EXHIBIT 1

HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY
SUBJECT TO PROTECTIVE ORDER

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

APPLE INC.,

V.

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC. AND SAMSUNG TELECOMMUNICATIONS AMERICA, LLC

Case No. 11-CV-01846-LHK

EXPERT REPORT OF JEFFREY JOHNSON, PH.D. REGARDING NON-INFRINGEMENT OF U.S. PATENT NO. 7,469,381

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I. INTRODUCTION

1. I have been retained by counsel for Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. and Samsung Telecommunications America, LLC (collectively, "Samsung") as an expert in this case.

2. As part of that engagement I have been asked to provide analysis and expert opinions on the following topics: (a) the rebuttal of Expert Report of Ravin Balakrishnan, Ph.D. Regarding Infringement of U.S. Patent No. 7,469,381 ("Balakrishnan Report"), asserting infringement of claims 1-11, 13-20 (the "Asserted Claims") of U.S. Patent No. 7,469,381 (the "'381 patent") .

3. I expect to be called to provide expert testimony regarding opinions formed resulting from my analysis of the issues considered in this report if asked about those issues by the Court. If asked to do so, I may also provide testimony describing the technologies relating to tablet and touch screen computing devices, graphical user interface design, user interface software, computer programming, as well as the field of human interface interaction generally. I may also discuss the understanding of one of ordinary skill in the art in these technologies. I may rely on handbooks, textbooks, technical literature, and the like to demonstrate the knowledge of one skilled in the art in the relevant period.

4. In reaching the conclusions described herein, I have considered the documents and materials identified in Exhibit 2 that is attached to this report. My opinions are also based upon my education, training, research, knowledge, and personal and professional experience.

5. I reserve the right to modify or supplement my opinions, as well as the basis for my opinions, in light of any documents, testimony, or other evidence that may emerge during the course of this matter, including depositions that have yet to be taken.

6. In preparing this report, I have responded to Balakrishnan Report served on

March 22, 2012. I reserve the right to supplement my report if Apple supplements or changes its positions on infringement of the ’381 patent.

II. BASIS FOR OPINIONS

A. Qualifications

7. A detailed record of my professional qualifications, including a list of publications, awards, and professional activities, is attached as Exhibit 1 to this report and summarized below.

8. I attach as Exhibit 1 my *curriculum vitae*¸ which includes a more detailed list of my qualifications and also includes a list of matters in which I have provided expert testimony, either at deposition or at trial in the last 5 years.

9. I am currently the President and Principal Consultant at UI Wizards, Inc., where I manage the company, perform product usability design, evaluation, testing and training for clients.

10. I have more than 32 years of experience in the computer industry designing, implementing, evaluating, and testing user interfaces, including touch-screen based user interfaces. Previously, I held positions at Cromemco, Xerox, US West, Hewlett-Packard and Sun Microsystems. I have authored numerous publications on user interface technology, including four books in this field.

11. I earned a B.A. in psychology from Yale University and a Ph.D. in psychology with additional studies in computer science from Stanford University.

12. I have also published multiple papers relating to touchscreens. In 1995, I published a paper entitled “A Comparison of User Interfaces for Panning on a Touch-Controlled Display” in the proceedings of the Computer-Human Interaction (CHI) conference in 1995. I also made a presentation on the same subject at the CHI conference in 1995. The study

involved, among other things, an investigation into the accuracy of panning. In April 1994, I published another paper on touchpad technology entitled "The Effect of Touch-Pad Size on Pointing Accuracy" as a FirstPerson Technical Report FP-1994-2. This study investigated the accuracy of certain touchpads. In August 1995, I published a paper entitled "A Comparison of Remote Pointing Devices for Interactive TV Applications" as another FirstPerson Technical Report FP-1994-5. This study also investigated the accuracy of certain touchpads.

13. I have been asked by counsel for Samsung Electronics Co., Ltd.; Samsung Electronics America, Inc.; and Samsung Telecommunications America, LLC (collectively "Samsung") to provide an opinion on Apple's allegations of infringement of U.S. Patent No. 7,469,381 ("'381 Patent").

14. I am being compensated at my customary rate for my work on this case. I have received no other compensation for my work in this litigation. My compensation is in no way contingent upon the opinions I arrive at or the result of the litigation.

15. I provide the details of my analysis, and the conclusions that form the basis for any testimony that I may give, below. Any testimony I give may include appropriate visual aids, some or all of the data or other documents and information cited herein or identified in Exhibit 2, and additional data or other information identified in discovery, to support or summarize my opinions. For example, I may include information cited by the experts of Apple or Samsung, as well as witness testimony.

B. Materials Considered

16. As part of my preparation for writing this report, I reviewed the materials listed in Exhibit 2. These materials include, but are not limited to the following: the Expert Report of Ravin Balakrishnan, Ph.D. Regarding Infringement of U.S. Patent No. 7,469,381 ("Balakrishnan Report"), including exhibits and attachments; the '381 patent; U.S. patent application

2009/0073194; Court's claim construction order; Court's order on Apple's preliminary injunction motion; and the accused Samsung devices.

C. Level of Ordinary Skill in the Art

17. A person of ordinary skill in the art relevant to the '381 patent at the time of the invention had at least a bachelor's degree in computer science or electrical engineering, and approximately 3-5 years of software design and implementation experience, including experience with graphical user interface design and with touch-sensing technologies, or would have equivalent educational and work experience. My opinions in this report use this definition.

18. I meet these criteria and consider myself a person with at least ordinary skill in the art pertaining to the '381 patent. I would have been at least such a person at the claimed time of invention of the '381 patent.

III. TECHNOLOGY BACKGROUND

19. Broadly speaking, the '381 patent relates to a computer-implemented GUI method and device for scrolling or translating an electronic document displayed on a touch screen display device. (*See, e.g.,* '381 patent at Abstract.) The '381 patent describes a "snap back" feature for an "over-scroll" correction where, if the user scrolls or translates an electronic document beyond an edge of that document, an area beyond that edge will be displayed. When the user lifts her finger from the touch screen, the over-scroll is corrected by the document snapping back so that the edge of the document is aligned with the edge of the screen, such that no area beyond the edge of the document is displayed. ('381 patent at Figs. 5, 6A-6D, and accompanying text at 23:60-26:63.) The '381 patent recites "electronic documents" including a list of items, e.g., a list of emails displayed in an inbox ('381 patent at claim 9, Figs. 6A-6D), word processing, spreadsheet, email or presentation documents ('381 patent at claim 8), web

pages ('381 patent at claim 6, Figs. 8A-8D), and digital images ('381 patent at claim 7, Figs. 13A-13C).

20. Scrolling and translating various electronic documents was a mundane problem in the computer science field. As the '381 patent acknowledges, the decreasing size of portable electronic devices and the increasing numbers of functions were being addressed with user interface changes. ('381 patent at col. 1:52-2:36.) Indeed, from nearly the onset of using computers to display and edit electronic documents, programmers have been developing user interface solutions to aid the user's ability to navigate through an electronic document. Scrolling or translating an electronic document was a common functionality in user interfaces at that time. On some devices, the user could use his finger to scroll the content displayed within a window – in these situations the content would scroll in the same direction as the finger movement. On other devices, the user could use her finger to scroll the display window, for example, by dragging a scrollbar in the window's chrome – in these situations the content would scroll in the opposite direction as the finger movement. Both types of scrolling were common and well known to one of ordinary skill in the art.

IV. LEGAL UNDERSTANDINGS

21. In this section I describe my understanding of certain legal standards. I have been informed of these legal standards by Samsung's attorneys. I am not an attorney and I am relying only on instructions from Samsung's attorneys for these legal standards.

A. Legal Standard for Claim Interpretation

22. I understand that the same term used multiple times within a claim should be interpreted the same way each time it is used.

B. Legal Standard for Literal Infringement

23. I understand that to prove literal infringement, the patent holder must prove that it

is more probable than not that the alleged infringer's method includes every step in the patent holder's patent claim. If the alleged infringer's method omits any step recited in the patent holder's patent claim, the alleged infringer does not infringe that claim.

