

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP

Charles K. Verhoeven (Bar No. 170151)

2 charlesverhoeven@quinnemanuel.com

50 California Street, 22<sup>nd</sup> Floor

3 San Francisco, California 94111

4 Telephone: (415) 875-6600

Facsimile: (415) 875-6700

5 Kevin P.B. Johnson (Bar No. 177129)

6 kevinjohnson@quinnemanuel.com

7 Victoria F. Maroulis (Bar No. 202603)

victoriamaroulis@quinnemanuel.com

8 555 Twin Dolphin Drive, 5<sup>th</sup> Floor

Redwood Shores, California 94065-2139

9 Telephone: (650) 801-5000

Facsimile: (650) 801-5100

10 Michael T. Zeller (Bar No. 196417)

11 michaelzeller@quinnemanuel.com

12 865 S. Figueroa St., 10th Floor

Los Angeles, California 90017

13 Telephone: (213) 443-3000

14 Facsimile: (213) 443-3100

15 Attorneys for SAMSUNG ELECTRONICS CO.,

LTD., SAMSUNG ELECTRONICS AMERICA,

16 INC. and SAMSUNG

TELECOMMUNICATIONS AMERICA, LLC

18 UNITED STATES DISTRICT COURT

19 NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION

20 APPLE INC., a California corporation,

21 Plaintiff,

22 vs.

23 SAMSUNG ELECTRONICS CO., LTD., a

24 Korean business entity; SAMSUNG

25 ELECTRONICS AMERICA, INC., a New

26 York corporation; SAMSUNG

27 TELECOMMUNICATIONS AMERICA,

LLC, a Delaware limited liability company,

28 Defendant.

CASE NO. 11-cv-01846-LHK

**DECLARATION OF STEPHEN GRAY IN  
SUPPORT OF SAMSUNG'S MOTION  
FOR SUMMARY JUDGMENT**

1 **DECLARATION OF STEPHEN GRAY**

2 I, Stephen Gray, declare:

3 1. I have personal knowledge of the facts set forth herein, and am competent to testify  
4 to the same.

5 2. I submit this declaration in support of Samsung's Motion for Summary Judgment of  
6 invalidity on U.S. Patents 7,844,915 and 7,864,163. If asked at hearings or trial, I am prepared to  
7 testify regarding the matters I discuss in this declaration

8 3. I reserve the right to supplement or amend this declaration based on any new  
9 information that is relevant to my opinions.

10 4. I am being compensated for my work in this matter at my standard consulting rate  
11 of \$370 per hour. I am also being reimbursed for expenses that I incur. My compensation is not  
12 contingent upon the results of my study or the substance of my testimony.

13 **I. PROFESSIONAL BACKGROUND**

14 5. I am an independent consultant. All of my opinions stated in this Declaration are  
15 based on my personal knowledge and professional judgment. In forming my opinions, I have  
16 relied on my knowledge and experience in graphical user interfaces and operating systems;  
17 software development practices; programming, including C and graphical programming; and on  
18 the documents and information referenced in this Declaration. I have attached as Exhibit 1 a true  
19 and correct copy of my current curriculum vitae (CV), which details my education and experience.  
20 The following thus provides only a brief overview of some of my experience that is relevant to the  
21 matters set forth in this Declaration.

22 6. Since the mid-1970s, I have designed, developed, and deployed computing systems  
23 and products that operate in server, desktop, and graphical environments. As such, I have  
24 acquired expertise and am an expert in the areas of server computing architecture and design,  
25 graphical user interfaces, operating systems, local area and wide area networks, and various  
26 programming languages used in the development of those systems and products. I have been  
27 employed by or retained as a consultant, including acting as a litigation consultant, for numerous  
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1 companies such as Burroughs, Filenet, Fujitsu, Marriott Corporation, MCI, Northern Telecom,  
2 Olivetti, TRW, and Xerox, as well as other companies.

3 7. I have several relevant professional experiences that further demonstrate my  
4 expertise in the field of graphical user interfaces. In late-2001 to mid-2002, as Chief Technology  
5 Officer for Networld Exchange Inc., I was responsible for the design, development, and  
6 deployment of a suite of products that delivered eCommerce functions. These functions were  
7 provided over the Internet and included product catalog information display, purchase and/or  
8 purchase order creation, order delivery to fulfillment systems, and order status reporting. The  
9 products for which I had responsibility provided an electronic shopping graphical user interface  
10 for business-to-business and business-to-consumer transactions. The graphical user interface was  
11 designed to support both vendors of products as well as customers. Each of these user interfaces  
12 were an optimization based on the specific user class.

13 8. In the mid-1990s I was a consultant for Xerox. One of my assignments there was  
14 to develop a graphical interface for network attached office products. For example, one of the  
15 graphical user interfaces I designed provided end-user visibility into printer queues supporting  
16 distributed network printers. Another graphical user interface I designed provided network  
17 operations distributed job management control.

