751 F. Supp. 225, 233 n.2 (D.D.C. 1990) (prior art reference offered simply as evidence of what

it describes, not for proving the truth of the matters asserted).

Finally, Skyline does make some other unsupported and argumentative allegations in

rebuttal to Google's Statement of Undisputed Facts. However, for the most part, these

allegations are unrelated to the facts actually stated and/or simply repeat the undisputed fact that

in the publicly demonstrated TerraVision application after December 1994, DEM (elevation

data) tiles were downloaded from a remote server during initialization, before the OI (image

data) tiles. *See, e.g.,* Feiner SJ Decl ¶¶ 53, 78; Haight Decl, Ex. 42 (Feiner Depo. at 41:4-9).

They do not create any genuine dispute of material fact.

Thus, Skyline has failed to raise any genuine dispute of fact over how the TerraVision

application practiced the "renderer," "hierarchical structure," "receiving from" and "providing

to" limitations of the asserted claims. *See, e.g.,* Undisputed Facts ¶¶ 71, 73-78, 80-81. It has

also failed to raise any genuine dispute of fact over any of the following statements relating to

the "downloading" limitation of the asserted claims:

86.   In TerraVision, one or more additional OI tiles were downloaded from a remote
        server if the provided block from the local memory was not at the indicated
        resolution level.

87.   In TerraVision, the additional OI tiles downloaded from the remote server were at
        a resolution level higher than the resolution level of the provided block from the
        local memory.

88.   In TerraVision, the additional OI tiles downloaded from the remote server
        included data corresponding to the one or more coordinates received from the
        renderer.

89.   TerraVision was used on a computer with a communication link.

Id. ¶¶ 86-89.

2.   *Skyline's Opposition Likewise Fails to Raise Any Genuine Dispute*

Skyline argues that Google has failed to show "public use" of the TerraVision

application, asserting that the testimony of Stephen Lau is unreliable, that the

"contemporaneous" documents contradict this testimony and that the April 1996 version of the

source code for TerraVision was never publicly used. Like Skyline's rebuttal, these are mere

allegations and conjecture, not evidence.

Google does rely in part on the testimony of Stephen Lau, one of inventors of

TerraVision. *See* Chang Decl., Ex. 14. Google agrees that such testimony must be corroborated

under Federal Circuit case law. *See, e.g., Juicy Whip, Inc. v. Orange Bang, Inc.*, 292 F.3d 728,

740-41 (Fed. Cir. 2002). Contrary to Skyline's baseless assertions, Lau's testimony is well-

corroborated, not just by the contemporaneous documents describing the TerraVision

application, but also by the April 1996 version of the TerraVision source code. *See* Chang Decl.,

Exs. 20-26, 30-34; Haight Decl., Exs. 12-18, 24. This version of the source code contains

functions added to TerraVision much earlier as also confirmed by contemporaneous documents.

See Chang Decl., Exs. 20, 34 (functions dated 1993 and 1994); Haight Decl., Exs. 15-18, 24

(describing source code development). Moreover, every element of the asserted claims is

implemented in source code and further described in the MAGIC Final Report and the MAGIC

IEEE Article. *See* Feiner SJ Decl. ¶¶ 62-79; Feiner Opp. Decl. ¶¶ 37-61.[3] This is in stark

contrast to *Juicy Whip* and other cases relied on by Skyline where oral testimony was the sole

filler for a missing element from the prior art.

   The quarterly reports and source code confirm *when* particular functionality was

implemented in the TerraVision application. The quarterly reports for periods as early as 1993

confirm that the TerraVision application had the capability of rendering three-dimensional

terrain by combining OI tiles that were downloaded as-needed from a remote server with DEM

tiles. *See, e.g.,* Haight Decl., Ex. 15 at GOOG 26536-37 (describing communication, receiving,

tile visibility and rendering modules) & Ex. 16 at GOOG 26584-86 (describing improvements).

This is consistent with the April 1996 version of the source code which includes corresponding

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[3] Skyline asserts that there is a question as to the authenticity of the TerraVision source code. *See* Skyline Invalidity Opp. at 5 n.6. There is not. Stephen Lau produced a copy of this source code and further authenticated it at his deposition. *See* Chang Decl. ¶ 21 & Ex. 14 at 216:6-217:24. As the author of the majority of this source code, Lau was certainly competent to testify on this issue. Skyline also has no *evidence* that the source code is not authentic, and is relying on mere allegation. In addition, Skyline "moves to strike" Exhibit 26 to the Chang declaration, a publicly available article regarding the SIGGRAPH '95 conference, on the grounds that this article was not produced in discovery. *See* Skyline Invalidity Opp. at 5 n.7. However, this article was specifically identified by Dr. Feiner in his expert report (*see* Feiner SJ Decl., Ex. D at ¶ 76) and is readily available on the Internet where Dr. Feiner found it (*see* http://portal.acm.org/citation.cfm?id=232845.232849), and there can be no undue prejudice to Skyline.

functions that are dated in 1993. *See* Chang Decl., Exs. 20, 34 (GenerateVisible() and

GenerateRequests(), and ParseQuadTree() functions dated in 1993).