24. I understand that for literal infringement, the patent holder is not required to prove that the alleged infringer intended to infringe or knew of the patent.

C. Legal Standards for Indirect Infringement

25. I understand that contributory infringement occurs when a party with knowledge of the patent supplies a part, or a component, to another for use in a product, machine, or process that infringes a patent claim. The patent holder must prove that it is more probable than not that contributory infringement occurred. Contributory infringement arises only if one who received the component infringes a patent claim. The component must also have three characteristics.

1. the component must be a significant part of the invention;

2. the component must be especially made or adapted for use in a way that infringes at least one claim of the patent, and the supplier must know that the component was especially made for that use; and

3. the component must not have a significant non-infringing use.

26. I understand that a component that has a number of non-infringing uses is often referred to as a staple or commodity article. Providing such a staple or commodity article is not contributory infringement even if the person receiving or buying the article uses it in an infringing way.

27. I understand that a party induces patent infringement if it purposefully causes, urges, or encourages another to infringe the claims of a patent. Inducing infringement cannot occur unintentionally. This is different from direct infringement, which can occur unintentionally. To prove that the alleged infringer induced patent infringement, the patent

holder must prove that it is more probable than not that:

1. the alleged infringer actively encouraged or instructed another person on how to use a product or perform a process in a way that infringes at least one patent claim;

2. the alleged infringer knew of the patent at that time;

3. the alleged infringer knew, or should have known, that the encouragement or instructions would result in infringement of at least one patent claim; and

4. the other person infringed at least that one patent claim.

28. I understand that the patent holder must prove that the alleged infringer had a specific intent to induce the infringement. The patent holder must prove that the alleged infringer knowingly induced infringement, not merely that the alleged infringer knowingly induced the acts that constitute infringement.

D. Legal Standard for Infringement under Doctrine of Equivalents

29. I understand that there are two ways of evaluating whether a requirement is present under the doctrine of equivalents. One test for equivalency is the "function-way-result" test, whereby the patentee may show an equivalent when the accused product or process performs substantially the same function, in substantially the same way, to achieve substantially the same result, as disclosed in the claim. Equivalency may also be proven where the differences between the invention as claimed and the accused product or process are insubstantial.

V. THE '381 PATENT

A. The '381 Patent Generally

30. I have reviewed the Expert Report of Andries van Dam, Ph.D. Regarding Invalidity of U.S. Patent No. 7,469,381 and where I agree with his descriptions of the ’381 Patent, file history, re-examination and technology, have adopted similar language.

31. The '381 patent generally relates to correcting the display of an document when a

user has translated or scrolled past the edge of the document, i.e. "overscroll correction." (*See, e.g.*, '381 patent at col. 26:63-67 ("The method . . . provides a simple visual indicator to a user that one or more edges of an electronic document are being displayed.").) Independent claims 1, 19 and 20 of the '381 patent disclose translating an electronic document displayed on a touch screen display in response to detecting movement of an object on or near the touch screen. The '381 Patent claims a snap-back functionality where, if the user translates an electronic document beyond the edge of that document, an area beyond that edge will be displayed. When the user lifts her finger from the touch screen, the document will snap back so that the edge of the document is aligned with the edge of the screen, such that no area beyond the edge of the document remains in view. As an analysis of the prior art below will demonstrate, as of the date of invention, this was not a new problem and solutions to this problem existed in the art. The '381 patent specification discloses a particular functionality for solving this problem based on the display of an area beyond the edge of the electronic document to indicate that the user has translated past the edge of the document and then reversing the direction of translation to "snap" the document back to its edge. (*See, e.g.*, '381 patent at claim 1, 19 and 20.)

32. Figure 5 of the '381 patent, reproduced below, describes an abstract, high-level flow chart of the purported invention of the '381 patent ('381 patent at Fig. 5 and accompanying text at col. 23:60-24:44.)

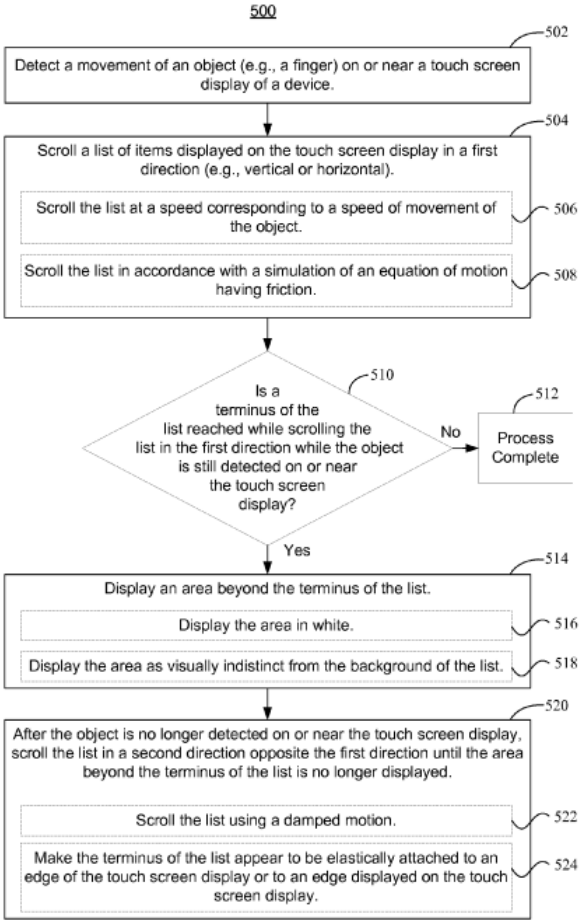

Figure 5

33. Figures 6A through 6D, reproduced below, are pictorial representations of the results of scrolling or translating an electronic document that is a list of items, e.g. a contacts list, to the terminus of the list. ('381 patent at col. 25:18-19.) Once the terminus of the list has been reached, an area beyond the terminus is displayed and the list is then scrolled in an opposite direction until the area beyond the terminus of the list is no longer displayed. ('381 patent at col. 25:19-22.)

34. Figures 6A and 6 B from the '381 patent are reproduced below:

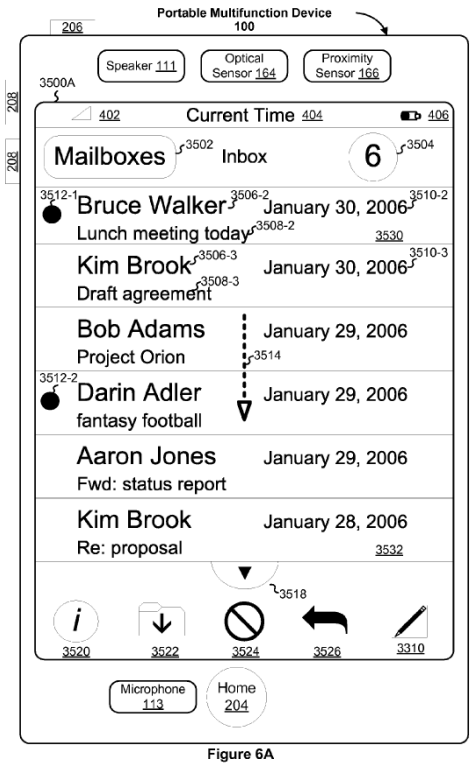

Figure 6A

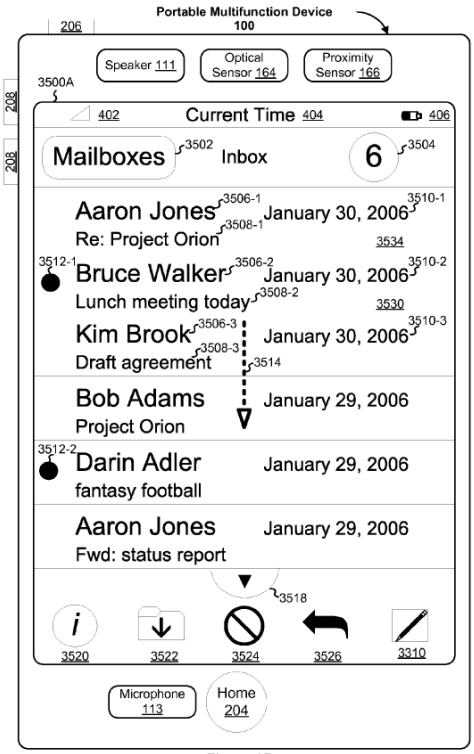

Figure 6B

('381 patent at Figs. 6A to 6B.)