18 9. As a software development professional, I have had numerous occasions to review  
19 bodies of source code. I have analyzed source code written in several variants of C, SQL,  
20 COBOL, RPG, variants of Basic, Java, Perl, several Assembler languages, and others. For  
21 example, as an individual contributor at Xerox during the mid-1980s to 1990, I evaluated the  
22 quality of source code from third-party software providers for possible inclusion in the Xerox  
23 product line. Also, I evaluated the source code of several application software packages for  
24 completeness and maintainability, and for possible inclusion into the NTN product line in 2000-  
25 2001. During my early career, I spent time maintaining source code written by others. In each of  
26 these assignments, I analyzed the source code to identify the data structures, logical flow,  
27 algorithms, and other aspects.

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1           10.     During my career as a software development professional, I have several relevant  
2 professional experiences that demonstrate my expertise in the field of operating system  
3 technologies. I have performed operating system programming assignments, I have publicly  
4 lectured regarding various operating systems, and I have provided litigation support where  
5 operating system technology was central to the matter.

6           11.     Finally, I have been retained by attorneys for plaintiffs and defendants in several  
7 matters where the concepts and practice of graphical user interface technology was a central issue.  
8 The matters include contract disputes: GTE v. Videotron; Eyefinity, Inc. v. Entigo; HealthFirst v.  
9 HealthTrio; Waltrip Associates v. Kevin Kimberlin & Spencer Trask Ventures, as well as patent  
10 infringement: WebSide Story v. NetRatings; ICR v. Harpo; Leader v. Facebook; Fotomedia v.  
11 Yahoo!; Cisco v. Telcordia; Ampex v. Kodak, et al and ICI v. Red Hat and Novell.

12     **II.    APPLICABLE LEGAL PRINCIPLES**

13           12.     I am informed by counsel that "prior art" includes public information, public  
14 knowledge, and public acts that occur before an application for a patent was filed. Prior art  
15 includes patents, journals, Internet publications, systems, and products.

16           13.     I am further informed by counsel that a prior art reference "anticipates" an asserted  
17 claim of a patent, and thus renders the claim invalid, if all the elements of the claim are disclosed  
18 in that prior art reference, either explicitly or inherently (*i.e.*, necessarily present or implied).

19           14.     I make this Declaration with the understanding that anticipation must be shown by  
20 clear and convincing evidence.

21     **III.   MATERIALS CONSIDERED**

22           15.     In forming my opinions in this Declaration, I reviewed a number of materials,  
23 including U.S. Patent Nos. 7,844,915 (the "'915" Patent) and 7,864,163 (the "'163 Patent") as well  
24 as their respective file histories, and relevant portions of the record in this case to date. I have  
25 reviewed the Expert Infringement and Rebuttal Reports of Dr. Karan Singh as well as the  
26 deposition transcript of Dr. Karan Singh. In forming my opinions, I have also relied on the  
27 Declaration of Dr. Benjamin Bederson dated May 17, 2012.

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1           16.     In addition, I rely on the same materials I reviewed and considered in preparing my  
2 Expert Invalidation and Rebuttal Reports. Exhibit 2 is a true and correct copy of the materials I  
3 considered in preparing my Expert Invalidation Report and Expert Rebuttal Report in this case.

4 **IV. THE '915 PATENT**

5 **A. OVERVIEW OF THE '915 PATENT**

6           17.     The '915 Patent, entitled "Application Programming Interfaces for Scrolling  
7 Operations," issued on Nov. 30, 2010 from an application filed Jan. 7, 2007. The named inventors  
8 of the '915 Patent are Andrew Platzler and Scott Herz. The Patent is assigned to Apple Inc.

9           18.     The '915 Patent relates to the field of application programming interfaces that  
10 provide user interface operations, such as scrolling. The '915 Patent specifically concerns the  
11 problem of distinguishing among different touch-based user inputs, i.e., gestures, and responding  
12 by carrying out an appropriate operation in a computer system. As of the date of invention this  
13 was not a new problem, and a number of solutions to this problem already existed in the art.

14           19.     The '915 Patent generally describes a programming interface for recognizing touch-  
15 based user input that signals either a "scrolling" operation or a non-scrolling "gesture" operation,  
16 including scaling and rotation.