The quarterly reports for periods after December 1994 confirm that the TerraVision

application also had the capability of downloading DEM tiles from a remote server. Haight

Decl., Ex. 18 at GOOG 26479 (quarterly report for period covering January to March 1995:

"Now, when a user selects a data set from the DSM, the DEM tiles are requested from the ISS")

& Ex. 24 at GOOG 26612 ("All the DEM tiles are requested from the ISS and kept within the

local cache when a user selects a data set."). This is also consistent with the April 1996 version

of the source code which includes the TsRequestDems() function dated December 15, 1994.

Chang Decl., Exs. 20, 34. Thus, all of these capabilities were in place, in source code, by at least

December 1994. This is long before the public demonstrations of the TerraVision application at

SIGGRAPH '95, Supercomputing '95 and the 1995 MAGIC Symposium (among others).

Thus, all of this evidence corroborates Lau's testimony that the TerraVision

application—including its capabilities of downloading additional data blocks as-needed in the

manner claimed by the '189 patent and of rendering three-dimensional terrain—was publicly

demonstrated prior to February 26, 1998. *See also* Chang Decl., Ex. 14 (Lau Depo. at 82:10-

85:4, 86:19-87:2, 90:7-18, 193:22-194:18, 201:5-202:11 (SIGGRAPH '95); *id.* at 85:5-86:14,

87:16-20, 90:20-91:4, 108:11-110:10 (Supercomputing '95); *id.* at 88:15-90:6, 93:20-95:3 &

194:22-198:2 (1995 MAGIC Symposium)). Skyline speculates that whenever TerraVision was

publicly demonstrated, it must have been using locally stored data and not downloading data

from a remote server. *But see, e.g.,* Chang Decl., Ex. 21 at GOOG 368 (describing network set-

up for public demonstrations and stating that "[i]magery was drawn from several locations across

the MAGIC network simultaneously") & Ex. 26 at p. 13 (at SIGGRAPH '95, "[t]he MAGIC

Gigabit Testbed demonstrated their terrain mapping program accessing satellite imagery over an ATM network"). Regardless, in *Hewlett-Packard Co. v. Mustek Sys.*, the Federal Circuit held that "a prior art product that sometimes, but not always, embodies a claimed method nonetheless teaches that aspect of the invention." 340 F.3d at 1326. In *Hewlett-Packard*, the patentee (like Skyline here) argued that the prior art device could be easily set to operate in a manner different from that recited in the claims, and therefore there was no clear and convincing evidence of public use. *Id.* The Federal Circuit rejected this theory since the prior art device had the capability of practicing the claimed method. *Id.* Skyline's theory here is even more attenuated. It argues that in every public demonstration of TerraVision, contrary to *all the documents* and contrary to *all the testimony*, neither OI tiles nor DEM tiles were downloaded from a remote server but rather were present locally on a CD or disk drive. Skyline Invalidity Opp. at 5 & 7 n.9. This is nothing more than wild speculation, and it is not sufficient to create a genuine dispute of material fact.

> **B.   As Properly Construed, the Public Use of the TerraVision Application Anticipates Claims 1, 3, 12 and 14**

Google does not contest that, in the public use of the TerraVision application, DEM tiles were downloaded from a remote server during initialization, before the OI tiles. *See, e.g.,* Feiner SJ Decl ¶¶ 53, 78; Haight Decl, Ex. 42 (Feiner Depo. at 41:4-9). This is immaterial, however, in the face of clear and incontrovertible evidence that the OI tiles were downloaded according to the method and apparatus of claims 1 and 12 of the '189 patent, and combined with DEM tiles in the TerraVision application to render three-dimensional terrain. Undisputed Facts ¶¶ 86-89.

> **1.   *TerraVision disclosed a method of "providing data blocks describing three-dimensional terrain"***

The '189 patent is not a method of downloading elevation data. It is a "method of providing data blocks describing three-dimensional terrain." '189 patent at col. 16:28-29. It is

clear from the claim language that "providing" is not equivalent to "downloading." The claim

language requires that some data blocks be "provided" from local memory while other,

additional data blocks are downloaded from a remote server. *Id.* at col. 16:35-43.

