Exhibit L

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

APPLE INC., a California corporation,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD., A Korean business entity; SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation; SAMSUNG TELECOMMUNICATIONS AMERICA, LLC, a Delaware limited liability company,

Defendants.

Case No. 11-cv-01846-LHK

EXPERT REPORT OF KARAN SINGH, PH.D. REGARDING INFRINGEMENT OF U.S. PATENTS NOS. 7,864,163, 7,844,915 AND 7,853,891

****CONFIDENTIAL – CONTAINS MATERIAL DESIGNATED AS HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY PURSUANT TO A PROTECTIVE ORDER****

I. INTRODUCTION

1. I, Dr. Karan Singh, have been asked by counsel for Apple Inc. ("Apple") to provide an opinion in the above-captioned case. I understand that Apple has alleged that Defendants Samsung Electronics Co. Ltd., Samsung Electronics America, Inc., and Samsung Telecommunications America, LLC (collectively "Samsung") have infringed various patents assigned to Apple. I have been asked to provide opinions as to whether Samsung has infringed United States Patents Nos. 7,864,163 (the "'163 patent), 7,844,915 (the "'915 patent) and 7,853,891 (the "'891 patent"). My opinions are set forth below in this Report and in the accompanying exhibits.

2. I submit this expert Report in compliance with Federal Rule of Civil Procedure 26(a)(2). I reserve the right to supplement or amend this Report pursuant to Rule 26(e) and as otherwise provided if additional data or other information that affects my opinions becomes available. I expect to testify at trial regarding the matters expressed in this Report and any supplemental Reports that I may prepare for this litigation. I also may prepare and rely on audiovisual aids to demonstrate various aspects of my testimony at trial. I also expect to testify with respect to any matters addressed by any expert testifying on behalf of Samsung, if asked to do so.

3. I am being compensated for my work in connection with this matter at my current standard consulting rate of $450 per hour. I am separately being reimbursed for any out-of-pocket expenses. My compensation is not based in any way on the outcome of the litigation or the nature of the opinions that I express.

II. QUALIFICATIONS

4. Here, I provide a brief summary of my qualifications. I received my Bachelor of Technology degree in Computer Science from the Indian Institute of Technology in 1991. I was awarded a Master of Science degree in 1992, and a Ph.D. in 1995, both in Computer and Information Science, from Ohio State University. I can read and program fluently in object-oriented programming languages, such as C++ and Java. My qualifications and experience are stated more fully in my curriculum vitae, which includes a list of all my honours, patents,

presentations, grants, and publications from the last five years, and is attached to this Report as Exhibit 1.

5. In 1994, I was invited to conduct research at the Advanced Telecommunications Research laboratory in Kyoto, Japan. During this time I researched virtual reality technology, specifically designing graphical environments in which human characters could interact with computing systems.

6. My Ph.D. dissertation, which I presented in 1995, was on creating representations of humans which could interact in graphical environments.

7. In 1995, I joined Alias Wavefront in Toronto, Canada. While there I designed character animation and facial modeling tools for the first release of Maya, which is a software system for computer graphical modeling, animation, and rendering which won a technical Oscar in 2003, one of only 38 such awards since 1930. This software, which I worked on for more than two years, is still the premiere software package today for these functions. I worked at Alias Wavefront until 1999.

8. I have worked with Chris Landreth, a director of animated films, since I started with Alias Wavefront in 1995. Chris and I worked together on the design of Maya, and have subsequently worked on a number of film projects. Notable among these projects is the short film "Ryan," which won an Oscar for Best Animated Short in 2005.

9. Later in 1999, I joined a start-up company in California called Paraform Inc. While there I worked to develop a system which transformed data from real objects which had been scanned using lasers into useable digital models for downstream applications.

10. For several months in 1999 I was a Visiting Professor of Computer Science at the University of Otago in New Zealand. During that time I taught and conducted research in computer graphics.

11. Since 2002, I have been an Associate Professor of Computer Science at the University of Toronto where I co-direct a graphics and human computer interaction laboratory dgp (dynamic graphics project). I have conducted research and taught classes in graphics and in human computer interaction. During this period, I have also undertaken consulting projects with

various companies in the computer graphics and design industries. Since 2002, I have also been the Chief Scientist at Geometry Systems, which is a company which designs software for the reverse engineering of physical objects into usable digital models. I also co-founded Arcestra, Inc. in 2006, which is a software service for conceptualizing and visualizing architectural interiors.

12. My current research focus is on interaction techniques for pen and touch based devices inspired by a sketching metaphor.

13. I have previously testified by deposition as an expert in proceedings before the International Trade Commission in the ITC Investigation In re Certain Electronic Digital Media Devices and Components Thereof, Inv. No. 337-TA-796 on behalf of complainant Apple.

III. MATERIALS CONSIDERED

14. In forming my opinions and views expressed in this Report, I reviewed the '163 patent and its file history, the '915 patent and its file history, and the '891 patent and its file history.

15. I have also examined all of the following Samsung products, which are sometimes referred to in this Report as the "Samsung Accused Products": Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1,[1] Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant.

16. In addition, I have reviewed portions of Samsung's website regarding most of these products. I have also reviewed portions of the user manuals for these products. Attached as Exhibit 2 is a chart that lists the Bates numbers where true and correct copies of printouts from www.samsung.com of user guides and technical specifications for various Samsung Accused Products have been produced.

[1] Galaxy Tab 10.1 refers to both the WiFi and LTE versions.

17. I have also reviewed portions of the publicly available Android source code and related documentation available at the Android developers website located at the following URL: http://developer.android.com/index.html, as well as portions of the Samsung proprietary source code that were produced by Samsung in this litigation prior to the close of fact discovery on March 8, 2012. I have been informed that although Apple requested a production of all of the Samsung source code for all of the Samsung Accused Products and that Samsung was ordered by the Court to produce it by December 31, 2011, that Samsung produced source code only for a subset of those products. Moreover, I understand that for those Accused Products for which Samsung has produced source code, it produced only one version per Accused Product, even if that product ran different versions of Samsung's code over time. It is my further understanding that Samsung has produced representative examples of the different versions of its source code that were based upon Android releases 2.1, 2.2, 2.3 and 3.1, and that Samsung has represented, subject to certain conditions, that the source code for any other version of each Accused Product that was not produced does not differ in any material way for purposes of this litigation with respect to the three patents I am addressing, from the source code that it has produced.[2]

[2] For all three patents discussed in this Report, I understand that Samsung has represented that the source code it produced on December 31, 2011 (on which my Report is based) is representative of all versions, through February 14, 2012, of software on the following Accused Products: Captivate, Continuum, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace Showcase, Galaxy S 4G, Gravity Smart, Indulge, Intercept, Mesmerize, Nexus, Nexus S, Nexus S 4G, Replenish, Showcase Galaxy S, Sidekick, Transform, Vibrant, and the Galaxy Tab.

I understand that Samsung has further represented that, as to source code accused of infringing the '915 patent, the code it produced on December 31, 2011 (on which my Report is based) is representative of all versions of software on all of the Accused Products.

As to source code accused of infringing the '163 and '891 patents, I understand that Samsung has recently represented that the code it produced on December 31, 2011 (on which my Report is based) is representative of all versions of software on Accused Products released before December 23, 2011. I understand that, in an email dated March 10, 2012, counsel for Samsung provided notice that Samsung would be disclosing new versions of source code. I also understand that counsel for Samsung described the code as "design-arounds" for the '891 and '163 patents. I have not reviewed this late-produced code, which I understand was produced on or around March 12, 2012, as of the date of this Report and therefore cannot offer any opinion at this time on whether it in fact reflects a "design-around" that avoids infringement of either the '891 or the '163 patent.

18. In forming the opinions in this Report, I have reviewed all of the material cited in this Report, as well as the documents, things and materials listed in Exhibit 3. I also had discussions with Bas Ording and Scott Herz, Apple employees listed as inventors on the '891 and '915 patents, respectively.

19. If called to testify or to give additional opinions regarding this matter, I reserve the right to rely upon additional materials that may be provided to me or that are relied upon by any of Samsung's experts or witnesses.

IV. LEGAL PRINCIPLES

20. I have not been asked to offer an opinion on the law; however, as an expert assisting the Court in determining infringement, I understand that I am obliged to follow existing law. I have therefore been asked to apply the following legal principles to my analysis of infringement:

21. I understand that to determine whether there is infringement of a patent: (1) the claims of the patent must be construed; and (2) the properly construed claims must then be compared with the accused products.

22. I understand that the parties have proposed differing constructions of certain terms in the '915 and '891 patents, and that the parties may have differing constructions of terms that were not part of the claim construction hearing, but that no claim construction Order has been issued. Because no claim construction has been issued by the Court, I have interpreted the claims as one of ordinary skill in the art would have at the time the relevant patent was filed in light of its claim language, specification, and prosecution history.

23. I further understand that the claims should be construed from the standpoint of a hypothetical person of ordinary skill in the art as of the invention date of the asserted patent. I understand that claim construction is a matter of law and will be determined by the Court. I reserve the right to modify my opinions if needed following the Court's issuance of a claim construction Order.

24. As the second step in the infringement analysis, I understand that the properly construed claim must be compared to the accused products. I understand that an accused product

may infringe a claim either literally or equivalently. I understand from counsel that literal infringement exists when the accused product embodies each and every limitation of a given asserted claim.

25. I understand that infringement requires that every limitation of a claim be met, either literally or equivalently, by the accused device.

26. I understand that one test for determining equivalence is to determine whether the differences between the claimed limitation and the accused product are insubstantial. I understand that another test for determining equivalence is to examine whether the step used by the accused product performs substantially the same function in substantially the same way to achieve substantially the same result as the claimed step.

27. I understand that to prove direct infringement of an apparatus or system claim, a plaintiff must show that a defendant "makes, uses, offers to sell, or sells," within the United States, or imports into the United States, an accused device that reads on every limitation of the patent claim.[3]

28. I understand that a device or method literally and directly infringes a claim of a patent if all of the asserted claim elements are found in or performed by the accused device or method. I understand that a device may be found to infringe an apparatus claim if it is reasonably capable of satisfying the claim limitations, even if it is also capable of operating in non-infringing modes. For method patent claims, I understand that direct infringement occurs when someone performs all of the steps of the claim.

29. I understand that to literally infringe a method claim, the product must perform every step of the claim. If a product does not literally perform a step of the claim, it can still infringe under the doctrine of equivalents if the step it performs is insubstantially different from the claimed step or if it performs substantially the same function to achieve substantially the same

[3] At various places in this Report, I may refer interchangeably to Samsung Accused Products, or to the use of Accused Products, infringing a claim, meeting all the limitations of a claim, or practicing the limitations of a claim. In so doing, I intend to be offering opinions about the Accused Products and the methods that they perform, and not to offer opinions about whether any particular Accused Product was sold or used in the United States.

result, in substantially the same way as in the claimed step. I further understand that infringement of a method claim can be either direct or indirect. I understand that an indirect infringement occurs either through inducement, where a party induces another to engage in acts that constitute direct infringement, or through contributory infringement, where a party sells an article that is made for use in an infringement of the patent's claims or, put otherwise, is not a staple article of commerce that has substantial non-infringing uses.

30. I have been informed that "means plus function" claims are construed to cover the corresponding structure, material, or acts described in the specification for performing the specified function and equivalents thereof. Therefore, I understand that the literal scope of a means plus function limitation includes equivalents to the structure described in specification. I understand that the inquiry for structural equivalence is whether the accused structure performs the claimed function in substantially the same way to achieve substantially the same result as the corresponding structure described in the specification.

V. DETAILED OPINION REGARDING THE '163 PATENT

A. Summary of the '163 Patent

31. Apple's '163 patent is titled "Portable Electronic Device, Method, and Graphical User Interface for Displaying Structured Electronic Documents." It claims methods and apparatuses for displaying structured electronic documents, such as web pages, on a touch screen display, and navigating in them using touch gestures. The invention of the '163 patent allows a user to navigate easily around a structured electronic document by tapping or double tapping on boxes of content in that document. The '163 patent describes enlarging or translating the electronic document, in response to a tap gesture, so that the tapped box of content is substantially centered on the touch screen display. Tapping on a previously enlarged box can result in zooming back out, including to the original scale. Other gestures, such as a finger swipe or a "de-pinch" gesture, can also result in translating or scaling of the electronic document.

32. A person of ordinary skill in the art at the time the patent application that led to the '163 patent was filed would have had a bachelor's degree in computer science or electrical engineering, or the equivalent, and one or more years of experience working on designing and/or

implementing user interfaces. I have interpreted the '163 patent claims according to how I believe such a person of ordinary skill would have understood the claims in 2006.

B. Apple's Practice Of The '163 Patent

33. I have examined a number of Apple products, including the iPhone 4S, iPhone 4, iPhone 3GS, iPhone 3G, iPhone, iPad 2, and iPad. It is my opinion that each of these products practices the claims of the '163 patent. For example, with Apple's iPhone 4, a user can open the Safari application and load a web page, such as the *New York Times* home page (www.nytimes.com). The iPhone 4 displays the *New York Times* home page which is a structured electronic document that includes several boxes of content on its touch screen display. The iPhone 4 detects a user's double tap gesture (two taps on the touch screen in quick succession) on a box of content, and it responds to that gesture by determining which box was tapped and then enlarging and substantially centering that box on the screen. If the user proceeds to double tap on a second box of content on the web page, the iPhone 4 responds by substantially centering that second box on the screen. If the user then double taps again on the second box which is already enlarged and centered from the user's previous actions the iPhone 4 responds by zooming out, reducing the size of the web page to its pre-enlargement scale.

34. Based on my examination of the aforementioned Apple products, I conclude that they practice the asserted apparatus and system claims of the '163 patent, and their ordinary and intended use practices the asserted method claims of the '163 patent. I have confirmed the behavior I saw on the iPhone 4 and other Apple products by examining portions of the source code for Apple's iOS operating [redacted] as well as the Event Handling Guide for iOS (*available at* http://developer.apple.com/library/ios/#documentation/EventHandling/Conceptual/EventHandlingiPhoneOS/Introduction/Introduction.html#//apple_ref/doc/uid/TP40009541).

35. My examination was further confirmed by my review of the testimony of Scott Forstall, one of the inventors of the '163 patent. Mr. Forstall testified that at least the iPhone, iPad, and iPod Touch practice the '163 patent (Forstall Dep. Tr. at 24:8 24:16). He then walked

through a demonstration of some double-tap zooming elements of claim 2 of the '163 patent, confirming that the iPhone demonstrated in his deposition exhibited behavior meeting certain elements of that claim (Forstall Dep. Tr. at 24:17 27:10).

C. Priority Date of the '163 Patent

36. I intend to rely upon the documentary evidence and testimony of one or more of the named co-inventors of the '163 patent or other witnesses to testify regarding facts relevant to the conception and reduction to practice of the claimed invention prior to the filing date of the patent.

37. I have reviewed the documentary evidence regarding the design and implementation work done on the inventions claimed in the '163 patent, including the deposition transcripts of Scott Forstall, Chris Blumenberg, and Richard Williamson, emails regarding technology demonstrations and planned and completed development tasks, as well as code check-in logs. From that evidence, it appears that the claims of the '163 patent that I analyze below were conceived of by Andre Boule, Scott Forstall, Greg Christie, Stephen O. Lemay, Imran Chaudhri, Richard Williamson, Chris Blumenberg, and Marcel van Os in or before March 2006, and reduced to practice in March/April 2006. [redacted]

[redacted] I understand that the asserted claims were also constructively reduced to practice in a provisional patent application filed on September 6, 2006 and in U.S. Patent Application No. 11/850,013 filed September 4, 2007. Documents relating to these facts are found in, for example: APLNDC00016628; APLNDC00019636-637; APLNDC00019638; APLNDC0001200348-353; APLNDC0001200354-360; APLNDC0001200361-373; APLNDC0001200374; APLNDC0000019634; APLNDC-X0000002313-2319; and APLNDCX0000004557-4561.

D. Samsung's Infringement of the '163 Patent

38. In the discussion that follows, I analyze whether certain Samsung Accused Products embody the apparatus claims of the '163 patent and whether the ordinary and intended use of the Samsung Accused Products would practice the method claims of the patent. For purposes of this section of my Report, the "Accused Products" include the following Samsung products: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant.

39. In performing this analysis I reviewed the '163 patent and its file history, tested the operation of these Samsung Accused Products, reviewed source code that Samsung produced prior to the March 8 fact discovery cutoff, and reviewed other materials described in this Report. Because the Samsung source code is built upon the foundation of publicly-available Android code, I reviewed portions of that Android code and its accompanying documentation. I have analyzed Samsung source code on at least one Accused Product representative of each major release of Android that appears on the Accused Products. I reviewed source code that implements the accused functionalities of the '163 patent on, among other devices, the Samsung Captivate (Android 2.1), the Samsung Vibrant, (Android 2.2), the Samsung Galaxy S II (Android 2.3), and the Samsung Galaxy Tab 10.1 (Android 3.1). I have compared portions of the relevant code on

each of these devices to analogous code (where available) on other Accused Products running that version, as well as the publicly available version of each major Android release. Based on those comparisons, I conclude that, for each major Android release, all of the Accused Products based on that release implement the accused functionalities of the '163 patent in substantially the same way as the representative device for that release whose source code I have analyzed and cited in this Report.

40. In the paragraphs that follow, I will set forth the claims of the '163 patent for which it is my opinion that Samsung Accused Products, or the ordinary and intended use of Samsung Accused Products, meets every limitation of the claim.