17           20.     I understand that Apple has asserted that Samsung's devices infringe independent  
18 Claim 8 of the '915 Patent. Claim 8 is reproduced below:

19           8. A machine readable storage medium storing executable program instructions  
20 which when executed cause a data processing system to perform a method  
comprising:

21           [a] receiving a user input, the user input is one or more input points applied to  
22 a touch-sensitive display that is integrated with the data processing  
system;

23           [b] creating an event object in response to the user input;

24           [c] determining whether the event object invokes a scroll or gesture operation  
25 by distinguishing between a single input point applied to the touch-  
sensitive display that is interpreted as the scroll operation and two or more  
input points applied to the touch-sensitive display that are interpreted as  
the gesture operation;

26           [d] issuing at least one scroll or gesture call based on invoking the scroll or  
gesture operation;

27           [e] responding to at least one scroll call, if issued, by scrolling a window  
28 having a view associated with the event object; and

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[f] responding to at least one gesture call, if issued, by scaling the view associated with the event object based on receiving the two or more input points in the form of the user input.

**B. CLAIM CONSTRUCTION**

21. Based on my experience, the plain and ordinary meaning to one of ordinary skill in the art of the phrase "object invokes" in the context of claim 8 of the '915 Patent is that the object itself calls a method or function. In other words, a person of ordinary skill in the art would understand the phrase "the event object invokes a scroll or gesture operation" to mean that the event object calls a method or function for scrolling or scaling.

22. At their depositions, both inventors of the '915 Patent gave testimony that supports my conclusion regarding the plain and ordinary meaning of "the event object invokes." Attached to this Declaration as Exhibits 8 and 9 are true and correct copies of relevant excerpts from the deposition testimony of Scott Herz and Andrew Platzer, respectively.

[REDACTED]

Ex. 8: Herz Depo Trans. at 95:6-96:10.

[REDACTED]

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[REDACTED]

Ex. 9: Platzer Dep. at 79:7 to 80:5.

23. This inventor testimony is consistent with the common usage of this phrase in the field. Attached to this Declaration as Exhibit 16 is a true and correct copy of a standard computer science dictionary, which use the phrase "invoke" in the manner referred to in the '915 Patent and in the same sense used by the '915 inventors. Ex. 16: *Microsoft Computer Dictionary* (5th ed. 2002) at 287 (defining "invoke" as "to call or activate; used in reference to commands and subroutines").

24. Attached to this Declaration as Exhibit 13 is a true and correct copy of relevant excerpts from the Expert Infringement Report of Apple Expert Karan Singh. Attached to this Declaration as Exhibit 14 is a true and correct copy of Exhibit 17 to Dr. Singh's Expert Infringement Report. The Singh Report asserts that the Android system's MotionEvent object represents the "event object" required in Claim 8. Ex. 13: Singh Report at ¶¶ 320-324, 387. But instead of asserting that the MotionEvent object invokes a scroll or gesture operation, the Singh Report maintains that *another*, different object includes a method, `WebView.handleQueuedMotionEvent()`, that invokes a scroll or gesture operation (*e.g.*, `handleTouchEventCommon()` for a single input point and `handleMultiTouchInWebView()` for two or more input points). Ex. 13: Singh Infringement Report at ¶¶ 331-332, 388. Dr. Singh also testified that the event object does not have to invoke the scroll or gesture operation. Attached to

1 this Declaration as Exhibit 7 is a true and correct copy of the deposition transcript of Karan Singh,  
2 Volume II.

3 [REDACTED]  
4 [REDACTED]  
5 [REDACTED]

6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]

11 Ex. 7: Singh Dep. Trans. Vol. II at 319:16-320:6.

12 25. Dr. Singh's proposed definition ignores the plain meaning of the term "invoke" as  
13 used in the phrase "event object invokes" – namely, "the event object invokes a scroll or gesture  
14 operation." Dr. Singh argues that certain gestures "invoke" an operation, whereas the claim  
15 requires something else: Claim 8 says that the "event object invokes," and not the "user input  
16 invokes." Yet Dr. Singh claims that the Epic 4G manual shows that "a Swipe, Slide, or Drag, all  
17 of which invoke a scroll operation, are distinguished from a Pinch or Spread, which invoke a  
18 gesture operation." Ex. 13: Singh Infringement Report at ¶¶ 311-312.

19 26. As described above, the '915 claims provide context for the claimed use of the  
20 phrase "object invokes." A person of ordinary skill in the art would understand that Claim 8  
21 describes a process whereby an "event object invokes" – specifically, claim 8 recites "executable  
22 program instructions" in a computer. In this context, one of skill would understand that an  
23 "object" is a programmatic construct, a basic building block used in computer programming  
24 languages, including object-oriented programming languages - and a person of ordinary skill  
25 would therefore understand that "invokes" here is being used to refer to invocation in the  
26 programming context. As the inventors recognized, this meaning of "invokes" is the commonly  
27 understood meaning of the term in the field, particularly in the context of program instructions for  
28 software.



1 Infringement Report at ¶ 387. However, Apple fails to show that the MotionEvent object invokes  
2 a scroll or gesture operation. In fact, it does not.