35. The specification provides the following disclosure for Figures 5, 6A and 6B:

> In the example of FIG. 6A, a portion of a list of emails is displayed in the screen area, including a top displayed email 3530 from Bruce Walker and a bottom displayed email 3532 from Kim Brook. A user performs a vertically downward swipe gesture 3514 to scroll toward the top of the list. The vertically downward gesture 3514, which may be a finger gesture, corresponds to the movement of an object on or near the touch screen that is detected in operation 502 of process 500 (FIG. 5).
>
> ***
>
> As a result of detecting the vertically downward gesture 3514, in FIG. 6B the displayed emails have shifted down, such that the previous bottom displayed email 3532 from Kim Brook is no longer displayed, the previous top displayed email 3530 from Bruce Walker is now second from the top, and the email 3534 from Aaron Jones, which was not displayed in FIG. 6A, is now

> displayed at the top of the list. This shifting of emails is an example of the scrolling described in operation 504 of process 500 (FIG. 5).
>
> In this example, the email 3534 from Aaron Jones is the first email in the list and thus is the terminus of the list.

('381 patent at col. 26:2-10, 26:16-26 (text accompanying Figs. 5, 6A and 6B).)

36. The result of continued scrolling of the list past the terminus of the list to display an area beyond the terminus is shown in Figure 6C. Figure 6D shows the result of the translation in a second and opposite direction until the area beyond the terminus of the list is no longer displayed.

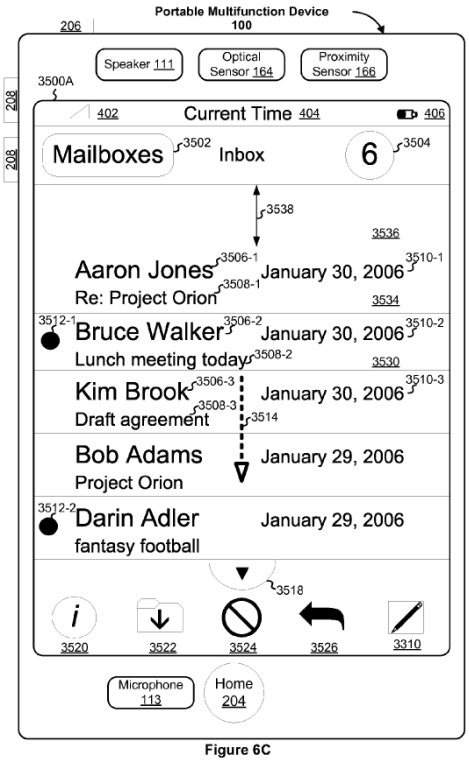

Figure 6C

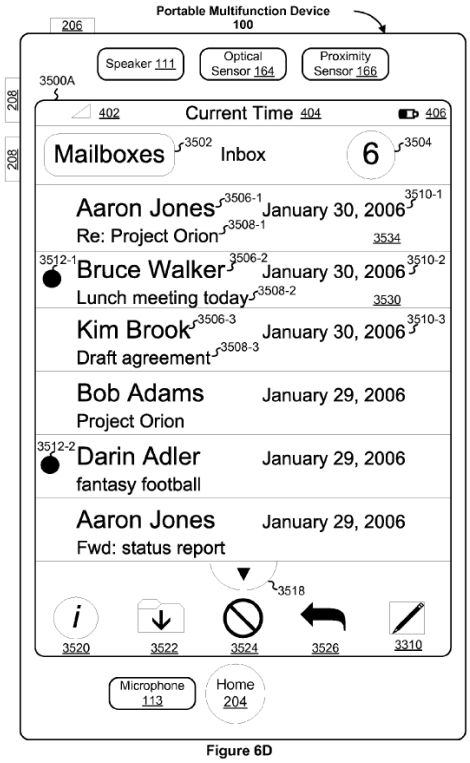

Figure 6D

('381 patent at Figs. 6C to 6D.)

37. The specification provides the following disclosure for Figures 5, 6C and 6D:

> Upon reaching this email 3534, in response to continued detection of the vertically downward gesture 3514, an area 3536 (FIG. 6C) above the first email 3534 (i.e., beyond the terminus of the list) is

> displayed, as described in operation 514 of process 500 (FIG. 5). In some embodiments, the area displayed beyond the terminus of the list is visually indistinct from the background of the list, as described in operation 518 of process 500 (FIG. 5). In FIG. 6C, both the area 3536 and the background of the emails (e.g., emails 3534 and 3530) are white and thus are visually indistinct.
>
> Once vertically downward gesture 3514 is complete, such that a corresponding object is no longer detected on or near the touch screen display, the list is scrolled in an opposite direction until the area 3536 is no longer displayed. FIG. 6D illustrates the result of this scrolling in the opposite direction, which corresponds to operation 520 of process 500 (FIG. 5): the email 3534 from Aaron Jones is now displayed at the top of the screen area allotted to the list and the area 3536 is not displayed.

('381 patent at col. 26:26-45 (text accompanying Figs. 5, 6C and 6D).)

38. I also note that Figs. 7 and 8A-8D, along with associated text in the ’381 Patent (26:63-30:10) describe another embodiment relating to an “electronic document.”

39. I understand that Apple has accused Samsung of infringing claims 1-11, 13-20 of the '381 patent. A representative claim, claim 1, is reproduced below:

> 1. A computer-implemented method, comprising:
>
> at a device with a touch screen display:
>
> displaying a first portion of an electronic document; detecting a movement of an object on or near the touch screen display;
>
> in response to detecting the movement, translating the electronic document displayed on the touch screen display in a first direction to display a second portion of the electronic document, wherein the second portion is different from the first portion;
>
> in response to an edge of the electronic document being reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display: displaying an area beyond an edge of the electronic document, and displaying a third portion of the electronic document, wherein the third portion is smaller than the first portion; and
>
> in response to detecting that the object is no longer on or near the touch screen display, translating the electronic document in a second direction until the area beyond the edge of the electronic document is no longer displayed to display a fourth portion of the electronic document, wherein the fourth portion is different from the

first portion.

B. File History

40. I understand that the '381 patent was filed on December 14, 2007. It was originally filed with twenty claims.

41. I understand that the '381 patent was prosecuted through accelerated examination. As part of the accelerated examination proceeding, the applicant was required to submit support documents that identified § 112 support for each claim. The applicant was also required to identify representative prior art references and chart those references against the claims. Applicant identified both list-based and document-based portions of the specification as support for descriptions of the claimed "electronic document," including as support for dependent claim 9. ('381 File History, Accelerated Examination Support Document (Dec. 14, 2007) (identifying Figures 6A-6D as support for electronic document as defined in claim 9).

42. Applicant identified four references as "most closely related" to the pending claims: (1) Zimmerman et al., US Pat. No. 6.690,387, (2) Kwatinez et al, U.S. Pat. No. 5,495,566, (3) Pallakoff, U.S. Pat. App. Pub. 2005/0012723, and (4) Miller, "PersonalJava Application Environment," http://java.sun.com/products/personaljava/touchable (June 8, 1999). ('381 File History, Supplemental Accelerated Examination Support Document (April 30, 2008).)

43. Applicant contended that only Miller disclosed displaying an area beyond the edge of the document in response to an edge of the electronic document being reached during translation. ('381 File History, Supplemental Accelerated Examination Support Document (April 30, 208).) Applicant also represented that none of these references disclosed translating a document in a second direction in response to no longer detecting the object on the screen (finger, stylus, etc.). ('381 File History, Supplemental Accelerated Examination Support Document (April 30, 2008).)