41. By "ordinary and intended use" in this section of my Report, I mean actions that virtually every user of a Samsung Accused Product would perform when using the Accused Product, and which Samsung encouraged and intended the user to perform. For example, manuals included with Samsung Accused Products instruct users to "[t]ap the screen twice to zoom in or out" when viewing a web page in the Browser application. (*See, e.g.*, APLNDC-Y0000058046, APLNDC-Y0000060424, APLNDC-Y0000061493, APLNDC-Y0000061697, APLNDC-Y0000061866, APLNDC-Y0000063918, APLNDC-Y0000065351, APLNDC-Y0000066627, APLNDC-Y0000065800.) In addition, each of the Samsung Accused Products, with the exception of the Galaxy Tab 10.1, includes a "tool tip" (i.e., contextual instructions to the user in a pop-up window) that is programmed to appear automatically when a user first uses the Browser application. The tool tip displays the text "Tip: double tap to zoom in and out."[4] Once a user zooms in using a double tap, it is overwhelmingly likely given the relatively small size of the displays of the Accused Products and typical practice in using touch screen devices that he will tap again on a different box, resulting in centering on that box, as he attempts to navigate

[4] Exemplary code that triggers this tool tip message in Android 2.3 devices, such as the Galaxy S II, appears at SAMNDCA-C000008649, line 8197 and SAMNDCA-C000008646, line 902. Similar code for Android 2.2 devices, exemplified by the Samsung Vibrant, appears at SAMNDCA-C000008648, line 5672 and SAMNDCA-C000008645, line 1487. Similar code for Android 2.1 devices, exemplified by the Samsung Captivate, appears at SAMNDCA-C000008306, line 4263 and SAMNDCA-C000008634, line 1390.

around the displayed web page using touch gestures like the double tap described in the manuals and on-screen tool tip. Accordingly, it is my opinion that all or virtually all users of the Samsung Accused products would engage in direct infringement of the '163 patent. Because Samsung encouraged and intended this direct infringement by end users, it is my opinion that the Samsung defendants have indirectly infringed the method claims of the '163 patent discussed below.

42. With respect to the claims of the '163 patent that claim an apparatus, device, or medium, it is my opinion that a Samsung defendant who makes, uses, sells, imports or offers to sell the Samsung Accused Product in the United States has engaged in direct infringement of the '163 claims discussed below.

43. Attached as Exhibits 4 and 5 are exemplary claim charts that illustrate the infringement of the claims below by the Galaxy Tab 10.1 (Exhibit 4) and the Galaxy S II (Exhibit 5). Where source code is cited in the Galaxy S II claim chart (corresponding to Android 2.3), reference is also made to analogous code in Android 2.2 (as exemplified by the Samsung Vibrant) and Android 2.1 (as exemplified by the Samsung Captivate).

44. **Claim 2.** Claim 2 of the '163 patent recites:

> A computer-implemented method, comprising:
>
> [a] at a portable electronic device with a touch screen display;
>
> [b] displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;
>
> [c] detecting a first gesture at a location on the displayed portion of the structured electronic document;
>
> [d] determining a first box in the plurality of boxes at the location of the first gesture;
>
> [e] enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;
>
> [f] while the first box is enlarged, a second gesture is detected on a second box other than the first box; and
>
> [g] in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

45. In my opinion, the Samsung Accused Products meet each and every limitation of claim 2 either literally or, in the alternative, under the doctrine of equivalents.

46. **Claim 2, Preamble:** The preamble of claim 2 recites: "A computer-implemented method."[5]

47. The Samsung Accused Products are mobile computing devices with processors that run the Android software platform and implement a number of methods of displaying structured electronic documents. As Samsung describes its own products, they are mobile computing devices with the following features:

- Galaxy S II: a "1.5 GHz, Dual Core (Qualcomm Snapdragon S3)" processor (Ex. 6 at APLNDC-Y0000066880);
- Galaxy Tab 10.1: a "1GHz Dual Core Nvidia Tegra2 Processor" (Ex. 7 at APLNDC-Y0000066821).

48. All of the Samsung Accused Products are either smartphones (like the Galaxy S II) or tablet computers (like the Galaxy Tab 10.1). These devices employ processors and run software that performs functions typically performed on computers, such as displaying structured electronic documents. Therefore, the ordinary and intended use of the Samsung Accused Products meets the preamble of claim 2: "[a] computer-implemented method."

49. To the extent that the preamble is found to be a limitation and is not met literally, in my opinion it is met under the doctrine of equivalents because the processors and relevant portions of the Android software of each of the Samsung Accused Products are insubstantially different from a computer-implemented method as recited in claim 2.

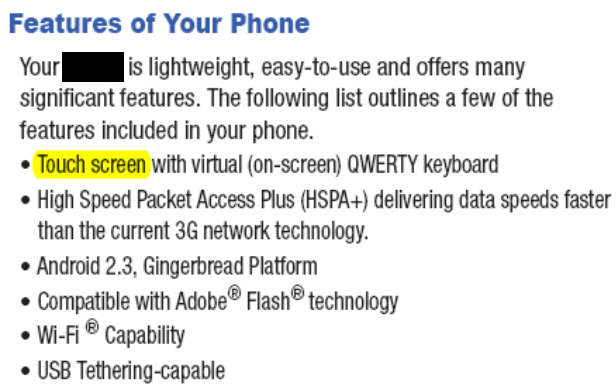
50. In particular, relevant portions of the processors and Android software of each of the Samsung Accused Products perform substantially the same function of implementing a method for displaying structured electronic documents, such as web pages, on a touch screen display, and navigating in them using touch gestures, as the computer-implemented method of the

[5] I understand that a preamble may or may not limit a claim depending on how it is used within the context of the claims. Because the preamble is clearly met within the Samsung Accused Products, I had no need to consider whether this particular preamble is a limitation.

'163 patent. In addition, the processors and relevant portions of the Android software of the Samsung Accused Products perform that function in substantially the same way by the execution of computer instructions with a processor. Finally, both the processors and relevant portions of Android software, and the recited method achieve substantially the same result of displaying structured electronic documents, such as web pages, on a touch screen display, which the user can navigate using touch gestures.

51. **Claim 2, Element [a]:** Claim 2 recites "at a portable electronic device with a touch screen display."

52. The ordinary and intended use of the Samsung Accused Products performs the claimed method "at a portable electronic device with a touch screen display." For example, the Galaxy S II user manual states that the Galaxy S II is a phone, or portable electronic device, with a touch screen display:

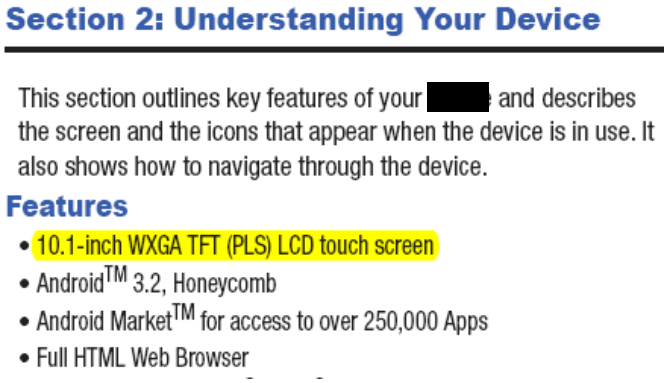


Features of Your Phone

Your [redacted] is lightweight, easy-to-use and offers many significant features. The following list outlines a few of the features included in your phone.

- Touch screen with virtual (on-screen) QWERTY keyboard
- High Speed Packet Access Plus (HSPA+) delivering data speeds faster than the current 3G network technology.
- Android 2.3, Gingerbread Platform
- Compatible with Adobe® Flash® technology
- Wi-Fi ® Capability
- USB Tethering-capable

(Ex. 8 at APLNDC-Y0000060923.) By way of further example, the Galaxy Tab 10.1 user manual describes a portable electronic "device" with a touch screen:



Section 2: Understanding Your Device

This section outlines key features of your [redacted] and describes the screen and the icons that appear when the device is in use. It also shows how to navigate through the device.

Features

- 10.1-inch WXGA TFT (PLS) LCD touch screen
- Android™ 3.2, Honeycomb
- Android Market™ for access to over 250,000 Apps
- Full HTML Web Browser

(Ex. 9 at APLNDC-Y0000061396.)

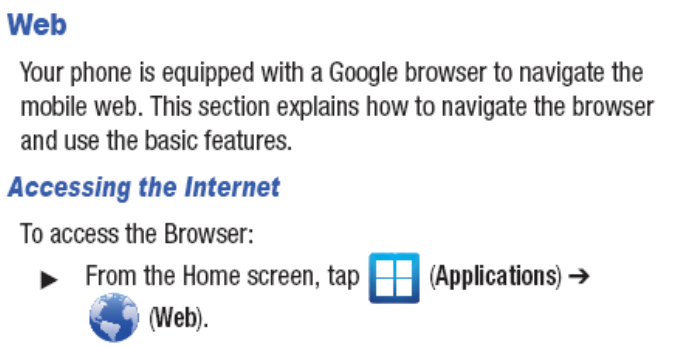
53. Each of the other Samsung Accused Products is also a portable electronic device with a touch screen display. Therefore, the ordinary and intended use of the Samsung Accused Products infringes this element of claim 2.

54. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the portable devices with touch screen displays of the '163 Samsung Accused Products perform substantially the same function of implementing a method for displaying structured electronic documents, such as web pages, on a touch screen display, and navigating in them using touch gestures, as the portable electronic device with touch screen display of the '163 patent.

55. In addition, Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the Samsung Accused Products achieve substantially the same result by enabling a user to interact with the presented information.

56. **Claim 2, Element [b]:** Claim 2 recites "displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content."

57. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content." Each of the Samsung Accused Products includes a Browser application for displaying web pages written in HyperText Markup Language (HTML). For example, the user manuals for the Galaxy S II and the Galaxy Tab 10.1 describe the capabilities of the Browser application on those devices:



Web

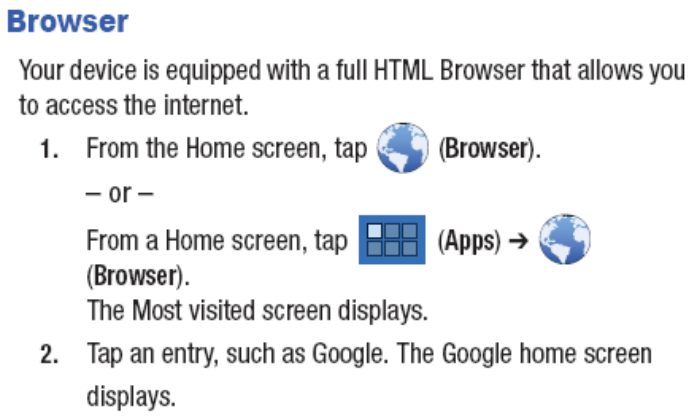
Your phone is equipped with a Google browser to navigate the mobile web. This section explains how to navigate the browser and use the basic features.

Accessing the Internet

To access the Browser:

- From the Home screen, tap (Applications) → (Web).

Galaxy S II user manual excerpt (Ex. 8 at APLNDC-Y0000061077.)



Browser

Your device is equipped with a full HTML Browser that allows you to access the internet.

1. From the Home screen, tap (Browser).
   – or –
   From a Home screen, tap (Apps) → (Browser).
   The Most visited screen displays.
2. Tap an entry, such as Google. The Google home screen displays.

Galaxy Tab 10.1 user manual excerpt (Ex. 9 at APLNDC-Y0000061493.)

58. The Browser application on the Samsung Accused Products uses the WebView Android class to display web pages written in HTML. (*See* http://developer.android.com/reference/android/webkit/WebView.html.) HTML is a markup language that employs various "tags" (such as <html>, <head>, <body>, <img>, among many others) to structure and delimit a web page's content. These tags indicate where different sections of a web page begin and end, and they define and delimit elements like images, paragraphs, headings, and links. (*See, e.g.*, Exhibit 10, HTML source code for www.nytimes.com). HTML documents displayed in the Browser application, therefore, are structured electronic documents. The figures below show the Browser application on the Galaxy S II and the Galaxy Tab 10.1 displaying a portion of a structured electronic document in this case, the *New York Times* home page on the touch screen displays of those devices.

Fig. 1: Galaxy S II Browser displaying www.nytimes.com

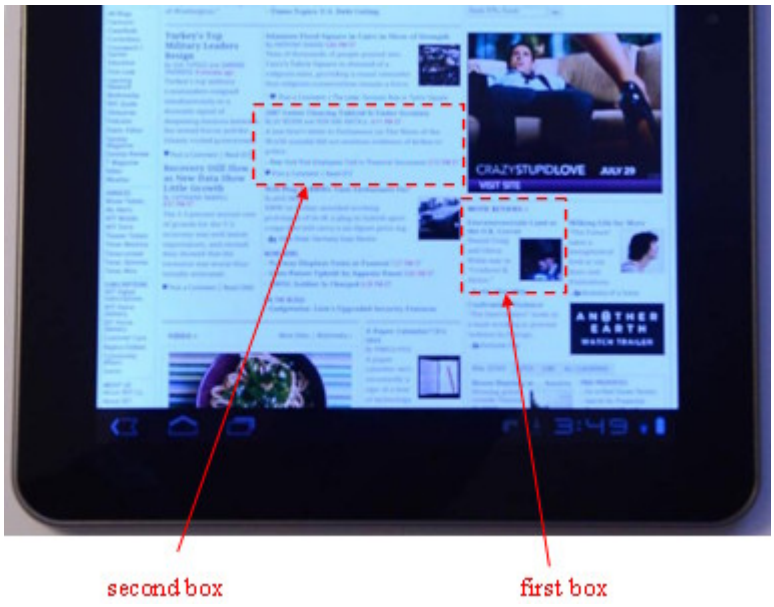


Fig. 2: Galaxy Tab 10.1 Browser displaying www.nytimes.com

59. As Figures 1 and 2 above show, a web page displayed in the Browser application on the Samsung Accused Products can include a plurality of boxes of content. In Figures 1 and 2, the boxes of content on www.nytimes.com have been highlighted for illustrative purposes with dashed rectangles. These illustrative boxes may not exactly match the boxes in the structured

electronic document. The boxes contain headlines and snippets of images and text related to news articles and other *New York Times* features. Like the rest of the web page structure, these boxes of content are defined by the HTML of the displayed web page. In my opinion, the ordinary and intended use of the Samsung Accused Products meets this recitation of claim 2.

60. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of each of the Samsung Accused Products in displaying at least a portion of a structured electronic document on the touch screen display is insubstantially different from the recited method step in claim 2.

61. In particular, the relevant operations of the Browser application of each of the Samsung Accused Products performs substantially the same function of displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content. In addition, the relevant operations of the Browser application of each of the Samsung Accused Products performs that function in substantially the same way by executing computer instructions with a processor to display at least a portion of a structured document. Finally, the relevant operations of the Browser application of the Samsung Accused Products achieve substantially the same result by displaying at least a portion of an electronic structured document composed of multiple elements such as images, paragraphs, headings, and links.

62. **Claim 2, Element [c]:** Claim 2 recites "detecting a first gesture at a location on the displayed portion of the structured electronic document."

63. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "detecting a first gesture at a location on the displayed portion of the structured electronic document." When a structured electronic document, such as a web page in the Browser application, is displayed on the touch screen, a user can touch the screen at different locations on the document to interact with it. For example, as the discussion below of the remaining elements of claim 2 illustrates in greater detail, tapping at a location on a web page displayed in the Browser causes each Samsung Accused Product to respond by enlarging and

translating the web page based on the location of the user's tap. It is apparent that each Samsung Accused Product detects a user's gesture because it responds to it. The figures below, and the videos attached as Exhibits 11a and 12a,[6] show the Galaxy S II and Galaxy Tab 10.1 devices detecting a user's tap input:

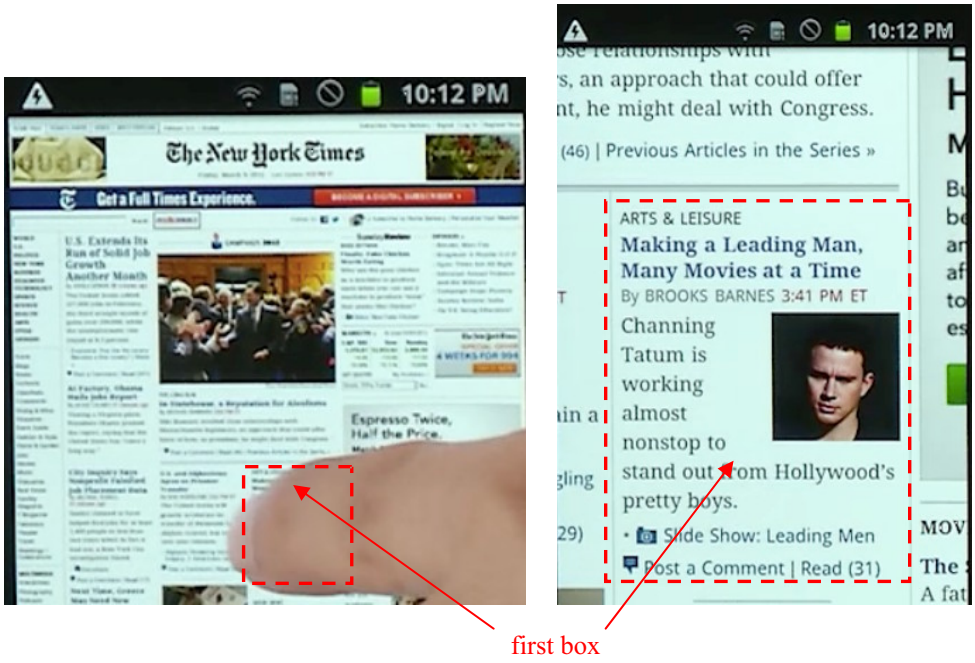
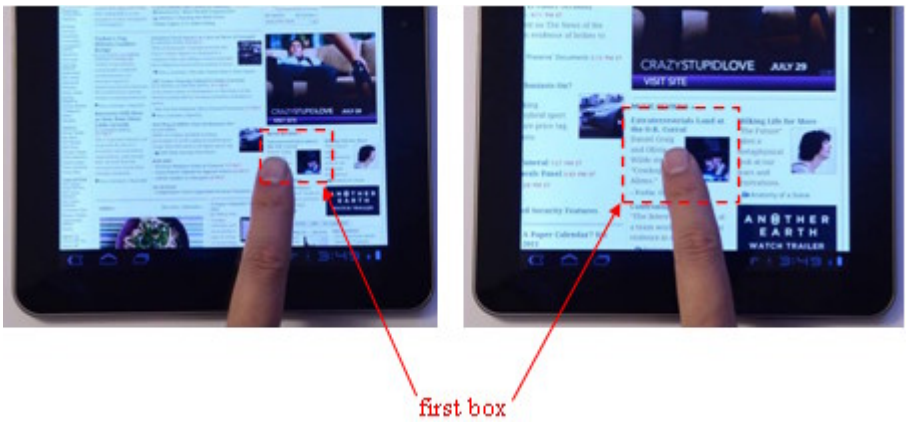


Fig. 3: Galaxy S II Browser detecting a first gesture



[6] For the remainder of this section, I will refer to the videos in Exhibits 11 and 12, which demonstrate the '163 patent features on the Galaxy Tab 10.1 and the Galaxy S II. Analogous videos showing the same features on the Samsung Vibrant are attached as Exhibit 13, and videos showing the same features on the Samsung Galaxy S Showcase are attached as Exhibit 14.