In the TerraVision application, both data blocks with image data and data blocks with

elevation data were "provided" to a renderer to render three-dimensional terrain. Undisputed

Facts ¶¶ 62-70. Some of these data blocks were provided from local memory (i.e., lower

resolution level OI tiles and DEM tiles) while other, additional data blocks were downloaded as-

needed from a remote server (additional OI tiles). *Id.* ¶¶ 80-83, 84-89. This satisfies the

preamble of the asserted claims that merely recite an apparatus for or method of "providing data

blocks describing three-dimensional terrain."

2.   TerraVision disclosed "downloading ... if

There is no dispute that in TerraVision one or more additional OI tiles were downloaded

only if the provided block from local memory was not at the indicated resolution level.

Undisputed Fact ¶ 86; *see also id.* ¶¶ 87-89. This satisfies the "downloading" limitation,

including the "downloading … if" determination.

Skyline nonetheless ignores these disclosures and argues that the initial downloading of

DEM tiles in the TerraVision application does not satisfy the "downloading … if" determination.

This is a red-herring. The '189 patent clearly contemplates that some data blocks describing the

three-dimensional terrain will already be in local memory (i.e., a "first data block"). The claims

place no restriction on where these data blocks should come from or how they should be

downloaded (if they are downloaded at all). In the TerraVision application, the DEM tiles were

obtained *initially* either from local storage in an earlier version or from a remote server in a later

version; in either case, they were obtained *before* the renderer provided "one or coordinates in

the terrain along with indication of a respective resolution level." *See, e.g.,* Feiner SJ Decl. ¶¶

53, 61, 77-78. TerraVision then downloaded "additional" data blocks describing three-dimensional terrain *only if* the provided block from local memory was not at the indicated resolution level as required by the claims—this determination would not result in the download of additional DEM tiles, since these tiles were already available in local memory, but would result in the download of additional OI tiles stored on a remote server. Feiner SJ Decl. ¶ 77; *see also* Haight Decl., Ex. 16 at GOOG 26584 (one quadtree with both OI and DEM tiles; tile visibility and requestor modules prune the quadtree based upon factors such as tile availability and desired resolution). TerraVision thus satisfies the "downloading … if" limitation.

3.   *TerraVision disclosed downloading "data blocks describing three-dimensional terrain"*

TerraVision downloaded additional OI tiles according to the claimed method. Undisputed Facts ¶¶ 86-89. The only issue is whether these tiles were "data blocks describing three-dimensional terrain." Because OI tiles are used in TerraVision with DEM tiles to render three-dimensional terrain, they are "data blocks describing three-dimensional terrain," i.e., blocks or collections of data or digital information that represent or describe a section of three-dimensional terrain at a particular resolution level. Alternatively, if a data block must include *all* the data for a "section of three-dimensional terrain" (i.e., image data, elevation data *and* vector data), then Google Earth cannot infringe the '189 patent as it does not have "data blocks describing three-dimensional terrain." *See* Google's Noninfringement Mot. at 16-17.

Skyline equates "terrain" with "elevation data." This is not correct. Terrain includes image data as well as elevation data. *See* Chang Decl., Ex. 4 at 17-19 (order construing "terrain"). Moreover, in order to render *three-dimensional* terrain, image data and elevation data are combined. *See* '189 patent at col. 8:32-40; Chang Decl., Ex. 4 at 9-12 (order construing "data block describing three-dimensional terrain"). "Additional objects" or vector data may also

be overlaid on the terrain. *Id.* Thus, a "data block describing three-dimensional terrain" may include image data, elevation data *or* vector data.

Skyline misreads the Court's claim construction order to the extent it claims elevation data alone constitutes terrain. In its claim construction order, the Court made clear that "data blocks describing three-dimensional terrain" may also include optional objects to be overlaid on the terrain *and were not limited to* image and elevation data (i.e., block 42 described at col. 8:32-37). Chang Decl., Ex. 4 at 10. The Court did not specifically address whether a data block with only image data or only elevation data was a "data block describing three-dimensional terrain," perhaps because the '189 patent never contemplated such a system. Given that the Court held that *both* color (image) data and elevation data are "terrain," *id.* at 17-19, it follows that *both* a data block with only image data *and* a data block with only elevation data represent or describe "a section of three-dimensional terrain."