44. The examiner conducted a June 2, 2008 telephone interview with the applicant and discussed a proposed rejection over Zimmerman et al. (US Pat. No. 6,690,387), Microsoft Word screenshots (unidentified), and Collins et al (US Pat. App. No. 2008/0104544). The substance of the interview is not summarized in writing, but following the call, the applicant amended the independent claims to include the limitation: "in response to detecting that the object is no longer on or near the touch screen display, translating the document in a second direction until the area beyond the edge of the document is no longer displayed." ('381 File History, Examiner-Initiated Interview Summary (June 9, 2008).)

45. The examiner conducted another telephone interview June 30, 2008 to discuss a potential rejection over Photo Mesa (unidentified) and Jaeger ('381 File History, Examiner-Initiated Interview Summary (October 20, 2008)). This interview was also not summarized in writing.

46. Following these interviews, the examiner amended the claims through an Examiner's Amendment, and allowed the claims as amended. ('381 File History, Examiner's Amendment (October 29, 2008).) The examiner's changes to the claims are shown below in redline:

A computer-implemented method, comprising:

at a device with a touch screen ~~display,~~ display;

displaying a first portion of an electronic document;

detecting a movement of an object on or near the touch screen display;

in response to detecting the movement, translating ~~an~~ the electronic document displayed on the touch screen display in a first direction to display a second portion of the electronic document, wherein the second portion is different from the first portion;

in response to an edge of the electronic document being reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen ~~display,~~ display:

displaying an area beyond the edge of the document, and

displaying a third portion of the electronic document, wherein the third portion is smaller than the first portion; and

~~after~~ in response to detecting that the object is no longer detested on or near the touch screen display, translating the electronic document in a second direction until the area beyond the edge of the electronic document is no longer displayed to display a fourth portion of the electronic document, wherein the fourth portion is different from the first portion.

1. Reexamination History

47. On April 28, 2010, Brient Intellectual Property Law, LLC filed an *ex parte* reexamination request based on three new references: (1) Forlines et al., Glimpse: A Novel Input Model for Multi-Level Devices (MERL April 2005), (2) Millhollon et al., Microsoft Office Word 2003 Inside Out (Microsoft Press 2003), and (3) Robbins et al., U.S. Pat. App. No. 2005/0195154 A1. ('381 Reexamination History, Request for Reexamination (April 28, 2010).)

48. On July 14, 2010, the USPTO granted the request for reexamination, stating that the newly identified references raised a substantial new question of patentability with respect to all claims of the '381 patent. Specifically, the examiner stated that the three new references (Glimpse, Inside Out, and Robbins), in combination with Zimmerman et al. (US Pat. No. 6,690,387 – cited by the examiner during the original '381 patent prosecution), taught the limitations highlighted in the original examiner's notice of allowance for the '381 patent. ('381 Reexamination History, Order Granting Request for *Ex Parte* Reexamination (July 14, 2010.)

49. On January 13, 2011, the examiner issued a Notice of Intent to Issue *Ex Parte*

Reexamination Certificate. The examiner's statement of reasons for patentability stated that the new references did not teach a subset of the limitations that had been identified as missing from the prior art at the time of the original Notice of Allowance:

> The prior art does not teach or fairly address the invention as recited in independent claims 1, 19, and 20 of U.S. Patent No. 7,469,381 B2. Specifically, the prior art references of Glimpse, Inside Out, Robbins, and Zimmerman fail to disclose "in response to detecting that the object is no longer on or near the touch screen display, translating the electronic document in a second direction until the area beyond the edge of the electronic document is no longer displayed to display a fourth portion of the electronic document, wherein the fourth portion is different from the first portion" as recited in claims 1, 19, and 20.

('381 Reexamination History, Notice of Intent to Issue *Ex Parte* Reexamination Certificate (Jan. 13, 2010).)

VI. CLAIM CONSTRUCTION

50. In conducting my analysis of the '381 patent claims, I have applied the legal understandings set out in this report.

51. I understand that the Court has issued a claim construction order in this case. In this report, I have performed my analysis according to this claim construction order. I further understand that the Court has interpreted the claims of the ’381 Patent in its order on Apple’s motion for preliminary injunction.

52. The Court found that an electronic document may contain other electronic documents (*i.e.*, be hierarchical). Because of this, there can be no distinction between the edge of the outermost electronic document and edges of any contained electronic document, which prior to this ruling were characterized by Apple as “internal edges” not subject to the ‘381 behavior. The Court’s ruling makes it clear that outermost and internal edges are all to be construed as edges of documents and need to be analyzed for ‘381 Style Snap-back behavior as

discussed below as part of the infringement analysis.

53. I understand that the Court has interpreted Claim 1 of the '381 patent to require that an electronic document always translates in a second direction ("snap back") after reaching the edge of the electronic document. I have performed my analysis under my understanding of the Court's interpretation of the '381 Patent claims, which is described in more detail below.

54. In the Court's Order Denying Motion for Preliminary Injunction, dated December 2, 2011 ("Court's PI Order"), the Court states: "In contrast, the '381 patent contains no second behavior when a user scrolls past a certain threshold; the screen will **always** snap back." (emphasis added) Court's PI Order at 59:6-7. According to this construction, whenever a user scrolls past the edge of an electronic document, the document will always snap back. In this scenario, there is effectively no additional "certain threshold."[1] Once the user has translated the document past the edge, there is no choice other than to snap back.

55. The Court also stated: "As written claim 1 of the '381 patent is fatalistic: if a user scrolls past the edge of an electronic document in the first direction, the screen **must** snap back to that document when the user lifts her finger." (emphasis added). Court's PI Order at 60:17-

[1] In the case of general snapping behavior, there is a snap threshold. If the distance scrolled beyond the edge is less than the snap threshold, snap back occurs upon release. Otherwise, snap forward occurs. In '381 Style Snap-back behavior, the snap threshold test is replaced by a edge crossing test: once past the edge, the area beyond the edge appears and when the user lifts the object/finger, the snap back behavior automatically occurs. '381 Style Snap-back thus should be viewed as a special case of the more general snapback behavior where the snap threshold is set to the edge of the document and there is no auto-correction for under-scrolling (i.e. no snap forward), only an auto-correction for over-scrolling (*i.e.*, the '381 Style Snap-back behavior). Different implementations of '381 Style Snap-back may differ on how far beyond the edge the user may scroll before no further movement of the screen content for additional area beyond the edge appears. Similarly the snap threshold may be set differently in different implementations of the general snapping behavior.

19. As with the other statement, the Court is expressing the idea that as described in the '381 Patent, if a user has scrolled past the edge of an electronic document, there is no option other than to snap back.

56. In light of these statements, it is helpful to define a term "'381 Style Snap-back" to refer to snap-back behavior that J. Koh characterized as "always" occurring or "fatalistic." '381 Style Snap-back is distinguished from snap-back more generally, which is a component of the more general "auto-correct" functionality where both a snap-back and a snap-forward are present based on the snap threshold. '381 Style Snap-back is a subset of the more general snap-back functionality.

57. It is furthermore helpful to define a "potentially scrollable edge" of an electronic document as an edge that can be reached by scrolling. The term includes both over-scrollable edges, *i.e.* so that an area beyond the edge is displayed, and non-over-scrollable edges. In general, most electronic documents under most applications, there will be edges that cannot be scrolled to or from, let alone over-scrolled (*e.g.*, the vertical edges of a contact list; the horizontal edges of a list of photos displayed in a horizontal film strip when photographs are not zoomed in).

58. It is also helpful to categorize scrolling into various types. First, there is constrained horizontal or vertical scrolling; one could describe this type of scrolling as scrolling "on rails." Vertical scrolling of a list of mail headers or a contact list is an example of such constrained scrolling. Second, there is unconstrained two-dimensional scrolling or panning, i.e., without directional constraints. Third, scrolling could be constrained to an arbitrary diagonal vector.

59. I understand that the Court held in the PI Order that a device that sometimes met the limitations of a patent claim would not infringe the patent claim if the patent claim was

interpreted to require the claimed behavior to always occur.