Fig. 4: Galaxy Tab 10.1 Browser detecting a first gesture

64. In my opinion, the ordinary and intended use of the Samsung Accused Products meets this recitation of claim 2.

65. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of the Samsung Accused Products in detecting a first gesture on the display portion of a structured document, namely a webpage, are insubstantially different from the recited method step in claim 2.

66. In particular, the Browser application of the Samsung Accused Products perform substantially the same function of detecting a first gesture at a location on the displayed portion of the structured electronic document as recited in the '163 patent. In addition, the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the Samsung Accused Products achieve substantially the same result by detecting gestures on a portion of a structured web page.

67. **Claim 2, Element [d]:** Claim 2 recites "determining a first box in the plurality of boxes at the location of the first gesture."

68. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "determining a first box in the plurality of boxes at the location of the first gesture." The Samsung Accused Products all contain computer code that uses the HTML-derived structure of the displayed web page to determine the box of content at the location of the user's touch.

69. For example, the Galaxy Tab 10.1 executes the zoomToReadingLevel() method in the ZoomManager class when a user double taps on a box of content while the displayed web page is fully zoomed out. (*See* SAMNDCA-C000002402; SAMNDCA-C000002406.) The zoomToReadingLevel() method then calls the nativeGetBlockLeftEdge() method of the associated WebView object (SAMNDCA-C000002406, line 1146), which ultimately returns the location of the left edge of the box at the location of the user's touch. The nativeGetBlockLeftEdge() finds the left edge of the touched box by calling methods that traverse

a set of nodes corresponding to the web page's HTML-derived structure. (*See* SAMNDCA-C000003597 to -3598 (nativeGetBlockLeftEdge() and getBlockLeftEdge() in WebView.cpp); SAMNDCA-C000003625 to -3626 (getBlockLeftEdge() and findAt() in CachedRoot.cpp); SAMNDCA-C000003648 (findBestAt(), findBestFrameAt(), and findBestHitAt() in CachedFrame.cpp).)

70. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that determines the touched box based on the HTML-derived structure of the displayed web page. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. Therefore, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 2.

71. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Android software in determining a first box among a plurality of boxes at the first location of an initial touch gesture of each of the Samsung Accused Products are insubstantially different from the recited method step.

72. In particular, the relevant operations of the Android software of each of the Samsung Accused Products performs substantially the same function as recited in claim 2, determining the touched box based on the HTML-derived structure of the displayed web page. In addition, the Android software of each of the Samsung Accused Products performs that function in substantially the same way by executing computer instructions in a processor. Finally, the Android software of the Samsung Accused Products achieves substantially the same result by determining the box in a webpage touched by the user.

73. **Claim 2, Element [e]:** Claim 2 recites "enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display."

74. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display." When a web page is displayed in the Browser

application of the Samsung Accused Products, double tapping on a box of content causes the tapped box to be enlarged and substantially centered on the touch screen display. For example, the figures below, as well as the videos attached as Exhibits 11a and 12a, show the Galaxy S II and Galaxy Tab 10.1 devices enlarging and translating a web page in response to a double tap gesture:

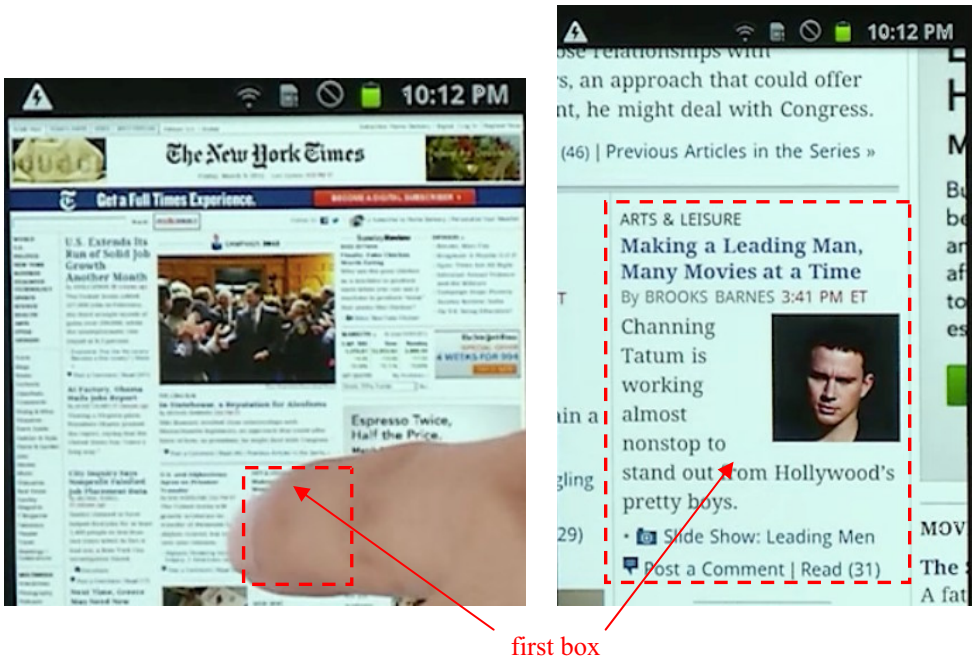


Fig. 5: Galaxy S II Browser enlarging and translating the structured electronic document

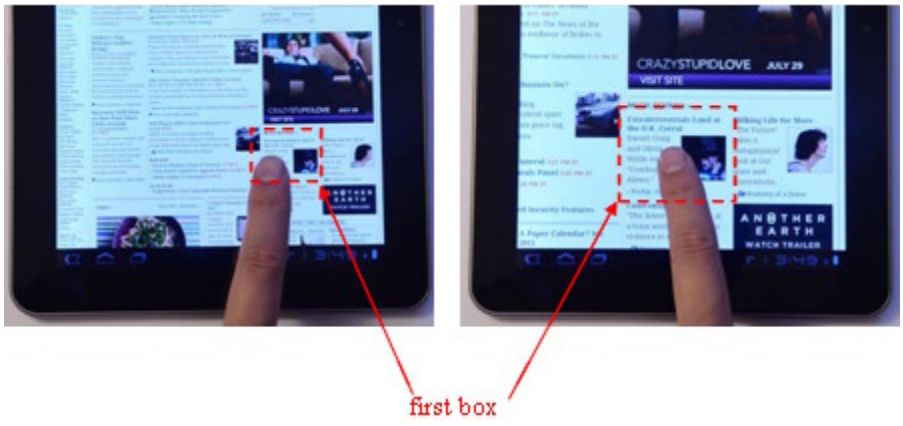


Fig. 6: Galaxy Tab 10.1 Browser enlarging and translating the structured electronic document

75. My review of Samsung source code running on the Samsung Accused Products confirms that they respond to a double tap gesture in the Browser by enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display. For example, upon receiving user touch input, the Galaxy Tab 10.1 executes the handleTouchEventCommon() method of the WebView class, which calls the handleDoubleTap() method of the ZoomManager class if the touch input is a double tap. (*See* SAMNDCA-C000002377, line 7689.) The handleDoubleTap() method, in turn, calls zoomToReadingLevel() if the double tap occurs when the web page is fully zoomed out. (*See* SAMNDCA-C000002403, line 1030.) The zoomToReadingLevel() method first determines the touched box as outlined above in element [d] of this claim (*see* SAMNDCA-C000002406, line 1146), and then it adjusts the zoom center as necessary to substantially center the touched box on the touch screen display. (*See* SAMNDCA-C000002406, lines 1147-59.) Finally, zoomToReadingLevel() calls startZoomAnimation() with the scale parameter set to readingScale. (SAMNDCA-C000002406, ll64-66.) This causes the touched box to be enlarged, via a call in startZoomAnimation() to setZoomScale(). (*See* SAMNDCA-C000003690.)

76. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that responds to a double tap gesture in the Browser by enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. In my opinion, each of the Samsung Accused Products meets this recitation of claim 2.

77. **Claim 2, Element [f]:** Claim 2 recites "while the first box is enlarged, detecting a second gesture is detected on a second box other than the first box."

78. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "while the first box is enlarged, a second gesture is detected on a second box other than the first box." After the actions corresponding to the claim elements above have enlarged the first box as previously described, a user can, while the first box is enlarged, touch the screen at the

location of a second box other than the first box. It is apparent that each Samsung Accused Product detects a user's gesture on the second box, because as detailed further in element [g] of this claim each device responds to such a gesture. The figures below, and the videos attached as Exhibits 11a and 12a, show the Galaxy S II and Galaxy Tab 10.1 devices detecting a user's tap gesture on a second box:

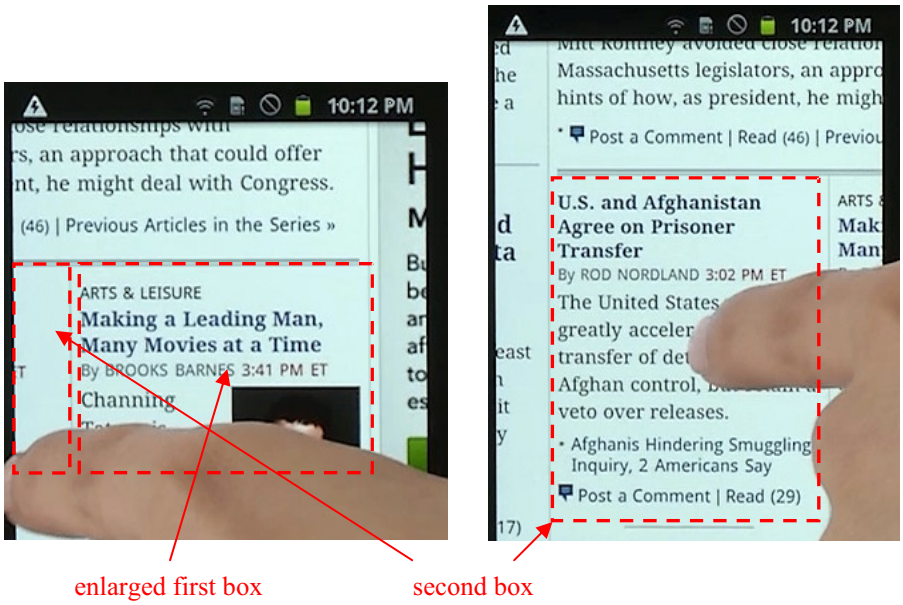


Fig. 7: Galaxy S II Browser detecting a second gesture

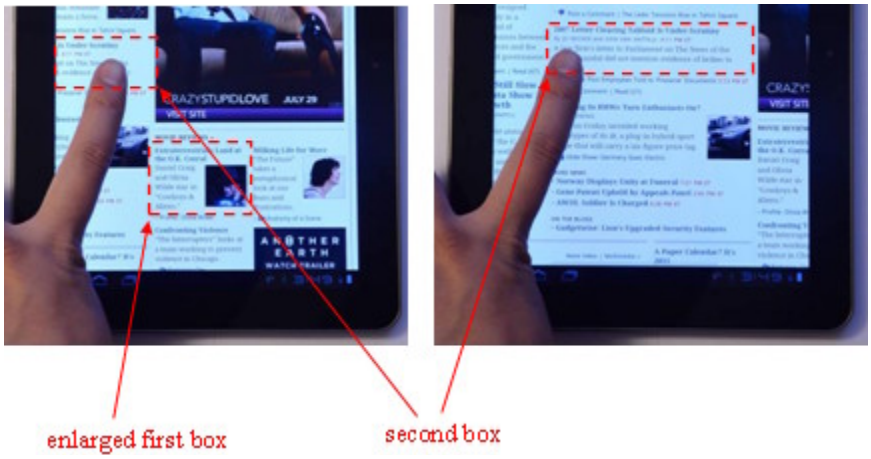


Fig. 8: Galaxy Tab 10.1 Browser detecting a second gesture

79. In my opinion, each of the Samsung Accused Products meets this limitation of claim 2.

80. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products in detecting a second gesture on a second box in a structured document while the first box is enlarged are insubstantially different from the recited method step.

81. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function of detecting a second gesture, namely the user's touch, on a second box other than the first box, while the first box is enlarged as recited in claim 2. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Samsung Accused Products achieve substantially the same result by responding to the user's touch on the screen at the location of a second box other than the first box, while the first box is enlarged.

82. **Claim 2, Element [g]:** Claim 2 recites "in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display."

83. The ordinary and intended use of the Samsung Accused Products meets the claim limitation "in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display." When a web page is displayed in the Browser application of the Samsung Accused Products, and the user has already enlarged and substantially centered a first box by double tapping on it, tapping on a second box of content causes that web page to translate such that that box is substantially centered on the screen. For example, the figures below, as well as the videos attached as Exhibits 11a and 12a, show the Galaxy S II and Galaxy Tab 10.1 devices substantially centering a second box on the screen in response to a tap gesture:

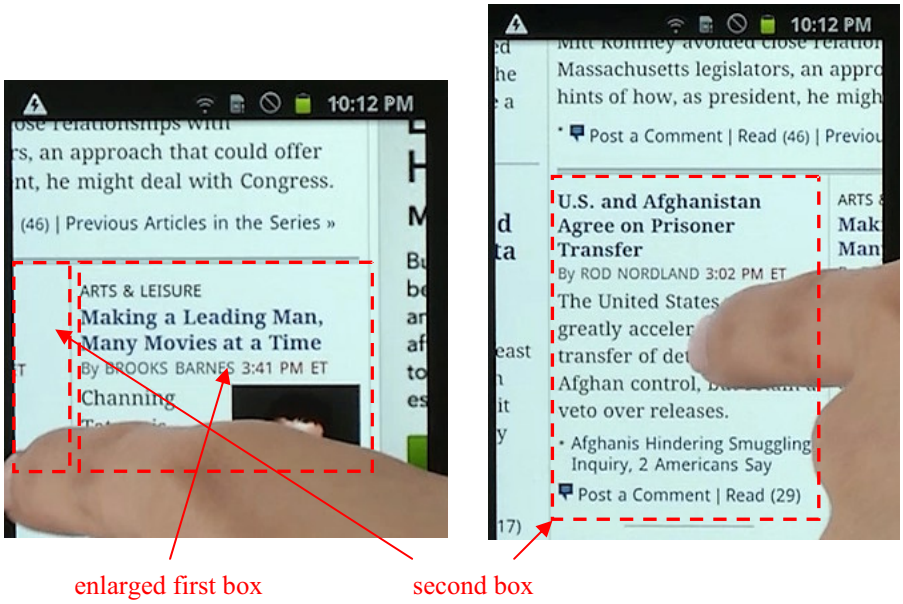


Fig. 9: Galaxy S II Browser substantially centering a second box on the screen

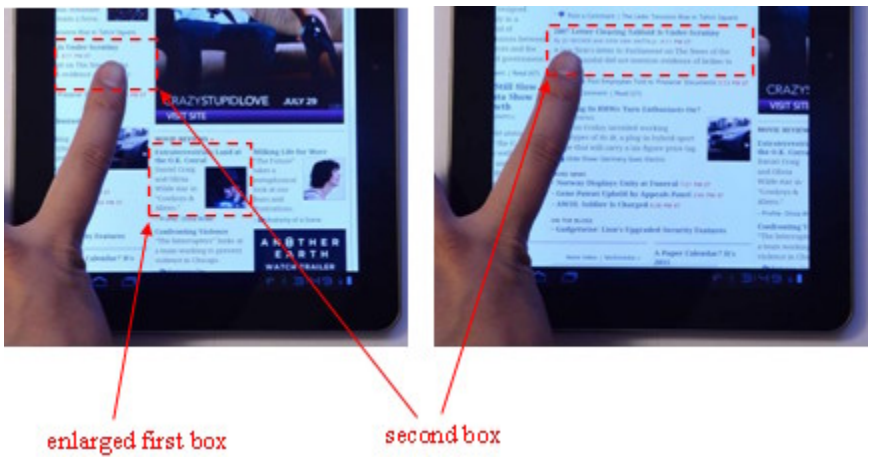


Fig. 10: Galaxy Tab 10.1 Browser substantially centering a second box on the screen

84. My review of Samsung source code running on the Samsung Accused Products confirms that they respond to a tap gesture on a second box by substantially centering that second box on the touch screen. For example, the Galaxy Tab 10.1 executes the doShortPress() method in the WebView class when the user lifts up from a single tap on the second box. (SAMNDCA-C000002369, line 7319.) The doShortPress() method, in turn, calls doMotionUp() (SAMNDCA-C000002440, line 9564), which calls nativeMotionUp() in the WebView.cpp file (SAMNDCA-

C000002441, line 9570). The nativeMotionUp() method calls motionUp() (SAMNDCA-C000002442, line 2515), which checks for the center of the tapped box (SAMNDCA-C000002443, line 1106) and then calls scrollBy() to translate the web page to substantially center the tapped box on the screen. (SAMNDCA-C000002443, line 1108).

85. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that responds to a tap gesture on a second box by substantially centering that second box on the touch screen. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. In my opinion, each of the Samsung Accused Products meets this recitation of claim 2.

86. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Android software of the Samsung Accused Products in translating the structured document so that the second box is substantially centered in response to a tap on the display are insubstantially different from the recited method step.

87. In particular, the relevant operations of the Android software of the Samsung Accused Products perform substantially the same function as recited in claim 2, translating the structured document so that the second box is substantially centered on the touch screen display in response to detecting the second gesture, namely a tap by the user. In addition, the relevant operations of the Android software of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Android software of the Samsung Accused Products achieve substantially the same result by substantially centering a second box in response to a tap by the user.

88. Based on the foregoing analysis of documents, source code, and the operation of the Samsung Accused Products, I conclude that each and every element of claim 2 is met by the ordinary and intended use of the Samsung Accused Products. Therefore, the ordinary and intended use of the Samsung Accused Products infringes claim 2.

89. **Claim 4.** Claim 4 of the '163 patent recites:

> The method of claim 2, wherein the structured electronic document is a web page.

90. Claim 4 depends from claim 2 and further requires that the structured electronic document is a web page. The analysis of claim 2, elements 3-7, above, demonstrates how the ordinary and intended use of Samsung Accused Products infringe claim 2 when the structured electronic document is a web page accessed in each Samsung Accused Product's Browser application.

91. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 4.

92. **Claim 5.** Claim 5 of the '163 patent recites:

> The method of claim 2, wherein the structured electronic document is an HTML or XML document.

93. Claim 5 depends from claim 2 and further requires that the structured electronic document is an HTML or XML document. The analysis of claim 2, element 2, above, demonstrates how the ordinary and intended use of Samsung Accused Products infringe claim 2 when the structured electronic document is an HTML document accessed in each Samsung Accused Product's Browser application.

94. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 5.

95. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the structured electronic documents accessed by the Browser application of the Samsung Accused Products are insubstantially different from an HTML or XML document as recited in claim 5.

96. In particular, the structured electronic documents accessed by the Browser application of the Samsung Accused Products perform substantially the same function of displaying information in a plurality of boxes, using HTML documents. In addition, the structured electronic documents accessed by the Browser application of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions

in a processor. Finally the structured documents accessed by the Browser application of the Samsung Accused Products achieve substantially the same result by presenting electronic structured documents in HTML format.

97. **Claim 6.** Claim 6 of the '163 patent recites:

> The method of claim 2, wherein:
>
> [a] the structured electronic document has a document width and a document length;
>
> [b] the touch screen display has a display width; and
>
> [c] displaying at least a portion of the structured electronic document comprises scaling the document width to fit within the display width independent of the document length.

98. Claim 6 depends from claim 2 and further requires that [a] the structured electronic document has a document width and a document length, [b] the touch screen display has a display width, and [c] displaying the document comprises scaling the document width to fit within the display width independent of the document length. The ordinary and intended use of Samsung Accused Products meets each and every limitation of claim 6 either literally or, in the alternative, under the doctrine of equivalents.

99. **Claim 6, Element [a]:** The ordinary and intended use of the Samsung Accused Products meets the limitation "the structured electronic document has a document width and a document length." Each of the Samsung Accused Products has computer code that keeps track of the document width and document length of a web page accessed in the Browser application. For example, on the Galaxy Tab 10.1, the WebView object that corresponds to the displayed web page includes a getContentWidth() method that returns the width of the web page document, and a getContentHeight() method that returns the length of the web page document. (*See, e.g.*, SAMNDCA-C000002404 (calling these methods to calculate width and length of the web page document).)

100. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that tracks the document width

and document length of a web page. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3. In my opinion, each of the Samsung Accused Products meets this recitation of claim 6.

101. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the structured electronic documents accessed by the Browser application of the Samsung Accused Products are insubstantially different from the structured electronic documents as described in claim 6.

102. In particular, the structured documents accessed by the Browser application of the Samsung Accused Products perform substantially the same function of having a document width and document length as the structured documents of the '163 patent. In addition, the structured documents accessed by the Browser application of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the structured documents accessed by the Browser application of the Samsung Accused Products achieve substantially the same result by enabling the information in the document to be displayed for the user.

103. **Claim 6, Element [b]:** The ordinary and intended use of the Samsung Accused Products meets the limitation "the touch screen display has a display width." Each of the Samsung Accused Products has computer code that keeps track of the device's display width. For example, on the Galaxy Tab 10.1, the Display class includes a getWidth() method that, according to the accompanying comment, "[r]eturns the raw width of the display, in pixels." (SAMNDCA-C000002492.)

104. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that tracks the touch screen display width. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. In my opinion, each of the Samsung Accused Products meets this recitation of claim 6.

105. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the touch screens of the Samsung Accused Products are insubstantially different from the touch screens described in claim 6 in that they have a display width.

106. In particular, the touch screens of the Samsung Accused Products perform substantially the same function as the touch screens of the '163 patent, displaying information that a user can interact with via touch gestures in an area with a set width. In addition, the touch screens of the Samsung Accused Products perform that function in substantially the same way by implementing computer code that tracks the touch screen display width. Finally, the touch screen displays of the Samsung Accused Products achieve substantially the same result by displaying information on a touch screen with a set width.

107. **Claim 6, Element [c]:** The ordinary and intended use of the Samsung Accused Products meets the limitation "displaying at least a portion of the structured electronic document comprises scaling the document width to fit within the display width independent of the document length." When each Accused Product displays a web page in the Browser application, the web page is displayed, when it first loads, such that the document width fits exactly within the display width, regardless of the document length. The web page is scaled appropriately to accomplish this. For example, the figures below show the Galaxy S II and the Galaxy Tab 10.1 displaying a web page such that the web page width is scaled to fit within (and fill) the display width, without regard to the web page's length:

Fig. 11: Galaxy S II Browser scaling the document width to fit within the display width independent of the document length

Fig. 12: Galaxy Tab 10.1 Browser scaling the document width to fit within the display width independent of the document length

108. My review of Samsung source code running on the Samsung Accused Products confirms that the Browser application scales the document width to fit within the display width independent of document length. For example, on the Galaxy Tab 10.1, the onSizeChanged() method of the ZoomManager class calls getZoomOverviewScale() to calculate the scale of the web page when it is fully zoomed out, as it is when the Browser application first loads. (SAMNDCA-C000002413, line 1455.) The getZoomOverviewScale() method calculates the scale for the web page as a function of only the document width. (*See* SAMNDCA-C000002404, line 1044). Because the document length is not involved in this calculation of the scaling factor, the scaling that occurs based on it is independent of document length.

109. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that scales the document width to fit within the display width independent of the document length. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. In my opinion, each of the Samsung Accused Products meets this recitation of claim 6.

110. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 6.

111. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of the Samsung Accused Products that scale electronic document width to fit the display are insubstantially different from the recited method step.

112. In particular, the relevant operations of the Browser application of the Samsung Accused Products perform substantially the same function as the recited method step, scaling the structured electronic document width to fit within the display width independent of the document length. In addition, the relevant operations of the Browser application of the Samsung Accused Products achieve substantially the same result by scaling the width of electronic documents to fit the display screen width independent of the length of the document.

113. **Claim 7.** Claim 7 of the '163 patent recites:

> The method of claim 6, wherein:
>
> [a] the touch screen display is rectangular with a short axis and a long axis;
>
> [b] the display width corresponds to the short axis when the structured electronic document is seen in portrait view; and the display width corresponds to the long axis when the structured electronic document is seen in landscape view.

114. Claim 7 depends from claim 6 and further requires that [a] the touch screen display is rectangular with a short axis and a long axis, [b] the display width corresponds to the short axis when the structured electronic document is seen in portrait view; and the display width corresponds to the long axis when the structured electronic document is seen in landscape view. The ordinary and intended use of Samsung Accused Products meets each and every limitation of claim 7.

115. **Claim 7, Element [a]:** The ordinary and intended use of the Samsung Accused Products meets the limitation "the touch screen display is rectangular with a short axis and a long axis." Inspection of the Samsung Accused Products makes plain that each has a rectangular touch screen display with a short and a long axis, as Figures 11 and 12 exemplify for the Galaxy S II

and Galaxy Tab 10.1 devices. In my opinion, each of the ordinary and intended use of Samsung Accused Products meets this recitation of claim 7.

116. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the touch screen display of the Samsung Accused Products are insubstantially different from the touch screen display as described in claim 7.

117. In particular, the touch screen displays of the Samsung Accused Products perform substantially the same function of displaying information in a defined area as the touch screen displays of the '163 patent. In addition, the touch screen displays of the Samsung Accused Products perform that function in substantially the same way by having a rectangular shape with a short axis and a long axis. Finally, the touch screen displays of the Samsung Accused Products achieve substantially the same result by presenting information on a rectangular screen.

118. **Claim 7, Element [b]:** The ordinary and intended use of the Samsung Accused Products meets the limitation "the display width corresponds to the short axis when the structured electronic document is seen in portrait view; and the display width corresponds to the long axis when the structured electronic document is seen in landscape view." Each of the Samsung Accused Products has computer code that takes account of the device's rotation whether portrait or landscape orientation in the method that returns the display width. For example, on the Galaxy Tab 10.1, the getWidth() method in the Display class includes the following comment in the source code: "Returns the raw width of the display, in pixels. . . . This value is adjusted for you based on the current rotation of the display." (SAMNDCA-C000002492.) As shown in Figures 11 and 12 above and in the videos attached as Exhibits 11c and 12c,[7] the Browser application on the Samsung Accused Products scales a web page to fit within the short axis in portrait view and to fit within the long axis in landscape view. In my opinion, each of the Samsung Accused Products meets this recitation of claim 7.

[7] Video attached as Exhibit 13c shows the same features demonstrated on the Samsung Vibrant and the Samsung Galaxy S Showcase.

119. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code that orients the display width according to portrait and landscape views. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1. In my opinion, each of the Samsung Accused Products meets this recitation of claim 6.

120. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 7.

121. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products in displaying structured documents in portrait and landscape views are insubstantially different from the recited method step.

122. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function as the recited method step, corresponding the display width to the short axis when the structured electronic document is seen in portrait view, and corresponding the display width to the long axis when the structured electronic document is seen in landscape view. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Samsung Accused Products achieve substantially the same result by displaying content in landscape view, or portrait view, depending on the orientation and rotation of the device.

123. **Claim 8.** Claim 8 of the '163 patent recites:

> The method of claim 2, wherein the plurality of boxes are defined by a style sheet language.

124. Claim 8 depends from claim 2 and further requires that the plurality of boxes are defined by a style sheet language. Each of the Samsung Accused Products includes a Browser application capable of displaying web pages via the WebView class that define boxes of content using Cascading Style Sheets (CSS). (*See*

http://developer.android.com/reference/android/webkit/WebView.html ("Starting with API Level 5 (Android 2.0), WebView supports DOM, CSS, and meta tag features . . . .").) CSS is a style sheet language. (*See* Ex. 15, Cascading Style Sheets Specification ("CSS 2.1 is a style sheet language . . . .").) The source code for the web page used to demonstrate the elements of claim 2 above, www.nytimes.com, confirms that that web page uses CSS to define the plurality of boxes displayed. (*See* Ex. 10, source code for www.nytimes.com.)

125. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 8.

126. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of each Samsung Accused Product that define the plurality of boxes in a structured document are insubstantially different from the method recited in claim 8.

127. In particular, the relevant operations of the Browser application of each Samsung Accused Product perform substantially the same function as the recited method step, defining the plurality of boxes by CSS. In addition, the relevant operations of the Browser application of each Samsung Accused Product perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Browser application of the Samsung Accused Products achieve substantially the same result by defining the boxes of an electronic structured document with CSS.

128. **Claim 9.** Claim 9 of the '163 patent recites:

> The method of claim 8, wherein the style sheet language is a cascading style sheet language.

129. Claim 9 depends from claim 8 and further requires that the style sheet language is a cascading style sheet language. The example of Cascading Style Sheets used to demonstrate infringement of claim 8 above is a cascading style sheet language.

130. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 9.

131. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the cascading style sheet language used by the Browser application of the Samsung Accused Products is insubstantially different from the cascading style sheet language as recited in claim 9

132. In particular, the cascading style sheet language used by the Browser application of the Samsung Accused Products perform substantially the same function of defining the plurality of boxes to be displayed as the cascading style sheet language of the 163 patent. In addition, the cascading style sheet language used by the Browser application of the Samsung Accused Products perform that function in substantially the same way, by providing computer instructions. Finally, the cascading style sheet language used by the Browser application of the Samsung Accused Products achieve substantially the same result by defining the boxes of structured electronic documents.

133. **Claim 10.** Claim 10 of the '163 patent recites:

> The method of claim 2, wherein the first gesture is a finger gesture.

134. Claim 10 depends from claim 2 and further requires that the first gesture is a finger gesture. Figures 3 and 4 in the analysis of claim 2, above, as well as the videos attached as Exhibits 11a and 12a, show infringement of claim 2 where the first gesture is performed by the user with a finger. The first gesture is therefore a finger gesture. All of the Samsung Accused Products detect and respond to a similar first gesture with a finger.

135. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 10.

136. **Claim 12.** Claim 12 of the '163 patent recites:

> The method of claim 2, wherein the first gesture is a tap gesture.

137. Claim 12 depends from claim 2 and further requires that the first gesture is a tap gesture. The videos attached as Exhibits 11a and 12a, show infringement of claim 2 where the first gesture is a double tap by the user on the touch screen display. The first gesture is therefore a tap gesture. All of the Samsung Accused Products detect and respond to a similar tap first gesture.

138. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 12.

139. **Claim 13.** Claim 13 of the '163 patent recites:

> The method of claim 12, wherein the first gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

140. Claim 13 depends from claim 12 and further requires that the first gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers. The videos attached as Exhibits 11a and 12a, show infringement of claim 2 where the first gesture is a double tap by the user on the touch screen display. All of the Samsung Accused Products detect and respond to a similar double tap first gesture.

141. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 13.

142. **Claim 17.** Claim 17 of the '163 patent recites:

> The method of claim 2, wherein enlarging and translating the structured electronic document comprises displaying at least a portion of the second box of the plurality of boxes of content on the touch screen display.

143. Claim 17 depends from claim 2 and further requires that at least a portion of the second box of content be displayed on the touch screen after enlarging and translating the structured electronic document. Figures 7 and 8 in the analysis of claim 2, above, as well as the videos attached as Exhibits 11a and 12a, show the Galaxy S II and Galaxy Tab 10.1 displaying at least a portion of the second box of content after a double tap gesture causes enlarging and translating of the first box. All of the Samsung Accused Products operate similarly in this regard.

144. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 17.

145. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of the Samsung Accused Products which enlarge and translate structured electronic documents are insubstantially different from the recited method step.

146. In particular, the relevant operations of the Browser application of the Samsung Accused Products provide substantially the same function as the recited method step, displaying at least a portion of the second box of content after a double tap gesture causes enlarging and translating of the first box. In addition, the relevant operations of the Browser application perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Browser application of the Samsung Accused Products achieve substantially the same result by displaying at least a portion of a second box after enlarging a box of a structured document.

147. **Claim 18.** Claim 18 of the '163 patent recites:

> The method of claim 2, wherein enlarging comprises expanding the first box so that the width of the first box is substantially the same as the width of the touch screen display.

148. Claim 18 depends from claim 2 and further requires that enlarging comprises expanding the first box so that the width of the first box is substantially the same as the width of the touch screen display. Figure 5 and the video attached as Exhibit 11a show this behavior on the Galaxy S II in demonstrating the infringement of claim 2. Based upon my observation of each of the Samsung Accused Products in operation, I believe that all of the Samsung Accused Products, with the exception of the Galaxy Tab 10.1, similarly expand the first box, in response to a double tap gesture, so that it is substantially the same width as the touch screen display.

149. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy Tab 10.1, literally infringes claim 18.

150. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application in the Samsung Accused Products which enlarge and expand the first box of a structured document to the width of the touch screen display are insubstantially different from the recited method step.

151. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function of expanding the first box, in response to a double tap gesture, so that it is substantially the same width as the touch screen display In addition, the Samsung Accused Products perform that function in substantially the same way by executing computer

instructions with a processor. Finally, the Browser application of the Samsung Accused Products achieve substantially the same result by enlarging and expanding the box of the structured document to fit the display screen in response to the user's gesture.

152. **Claim 27.** Claim 27 of the '163 patent recites:

> The method of claim 2, including:
>
> detecting a third gesture on the enlarged second box; and in response to detecting the third gesture, reducing in size the displayed portion of the structured electronic document.

153. Claim 27 depends from claim 2 and further requires detecting a third gesture on the second enlarged box and reducing the size of the displayed portion of the structured electronic document in response to it. The videos attached as Exhibits 11a and 12a, show the Galaxy S II and Galaxy Tab 10.1 detecting a third gesture, a double tap, on the second enlarged box and zooming out in response. Based upon my observation of each of the Samsung Accused Products in operation, I believe that all of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, similarly detect and respond to a double tap on the second enlarged box by zooming out as shown in Exhibits 11a and 12a. My review of Samsung's source code implementing this feature is discussed in connection with claim 28 below.

154. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, literally infringes claim 27.

155. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products that detect a third gesture, namely a double tap, on the second enlarged box and zoom out in response, are insubstantially different from the recited method step.

156. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function as the recited method step, detecting a third gesture on the enlarged second box, which is a double tap, and in response to detecting the third gesture, reducing in size the displayed portion of the structured electronic document. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the

same way by executing computer instructions with a processor. Finally, the relevant operations of the Samsung Accused Products achieve substantially the same result by enabling a user to reduce the size of the previously enlarged displayed portion of the structured electronic document.

157. **Claim 28.** Claim 28 of the '163 patent recites:

> The method of claim 27, wherein the first box returns to its size prior to being enlarged.

158. Claim 28 depends from claim 27 and further requires that the first box returns to its size prior to being enlarged. The videos referenced in demonstrating infringement of claim 27, exhibits 11a and 12a, also show, for the Galaxy S II and Galaxy Tab 10.1 devices, that the reduction in size in response to the third gesture returns the web page including the first box of content to its pre-enlargement size. I have confirmed similar behavior by observing each of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, in operation.

159. My review of Samsung source code running on the Samsung Accused Products confirms that the reduction in size in response to the third gesture returns the web page including the first box of content to its pre-enlargement size. For example, the Galaxy Tab 10.1 executes the handleDoubleTap() method of the ZoomManager class when it detects the third gesture (a double tap). (SAMNDCA-C000002402 to -C000002403). The code detects that the device is not in "overview" mode due to the earlier enlargement of the web page (in response to the first gesture), which causes it to call zoomToOverview(). (SAMNDCA-C000002403, lines 1027-28.) The zoomToOverview() method (SAMNDCA-C000002403 to -C000002406) returns the web page to the "overview" scale, which corresponds to its size as noted in claim 6, element [c] above prior to being enlarged.

160. Based on my inspection of Samsung source code for each major release of Android running on the Samsung Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I believe that each Samsung Accused Product includes similar computer code returns the web page, including the first box, to its pre-enlargement size in response to the third gesture. The claim chart in Exhibit 5 identifies analogous code that satisfies this element in Android 2.3, 2.2, and 2.1.

161. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, literally infringes claim 28.

162. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Android software of the Samsung Accused Products that returns a box in a structured document to its pre-enlargement size in response to a touch gesture are insubstantially different from the recited method step.

163. In particular, the relevant operations of the Android software of the Samsung Accused Products perform substantially the same function as the recited method step, returning the first box to its size prior to being enlarged. In addition, the relevant operations of the Android software perform that function in substantially the same way, by executing computer instructions with a processor. Finally, the relevant operations of the Android software of the Samsung Accused Products achieve substantially the same result by returning an enlarged box in a structured document to its pre-enlargement size.

164. **Claim 29.** Claim 29 of the '163 patent recites:

> The method of claim 27, wherein the third gesture and the first gesture are the same type of gesture.

165. Claim 29 depends from claim 27 and further requires that third gesture and the first gesture are the same type of gesture. As explained in the analysis of claims 2 and 27 above, and depicted, for the Galaxy S II and Galaxy Tab 10.1 devices, in the videos attached as Exhibits 11a and 12a, both the first gesture which causes the initial enlargement and translation of the first box of content and the third gesture which zooms back out are double tap gestures. They are therefore the same type of gesture. All of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, exhibit this same identity of the first and third gestures (both are double taps).

166. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, infringes claim 29.

167. **Claim 30.** Claim 30 of the '163 patent recites:

> The method of claim 27, wherein the third gesture is a finger gesture.

168. Claim 30 depends from claim 27 and further requires that the third gesture is a finger gesture. The videos attached as Exhibits 11a and 12a, show infringement of claim 27 where the third gesture is performed by the user with a finger. The third gesture is therefore a finger gesture. All of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, detect and respond to a similar third gesture with a finger.

169. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, infringes claim 30.

170. **Claim 32.** Claim 32 of the '163 patent recites:

> The method of claim 27, wherein the third gesture is a tap gesture.

171. Claim 32 depends from claim 27 and further requires that the third gesture is a tap gesture. The videos attached as Exhibits 11a and 12a, show infringement of claim 27 where the third gesture is a double tap by the user on the touch screen display. The third gesture is therefore a tap gesture. All of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, detect and respond to a similar tap third gesture.

172. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, infringes claim 32.

173. **Claim 33.** Claim 33 of the '163 patent recites:

> The method of claim 32, wherein the third gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

174. Claim 33 depends from claim 32 and further requires that the third gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers. The videos attached as Exhibits 11a and 12a, show infringement of claim 32 where the third gesture is a double tap with a single finger by the user on the touch screen display. All of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, detect and respond to a similar double tap third gesture.

175. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products, with the exception of the Galaxy S II Epic 4G Touch, infringes claim 33.

176. **Claim 34.** Claim 34 of the '163 patent recites:

> The method of claim 2, wherein the second gesture and the first gesture are the same type of gesture.

177. Claim 34 depends from claim 2 and further requires that second gesture and the first gesture are the same type of gesture. As explained in the analysis of claim 2 above, and depicted, for the Galaxy S II and Galaxy Tab 10.1 devices, in the videos attached as Exhibits 11a and 12a, both the first gesture and the second gesture are finger gestures. Both are also tap gestures. They are therefore the same type of gesture. All of the Samsung Accused Products are similar in the sense that both the first gesture and the second gesture can be finger gestures, or both can be tap gestures.

178. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 34.

179. **Claim 35.** Claim 35 of the '163 patent recites:

> The method of claim 2, wherein the second gesture is a finger gesture.

180. Claim 35 depends from claim 2 and further requires that the second gesture is a finger gesture. Figures 9 and 10 in the analysis of claim 2, above, as well as the videos attached as Exhibits 11a and 12a, show infringement of claim 2 where the second gesture is performed by the user with a finger. The second gesture is therefore a finger gesture. All of the Samsung Accused Products detect and respond to a similar second gesture with a finger.

181. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 35.

182. **Claim 37.** Claim 37 of the '163 patent recites:

> The method of claim 2, wherein the second gesture is a tap gesture.

183. Claim 37 depends from claim 2 and further requires that the second gesture is a tap gesture. The video attached as Exhibits 11a and 12a, show infringement of claim 2 where the second gesture is a single tap (on the Galaxy Tab 10.1) or double tap (on the Galaxy S II) by the

user on the touch screen display. The second gesture is therefore a tap gesture. All of the Samsung Accused Products detect and respond to a similar tap second gesture.

184. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 37.

185. **Claim 38.** Claim 38 of the '163 patent recites:

> The method of claim 37, wherein the second gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

186. Claim 38 depends from claim 37 and further requires that the second gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers. The video attached as Exhibits 11a and 12a, show infringement of claim 37 where the second gesture is a single tap with a single finger (on the Galaxy Tab 10.1) or a double tap with a single finger (on the Galaxy S II) by the user on the touch screen display. All of the Samsung Accused Products detect and respond to similar single or double tap gestures with a single finger.

187. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 38.

188. **Claim 39.** Claim 39 of the '163 patent recites:

> The method of claim 2, including:
>
> detecting a swipe gesture on the touch screen display; and in response to detecting the swipe gesture, translating the displayed portion of the structured electronic document on the touch screen display.

189. Claim 39 depends from claim 2 and further requires detecting a swipe gesture and responding by translating the displayed portion of the structured electronic document on the touch screen display. The figures below, and the videos attached as Exhibits 11b and 12b,[8] show the Galaxy S II and Galaxy Tab 10.1 detecting a swipe gesture and responding by translating the web page displayed in the Browser application:

[8] Videos attached as Exhibits 13b and 14b show the same features demonstrated on the Samsung Vibrant and the Samsung Galaxy S Showcase.

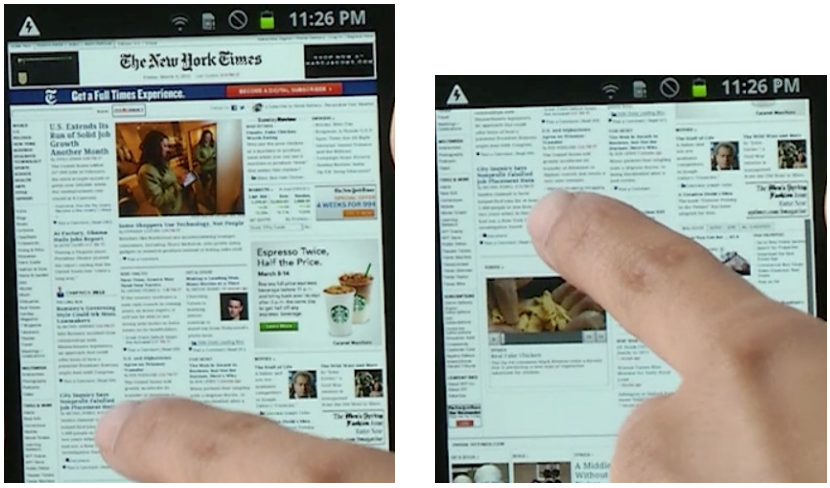


Fig. 13: Galaxy S II Browser detecting and responding to a swipe gesture

Fig. 14: Galaxy Tab 10.1 Browser detecting and responding to a swipe gesture

190. Based upon my observation of each of the Samsung Accused Products in operation, I believe that all of the Samsung Accused Products similarly detect and respond to a swipe gesture by translating, or scrolling, the displayed web page.

191. My review of Samsung source code running on the Samsung Accused Products confirms that the Browser application on each Samsung Accused Product detects and responds to a one-fingered swipe gesture by translating, or scrolling, the displayed web page. I describe in

greater detail the source code that accomplishes detecting and responding to a single-finger scrolling, such as the swipe gesture described in this claim, in my analysis of claim 1 of the '915 patent. I incorporate that source code discussion here by reference.

192. Based on the foregoing analysis, I conclude that the ordinary and intended use of the Samsung Accused Products literally infringes claim 39.

193. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products that detect and respond to a swipe gesture by translating, or scrolling, the web page, are insubstantially different from the recited method step.

194. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function of detecting a swipe gesture on the touch screen display, and in response to that swipe gesture translating, or scrolling the displayed web page. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Samsung Accused Products achieve substantially the same result by detecting a swipe gesture, and translating, or scrolling the displayed web page.

195. **Claim 40.** Claim 40 of the '163 patent recites:

> The method of claim 39, wherein translating comprises vertical, horizontal, or diagonal movement of the structured electronic document on the touch screen display.

196. Claim 40 depends from claim 39 and further requires that the translating comprises vertical, horizontal, or diagonal movement of the structured electronic document on the touch screen display. The example used to demonstrate infringement of claim 39 above shows vertical movement of a web page in the Browser application in response to a finger swipe gesture. That analysis therefore satisfies the additional limitation of this claim.

197. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 40.

198. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products that

translate a finger swipe gesture on the display screen into vertical movement of a web page is are insubstantially different from the recited method step.

199. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function as the recited method step, translating a finger swipe gesture into vertical movement of a structured electronic document on the touch screen display. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Samsung Accused Products achieve substantially the same result by responding to a finger swipe gesture by translating that gesture into vertical movement of the structured electronic document on the touch screen display.

200. **Claim 41.** Claim 41 of the '163 patent recites:

> The method of claim 39, wherein the swipe gesture is a finger gesture.

201. Claim 41 depends from claim 39 and further requires that the swipe gesture is a finger gesture. Figures 13 and 14 in the analysis of claim 39, above, as well as the videos attached as Exhibits 11b and 12b, show infringement of claim 39 where the swipe gesture is performed by the user with a finger. The swipe gesture is therefore a finger gesture. All of the Samsung Accused Products detect and respond to a similar swipe gesture with a finger.

202. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products infringes claim 41.

203. **Claim 47.** Claim 47 of the '163 patent recites:

> The method of claim 2, including:
>
> detecting a change in orientation of the device, in response to detecting the change in orientation of the device, rotating the displayed portion of the structured electronic document on the touch screen display by 90 degrees.

204. Claim 47 depends from claim 2 and further requires detecting a change in orientation of the device and responding by rotating the displayed portion of the structured electronic document on the touch screen display by 90 degrees. The videos attached as Exhibits 11c and 12c, show the Galaxy S II and Galaxy Tab 10.1 rotating a web page displayed in the

Browser application by 90 degrees in response to a change in orientation of the device. In addition, Figures 11 and 12 above show the Galaxy S II and Galaxy Tab 10.1 displaying a web page before and after a change in orientation of the devices. Figures 11 and 12 show that the displayed web page rotates by 90 degrees in response to the orientation change.

205. Based upon my observation of each of the Samsung Accused Products in operation, I believe that all of the Samsung Accused Products similarly rotate a web page displayed in the Browser application by 90 degrees in response to a change in orientation of the device, as shown in Exhibits 11c and 12c and Figures 11 and 12.

206. Accordingly, it is my opinion that the ordinary and intended use of the Samsung Accused Products literally infringes claim 47.

207. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Samsung Accused Products that rotate the displayed portion of the structured electronic document on the touch screen display in response to the orientation of the device are insubstantially different from the recited method step.

208. In particular, the relevant operations of the Samsung Accused Products perform substantially the same function as the recited method step, rotating the displayed portion of the structured electronic document 90 degrees on the touch screen display in response to change in the orientation of the device. In addition, the relevant operations of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally , the relevant operations of the Accuse products achieve substantially the same result by rotating the displayed portion of the structured electronic document in response to a change in the orientation of the device.

209. **Claim 48.** Claim 48 of the '163 patent recites:

> The method of claim 2, including:
>
> detecting a multi-finger de-pinch gesture on the touch screen display, in response to detecting the multi-finger de-pinch gesture, enlarging a portion of the displayed portion of the structured electronic document on the touch screen display in accordance with a position of the multi-finger de-pinch gesture and an amount of finger movement in the multi-finger de-pinch gesture.

210. Claim 48 depends from claim 2 and further requires detecting a multi-finger de-pinch gesture and responding by enlarging a portion of the displayed portion of the structured electronic document on the touch screen display in accordance with a position of the multi-finger de-pinch gesture and an amount of finger movement in the multi-finger de-pinch gesture. The figures below, and the videos attached as Exhibits 11b and 12b, show the Galaxy S II and Galaxy Tab 10.1 detecting two-finger de-pinch gesture and responding by scaling the web page displayed in the Browser application based on the position of the de-pinch and the finger movement in it:

Fig. 15: Galaxy S II Browser detecting and responding to a de-pinch gesture

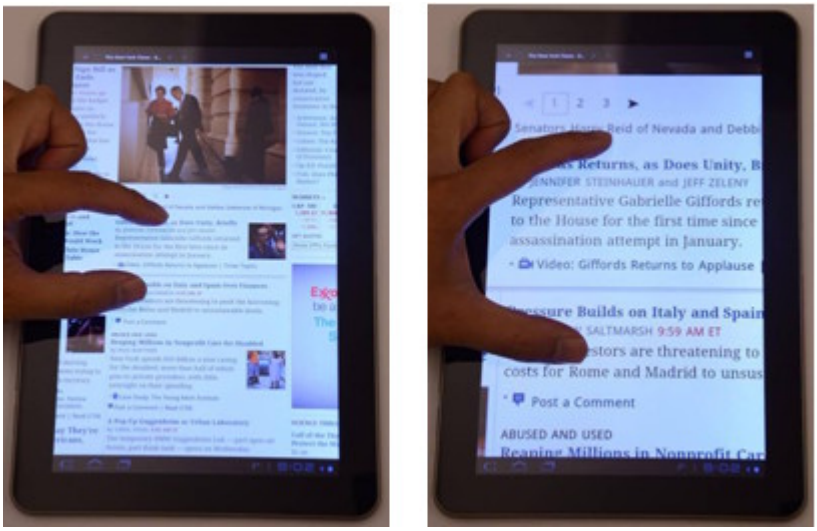


Fig. 16: Galaxy Tab 10.1 Browser detecting and responding to a de-pinch gesture

211. Based upon my observation of each of the Samsung Accused Products in operation, I believe that all of the Samsung Accused Products similarly detect and respond to a de-pinch gesture by scaling the web page based on the position of the de-pinch and the finger movement in it.

212. My review of Samsung source code running on the Samsung Accused Products confirms that the Browser application on each Samsung Accused Product detects and responds to a two-fingered de-pinch gesture by scaling the web page based on the position of the de-pinch and the finger movement in it. I describe in greater detail the source code that accomplishes detecting and responding to a such a de-pinch gesture in my analysis of claim 1 of the '915 patent. I incorporate that source code discussion here by reference.

213. Accordingly, I conclude that the ordinary and intended use of the Samsung Accused Products literally infringes claim 48.

214. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the relevant operations of the Browser application of the Samsung Accused Products that detect and respond to a two-fingered de-pinch gesture by scaling the web page based on the position of the de-pinch and the finger movement in it are unsubstantially different from the recited method step.

215. In particular, the relevant operations of the Browser application of the Samsung Accused Products perform substantially the same function as the recited method step, detecting and responding to a de-pinch gesture by scaling the web page based on the position of the de-pinch and the finger movement in it. In addition, the relevant operations of the Browser application of the Samsung Accused Products perform that function in substantially the same way by executing computer instructions with a processor. Finally, the relevant operations of the Browser application of the Samsung Accused Products achieve substantially the same result by detecting and responding to a de-pinch gesture on the display screen by scaling the web page based on the position of the de-pinch and the finger movement in it.