3 33. I note that Android's MotionEvent object is used to "report movement (mouse, pen,  
4 finger, trackball) events. The MotionEvent object does not call a method or function to scroll or  
5 scale content. Rather, the MotionEvent object may hold either absolute or relative movements and  
6 other data, depending on the type of device. See  
7 <http://developer.android.com/reference/android/view/MotionEvent.html>.

8 Some devices can report multiple movement traces at the same time.  
9 Multi-touch screens emit one movement trace for each finger. The  
10 individual fingers or other objects that generate movement traces are  
11 referred to as pointers. Motion events contain information about all  
of the pointers that are currently active even if some of them have  
not moved since the last event was delivered.

12 *Id.* Thus, the MotionEvent object is a passive container of information with respect to scroll or  
13 gesture operations, which does not call, initiate, cause or take any other actions with respect to  
14 scroll or gesture operations.

15 34. Rather than alleging that the MotionEvent object invokes a scroll or gesture  
16 operation, which would be inaccurate, the Singh Report maintains that *another* Android object,  
17 called WebView, includes a method called handleQueuedMotionEvent() that invokes a scroll or  
18 gesture operation. Ex. 13: Singh Infringement Report ¶¶ 331, 388.

19 35. The Singh Report goes on to state that the handleTouchEventCommon() method is  
20 invoked by the WebView for a single touch input point, while the handleMultiTouchInWebView()  
21 method is invoked for two or more touch input points. *Id.* Attached to this Declaration as Exhibit  
22 17 is a true and correct copy of produced source code from the Accused Products. [REDACTED]

23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]

26 36. The Singh Report provides no additional discussion of how the "event object  
27 invokes" the scroll or gesture operation, as required by this limitation of Claim 8. See Ex. 13:  
28 Singh Report ¶¶ 321-323, 388.



1 called by methods that MotionEvent implements. Thus, the differences between the "way" the  
2 Accused Products operate and the way in which the claim limitation operates are not insubstantial.

3 43. The claimed result is invocation of a scroll or gesture operation by an event object,  
4 based on the event object's interpretation of one-finger input as a scroll and multi-finger input as a  
5 scaling operation. As explained above, this does not occur in the Accused Products. Thus, the  
6 differences between the "result" the Accused Products and claim limitation are not insubstantial.

7 44. Moreover, in my opinion, Dr. Singh advances an equivalents argument that  
8 expands the scope of the claim language to the point that claim elements are eliminated. Claim 8  
9 states that "*the event object* invokes a scroll or gesture operation." If something other than the  
10 event object may invoke the scroll or gesture operation, this would eliminate the "event object"  
11 identified in this limitation. Dr. Singh's equivalents argument effectively rewrites "determining  
12 whether the event object invokes a scroll or gesture operation" as "determining whether to invoke  
13 a scroll or gesture operation," effectively eliding "the event object" from Claim 8[c].

## 14 **V. THE '163 PATENT**

### 15 **A. OVERVIEW OF THE '163 PATENT**

16 56. The '163 Patent, entitled "Portable Electronic Device, Method and Graphical User  
17 Interface for Displaying Structured Electronic Documents," issued on January 4, 2011 from an  
18 application filed on September 4, 2007. The Patent purports to claim priority to a provisional  
19 application filed as early as September 6, 2006. The named inventors of the '163 Patent are Bas  
20 Ording, Scott Forstall, Greg Christie, Stephen O. Lemay, Imran Chaudhri, Richard Williamson,  
21 Chris Blumenberg, and Marcel Van Os. The Patent is assigned to Apple Inc. on its face. A  
22 review of the file history shows that Apple filed a certificate of correction on January 14, 2011 to  
23 remove Bas Ording as an inventor and add Andre M.J. Boule as an inventor.

24 57. The '163 Patent relates to methods and systems for navigating a large information  
25 space on portable electronic devices with limited display screens. This limitation of portable  
26 electronic devices was well-known by persons in the art prior to the filing of the application for  
27 the '163 Patent.

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1           58. The independent claims of the '163 Patent generally cover a two-step process for  
2 zooming and panning to areas of interest contained within a structured electronic document.

3           59. I understand that Apple has asserted that Samsung's devices infringe independent  
4 Claim 50 of the '163 Patent. Claim 50 is reproduced below:

5                   **50.** A portable electronic device, comprising:

6                   **[a]** a touch screen display; one or more processors; memory; and one or  
7 more programs, wherein the one or more programs are stored in the memory and  
8 configured to be executed by the one or more processors,

9                   **[b]** the one or more programs including: instructions for displaying at least  
10 a portion of a structured electronic document on the touch screen display, wherein  
11 the structured electronic document comprises a plurality of boxes of content;

12                   **[c]** instructions for detecting a first gesture at a location on the displayed  
13 portion of the structured electronic document; instructions for determining a first  
14 box in the plurality of boxes at the location of the first gesture; instructions for  
15 enlarging and translating the structured electronic document so that the first box is  
16 substantially centered on the touch screen display;

17                   **[d]** instruction[s] for, while the first box is enlarged, detecting a second  
18 gesture on a second box other than the first box; and instructions for, in response to  
19 detecting the second gesture, translating the structured electronic document so that  
20 the second box is substantially centered on the touch screen display.