60. I recognize that in almost all applications electronic documents will have certain edges beyond which one cannot scroll simply because it doesn't make sense to do so – these are not potentially scrollable edges by my terminology defined above. I understand that the Court's holding should be interpreted to mean that the claims of the '381 Patent require '381 Style Snap-back only on all potentially scrollable edges of electronic documents within an application (*i.e.*, edges that permit over-scrolling). Under this interpretation, the claims of the '381 Patent are not applicable to the vertical edges of the vertical contact list that do not permit horizontal scrolling, and there is no need to analyze those edges for (non-)infringement purposes.

61. In consequence, identification of a potentially scrollable edge that exhibits general snap-back behavior, as opposed to the limited '381 Style Snap-back, shows that the application does not meet the strict requirement of always exhibiting '381 Style Snap-back behavior. Such an application would not infringe the claims of the '381 Patent under the Court's interpretation.

VII. APPLE'S ALLEGATIONS OF INFRINGEMENT OF THE '381 PATENT

62. In his expert report, Dr. Ravin Balakrishnan has alleged infringement of the '381 Patent by four applications on various Samsung devices. I have summarized the allegations in a table below:

	Product	Gallery	Contacts	Browser	ThinkFree Office
1	Captivate	X	X		
2	Continuum	X	X		X
3	Droid Charge	X	X		X
4	Epic 4G	X	X		X
5	Exhibit 4G	X	X	X	X
6	Fascinate	X	X		X
7	Galaxy Ace	X	X	X	X
8	Galaxy Prevail	X			X

9	Galaxy S (i9000)	X	X		X
10	Galaxy S II (i9000, AT&T, and Epic 4G Touch variants)	X	X	X	
11	Galaxy S 4G	X	X		X
12	Galaxy S Showcase (i500)	X	X		X
13	Galaxy Tab 7.0	X		X	X
14	Galaxy Tab 10.1	X		X	
15	Gravity Smart	X	X	X	
16	Gem		X		
17	Indulge	X	X		X
18	Infuse 4G	X	X		
19	Intercept				X
20	Mesmerize	X	X		X
21	Nexus S	X			
22	Nexus S 4G	X			
23	Replenish	X			X
24	Sidekick	X	X		X
25	Vibrant	X	X		

63. I have analyzed the accused applications on the accused devices as indicated in the table above. I have observed that the behavior of the accused applications vary across the accused devices, and have categorized my observations of non-infringing versions as follows:

Gallery

At least 4 Non-infringing Features in Gallery

	Products	**Android Version**	**Features**			
			1	**2**	**3**	**4**
1	Captivate	2.2	X	X		
2	Continuum	2.1-update1	X	X		
3	Droid Charge	2.2.1	X	X		
4	Epic 4G	2.3.5				X
5	Exhibit 4G	2.3.3	X	X		
6	Fascinate	2.1-update1	X	X		

7	Galaxy Ace	2.3.4	X	X		
8	Galaxy Prevail	2.3.5				X
9	Galaxy S (i9000)	2.3.4	X	X		
10	Galaxy S II	2.3.5				X
11	Galaxy S 4G	2.3.6				X
12	Galaxy S Showcase (i500)	2.3.5				X
13	Galaxy Tab 7.0	2.2	X			
14	Galaxy Tab 10.1	3.1	X			
15	Gravity Smart	2.2.2	X	X		
16	Indulge	2.2.1	X	X		
17	Infuse 4G	2.2.1	X	X		
18	Mesmerize	2.1-update1	X	X		
19	Nexus S	2.3.1	X	X	X	
20	Nexus S 4G	2.3.4	X	X		
21	Replenish	2.2.2	X	X		
22	Sidekick	2.2.1	X	X		
23	Vibrant	2.1-update1	X	X		

64. **Gallery Feature 1: General snapping behavior.** In horizontal filmstrip mode in Gallery, other than the "edge" or "corner cases" of the left edge of the first image and the right edge of the last image, all of the left and right edges exhibit general snapping behavior, not the more limited '381 style snapback. Depending on whether the user translates the image past a threshold beyond the edge of the document, the Gallery application can snap-forward to the next image or snap-back to the current image. This same behavior occurs both in "zoomed-in" and "zoomed-out" modes. Because the Court has interpreted the '381 Patent claims to require '381 Style Snap-back for all potentially scrollable edges, including ones Apple previously tried to rule out as interior edges, devices with Gallery that include Gallery Feature 1 (general snapping behavior) do not infringe the independent claims of the '381 Patent.

65. **Gallery Feature 2: Hold still behavior.** In "zoomed-in" mode of Gallery, a user can translate an image beyond the edge of the document, show an area beyond the edge, and upon lifting her finger, the image will hold still and does not snap back, thus continuing to show area beyond the edge. Because there is no translation of the document in the second direction after the user lifts her finger, devices with Gallery that include Gallery Feature 2 (hold still behavior) do not infringe the independent claims of the '381 Patent.

66. **Gallery Feature 3: Hard stop.** In "zoomed-out" mode of Gallery, when the user attempts to translate the image past the edge of the document, the user encounters a hard stop. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction when the finger is lifted off. Because devices with Gallery that include Gallery Feature 3 (hard stop) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, , they do not infringe the independent claims of the '381 Patent.

67. **Gallery Feature 4: Blue glow.** In devices with blue glow, when the user attempts to translate the image past the edge of the document, the user encounters a hard stop but a blue (or other color) glow is overlaid near the edge of the document to provide a visual indicator that an edge has been reached. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction when the finger is lifted off. Because devices with Gallery that include Gallery Feature 4 (blue glow) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, they do not infringe the independent claims of the '381 Patent.

Contacts

At least 1 Non-infringing Feature in Contacts

68. **Contacts Feature 1: Blue glow.** In devices with blue glow, when the user attempts to translate the list past the edge of the document, the user encounters a hard stop but a blue glow is overlaid near the edge of the document. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction. Because devices with Contacts that include Contacts Feature 1 (blue glow) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, they do not infringe the independent claims of the '381 Patent.

Browser

At least 3 Non-infringing Features in Browser

	Product	Android Version	Feature		
			1	2	3
1	Exhibit 4G	2.3.3			
2	Galaxy Ace	2.3.4			
3	Galaxy S II	2.3.5			X
4	Galaxy Tab 7.0	2.2	X	X	
5	Galaxy Tab 10.1	3.1		X	
6	Gravity Smart	2.2.2			

69. **Browser Feature 1: Hard Stop.** When the user attempts to translate the webpage past the edge of the document, the user encounters a hard stop. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction when the finger is lifted off. Because devices with Browser that include Browser Feature 1 (hard stop) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, they do not infringe the independent claims of the '381 Patent.

70. **Browser Feature 2: "Escapable" Scroll lock.** In devices with Browser Feature 2 ("escapable" scroll lock), when the user initially begins movement of her finger in a near vertical or horizontal direction, Browser locks the translation of the webpage into constrained vertical or horizontal translation. However, if the user's finger movement deviates sufficiently from vertical or horizontal respectively, then the initial scroll lock is broken and the webpage then tracks the user's finger, unconstrained in two dimensions. As described below, applications running in two-dimensional mode without a constraint on translation of the document do not meet both "first direction" limitations of the claims of the '381 Patent, and consequently do not infringe the '381 Patent.

71. **Browser Feature 3: Blue Glow.** In devices with blue glow, when the user attempts to translate the webpage past the edge of the document, the user encounters a hard stop but a blue glow is overlaid near the edge of the document. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction. Because devices with Browser that include Browser Feature 3 (blue glow) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, they do not infringe the independent claims of the '381 Patent.