216. **Claim 49.** Claim 49 of the '163 patent recites:

> A graphical user interface on a portable electronic device with a touch screen display, comprising:
>
> [a] at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content; wherein:
>
> [b] in response to detecting a first gesture at a location on the portion of the structured electronic document: a first box in the plurality of boxes at the location of the first gesture is determined;
>
> [c] the structured electronic document is enlarged and translated so that the first box is substantially centered on the touch screen display;
>
> [d] while the first box is enlarged, a second gesture is detected on a second box other than the first box; and
>
> [e] in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

217. **Claim 49, Preamble:** The preamble of claim 49 recites: "A graphical user interface on a portable electronic device with a touch screen display." As discussed in the context of the preamble and element [a] of claim 2 above, all of the Samsung Accused Products are either smartphones (like the Galaxy S II) or tablet computers (like the Galaxy Tab 10.1) with touch screen displays. Each includes a graphical user interface, such as the Browser application user interface showing in Figures 1 and 2. Therefore the Samsung Accused Products meet the preamble of claim 49.

218. To the extent that the preamble is found to be a limitation, and the limitation is not met literally, in my opinion it is met under the doctrine of equivalents because the Samsung Accused Products are all portable electronic devices with touch screen displays that have a graphical user interface, which are insubstantially different from the graphical user interface on a portable electronic device with a touch screen display as recited in claim 49

219. In particular, the Samsung Accused Products perform substantially the same function of having a graphical user interface on a portable electronic devices with touch screen display as the graphical user interface of claim 49. In addition, the graphical user interface of the Samsung Accused Products performs that function in substantially the same way, by executing

computer instructions with a processor. Finally, the graphical user interface of the Samsung Accused Products achieve substantially the same result by having a graphical user interface on a portable electronic device with a touch screen display.

220. **Claim 49, Element [a]:** Claim 49 recites: "at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content."

221. The Samsung Accused Products meet the claim limitation "at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content." This is the same limitation present in element [b] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 49 for the reasons discussed above in connection with element [b] of claim 2 (as depicted, in particular, in Figures 1 and 2).

222. **Claim 49, Element [b]:** Claim 49 recites: "in response to detecting a first gesture at a location on the portion of the structured electronic document: a first box in the plurality of boxes at the location of the first gesture is determined."

223. The Samsung Accused Products meet the claim limitation "at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content." This limitation is equivalent to elements [c] and [d] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 49 for the reasons discussed above in connection with elements [c] and [d] of claim 2 (as depicted, in particular, in Figures 3 and 4 and the videos in Exhibits 11a and 12a).

224. **Claim 49, Element [c]:** Claim 49 recites: "the structured electronic document is enlarged and translated so that the first box is substantially centered on the touch screen display."

225. The Samsung Accused Products meet the claim limitation "the structured electronic document is enlarged and translated so that the first box is substantially centered on the touch screen display." This limitation is equivalent to element [e] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 49 for the reasons discussed above in connection with element [e] of claim 2 (as depicted, in particular, in Figures 5 and 6 and the videos in Exhibits 11a and 12a).

226. **Claim 49, Element [d]:** Claim 49 recites: "while the first box is enlarged, a second gesture is detected on a second box other than the first box."

227. The Samsung Accused Products meet the claim limitation "while the first box is enlarged, a second gesture is detected on a second box other than the first box." This is the same limitation present in element [f] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 49 for the reasons discussed above in connection with element [f] of claim 2 (as depicted, in particular, in Figures 7 and 8 and the videos in Exhibits 11a and 12a).

228. **Claim 49, Element [e]:** Claim 49 recites "in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display."

229. The Samsung Accused Products meet the claim limitation "in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display." This is the same limitation present in element [g] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 49 for the reasons discussed above in connection with element [g] of claim 2 (as depicted, in particular, in Figures 9 and 10 and the videos in Exhibits 11a and 12a).

230. I conclude that the Samsung Accused Products meet each and every element of claim 49 either literally or, in the alternative, under the doctrine of equivalents as described in the discussion of claim 2. Therefore, the Samsung Accused Products infringe claim 49.

231. **Claim 50.** Claim 50 of the '163 patent Recites:

> A portable electronic device, comprising:
>
> [a] a touch screen display;
>
> [b] one or more processors;
>
> [c] memory; and
>
> [d] one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including:
>
> [e] instructions for displaying at least a portion of a structured electronic document on the touch screen display, wherein the

> structured electronic document comprises a plurality of boxes of content;
>
> [f] instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document;
>
> [g] instructions for determining a first box in the plurality of boxes at the location of the first gesture;
>
> [h] instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;
>
> [i] instruction for, while the first box is enlarged, a second gesture is detected on a second box other than the first box; and
>
> [j] instructions for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

232. **Claim 50, Preamble:** The preamble of claim 50 recites: "a portable electronic device." As described in the discussion of element [a] of claim 2, each of the Samsung Accused Products is a portable electronic device. The Samsung Accused Products accordingly meet the preamble of claim 50 for the reasons discussed above in connection with element [a] of claim 2.

233. **Claim 50, Element [a]:** Claim 50 recites: "a touch screen display." As described in the discussion of element [a] of claim 2, each of the Samsung Accused Products has a touch screen display. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [a] of claim 2.

234. **Claim 50, Element [b]:** Claim 50 recites: "one or more processors." As described in the discussion of the claim 2 preamble, the Samsung Accused Products are mobile computing devices with processors that run the Android software platform. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with the preamble to claim 2.

235. **Claim 50, Element [c]:** Claim 50 recites: "memory." The Samsung Accused Products contain memory. As Samsung describes its own products, they come equipped with the following features:

- Galaxy S II: "16GB built-in memory (on-board)" (Ex. 8 at APLNDC-Y0000060923);

- Galaxy Tab 10.1: "16GB built-in memory (on-board)" (Ex. 9 at APLNDC-Y0000061396).

236. All of the Samsung Accused Products similarly contain memory. Therefore each of the Samsung Accused Products meets this recitation of claim 50.

237. **Claim 50, Element [d]:** Claim 50 recites: "one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors."

238. The Samsung Accused Products meet the claim limitation "one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors." As discussed above in connection with claim 2, each of the Samsung Accused Products includes an application called "Browser," which displays web pages written in HTML. The Browser on each Accused Product is (or includes) a program that is stored in the memory of each Accused Product and configured to be executed by its processor. This is how computers generally operate, and thus it is how the Accused Products, which are computers, perform (among other methods) the computer-implemented method discussed above in reference to Samsung's infringement of claim 2. I have reviewed source code associated with the claims of the '163 patent. Based on my knowledge of how computers generally operate, I believe that a copy of this source code (or some part of it) is compiled to produce machine-readable instructions which are stored in the memory of each Accused Product and configured to be executed by its processor to implement the programs that the source code describes. The particular instructions produced by compilation of the source code relevant to this claim are discussed below. Based on the foregoing, it is my opinion that the Samsung Accused Products meet this recitation of claim 50.

239. **Claim 50, Element [e]:** Claim 50 recites that the one or more programs include: "instructions for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content."

240. The Samsung Accused Products meet the claim limitation "instructions for displaying at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content." This element requires instructions for performing the same limitation present in element [b] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [b] of claim 2 (as depicted, in particular, in Figures 1 and 2). Because the Samsung Accused Products all perform element [b] of claim 2, they must have instructions for doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 that I believe is compiled into machine-readable instructions that perform the method that claim 2 describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

241. **Claim 50, Element [f]:** Claim 50 recites that the one or more programs include: "instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document."

242. The Samsung Accused Products meet the claim limitation "instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document." This element requires instructions for performing the same limitation present in element [c] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [c] of claim 2 (as depicted, in particular, in Figures 3 and 4 and the videos in Exhibits 11a and 12a). Because the Samsung Accused Products all perform element [c] of claim 2, they must have instructions for doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 that I believe is compiled into machine-readable instructions that perform the method that claim 2

describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

243. **Claim 50, Element [g]:** Claim 50 recites that the one or more programs include: "instructions for determining a first box in the plurality of boxes at the location of the first gesture."

244. The Samsung Accused Products meet the claim limitation "instructions for determining a first box in the plurality of boxes at the location of the first gesture." This element requires instructions for performing the same limitation present in element [d] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [d] of claim 2. Because the Samsung Accused Products all perform element [d] of claim 2, they must have instructions for doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 (including, in particular, the code identified in the discussion of element [d] of claim 2 and in the claim charts in Exhibits 4 and 5) that I believe is compiled into machine-readable instructions that perform the method that claim 2 describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

245. **Claim 50, Element [h]:** Claim 50 recites that the one or more programs include: "instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display."

246. The Samsung Accused Products meet the claim limitation "instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display." This element requires instructions for performing the same limitation present in element [e] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [e] of claim 2 (as depicted, in particular, in Figures 5 and 6 and the videos in Exhibits 11a and 12a). Because the Samsung Accused Products all perform element [e] of claim 2, they must have instructions for

doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 (including, in particular, the code identified in the discussion of element [e] of claim 2 and in the claim charts in Exhibits 4 and 5) that I believe is compiled into machine-readable instructions that perform the method that claim 2 describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

247. **Claim 50, Element [i]:** Claim 50 recites that the one or more programs include: "instructions for, while the first box is enlarged, a second gesture is detected on a second box other than the first box."

248. The Samsung Accused Products meet the claim limitation "instructions for, while the first box is enlarged, a second gesture is detected on a second box other than the first box." This element requires instructions for performing the same limitation present in element [f] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [f] of claim 2 (as depicted, in particular, in Figures 7 and 8 and the videos in Exhibits 11a and 12a). Because the Samsung Accused Products all perform element [f] of claim 2, they must have instructions for doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 that I believe is compiled into machine-readable instructions that perform the method that claim 2 describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

249. **Claim 50, Element [j]:** Claim 50 recites that the one or more programs include: "instructions for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display."

250. The Samsung Accused Products meet the claim limitation "instructions for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display." This element requires

instructions for performing the same limitation present in element [g] of claim 2. The Samsung Accused Products accordingly meet this recitation of claim 50 for the reasons discussed above in connection with element [g] of claim 2 (as depicted, in particular, in Figures 9 and 10 and the videos in Exhibits 11a and 12a). Because the Samsung Accused Products all perform element [g] of claim 2, they must have instructions for doing so. As explained above in connection with element [d] of this claim, computers, such as the Samsung Accused Products, must execute instructions to accomplish the tasks they are programmed to perform. Moreover, I have analyzed Samsung's source code associated with claim 2 (including, in particular, the code identified in the discussion of element [g] of claim 2 and in the claim charts in Exhibits 4 and 5) that I believe is compiled into machine-readable instructions that perform the method that claim 2 describes. Accordingly, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 50.

251. I conclude that the Samsung Accused Products meet each and every element of claim 50 either literally or, in the alternative, under the doctrine of equivalents as described in the discussion of claim 2. Therefore, the Samsung Accused Products infringe claim 50.

252. **Claim 51.** Claim 51 of the '163 patent Recites:

> A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by a portable electronic device with a touch screen display, cause the device to:
>
> [a] display at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;
>
> [b] detect a first gesture at a location on the displayed portion of the structured electronic document;
>
> [c] determine a first box in the plurality of boxes at the location of the first gesture;
>
> [d] enlarge and translate the structured electronic document so that the first box is substantially centered on the touch screen display;
>
> [e] while the first box is enlarged, detect a second gesture on a second box other than the first box; and

> [f] in response to detecting the second gesture, translate the structured electronic document so that the second box substantially centered on the touch screen display.

253. **Claim 51, Preamble:** The preamble of claim 51 recites: "A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by a portable electronic device with a touch screen display" cause the device to execute the steps described below.

254. As described in the discussion of the preamble and element [a] of claim 2, each Samsung Accused Product is a mobile computing device with a processor that has a touch screen. Furthermore, as described in the discussion of elements [c] and [d] of Claim 50, each Samsung Accused Product has programs comprising instructions, like the Browser application, that are stored in its memory and configured to be executed by its processor. Therefore, it is my opinion that each of the Samsung Accused Products meets this recitation of claim 51.

255. To the extent that the preamble is found to be a limitation and is not met literally, in my opinion it is met under the doctrine of equivalents because the processors and relevant portions of the Android software of each of the Samsung Accused Products is insubstantially different from a computer-implemented method as recited in claim 51.

256. In particular, relevant portions of the processors and Android software of each of the Samsung Accused Products performs substantially the same function of implementing a method for displaying structured electronic documents, such as web pages, on a touch screen display, and navigating in them using touch gestures as the computer-implemented method of the '163 patent. In addition, the processors and relevant portions of the Android software of the Samsung Accused Products perform that function in substantially the same way by the execution of computer instructions with a processor. Finally, both the processors and relevant portions of Android software, and the recited method achieve substantially the same result of displaying structured electronic documents, such as web pages, on a touch screen display, which the user can navigate using touch gestures.

257. **Claim 51, Elements [a] through [f]:** Elements [a] through [f] of claim 51 describe the steps carried out by a device when it executes, on its processor, programs stored as

instructions on a computer readable storage medium. These elements of claim 51 correspond exactly to the "instructions" specified, respectively, in elements [e] through [j] of claim 50. Claim 50 simply refers to the instructions that are executed, while claim 51 refers to the results of executing those same instructions. The Samsung Accused Products accordingly meet the recitations of elements [a] through [f] of claim 51 for the reasons discussed above in connection, respectively, with elements [e] through [j] of claim 50.

258. I conclude that the Samsung Accused Products meet each and every element of claim 51 either literally or, in the alternative, under the doctrine of equivalents as described in the discussion of claim 2. Therefore, the Samsung Accused Products infringe claim 51.

259. **Claim 52**: Claim 52 of the '163 patent recites:

> A portable electronic device with a touch screen display, comprising:
>
> [a] means for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;
>
> [b] means for detecting a first gesture at a location on the displayed portion of the structured electronic document;
>
> [c] means for determining a first box in the plurality of boxes at the location of the first gesture;
>
> [d] means for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;
>
> [e] means for, while the first box is enlarged, a second gesture is detected on a second box other than the first box; and
>
> [f] means for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

260. **Claim 52, Preamble:** The preamble of claim 52 recites: "A portable electronic device with a touch screen display." As described in the discussion of element [a] of claim 2, each of the Samsung Accused Products is a portable electronic device with a touch screen display. The Samsung Accused Products accordingly meet the preamble of claim 52 for the reasons discussed above in connection with element [a] of claim 2.

261. **Claim 52, Element [a]:** Claim 52 recites: "means for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content." Each of the Samsung Accused Products displays a structured electronic document that comprises a plurality of boxes of content, as discussed above in connection with element [b] of Claim 2.

262. I have been informed that the "means for displaying a structured electronic document on a touch screen display" limitation is in "means plus function" form and is governed by section 112.6. The function is displaying at least a portion of a structured electronic document on the touch screen display. The corresponding structure is a touch screen display coupled to one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for displaying at least a portion of a structured electronic document on the touch screen display.

263. As discussed above with respect to claim 50, each of the Accused Products includes a touch screen display coupled to a processor programmed with special purpose software to display at least a portion of a structured electronic document on the touch screen display. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-3:27; 6:17-22; 18:38-21:25; FIGS. 1A-B, 5A-H, 6A-C.

264. **Claim 52, Element [b]:** Claim 52 recites: "means for detecting a first gesture at a location on the displayed portion of the structured electronic document." I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is detecting a first gesture at a location on the displayed portion of the structured electronic document. The corresponding structure is a touch screen display coupled to one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document.

265. As discussed above with respect to claim 50, each of the Accused Products includes a touch screen display coupled to a processor programmed with special purpose software

to detect a first gesture at a location on the displayed portion of the structured electronic document. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-44; 2:66-3:27; 6:17-22; 7:50-8:47; 10:42-61; 18:38-19:14, 20:24-21:25; FIGS. 1A-B, 5A-H, 6A-C.

266. **Claim 52, Element [c]:** Claim 52 recites: "means for determining a first box in the plurality of boxes at the location of the first gesture." I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is determining a first box in the plurality of boxes at the location of the first gesture. The corresponding structure is one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for determining a first box in the plurality of boxes at the location of the first gesture.

267. As discussed above with respect to claim 50, each of the Accused Products includes a processor programmed with special purpose software to determine a first box in the plurality of boxes at the location of the first gesture. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-3:27; 6:17-22; 18:38-19:30, 20:52-61, 21:9-37; FIGS. 1A-B, 5A-H, 6A-C.

268. **Claim 52, Element [d]:** Claim 52 recites: "means for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display." I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display. The corresponding structure is a touch screen display coupled to one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display.

269. As discussed above with respect to claim 50, each of the Accused Products includes a touch screen display coupled to a processor programmed with special purpose software

to enlarge and translate the structured electronic document so that the first box is substantially centered on the touch screen display. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-3:27; 6:17-22; 18:38-20:23, 21:10-40; FIGS. 1A-B, 5A-H, 6A-C.

270. **Claim 52, Element [e]:** Claim 52 recites "means for, while the first box is enlarged, a second gesture is detected on a second box other than the first box." I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is while the first box is enlarged, detecting a second gesture on a second box other than the first box. The corresponding structure is a touch screen display coupled to one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for, while the first box is enlarged, detecting a second gesture on a second box other than the first box.

271. As discussed above with respect to claim 50, each of the Accused Products includes a touch screen display coupled to a processor programmed with special purpose software, while the first box is enlarged, to detect a second gesture on a second box other than the first box. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-44; 2:66-3:13; 6:17-22; 18:38-21:25; FIGS. 1A-B, 6A-C.

272. **Claim 52, Element [f]:** Claim 52 recites "means for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display." I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display. The corresponding structure is a touch screen display coupled to one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for, in response to detecting the second gesture, translating the structured electronic document so that the second box is substantially centered on the touch screen display.