21           **B. CLAIM CONSTRUCTION**

22           60. I understand that the Court has not yet issued a claim construction order affecting  
23 the '163 Patent. For purposes of this Declaration, I understand that the term "structured electronic  
24 document" from Claim 50 of the '163 Patent will likely require construction. In my analysis, I  
25 have applied the definition of structured electronic document I offered in paragraph 274 of my  
26 Expert Invalidation Report:

27                   At the time of the '163 Patent, persons skilled in the art would have been  
28 familiar with structured electronic documents and their various applications. As  
understood by those in the art, a "structured electronic document" refers to any type  
of two-dimensional information space containing embedded coding that provides  
some meaning or "structure" to the document. The coding is embedded within the  
content of the document and specifies how elements or objects are to be arranged  
within the information space and relative to one another. Thus, the comingling of  
data providing *structure* and data providing *content* in the code of the document is  
a distinguishing feature of a structured electronic document.

1           61.     Attached to this Declaration as Exhibit 6 is a true and correct copy of volume I of  
2 the deposition transcript of Apple's Expert Karan Singh. [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6           **C.           OVERVIEW OF PRIOR ART**

7           62.     I understand that Benjamin Bederson and his colleagues created a graphical user  
8 interface for mobile devices in 2004 known as LaunchTile (also, sometimes referred to as  
9 LaunchPoint). This user interface is described in an indexed publication entitled AppLens and  
10 LaunchTile: Two Designs for One-Handed Thumb Use on Small Devices (hereafter "LaunchTile  
11 Publication"), which was published no later than April 7, 2005 and was prepared by Dr. Bederson  
12 for the ACM Conference on Human Factors in Computing Systems (known as the CHI  
13 Conference). I also understand that during the CHI Conference in April 2005 (and later at a May  
14 2005 symposium at the Human-Computer Interaction Lab at the University of Maryland) Dr.  
15 Bederson and his team discussed their work on LaunchTile and gave live demonstrations.

16           63.     In forming my opinion, I have personally used a HP Compaq ipaq h1900 series  
17 model 1950 PocketPC device running LaunchTile. I have reviewed the Declaration of Benjamin  
18 Bederson dated May 17, 2012. I have also reviewed the source code for a variant of LaunchTile  
19 (called XNav) which appears to have identical or substantially similar functionality to the relevant  
20 LaunchTile functionality. I have personally used the XNav program running on a Sony VGN-  
21 U750P touch-screen device.

22           64.     In the LaunchTile Publication, Bederson describes the use of gestures on a touch  
23 screen user interface for navigation within an information or content space. The space is  
24 constrained by the form factor of the smart phone:

25           For device interaction when using a touch-sensitive screen, both designs utilize a  
26 gestural system for navigation within the application's zoomspace. While our  
27 designs do not directly address one-handed text entry, they are compatible with a  
28 variety of existing single-handed text input techniques, including single- and  
multi-tap alphanumeric keypad input, as well as miniature thumb keyboards and  
unistroke input systems executed with a thumb (e.g., Graffiti [6], Quikwriting  
[17]).



1 Application tile fills the touch-screen display. Additionally, from Zone View, a user can pan to  
2 neighboring 4-tile clusters by "dragging" the zoomspace with his or her thumb, either vertically or  
3 horizontally on the "rails" separating each application tile. As the user initiates the pan process,  
4 the "zoomspace moves with the thumb during dragging." Bederson Decl. Ex. A at 205.

5 68. As described by Bederson, LaunchTile was designed to provide the user with an  
6 interface "to navigate through a group of embedded electronic elements (Application tiles)  
7 contained in the single interactive zoomspace." Bederson Decl. at ¶ 11. To this end, Bederson  
8 describes LaunchTile running on a portable electronic device as consisting of a single, hierarchical  
9 object-oriented data structure. Bederson Decl. at ¶ 13. My analysis of the XNav source code  
10 confirms this overall design architecture.