ThinkFree Office

At least 2 Non-infringing Features in ThinkFree Office Application

	Product	TFO Version	Feature	
			1	2
1	Continuum	2.0.0810.01		X
2	Droid Charge	2.0.110222		X
3	Epic 4G	2.0.110222		X
4	Exhibit 4G	2.0.110222		X
5	Fascinate	2.0.0604.01	X	

6	Galaxy Ace		NO TFO	
7	Galaxy Prevail	2.0.110919		X
8	Galaxy S (i9000)	2.0.110222		X
9	Galaxy S 4G	2.0.111005	X	
10	Galaxy S Showcase (i500)	2.0.110222		X
11	Galaxy Tab 7.0	2.0.0604.01		X
12	Indulge	2.0.1115.01		X
13	Intercept	2.0.1115.01		X
14	Mesmerize	2.0.0810.01		
15	Replenish	2.0.110222		X
16	Sidekick	2.0.110222		X

72. **ThinkFree Office Feature 1:** Vertical layout of pages. When ThinkFree Office display pages of a PDF document in a vertical layout, there is no snapping behavior observed on any of the edges. Rather, the user encounters a hard stop on all of the external edges. No area beyond the edge of the electronic document is displayed, and no translation of the document occurs in the second direction. Because devices with ThinkFree Office that include ThinkFree Office Feature 1 (Vertical layout of pages) do not display an area beyond the edge of the electronic document and do not translate the electronic document in a second direction, they do not infringe the independent claims of the ’381 Patent.

73. **ThinkFree Office Feature 2:** Horizontal layout of pages. When ThinkFree Office displays pages of a PDF document in a horizontal layout, the behavior of ThinkFree Office is similar to Gallery Feature 1. General snapping behavior is observed on all right and left edges of pages except the left edge of the first page and right edge of the last page. Because the Court has interpreted the ’381 Patent claims to require ’381 Style Snap-back on all potentially scrollable edges, devices with ThinkFree Office that include ThinkFree Office Feature 2 (Horizontal layout of pages) do not infringe the ’381 Patent.

74. In the table below, I indicate which non-infringing features I observed in the accused applications in the accused devices:

	Product	Gallery				Contacts	Browser			ThinkFree Office	
		1	2	3	4	1	1	2	3	1	2
1	Captivate	X	X								
2	Continuum	X	X								X
3	Droid Charge	X	X								X
4	Epic 4G				X	X					X
5	Exhibit 4G	X	X								X
6	Fascinate	X	X							X	
7	Galaxy Ace	X	X							NO TFO	
8	Galaxy Prevail				X						X
9	Galaxy S (i9000)	X	X								X
10	Galaxy S II				X	X			X		
11	Galaxy S 4G				X	X				X	
12	Galaxy S Showcase (i500)				X						X
13	Galaxy Tab 7.0	X					X	X			X
14	Galaxy Tab 10.1	X						X			
15	Gravity Smart	X	X								
16	Gem										
17	Indulge	X	X								X
18	Infuse 4G	X	X								
19	Intercept										X
20	Mesmerize	X	X								
21	Nexus S	X	X	X							
22	Nexus S 4G	X	X								
23	Replenish	X	X								X
24	Sidekick	X	X								X
25	Vibrant	X	X								

- 4 non-infringement features in the Gallery Application:
  - Feature 1: general snapping behavior (*See* Exhibit 3)
  - Feature 2: hold still (*See* Exhibit 4)
  - Feature 3: hard stop (*See* Exhibit 5)

- Feature 4: blue glow (*See* Exhibit 6)

❖ 1 non-infringement feature in the Contact Application:
- Feature 1: blue glow (*See* Exhibit 7)

❖ 3 non-infringement features in the Browser Application:
- Feature 1: hard stop (*See* Exhibit 8)
- Feature 2: "escapable" scroll lock (*See* Exhibit 9)
- Feature 3: blue glow (*See* Exhibit 10)

❖ 2 non-infringement features in the ThinkFree Office Application:
- Feature 1: no bounce in vertical layout of pages (*See* Exhibit 11)
- Feature 2: horizontal layout of pages (*See* Exhibit 12)

75. In the table below, I indicate which claim limitations are not met by each of the non-infringing features identified above:

	LIMITATIONS				
	"Displaying an area beyond the edge"	**"Translating the electronic document in a second direction"**	**In response to detecting object no longer on the screen, translating… to display a fourth portion[2]**	**"Translating the electronic document… in a first direction to display a second portion"**	**"An edge of the electronic document being reached while translating the electronic document in the first direction"**
GALLERY					
Feature 1: general snapping behavior			X		
Feature 2: hold still		X			
Feature 3: hard stop	X	X			
Feature 4: blue glow	X	X			
CONTACTS					

[2] Limitation has been paraphrased to fit in the table.

Feature 1: blue glow	X	X			
BROWSER					
Feature 1: hard stop	X	X			
Feature 2: "escapable" scroll lock				X	X
Feature 3: blue glow	X	X			
THINKFREE OFFICE					
Feature 1: vertical layout		X	X		
Feature 2: horizontal layout			X		

A. Accused Functionality does not "Always" bounce-back

76. As explained above, the Court has interpreted the '381 Patent to require '381 Style Snap-back on all potentially scrollable edges. For at least Gallery and ThinkFree Office, not all potentially scrollable edges of electronic documents displayed within those applications exhibit '381 Style Snap-back, either because there is no snapping behavior of any kind or because the more general snapping feature is present.

1. Gallery

77. The discussion in this section focuses on Gallery applications with Gallery Feature 1 described above.

78. In Apple's infringement allegations for Gallery, each image is considered an "electronic document." *See* Balakrishnan Infringement Report Exh. 3 Claim 1 ("The Exhibit 4G phone includes an application called 'Gallery' that displays electronic documents – more specifically, photographs – on the touch screen display. When running the 'Gallery'

application, the Exhibit 4G phone displays a first portion of a photograph.").

79. The accused functionality in Gallery displays images one at a time in a "horizontal filmstrip." The user can view one image at a time but can advance to other images by scrolling past a threshold beyond the right and left edges of an image. For the first and last images one cannot advance to an even more extreme image (i.e., no image beyond the terminus image). In the vertical filmstrip mode, the user cannot scroll beyond the top and bottom edges of an image. In this mode, the advance to the previous or next item in fact exhibits not '381 Style Snap-back but General Snapping. There is a snap threshold and not exceeding it causes snap back, while exceeding it causes snap-forward in the appropriate direction.

80. Dr. Ravin Balakrishnan's report did not analyze the horizontal filmstrip mode of Gallery which demonstrates the General Snapping behavior, nor did he consider or discuss in his report the case where an image in Gallery is scrolled past the threshold beyond the edge of the image.

"Zoomed-out" mode

81. In Gallery, the user can "zoom out" such that an image is scaled so that the entire image or a scaled up portion of it is visible on the display. I refer to this as the "zoomed-out" mode of Gallery. The Gallery in filmstrip mode, does not infringe because it exhibits general snapping behavior and Balakrishnan doesn't accuse this mode of infringement – he only accuses zoomed-in mode where a scaled-up portion of a single image is seen.

82. Zoomed out mode differs from zoomed in mode in which the user views a portion of an enlarged version of the image, discussed below.

"Zoomed-in" mode

83. In Gallery, the user can zoom in to enlarge an image such that it no longer fits on the display. I refer to this as the "zoomed-in" mode of Gallery.

84. In this mode, if there is more than one image available in Gallery, the left and right edges of the image exhibit general snapping behavior and not just the ’381 Style Snap-back behavior. For example, a user can move to an adjacent image by scrolling past a snap threshold beyond the left or right edge of an image. For the leftmost or rightmost image, the user cannot move to an adjacent image on the left or right, respectively. In certain versions of Android, Gallery in filmstrip mode exhibits the same general snapping behavior in “zoomed-in” mode as in “zoomed-out” mode. In other versions of Android, a second swipe gesture exhibits general snapping behavior and can be used to move to an adjacent image.

85. In the exhibits and charts attached to his report, Balakrishnan does not provide context for his assertion of infringement by Gallery. For example, the various video exhibits Balakrishnan uses to demonstrate his contention that the Gallery application infringes the ’381 Patent do not depict what happens when the user pans a document past a threshold beyond the edge of the document. As the Court has interpreted Claim 1 of the ’381 Patent to require “always” bouncing back when a user scrolls past an edge and lifts her finger, Balakrishnan’s analysis is incomplete as it does not examine the situation described above.

86. It is also unclear from Balakrishnan’s exhibits and charts whether he has considered the case where there are multiple images stored in Gallery. The case of multiple images is likely a far more common usage scenario than storing a single image in Gallery. When there are many images stored in Gallery, the user is able to advance to a next image by scrolling past a threshold beyond the edge of the document. The edges between the photos exhibit general snapping behavior, and not the limited ’381 Style Snap-back.