This reading does not erase the distinctions between the '189 patent and the prior art described in the specification or otherwise read out the "core innovation" of the patent. *See, e.g.,* '189 patent at col. 1:14-60. The patent distinguishes prior art Internet sites that displayed only still images or streaming video, but this art was distinguished on the ground that the user could not explore the terrain interactively. '189 patent at col. 1:33-40. TerraVision, by contrast, overcame this problem: in TerraVision, the user could "interact in real time with a synthetic 3D photo-realistic view of a large terrain." Chang Decl., Ex. 21 at GOOG 362; *see also id.*, Exs. 20 & 22 at GOOG 349-50.

The patent also distinguishes prior art systems that used computer storage space or a CD-ROM to store the required data for exploring the terrain interactively. '189 patent at col. 1:41-60. TerraVision, however, stores data remotely, just like the '189 patent, because the data

volume is very large "so it might not be feasible to transfer it to the user's site" and because it "simplif[ies] maintenance and updates." Chang Decl., Ex. 22 at GOOG 351; *see also id.*, Exs. 20 & 21 at GOOG 358. These are exactly the same reasons cited by the patent for the remote storage of data. '189 patent at col. 1:49-60.

The only other reasonable way to read the Court's construction of a "data block describing three-dimensional terrain" is that each data block must have "color," "elevation," "existing objects or structures on the land," and "any additional data overlaid on the digital image of the terrain, such as altitude, labels or optional objects" in order to constitute a "data block describing three-dimensional terrain." This interpretation is consistent with the preferred embodiment of the '189 patent, where each data block is made up of pixels having both color and elevation attributes, and has an attachment field in which additional optional data objects associated with the area are described. *See* '189 patent at col. 8:32-40. By contrast, there is no written description in the specification disclosing any embodiment where data blocks with elevation data, data blocks with image data and data blocks with vector data were downloaded separately, and no teaching in the specification explaining how these data blocks with different types of data should be combined for rendering in real-time. *See, e.g.,* Feiner Opp. Decl. ¶¶ 34-35. Indeed, Skyline avoided the alleged difficulties involved in combining data blocks of different types of data in real time for rendering precisely by having a single data block with all the image, elevation and vector data for an area. *Id.* Under this reading of the Court's construction, however, Google Earth cannot infringe because, like the prior art, it has separate data blocks made up of only image data, only elevation data or only vector data. *See* Google's Noninfringement Mot. at 16-17.

Thus, either TerraVision renders the '189 patent invalid for anticipation, or Skyline's re-writing of the Court's claim construction results in noninfringement by Google Earth.

4. *TerraVision disclosed the other limitations of the claims*

Skyline complains that Google did not address the other limitations of claims 1, 3, 12 and 14 in greater detail in its opening brief. Google did not address these limitations precisely because Skyline has never disputed them and Skyline's expert has either admitted that these limitations are met by TerraVision or entirely failed to address them in his expert reports. In any case, Google submitted evidence in support of its summary judgment that provided a detailed explanation for why each of these other limitations is met. *See* Feiner SJ Decl. ¶¶ 64-75, 79; Undisputed Facts ¶¶ 61-83, 90-93.

Specifically, with respect to the hierarchical structure limitation, Skyline's expert stated: "I do not disagree that data blocks in the TerraVision system belong to a hierarchical structure." Chang Decl., Ex. 8 at ¶ 34. Skyline cannot now make a dispute out of what was already conceded, particularly without citation to any other evidence. *See* Skyline Invalidity Opp. at 14-15. Moreover, the evidence of record confirms that TerraVision employed a database with a strict hierarchy as claimed by the '189 patent. *See* Feiner SJ Decl. ¶¶ 66-68.

With respect to the renderer limitation, Skyline's expert failed to address whether the TerraVision *source code* disclosed a renderer or the steps of "receiving from" or providing to" a renderer. *See* Chang Decl., Ex. 8 at ¶¶ 23-32, 35-41 & Ex. 10 at ¶¶ 18-31. In its Rebuttal to Google's Statement of Undisputed Facts, Skyline's only riposte is a resort to its mantras of "no first-hand knowledge" and "based on a characterization of the source code." *See* Rebuttal ¶¶ 73-81. Having failed to offer any evidence, Skyline cannot now dispute these facts. In any case, the evidence of record confirms that TerraVision both had a renderer and performed the steps of "receiving from" and "providing to" a renderer as claimed by the '189 patent. *See* Feiner SJ

Decl. ¶¶ 64-65, 69-75. In contrast to the insufficient evidence offered by Skyline with respect to

Google Earth, this evidence specifically identifies the objects that are the renderer and the

objects which are not the renderer, and identifies how these objects interact. *Id.*

With respect to the lower before higher limitation in claims 3 and 14, Skyline simply

repeats its arguments above and cites no additional evidence. For the same reasons discussed

above, TerraVision practices this limitation as well. *See also* Feiner SJ Decl. ¶ 79.