11 **D. THE '163 PATENT IS ANTICIPATED**

12 69. After considering the evidence in the record, it is my opinion that Claim 50 of the  
13 '163 Patent is anticipated by the LaunchTile System, the LaunchTile Video (*see* Bederson Decl.  
14 Ex. D), and by the LaunchTile Publication, (*see* Bederson Decl. Ex. A). Attached to this  
15 Declaration as Exhibit 3 is a detailed claim chart demonstrating how LaunchTile discloses each  
16 and every element of Claim 50. Along with my analysis, this claim chart includes relevant  
17 citations to the evidentiary record. Attached to this Declaration as Exhibits 4 and 5 are videos  
18 representing two alternative behaviors of the LaunchTile System that I believe anticipate the '163  
19 Patent.

20 **1. Claim 50, Element [a]**

21 70. Element [a] to Claim 50 recites:

22 "A portable electronic device, comprising: a touch screen display;  
23 one or more processors; memory; and one or more programs,  
24 wherein the one or more programs are stored in the memory and  
configured to be executed by the one or more processors."

25 71. The Compaq ipaq h1900 series model 1950 Pocket PC is a portable electronic  
26 device with a touch screen display.

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1           72.     The HP ipaq 1950 Pocket PC Quick Specs describe the device as including a  
2 Samsung SC32442 processor and main memory of 32 MB SDRAM. *See* HP ipaq 1950 Quick  
3 Specs (Dkt 168-13).

4           73.     Finally, the LaunchTile program, when running on the ipaq device, "was stored in  
5 the memory and configured to be executed by the one or more processors of the portable  
6 electronic device." Bederson Decl. at ¶ 9.

7           74.     For these reasons, it is my opinion that the LaunchTile System discloses this  
8 element of Claim 50.

9                   **2.     Claim 50, Element [b]**

10           75.     Element [b] to Claim 50 recites:

11                                 "the one or more programs including: instructions for  
12                                 displaying at least a portion of a structured electronic document on  
13                                 the touch screen display, wherein the structured electronic document  
                                      comprises a plurality of boxes of content."

14           76.     When running on an ipaq device, the LaunchTile System initially displays an  
15 interactive zoomspace consisting of a 6x6 grid of active tiles. It is my opinion that this 6x6  
16 zoomspace is a "structured electronic document" with 36 embedded Application tiles, each of  
17 which is also a structured electronic document. The 36 embedded Application tiles as well as 2x2  
18 groupings of these Application tiles ("Zones") are visually significant areas of interest and  
19 constitute the "plurality of boxes" of content.

20           77.     The zoomspace satisfies the construction I have offered for "structured electronic  
21 document," because it is a two-dimensional information space – the visual manifestation of the  
22 single, hierarchical object oriented data structure Bederson describes. The zoomspace contains  
23 "structure" in the form of embedded coding that provides how the various elements (*i.e.*  
24 Application tiles and Zones) are to be arranged within the zoomspace and relative to one another.  
25 Bederson Decl. at ¶ 13. The "content" (derived from the Application level of the hierarchy) and  
26 the "structure" (information dictating how the Application tiles are to be visually arranged) exist  
27 together in the hierarchical data structure that is visually depicted to the user as a structured  
28 electronic document.

1           78.     The advantages of using such a hierarchical design structure are apparent: such a  
2 design ensures a logical connection between each of the elements in the hierarchy. This permits  
3 the zoomspace to utilize and display appropriate data from the embedded Applications, regardless  
4 of the level of zoom. *See* Bederson Decl. at ¶ 15.

5           79.     The Bederson Declaration expressly recognizes that LaunchTile's creation of the  
6 object-oriented data structure is very similar to the process by which a browser interprets an  
7 HTML page. Bederson Decl. at ¶ 13. Because the '163 Patent expressly states that a "web page"  
8 is an example of structured electronic document, this reinforces my opinion that LaunchTile's  
9 interactive zoomspace is a structured electronic document.

10          80.     Attached to this Declaration as Exhibit 15 is a true and correct copy of relevant  
11 excerpts from the Expert Rebuttal Report of Apple's Expert Karan Singh. I would note that the  
12 Singh Rebuttal Report does not appear to dispute my opinion that the zoomspace constitutes a  
13 "structured electronic document." Ex. 15: Rebuttal Report of Apple Expert Karan Singh at ¶ 33  
14 n.1 ("I express no opinion as to whether the portions of the World View, Zone View, and  
15 Application View displayed by LaunchTile . . . individually constitute 'structured electronic  
16 documents' within the meaning of the '163 Patent.").

17          81.     Attached to this Declaration as Exhibits 10, 11, and 12 are true and correct copies  
18 of relevant excerpts from the deposition testimony of '163 Patent inventors Scott Forstall, Richard  
19 Williamson, and Greg Christie, respectively. [REDACTED]

20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]

23 [REDACTED]  
24 [REDACTED]

25 [REDACTED]  
26 [REDACTED]  
27 [REDACTED]  
28 [REDACTED]

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[REDACTED]

82. For these reasons, it is my opinion that the LaunchTile System discloses this element of Claim 50.

**3. Claim 50, Element [c]**

83. Element [c] to Claim 50 recites:

"instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document; instructions for determining a first box in the plurality of boxes at the location of the first gesture; instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display."