87. Because there exist edges that do not exhibit ’381 Style Snap-back behavior the Gallery application does not infringe the ’381 Patent.

2. ThinkFree Office

88. I consider the PDF Viewer within ThinkFree Office that displays pages of a PDF laid out horizontally that Apple has accused of infringement of the ’381 Patent.

89. Consider each page of the PDF as an “electronic document” under the construction in the Court’s claim construction order. An image of a single page in a PDF document viewed by PDF Viewer is analogous to a single image viewed within Gallery. The PDF page image is subject, for example, to the same scrolling and zooming behaviors. Therefore, a single page of the PDF can be considered an “electronic document” in the same way that an image within Gallery can be considered an “electronic document.”

90. Unless the PDF has only a single page, the user will be able to advance to an adjacent page by scrolling the page past a snap threshold beyond the appropriate edge. For each page, there will exist at least one edge with General Snapping snap-back or snap-forward behavior based on a snap threshold.

91. Because there exist potentially scrollable edges that do not exhibit the limited ’381 Style Snap-back behavior the ThinkFree Office application does not infringe the ’381 Patent.

No Infringement Under Doctrine of Equivalents

92. Under the Court’s interpretation of the independent claims of the ’381 Patent to require that snap back always occur when the user lifts her finger after scrolling past the edge, accused functionality that almost always snaps back or sometimes snaps back does not infringe under the doctrine of equivalents. Once the behavior deviates from “always” snapping back, the nature of the response is different, and it is no longer equivalent to always snapping back. It is not substantially the same. Treating the case of “always” snapping back and almost always snapping back as equivalent would ignore the distinction the Court’s order for the preliminary

injunction relied on for its holding.

B. Accused Functionality does not meet both "First Direction" limitations of claim

93. In claim 1[3] of the '381 Patent, the limitation "first direction" appears twice, as shown below:

> in response to detecting the movement, translating the electronic document displayed on the touch screen display **in a first direction** to display a second portion of the electronic document, wherein the second portion is different from the first portion;
> …
> in response to an edge of the electronic document being reached while translating the electronic document **in the first direction** while the object is still detected on or near the touch screen display:

94. When the same term appears twice within a single claim, I understand it must be interpreted the same way each time.

95. You only can guarantee that the direction of translation that takes you beyond the edge of the electronic document is the same as that which takes you from the first portion to the second portion of an electronic document if the application constrains the user to a specific direction. Furthermore, I have augmented Dr. Balakrishnan's video exhibit to illustrate that it is nearly impossible to perform claim 1 when the electronic document is not constrained. *See* Exhibit 13. There is a small amount of relatively random vertical movement, but this is sufficient to illustrate that both "first direction" limitations are not satisfied.

96. While, in an exceedingly rare case, the Samsung accused products can give the appearance of that highly constrained behavior in practice since the application does not force constrained motion.

97. For this to be possible in the literal interpretation and the legal requirement cited

[3] Claims 19 and 20 include similar claim limitations and therefore, my analysis is equally applicable for claims 19 and 20.

above, the application must constrain the movement of the electronic document between first and second portions and when the electronic document reaches the edge (i.e. typically, horizontal or vertical axis). If the application does not constrain the movement and has screen translation as some unconstrained function of object movement (i.e. tracking object movement), there can be no guarantee that a single direction will be maintained and it would be in fact nearly impossible for the human hand to describe a perfectly horizontal or vertical path or trajectory. This understanding of the "direction" of movement is especially important in order to interpret Claim 10 in which an opposite direction must be computed (e.g. second direction is opposite the first direction). In order to have this claim make sense, the first direction needs to be well defined.

98. In addition, because "first direction" is used in the claim to describe the translation of the electronic document, a motion controlled by the device (and not the human finger), it should be specified at the precision of the device, and not the precision of human finger movement.

99. The universe of scrolling motions can be divided into categories as described below:

100. Case 1 ("purely constrained"): In the purely constrained movement from initial contact, the electronic document is constrained to move only along a certain direction, even if the finger movement deviates from that direction. In the purely constrained case, the translation of the document can be in one of two directions: along the constrained direction or opposite.

101. Case 2 ("scroll-lock"): If a user makes a gesture within a range of vertical movement, the translation of the electronic document may be constrained, but the constraint may be broken if the user's finger movement sufficiently deviates from vertical. After the constraint is broken, only in the exceptional case will both instances of "first direction" limitations be met.

102. Case 3 ("unconstrained"): The electronic document is unconstrained and can

move in both dimensions. Only in the exceptional case can both instances of "first direction" be met, as in the unconstrained, or 2-D, case.

1. Browser

103. The Browser application can run in "zoomed-out" (where the entire width of the page is visible) or "zoomed-in" mode (where only a portion of the webpage is visible). In the "zoomed-out" mode, the Browser will typically exhibit purely constrained behavior. In the "zoomed-in" mode, the Browser exhibits both Case 2 ("scroll-lock") and Case 3 ("unconstrained") behavior. As explained above, only in the exceptional case can both instances of "first direction" be met for Case 2 and Case 3, and therefore, other than this exceptional case, the Browser in "zoomed-in" mode will not infringe the '381 Patent.

2. Gallery

104. The Gallery application can also be run in "zoomed-out" or "zoomed-in" mode. In the "zoomed-out" mode, the Gallery will typically exhibit purely constrained scrolling. In the "zoomed-in" mode, the Gallery exhibits Case 3 ("unconstrained") behavior. Again, only in the exception case can both instances of "first direction" be met for Case 3, and therefore, other than this exceptional case, the Gallery in "zoomed-in" mode will not infringe the '381 Patent.

3. ThinkFree Office

105. As with Gallery and Browser, ThinkFree Office can be run in "zoomed-out" or "zoomed-in" mode. In the "zoomed-out" mode, the ThinkFree Office will typically exhibit purely constrained scrolling. In the "zoomed-in" mode, the ThinkFree Office exhibits Case 3 ("unconstrained") behavior. Again, only in the exception case can both instances of "first direction" be met for Case 3, and therefore, other than this exceptional case, the ThinkFree Office in "zoomed-in" mode will not infringe the '381 Patent.

No Infringement Under Doctrine of Equivalents

106. Because "first direction" is used to refer to the direction of translation of the electronic document, translating in substantially the same "first direction" is not equivalent to translating in the actual "first direction." The translation of the document is ultimately controlled by the device and not the human finger, so if the direction is not exactly the same, the device is executing a different instruction. Therefore, translation of the electronic document in substantially the same first direction does not meet the second instance of "first direction" and does not infringe under the doctrine of equivalents.

C. Accused Functionality does not display an area "beyond the edge"

107. Android (and Android applications) uses a layer-based model to draw objects that are displayed to the user. Objects on different layers can overlap and therefore "block" each other from being seen by the user. Conversely, when a user moves an object aside, the layer underneath the object is revealed and becomes visible.

108. In Android, the background may be drawn in a separate section of the source code from objects overlaid on top of the background. Because of this, when the user moves an object in the foreground to one side, no additional "drawing" is performed in the area that appears next to the object. Rather, the background that was previously rendered and is now revealed simply becomes visible. Therefore, the user is not viewing the area "beyond the edge." Rather the user views a layer that is behind or under the object. Because the '381 Patent claims require displaying an area "beyond the edge," all of the accused applications (Gallery, Contacts, Browser, ThinkFree Office) that make use of the layer model do not infringe because they simply reveal background that was previously drawn, and no area "beyond the edge" of the electronic document is displayed.

109. I have spoken with Samsung and ThinkFree engineers as indicated in the table

below and confirmed that all 4 of the accused applications use the layer-based model described above:

Application	Engineer
Gallery	Kihyung Nam
Contacts	Wookyun Kho
Browser	Ioi Lam
ThinkFreeOffice	Sehyun Kim

D. ’381 Patent Claims are directed to “electronic documents” and not “list of items”

110. In the ’381 Patent, Figures 5 and 6A-6D, along with associated text in the specification (’381 Patent at 23:60-26:62), describe an embodiment that covers “list of items.” The specification provides examples of what is contemplated by a “list of items”: a list of instant message conversations, a list of favorite phone numbers, **a list of contact information (sometimes called a contact list or address book list)**, a list of labels, a list of email folders, a list of email addresses, a list of physical addresses, a list of ringtones, a list of album names, or a list of bookmarks. ’381 Patent at 24:5-10.