273. As discussed above with respect to claim 50, each of the Accused Products includes a touch screen display coupled to a processor programmed with special purpose software, in response to detecting the second gesture, to translate the structured electronic document so that the second box is substantially centered on the touch screen display. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '163 patent at 2:28-44; 2:66-3:13; 6:17-22; 18:38-21:25; FIGS. 1A-B, 6A-C.

274. I conclude that the Samsung Accused Products, which contain structures equivalent to those in the '163 patent to perform all the functions in claim 52, meet each and every element of claim 52 either literally or, in the alternative, under the doctrine of equivalents. Therefore, the Samsung Accused Products infringe claim 52.

E. Samsung's Emulation Of The Features Of The '163 Patent

275. I have also reviewed a number of documents produced by Samsung in this litigation, including analyses of features in Apple products and email messages. Based on my review of these documents, it appears that Samsung studied a number of Apple products that embody the asserted claims of the '163 patent, recognized the benefits of the '163 patent, and implemented the features of the '163 patent in Samsung products.

276. In December 2009, Samsung's C.E.O. issued "instruction items" for 2010, stating, "going forward our comparison standard is Apple iPhone. In High End cases, evaluate with iPhone standard." (SAMNDCA10907803.) The then-principal engineer of Samsung's Mobile R & D, Dongsub Kim, reiterated this sentiment in an email to several at the company, saying, "Henceforth our standard for comparison is the Apple iPhone." (SAMNDCA1097800.)

277. Earlier in 2009, Samsung conducted a "Browser Zooming Methods UX Exploration Study." (SAMNDCA11104115.) There, it concluded that it must "Adopt Double-Tap as a supplementary zooming method…The UX of iPhone can be used as a design benchmark."

278. A presentation entitled "Relative Evaluation Report on S1, iPhone" by the "Product Engineering Team Software Inspection Group" at Samsung shows that Samsung

modeled the embodiment of the "second gesture" element of the '163 patent in its Galaxy S devices after that element's embodiment in the iPhone. (SAMNDCA00203880, SAMNDCA00203937.) This document observes that, on the iPhone, "[w]hen a different point is tapped after enlarging, the screen moves to the tapped screen and shows the enlarged screen," while the Galaxy S prototype merely "shrinks back to the original screen" instead of translating to center on an enlarged view of a second box. (SAMNDCA00203937.) The slide concludes that Samsung "[n]eed[s] to supplement the double tapping enlargement/shrinkage feature" as an "[i]mprovement" for the Galaxy S prototype, to match the iPhone's embodiment of the "second gesture" element of the '163 patent. (*Id.*)

279. Documents produced by Samsung show that Samsung referred repeatedly to Apple products in developing and improving the double-tap zooming features of the '163 patent in its products. Samsung tested some of the Samsung Accused Products using Apple products embodying the '163 patent as benchmarks, creating charts measuring the smoothness, response time, and feel of the '163 patent's double-tap zooming features. (SAMNDCA00229399; SAMNDCA00229410; SAMNDCA00229449; SAMNDCA00525359; S-ITC-003524055; S-ITC-003680299.)

280. Samsung also developed patches to attempt to improve functionality covered by the '163 patent in its products to meet the superior performance of Apple's '163-embodying products. An email from Sangheon Kim to Jaegwan Shin shows that even after one patch was applied to Samsung's P7500 prototype, there was a "Double Tap problem…Initial response time is slow….zoom animation is not smooth like in the iPad2, and it feels slow and wobbles slightly from left/right." (SAMNDCA00201783.)

F. A Non-Infringing Alternative Design for Navigating Structured Electronic Documents

281. Samsung could have chosen other methods to implement the ability to navigate around structured electronic documents using touch gestures, but they would not have been as elegant or intuitive. One of the Samsung documents already discussed above the "Relative Evaluation Report" at SAMNDCA00203880 highlights one possible alternative to using the

features of the '163 patent, although this alternative is, in my opinion, less appealing to users. The Browser on a smartphone or tablet computer could be programmed to use gestures to zoom in and out on portions of a structured web page without the additional ability, once zoomed in, to use a "second gesture" (in the language of the '163 patent) to translate to a different box of content. This appears, from Samsung's own Relative Evaluation Report (SAMNDCA00203880 at SAMNDCA00203937), to be precisely how a Galaxy S prototype functioned before it imitated '163 functionality from an Apple iPhone: the prototype allowed zooming in an zooming out, but translation to a second box of content via a second gesture in the zoomed in state was not possible. Samsung itself assessed this alternative functionality as inferior it proposed an "[i]mprovement" to "supplement the double tapping enlargement/shrinkage feature" to include all of the '163 patent's features. (*Id.*) I agree that the '163 functionality is superior.

VI. DETAILED OPINION REGARDING THE '915 PATENT

A. Summary of the '915 Patent

282. The '915 patent is entitled "Application Programming Interfaces for Scrolling Operations." The application that resulted in the '915 Patent was filed on January 7, 2007.

283. The '915 patent is generally directed to methods and apparatus for responding to user inputs on a touch-sensitive display integrated with a device. The asserted claims of the '915 patent recite methods and apparatus that distinguish between a single-input point that is interpreted as a "scroll operation" and two or more input points that are interpreted as a "gesture operation."

284. The Background of the Disclosure section of the specification explains that various devices such as electronic devices, computing systems, portable devices, and handheld devices have software applications and application programming interfaces or "APIs" that interface between the software applications and user interface software to provide a user of the device with certain features and operations. ['915 patent, col. 1:7-8, 33-37.]

285. The specification further explains that various types of electronic devices, such as portable devices and handheld devices, have a limited display size, user interface, software, API interface and/or processing capability which limit the ease of use of the devices. User interfaces

of devices implement APIs in order to provide requested functionality and features, such as scrolling, selecting, gesturing, and animating operations for a display of the device. The '915 patent explains that one issue with these user interfaces is that they can have difficulty interpreting the various types of user inputs and providing the intended functionality associated with the user inputs. ['915 patent, col. 1:48-55.]

286. The '915 patent proposes a method for responding to a user input of a device, such as a portable electronic device (e.g., cellular phone, media player, multi-touch tablet device), in order to implement and distinguish between various desired input operations for a user interface, such as a scrolling operation and a multi-finger gesture operation. ['915 patent, col. 6:20-60.]

287. Figure 1 of the '915 patent illustrates one embodiment of a method for responding to a user input of a data processing device that is covered by claims 1, 8 and 15.

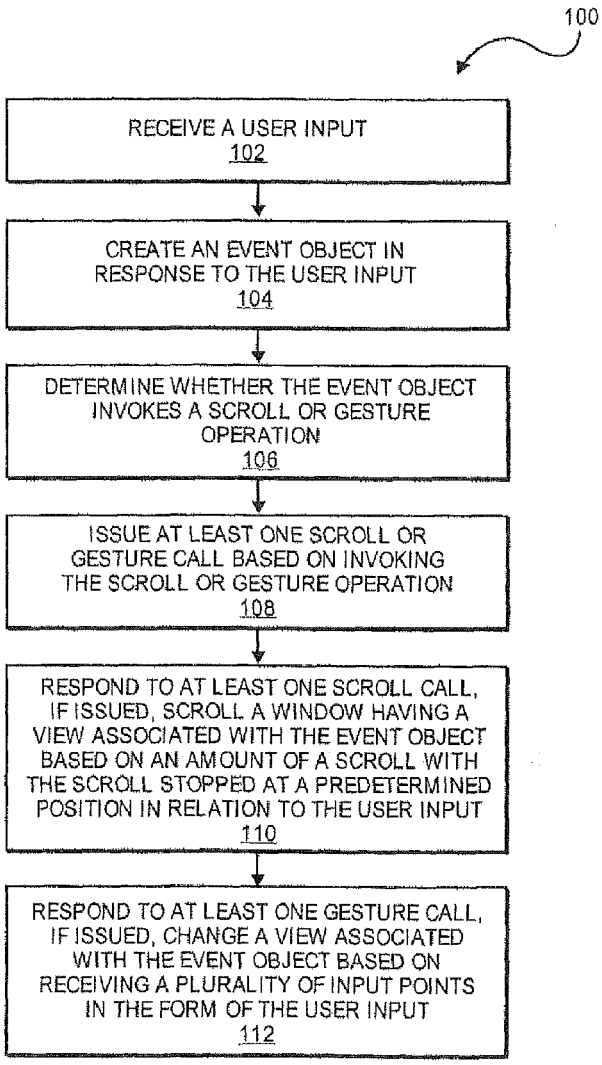


FIG. 1

The method 100 begins by receiving a user input at block 102. ['915 patent, col. 6:32-34.] The user input may be from an input key, button, wheel, touch, or other means for interacting with the device. ['915 patent, col. 6:34-36.] The method 100 next creates an event object in response to the user input at block 104. ['915 patent, col. 6:36-37.] The method 100 determines whether the event object invokes a scroll or gesture operation at block 106. ['915 patent, col. 6:37-39.] The '915 patent explains, for example, that a single touch that drags a distance across a display of the device may be interpreted as a scroll operation, and that in one embodiment, a two or more finger

touch of the display may be interpreted as a gesture operation. ['915 patent, col. 6:39-41.] Determining whether the event object invokes a scroll or gesture operation may also be based on receiving a drag user input for a certain time period. ['915 patent, col. 6:41-46.] The method 100 next issues at least one scroll or gesture call based on invoking the scroll or gesture operation at block 108. ['915 patent, col. 6:46-48.] If a scroll call is issued, the method 100 responds by scrolling a window having a view (e.g., web, text, or image content) associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input, as shown in block 110. ['915 patent, col. 6:48-53.] For example, an input may end at a certain position on a display of the device, and the scrolling may continue until reaching a predetermined position in relation to the last input received from the user. ['915 patent, col. 6:53-56.] Finally, at block 112, the method 100 responds to at least one gesture call, if issued, by changing a view associated with the event object based on receiving a plurality of input points in the form of the user input at block 112. ['915 patent, col. 6:56-60.] Changing the view may involve scaling the view associated with the event object by zooming in or zooming out based on receiving the user input. ['915 patent, col. 7:4-10.]

288. Figures 6A-D illustrate the process of scrolling content on a display and "rubberbanding" when a scrolling region exceeds a window edge. ['915 patent, col. 8:61-67.] As the '915 patent explains, the user interface may display "a portion of a list of emails," as shown in Fig. 6A. ['915 patent, col. 9:13-14.]

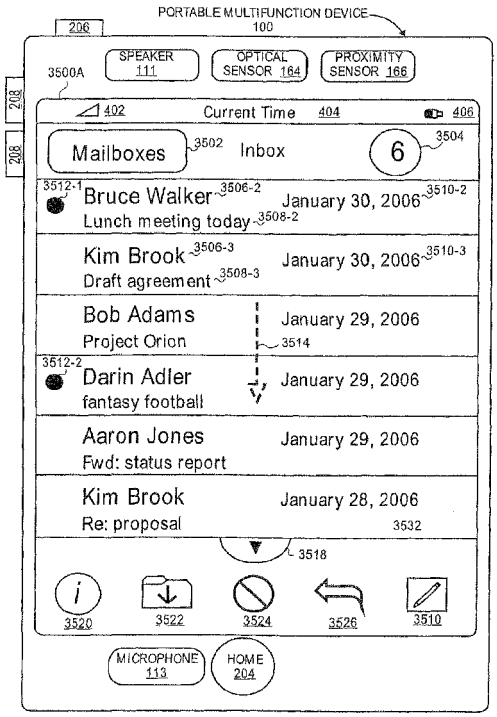


FIG. 6A

289. A user may scroll the list vertically (e.g., in the direction of arrow 3514) so that a different portion of the list is displayed, as shown in Fig. 6B. ['915 patent, col. 9:10-27.]

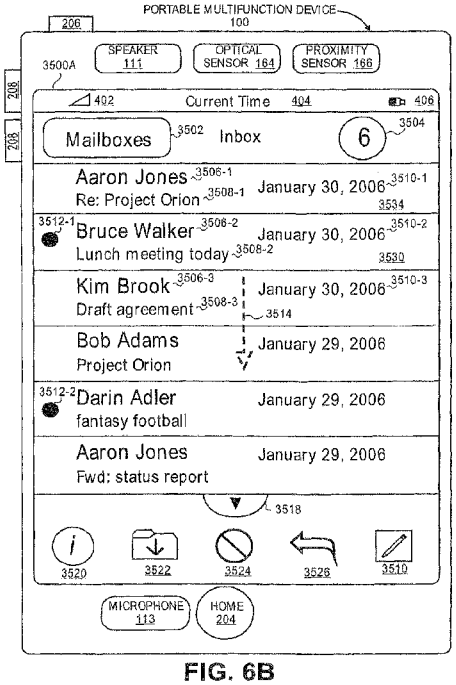


FIG. 6B

If the user continues to scroll past the terminus of the list, then an area beyond the edge of the list may be displayed (area 3536), as illustrated in Fig. 6C. ['915 patent, col. 9:29-38.]

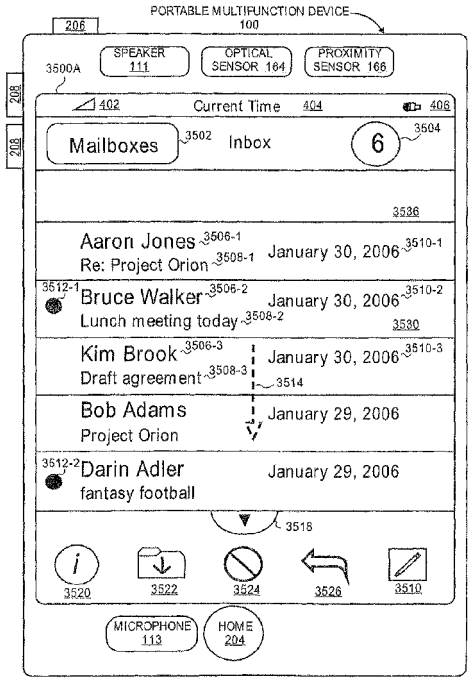


FIG. 6C

290. Once the vertical swipe is complete, e.g. the user lifts his/her finger off of the touch screen display, the list scrolls back in the opposite direction until the area beyond the terminus of the list is no longer displayed, as illustrated in Fig. 6D. ['915 patent, col. 9:39-46.]

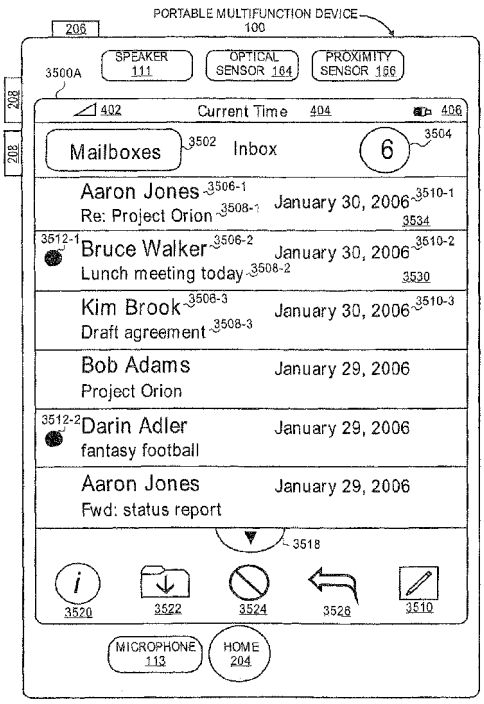


FIG. 6D

291. Figures 16A-C illustrate the process of scaling (e.g., zooming) content on a display in response to a multi-input point gesture. ['915 patent, col. 13:37 col. 14:24.] As the '915 patent explains, in certain embodiments, a user input in the form of two or more input points (e.g., two fingers) moves together or apart to invoke a gesture event that performs a scaling transform on the view associated with the user input. ['915 patent, col. 13:37-40.]

292. FIG. 16A illustrates a display 1604 of a device having a first scaling factor of a view 1616. A user input (e.g., two fingers 1608 and 1610 moving toward each other) associated with the view 1614 is interpreted as a gesture event to zoom in. ['915 patent, col. 13:52-57.]

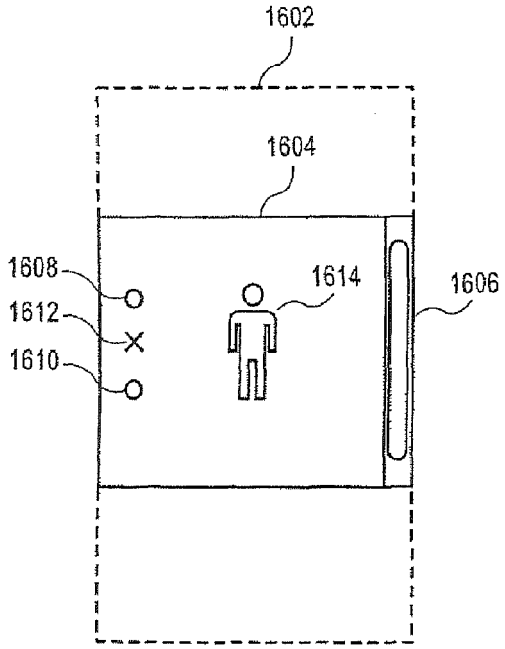


FIG. 16A

293. The gesture operation zooms in from view 1614 to view 1664 having a second scale factor as illustrated in Figure 16B. ['915 patent, col. 13:52-57.] The dashed regions 1602 and 1650 represent the total area of the content with the only content being displayed in the display area 1604 and 1652. ['915 patent, col. 13:57-59.]