84. LaunchTile contains instructions for detecting a first gesture at a location on the displayed portion of the zoomspace (*i.e.*, structured electronic document) and instructions for determining a first box in the plurality of boxes (*i.e.*, a 2x2 Zone). Bederson Decl. at ¶ 16. This is consistent with my opinion based on my use of LaunchTile running on an ipaq device and an analysis of the similar XNav source code.

85. It is further my opinion that LaunchTile's instructions for displaying an animated transition from World view to Zone view are "instructions for enlarging and translating the structured electronic document [*i.e.* the zoomspace] so that the first box [*i.e.* 2x2 Zone] is substantially centered on the touch screen display."<sup>1</sup> In other words, it would not be correct to describe the Zone view as a different "structured electronic document." The Zone view is merely an "enlarged" and "translated" view of the same zoomspace that existed at the World view. Although the four embedded tiles that remain in view render additional content from the

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<sup>1</sup> I have also opined that the term "substantially centered" is indefinite because it fails to reasonably apprise persons of skill in the art as to what is being claimed. For purposes of this Declaration, however, I assume that LaunchTile's enlarging and translating of the zoomspace such that a Zone or Application tile fills the touch-screen display is at least an example of "substantially centering" a "box of content."

1 Application-level of the hierarchical data structure, the two-dimensional information space  
2 presented to the user is still derived from the same underlying collection of content and structure.

3 86. At the display level, Video Exhibits 4 and 5 in support of this Declaration make  
4 clear that LaunchTile's animated transitions are designed to give the user the impression that the  
5 zoomspace itself is "enlarged" and "translated." Additionally, with respect to the transition from  
6 Zone view to Application view, the LaunchTile Publication describes the process as "[a]n  
7 animated zoom [that] draws the zoomspace toward the user until the target application fills the  
8 entire display." Bederson Decl. Ex. A at 205. It is significant that the LaunchTile user interface  
9 includes consistent visual metaphors such as a large, blue on-screen button in the middle of each  
10 Zone and dividing "rails" between each Application tile. These visual metaphors, which exist in  
11 World view and in an enlarged form in Zone view, reinforce to the user that a single, unified  
12 information space is at all times being viewed and displayed.

13 87. Additionally, at the code level, LaunchTile's overall hierarchical design structure  
14 clearly indicates that during each zooming transition, "it is still fundamentally the same  
15 hierarchical object oriented data structure that is visually displayed to the user. The four tiles that  
16 happen to be displayed in Zone view are the same embedded Application tiles (albeit rendered in  
17 further detail) that were present at World view." Bederson Decl. at ¶ 17. This is precisely what I  
18 would expect from a program employing a top-down hierarchical data structure. Indeed, the  
19 whole purpose of employing such a structure is to leverage the inherent logical connections  
20 between the lower-level elements and the top-most element in the hierarchy. When a hierarchical  
21 data structure (like LaunchTile) consists of many lower-level elements, each containing a large  
22 amount of data, it is sometimes the case that the available screen space may limit the amount of  
23 content that can be rendered from the lower-level elements.<sup>2</sup> But this does not change the fact that

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24  
25 <sup>2</sup> By contrast HTML documents (which are also transformed into a hierarchical structure) are  
26 specifically designed such that the amount of content associated with any one element does not  
27 overwhelm the structure within which it is placed. In other words, HTML documents are coded so  
28 that the entire "document" can be rendered at once. However, there is no requirement in Claim 50  
that the entire "document" be rendered upon the initial displaying step.

1 all the content exists as one cohesive data structure, represented to the user as a "structured  
2 electronic document."

3 88. The Singh Rebuttal Report's primary criticism of my position is that "moving to a  
4 different layer in LaunchTile . . . does not merely enlarge or translate a structured electronic  
5 document, but instead displays different and additional content." Ex. 15: Singh Rebuttal Report at  
6 ¶ 31. However, as described above, LaunchTile's rendering of additional content during the step  
7 from World view to Zone view does *not* mean that the original, embedded tiles have been  
8 replaced. In fact, during deposition questioning, even Dr. Singh appears to have recognized that  
9 there is no requirement that an "electronic document" (a term encompassing a "structured  
10 electronic document," Ex. 6: Singh Dep. Trans. Vol. I at 73:14-15) be all at once visually  
11 manifested to the user:

12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]

26 Ex. 6: Singh Dep. Trans. Vol. I at 178:22-179:22 (emphasis added). [REDACTED]  
27 [REDACTED]  
28 [REDACTED]

1 [REDACTED] This is exactly how Dr. Bederson describes the zoomspace and its  
2 embedded elements in LaunchTile. Bederson Decl. at ¶ 14 ("[W]hile the zoomspace did consist of  
3 a collection of embedded tiles that were distinct areas of interest . . . those embedded tiles were  
4 always part of one unified zoomspace that was dependent on a single object-oriented data  
5 structure for its content during the rendering process.").