111. Figure 7 and 8A-8D, along with associated text in the specification (’381 Patent at 26:63-30:10), describe a different embodiment that covers “electronic document.” The specification provides examples of what is contemplated by an “electronic document”: a web page, a digital image, a word processing, spreadsheet, email, or presentation document. ’381 Patent at 27:8-12.

112. This distinction between “list of items” and “electronic document” is further illustrated by the clear distinction made in the specification. *See, e.g.*, 20:33-35 (“a portion of a

list of items (e.g., information items) or of an electronic document"); 20:36-37 ("a list may be scrolled or the electronic document may be translated"); 20:41.

113. Furthermore, a continuation of the '381 Patent, US 2009/0073194, which shares the same specification, has similar claims to the '381 Patent, but they are directed towards "list of items."

114. Because of the clear dichotomy between "list of items" and "electronic document," I believe that the '381 Patent claims are directed towards electronic documents and not lists of items. As described above, the specification clearly indicates that a contacts list falls under a "list of items" and not an "electronic document." Because of this, I do not believe the accused Contacts application infringes the claims of the '381 Patent, because the Contacts application does not display an "electronic document."

VIII. SUFFICIENCY OF PROOF

115. Throughout the infringement assertions in his report, Dr. Balakrishnan asserts that the "ordinary and intended use" of the accused products infringes the claims of the '381 Patent. However, for almost all claims, Dr. Balakrishnan presents a single use case, and without further analysis, then asserts that the "ordinary and intended use" of the accused products infringes the claim. As shown above in my report, there are multiple non-infringing use cases for the accused applications. Dr. Balakrishnan has not provided sufficient proof that the accused products are used in an infringing way, has not proven what the "ordinary and intended use" is for each accused product, and therefore has not proven his assertion that the "ordinary and intended use" of the accused products infringes the claims of the '381 Patent.

IX. INDIRECT INFRINGEMENT

116. In paragraphs 51-60, 152, Dr. Balakrishnan discusses "Samsung's Emulation of Apple." However, this is not an element of patent infringement analysis. Dr. Balakrishnan

does not point to any evidence in those paragraphs that discusses or even mentions the ’381 Patent. I understand that in order to prove either willful infringement or to prove intent to induce infringement, Apple must prove not just knowledge of the patent and intent to cause the acts they allege infringe the patent, but Apple must prove that Samsung had intent to infringe. The evidence presented in paragraphs 51-60 falls short of what Apple needs to prove.

117. In paragraph 61, Dr. Balakrishnan points to an email from Chip Lutton to K.J. Kim that included presentations that identified the ’381 Patent. However, Dr. Balakrishnan does not identify any detailed claim charts alleging infringement in connection with this email, and describes the presentations as an “overview” and “identifying” the ’381 patent. Such general statements do not demonstrate evidence of infringement.

X. DEPENDENT CLAIMS

118. The first and last documents (in "Zoomed-In" mode) in the Gallery Application are not displayed at the same magnification on the third swipe for some of the accused devices with Gallery Features 1 and 2 behaviors. It is my opinion that accused devices with this feature do not infringe claim 2 of the '381 patent which requires "the fourth portion of the electronic document are displayed at the same magnification."

119. It is my opinion that accused devices with a list of items do not infringe claim 9 of the '381 patent because U.S. Patent Application No. 2009/0073194 has claims directed to list of items.

120. The second direction is not always opposite the first direction depending on which edge is exposed. Accused devices with this behavior do not infringe claim 10.

121. I observed checkered backgrounds, not black, gray, a solid color, or white, in the Browser Application and accused devices with this feature do not infringe claim 13. .

122. Accused devices with Gallery Features 1 and 2 behaviors do not infringe claims

17 and 18 of the '381 patent because the speed and distance of the translation of the document are not less than the speed and distance of the movement of the finger respectively.

XI. NON-INFRINGING ALTERNATIVES

123. I have examined the blue glow implementation on various Samsung devices and my opinion is that the blue glow feature does not infringe the ’381 Patent.

124. In a device/application[4] with blue glow, when a user attempts to scroll a document past the edge, the user encounters a hard stop, i.e. the document stops when it reaches the edge and does not scroll past the edge. In addition, a visual indication, typically but not always a blue (but the color is immaterial) glow is overlaid near the edge. Because no area beyond the edge is displayed in an application with blue glow, the application does not infringe the claims of the ’381 Patent. Furthermore, because the document never translates in a second direction (i.e. “bounces”), this is a second reason why blue glow feature does not infringe the claims of the ’381 Patent.

125. I note that Apple’s expert Mr. Hauser’s survey uses something very similar to the blue glow implementation in his “Does not rubberband” case. This supports my opinion that the blue glow does not infringe the ’381 Patent.

126. I note that the blue glow is not the only possible non-infringing alternative. Another possibility is to make the translation in a second direction not in response to detecting that the object is no longer on or near the touch screen display. The translation in a second direction could be triggered by a timer, for example, rather than a lifting of a finger off a touch screen display.

XII. LACK OF DIFFICULTY OF IMPLEMENTING NON-INFRINGING

[4] I understand that when a device has blue glow implementation, the blue glow feature is found across multiple accused functionalities.

ALTERNATIVES

127. Based on my experience and on my conversations with various engineers that worked on the accused applications, I believe that the implementation of the non-infringing alternatives is not technically difficult. I understand that the technical design and implementation of a non-infringing alternative is actually quite simple and straightforward, and other factors such as the approval process for design changes or even the time it takes to reach consensus on a large team affect the length of time it takes to bring a new feature to market.

XIII. FAULTY METHODOLOGY FOR SURVEY PERFORMED BY APPLE'S EXPERT J. HAUSER

128. I have reviewed the survey of Touchscreen features attached to expert report of Apple's expert J. Hauser. I note that he lists four possible features, only one of which appears to be relevant for the '381 Patent, namely "Rubberband effect." While there are 16 possible combinations of four features, the survey presents only four choices to the user and therefore it does not isolate the feature that may be relevant for '381 Patent.

129. The survey is vague as to what the "Rubberband effect" really is. The description of the feature in survey is "Rubberbands at Edge of Webpages or Images," but the linked video only presents a Webpage. Furthermore, the video shows only motion in the vertical direction; it is not clear if "Rubberband effect" is limited to this case. Some of the allegations on the '381 Patent go beyond Webpages moving in the vertical direction, so it is not clear if the "Rubberband effect" is intended to correspond to all or only a part of the accused functionality for the '381 Patent. As one more ambiguity, I note that the '381 Patent does not use the term "Rubberband."

130. Therefore, it is not clear that the survey of Touchscreen features attached to J. Hauser's report properly isolates and provides information on the functionality accused of

infringement of the ’381 Patent.

XIV. OTHER COMMENTS

131. My opinions are subject to change based on additional opinions that Complainant’s experts may present and information I may receive in the future or additional work I may perform. With this in mind, based on the analysis I have conducted and for the reasons set forth below, I have preliminarily reached the conclusions and opinions in this report.

132. At trial and as discussed above, I may rely on visual aids and may rely on analogies concerning elements of the '381 patent, the accused products, the prior art referenced in this report, or any related technologies.

133. In connection with my anticipated testimony in this action, I may use as exhibits various documents produced in this case that refer or relate to the matters discussed in this report. I have not yet selected the particular exhibits that might be used. In addition, I may create or assist in the creation of certain demonstrative evidence to assist me in testifying, and I reserve the right to do so, such as working computer systems or code highlighting to further support the positions in this report.

134. At hearings and at trial, and as discussed above, I may rely on visual aids and may rely on analogies concerning elements of the '381 patent, the accused products, the prior art referenced in this report, or any related technologies.

April 16, 2012

Jeffrey Johnson, Ph.D. | Date