Thus, the TerraVision application practiced each and every limitation of claims 1, 3, 12

and 14, and the Court should enter summary judgment of anticipation as to these claims.

> **C.** **As Interpreted by Skyline, the Public Use of the TerraVision Application Anticipates Claims 7, 8, 18 and 22 as Well**

Skyline does not bother to address Google's argument that TerraVision practiced the

downloading excess data blocks "when not downloading blocks required by the renderer"

limitation of claims 7 and 18 as that limitation has been interpreted by Skyline for the purposes

of infringement. Accordingly, if the Court adopts this interpretation, then it should also find that

TerraVision satisfied this limitation of claims 7 and 18.

Skyline does address Google's argument that TerraVision was used over the "Internet" as

that term has been construed by the Court. However, it fails completely to address all the

evidence that TerraVision meets this limitation, including:

- The disclosure in the MAGIC Final Report that "SRI demonstrated TerraVision running *over the Internet* at the JPL, connected to ISSs in Menlo Park. Although this situation was not optimal, it demonstrated the ability of TerraVision and the ISS to adapt to network bandwidth capabilities." Chang Decl., Ex. 21 at GOOG 369 (emphasis added).

- The further disclosure in this report that "An interesting consequence of the coarse-to-fine request strategy is that *TerraVision can also run over relatively slow networks*." *Id.* at GOOG 364 (emphasis added).

- The disclosure in the Clinger, *GraphicsNet '95* article that TerraVision was used on a public ATM network at SIGGRAPH '95. *Id.*, Ex. 26 at pp. 13-14 ("The

MAGIC Gigabit Testbed demonstrated their terrain mapping program accessing satellite imagery over an ATM network…. GraphicsNet provided a new node on the MAGIC ATM backbone").

- The disclosure in all the MAGIC Final Report and other TerraVision references that TerraVision was used over the MAGIC network and over the Internet using http protocols. Chang Decl., Exs. 21-23 at *passim*; *see also id.,* Exs. 20, 24-26, 30-34; Haight Decl., Exs. 12-18, 24.

Skyline speculates, but provides no evidence, that all references to TerraVision being publicly demonstrated either over the broader Internet or over the MAGIC network were either a fraud or were really referring to demonstrations of an "over-the-shoulder" application, not TerraVision. Skyline Invalidity Opp. at 17-18. An over-the-shoulder application was developed by the University of Kansas that allowed a remote user to view and control a workstation running TerraVision. *See, e.g.,* Chang Decl., Ex. 21 at GOOG 368; *see also id.* at GOOG 365-66 (discussing TeReVision application); Haight Decl., Ex. 16 at 26586-88. On at least one occasion, TerraVision was demonstrated with this over-the-shoulder application running, to show that a remote user could control TerraVision. *Id.* (remote user located at KU, while TerraVision publicly demonstrated at Sprint TIOC). However, the documents describing these demonstrations make clear that the "over-the-shoulder" application was not the only application being demonstrated, and that TerraVision itself was also demonstrated, including the capability of obtaining data blocks from a remote server in the same manner claimed by the '189 patent. *Id.* There is also no evidence of the sort of massive fraud campaign suggested by Skyline—all of the contemporaneous documents *confirm* that TerraVision was demonstrated over the broader Internet and over the MAGIC network. Chang Decl., Exs. 20-26, 30-34; Haight Decl., Exs. 12-18, 24. Skyline's bare allegations simply cannot create a dispute of fact. TerraVision satisfied the Internet limitation of claims 8 and 22.

Thus, the TerraVision application practiced each and every limitation of claims 7, 8, 18 and 22—at least as those limitations are interpreted by Skyline—and the Court should enter summary judgment of anticipation as to these claims as well.

II.   CONCLUSION

For the foregoing reasons, Google respectfully requests that the Court grant Google's Motion for Summary Judgment of Anticipation Based on the Public Use of TerraVision.

Dated: February 9, 2007   Respectfully submitted,

By: /s/Darryl M. Woo
                Darryl M. Woo

Attorneys for Defendants and Counterclaimants
KEYHOLE, INC. and GOOGLE INC.

Certificate of Service

I hereby certify that, on February 9, 2007, I caused a true and accurate copy of the foregoing document to be served upon all counsel of record for each party by complying with this Court's Administrative Procedures for Electronic Case Filing.

By: /s/ Darryl M. Woo
                Darryl M. Woo