6 89. Finally, even if the tiles (embedded structured electronic documents) were entirely  
7 replaced during the enlarging and translating step, this would not change my opinion that the  
8 zoomspace, within which the tiles exist at any particular level of zoom, is the same structured  
9 electronic document throughout the navigation process. In a somewhat analogous situation, I am  
10 aware that web pages (structured electronic documents encoded in HTML) sometimes contain  
11 embedded objects displaying live content in the form of advertising material, stock quotes, or  
12 "breaking news" headlines. When a user manually refreshes the web page or, in some cases, after  
13 some pre-set amount of time, the embedded object will be updated or even replaced with entirely  
14 new different content. However, no person of ordinary skill in the art would believe that they  
15 were viewing a different webpage (*i.e.*, "structured electronic document") merely because the  
16 content in one embedded element had changed.

17 90. For these reasons, it is my opinion that the LaunchTile System discloses this  
18 element of Claim 50.

19 **4. Claim 50, Element [d]**

20 91. Element [d] to Claim 50 recites:

21 "instruction[s] for, while the first box is enlarged, detecting a  
22 second gesture on a second box other than the first box; and instructions  
23 for, in response to detecting the second gesture, translating the structured  
24 electronic document so that the second box is substantially centered on the  
25 touch screen display."

26 92. LaunchTile contains instructions for detecting a second gesture at a location on a  
27 second box (*i.e.* Application tile). Bederson Decl. at ¶ 19. This is consistent with my opinion  
28 based on my use of the LaunchTile running on an ipaq device and an analysis of the similar XNav  
source code.

1           93.     It is my opinion that in Zone view, each of the four Application tiles constitute  
2 second "boxes" of content "other than the first box" notwithstanding the fact that the second  
3 "boxes" happen to be within the boundaries of the first box.

4           94.     It is further my opinion that a gesture on one of the four Application tiles within the  
5 Zone view (as depicted in Video Exhibit 4) "enlarges" and "translates" the zoomspace such that  
6 the "second box" (*i.e.* Application tile) is at least "substantially centered" on the touch-screen  
7 display. For the same reasons described in Section V.D.3, it is my opinion that this operation  
8 meets the requirements of the claim limitation notwithstanding the fact that LaunchTile renders  
9 additional content. Additionally, it is my opinion that this operation meets the requirements of the  
10 claim limitation notwithstanding the fact that the process involves an "enlarging" step in addition  
11 to the required "translating" step.

12           95.     Alternatively, if the claim language is construed to preclude the "second box" from  
13 existing within the boundaries of the "first box," I believe the many other commonly used  
14 operations in LaunchTile anticipate Claim 50. For instance, the LaunchTile Publication describes  
15 how from Zone view, "the user can use his or her thumb directly to drag the zoom space" (*i.e.*  
16 translate the "structured electronic document") in order to bring another Zone into view. Bederson  
17 Decl. Ex. A at 205. Therefore, as shown in Video Exhibit 5 attached to this Declaration, after a  
18 gesture at the location of a first box (*i.e.* first Zone), the user is able to drag a second Zone with  
19 four additional "second boxes" of content into view. A gesture at any one of these second boxes  
20 would then cause the translation of the zoomspace to bring the Application tile fully into view, as  
21 described by the '163 Patent. It is my opinion that this operation meets the requirements of the  
22 claim limitation notwithstanding the fact that the user performs an "interim gesture" between the  
23 "first" and "second" gestures explicitly called for by the claim.

24           96.     For these reasons, it is my opinion that the LaunchTile System discloses this  
25 element of Claim 50.

26           97.     Because the LaunchTile System and the LaunchTile Publication disclose each and  
27 every limitation of Claim 50, it is my opinion that Claim 50 is anticipated by these prior art  
28 reference.

1 **VI. OTHER COMMENTS**

2 98. The opinions expressed in this Declaration are my opinions based on my review to  
3 date of the evidence in the record. I reserve the right to amend or update my opinions as  
4 appropriate in response to future developments regarding claim construction.

5 99. At a hearing or trial, I reserve the right to use as exhibits various documents  
6 produced in this case that refer or relate to the matters discussed in this Declaration or to either of  
7 my Expert Reports. I have not yet selected particular exhibits that might be used. I also reserve  
8 the right to create or assist in the creation of certain demonstrative evidence that will assist me in  
9 testifying.

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I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on the 17 of May, 2012, in SAN FRANCISCO.

  
Stephen Gray