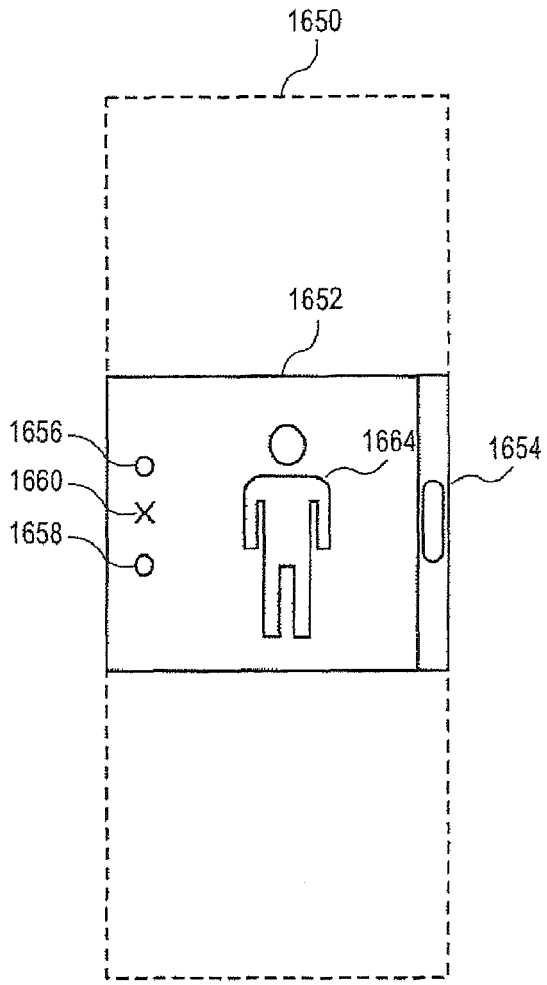


FIG. 16B

294. In performing the scaling transform from Figure 16A to Figure 16B in this embodiment, the center of the gesture event, center 1612 for Figure 16A and center 1660 for Figure 16B, remains in the same position with respect to the display 1604. ['915 patent, col. 13:59-63.] In the embodiment, the scroll indicator 1606 also shrinks to become scroll indicator 1654 during the transform to indicate that a smaller portion of the total content 1650 is being displayed on display 1604 as a result of the zoom in operation. ['915 patent, col. 13:63-66.] The dashed region 1650 is larger than the dashed region 1602 to represent that a larger portion of content is not being displayed on display 1652 in FIG. 16B as a result of the zoom in operation. ['915 patent, col. 13:67 col. 14:3.] The '915 patent also teaches that in some embodiments, the

scale factor of a view can be reduced (e.g., from scale factor of 2X to 1X) by moving a pair of input points (e.g., fingers) together. ['915 patent, col. 14:4-24; Fig. 16C.]

B. Apple's Practice of the '915 Patent

295. My use of Apple's iPhone and iPad products, along with my review of related materials detailing their operations, confirms that Apple's products practice the claims of the '915 patent. It is readily apparent that Apple's products have touch-sensitive displays that permit single-touch scrolling, with the amount of scrolling determined by the user input (with scroll-indicators at the content edge of windows); multi-touch gestures such as pinch zooming, with the direction and amount of zooming based on user input, or the rotation of a view based on user input; and rubberbanding by a predetermined amount when scrolling exceeds a window edge.

296. Related materials confirm that these features are implemented via objects generated in response to user input. For example, the "Event Handling Guide for iOS," explains how the "Multi-Touch Interface of iPhones, iPads, and iPod touches" generates event "objects" when users touch their displays, which in turn call various functions, based on the characteristic of the touch. (Guide at 6, 9 ("An event is an object that represents a user action detected by hardware on the devices . . . for example, a finger touching the screen."); see Guide at 16-36 generally.) The Guide explains that "a pinch-close gesture has two touches," while there are also "single-finger gestures" such as "a drag." (Guide at 17.) Supported "gestures include tapping (one or multiple times), pinching (to zoom a view in or out), swiping, panning or dragging a view, and using two fingers to rotate a view." (Guide at 18, 40.) And the Guide describes the "Gesture Recognizers" specific to pinch-zooming, dragging, swiping, and rotating, along with exemplary code for handling such gestures. (Guide at 40-45.) iOS uses the number of touches, location of touches, duration of touches, and distance between touches to distinguish between and implement these various features. (Guide at 17-20, 27, 40-45.)

297. The testimony of one of the inventors of the '915 patent confirms that Apple's products practice the claims of the '915 patent. At his deposition, Andrew Platzer confirmed that Apple's products have touch-sensitive displays that permit rubberbanding, single-touch scrolling, multi-touch gestures (including pinch-zoom or "scaling"), and create event objects in response to

user input. (Platzer Depo. (Oct. 18, 2011) Tr. at 37, 45, 51, 70, 72, 80-81, 84-85, 96, 108, 112-13, 118.)

298. Accordingly, it is my opinion that Apple's touch screen products practice the asserted claims of the '915 patent, and their ordinary and intended use practices the asserted method claims of the '915 patent.

C. Priority Date of the '915 Patent

299. I intend to rely upon the documentary evidence and testimony of the named inventors of the '915 patent or other witnesses to testify regarding facts relevant to the conception and reduction of to practice of the claimed invention prior to the filing date of the patent.

300. I have reviewed the documentary evidence regarding the design and implementation work done on the inventions claimed in the '915 patent, including the deposition transcript of Andrew Platzer and Scott Herz, and source code. (*See* Platzer Depo. Tr. (Oct. 18, 2011) at 118-120; Herz Depo. Tr. (Oct. 14, 2011) at 148.) From that evidence, it appears that the claims of the '915 patent were conceived no later than the summer and fall of 2005, and that the asserted claims were wholly or substantially reduced to practice by the fall of 2005. [redacted] I also understand the claims were constructively reduced to practice on January 7, 2007 in U.S. Patent Application No. 11/620,717. Documents relating to these facts are found in, for example: APL-ITC796-0000079762-768; APL-ITC796-0000079776-787; APL-ITC796-0000079794-801; APL-ITC796-0000079816-821; and APL-ITC796-0000079825-830.

D. Samsung's Infringement of the '915 Patent

301. In the discussion that follows, I analyze whether certain Samsung products embody the apparatus claims of the '915 patent and whether the ordinary and intended use of the

Samsung Accused Products would practice the method claims of the patent. For purposes of this section of my Report, the "Samsung Accused Products" include all of the following Samsung products: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant.

302. In performing this analysis I reviewed the '915 patent and its file history, tested the operation of these Samsung Accused Products, reviewed source code that Samsung produced prior to the March 8 fact discovery cutoff, and reviewed other materials described in this Report. Because the Samsung source code is built upon the foundation of publicly-available Android code, I reviewed portions of that Android code and its accompanying documentation. I have analyzed Samsung source code on at least one Accused Product representative of each major release of Android that appears on the Accused Products. I reviewed source code that implements the accused functionalities of the '915 patent on, among other devices, the Samsung Captivate (Android 2.1), the Samsung Vibrant, (Android 2.2), the Samsung Galaxy S II (Android 2.3), and the Samsung Galaxy Tab 10.1 (Android 3.1). I have compared portions of the relevant code on each of these devices to analogous code (where available) on other Accused Products running that version, as well as the publicly available version of each major Android release. Based on those comparisons, I conclude that, for each major Android release, all of the Accused Products based on that release implement the accused functionalities of the '915 patent in substantially the same way as the representative device for that release whose source code I have analyzed and cited in this Report.

303. In the paragraphs that follow, I will set forth the claims of the '915 patent for which it is my opinion that Samsung Accused Products, or the ordinary and intended use of Samsung Accused Products, meets every limitation of the claim.

304. By "ordinary and intended use" in this section of my Report, I mean actions that virtually every user of a Samsung Accused Product would perform when using the Accused

Product, and which Samsung encouraged and intended the user to perform. For example, manuals included with Samsung Accused Products instruct users to use a finger to scroll and two or more fingers to zoom. (*See, e.g.*, APLNDC-Y0000057563, APLNDC-Y0000058568-569, APLNDC-Y0000060382, APLNDC-Y0000061404, APLNDC-Y0000065325.) In addition, the ordinary use of each Accused Device involves using one-finger scroll and two-finger zoom. Accordingly, it is my opinion that all or virtually all users of the Samsung Accused products would engage in direct infringement of the '915 patent. Because Samsung encouraged and intended this direct infringement by end users, it is my opinion that the Samsung defendants have indirectly infringed the method claims of the '915 patent discussed below.

305. Attached as Exhibits 16 and 17 are exemplary claim charts that illustrate the infringement of the claims below by the Galaxy Tab 10.1 (Exhibit 16) and the Galaxy S II (Exhibit 17). Where source code is cited in the Galaxy S II claim chart (corresponding to Android 2.3), reference is also made to analogous code in Android 2.2 (as exemplified by the Samsung Vibrant) and Android 2.1 (as exemplified by the Samsung Captivate).

306. **Claim 1**. Claim 1 recites:

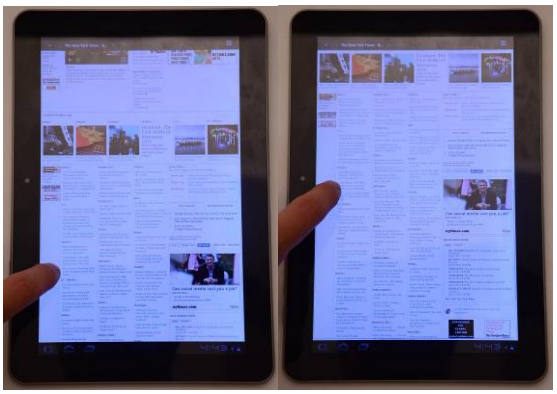
> A machine implemented method for scrolling on a touch-sensitive display of a device comprising:
>
> [a] receiving a user input, the user input is one or more input points applied to the touch-sensitive display that is integrated with the device;
>
> [b] creating an event object in response to the user input;
>
> [c] determining whether the event object invokes a scroll or gesture operation 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;
>
> [d] issuing at least one scroll or gesture call based on invoking the scroll or gesture operation;
>
> [e] responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input; and
>
> [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.

307. In my opinion, each of the Accused Products meets each and every limitation of claim 1 of the '915 patent literally and, in the alternative, under the doctrine of equivalents, as explained below. Videos of various Accused Products performing the limitations of this claim are included in Exhibit 18 (Galaxy Tab 10.1), Exhibit 19 (Galaxy S II), Exhibit 20 (Vibrant), and Exhibit 21 (Captivate).

308. **Claim 1 – Preamble: "A machine implemented method for scrolling on a touch-sensitive display of a device comprising**." Each of the Accused Products is either a smartphone or tablet running a version of the Android operating system. Each '915 Accused Product, which includes a touch-sensitive display, performs a machine implemented method for scrolling on the touch-sensitive display.

309. For example, the Galaxy Tab 10.1 includes a touch-sensitive display and performs a machine implemented method for scrolling on the touch-sensitive display. Below is an illustration of the Galaxy Tab 10.1 scrolling an image on the touch-sensitive display:



(Scroll operation when one input point is applied.)

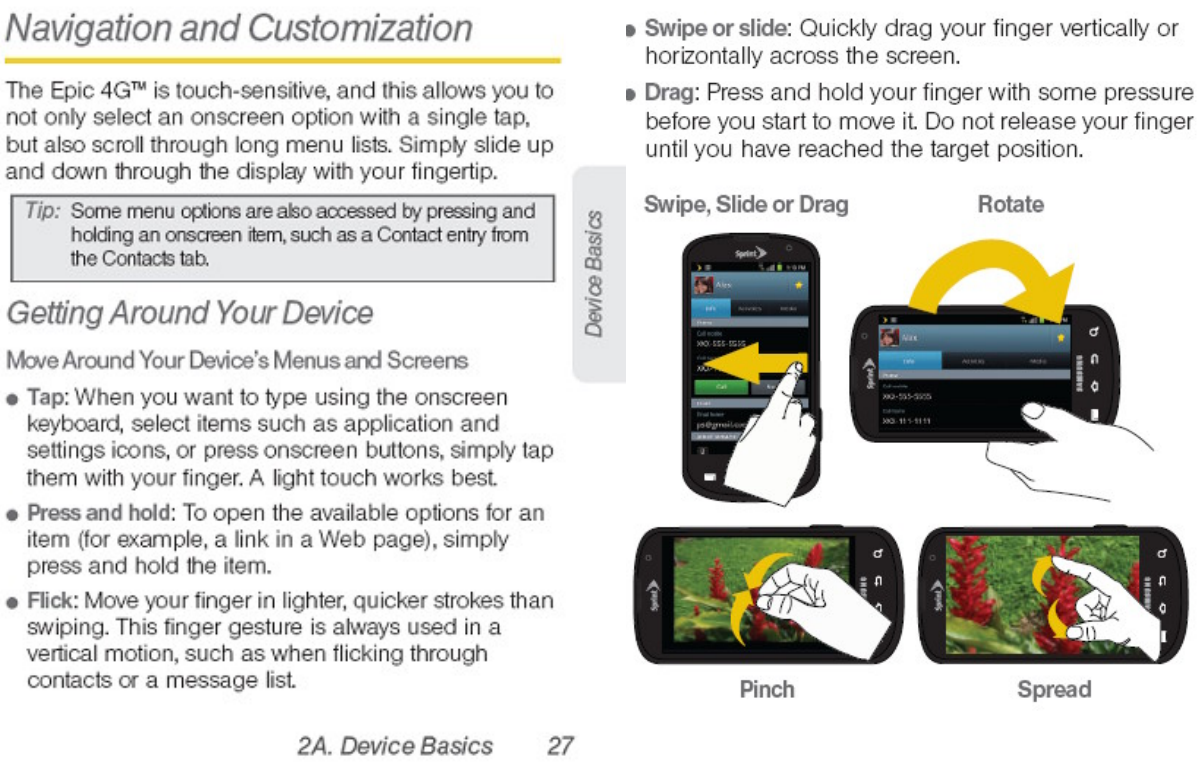
(Gesture operation when two or more input points are applied.)

310. For example, the Galaxy S II includes a touch-sensitive display and performs a machine implemented method for scrolling on the touch-sensitive display.

(Scroll operation when one input point is applied.)

(Gesture operation when two or more input points are applied.)

311. User manuals for Samsung products teach users how to scroll. For example, the user manual for the Epic 4G includes the following description:



Navigation and Customization

The Epic 4G™ is touch-sensitive, and this allows you to not only select an onscreen option with a single tap, but also scroll through long menu lists. Simply slide up and down through the display with your fingertip.

Tip: Some menu options are also accessed by pressing and holding an onscreen item, such as a Contact entry from the Contacts tab.

Getting Around Your Device

Move Around Your Device's Menus and Screens

- **Tap:** When you want to type using the onscreen keyboard, select items such as application and settings icons, or press onscreen buttons, simply tap them with your finger. A light touch works best.
- **Press and hold:** To open the available options for an item (for example, a link in a Web page), simply press and hold the item.
- **Flick:** Move your finger in lighter, quicker strokes than swiping. This finger gesture is always used in a vertical motion, such as when flicking through contacts or a message list.

- **Swipe or slide:** Quickly drag your finger vertically or horizontally across the screen.
- **Drag:** Press and hold your finger with some pressure before you start to move it. Do not release your finger until you have reached the target position.

Device Basics

Swipe, Slide or Drag

Rotate

Pinch

Spread

2A. Device Basics 27

312. In the manual displayed above, a Swipe, Slide, or Drag, all of which invoke a scroll operation, are distinguished from a Pinch or Spread, which invoke a gesture operation.

313. To the extent that the preamble is found to be a limitation and is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from scrolling on a touch-sensitive display of a device, and accomplishes the same function in the same way to achieve the same result.

314. **Claim 1 – Element [a] "receiving a user input, the user input is one or more input points applied to the touch-sensitive display that is integrated with the device."** In my opinion, each of the Accused Products performs this step of claim 1.

315. The Accused Products receive a user input. The user input includes one or more input points (one or more fingers) applied to the touch-sensitive display that is integrated with the Samsung device.

316. For example, the Galaxy Tab 10.1 receives user a user input with one input point (one finger) applied to the touch-sensitive display as illustrated above. I also note that the touch-sensitive display is integrated into the Galaxy Tab 10.1.

317. For example, the Galaxy S II receives a user input with one input point (one finger) applied to the touch-sensitive display as shown above. The touch-sensitive display is integrated into the Galaxy S II.

318. Based on my observations of the Accused Products, as well as my analysis of the source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product receives a user input, where the user input is one or more input points applied to the touch-sensitive display that is integrated with the device. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

319. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from machines receiving a user input, the user input is one or more input points applied to the touch-sensitive display that is integrated with the device, and accomplishes the same function in the same way to achieve the same result.

320. **Claim 1 – Element [b] "creating an event object in response to the user input."** In my opinion, each of the Accused Products performs this step of claim 1.

321. Each of the Accused Products, via the Android platform on which they operate, creates an event object in response to the user input.

322. Under the public Android platform, a MotionEvent object is created in response to a touch on the touch screen. (http://developer.android.com/reference/android/view/MotionEvent.html.)

323. I have confirmed the public Android code also appears in the Accused Products. For example, in the Galaxy Tab 10.1 tablet, which runs a version of Android 3.1, the user input is processed by the device driver, which passes the input into user space and parses it into an event object referred to as the "MotionEvent" object. This object is an event object created by the

method InputConsumer::populateMotionEvent(). (*See* frameworks/base/libs/ui/inputTransport.cpp:683-712 [SAMNDCA-C000002822]; *see also* frameworks/base/libs/ui/input.cpp:351-382 [SAMNDCA-C000002830 to -C000002831] (MotionEvent::initialize() method)).

324. Based on my observations of the Accused Products, as well as my analysis of the source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product practices includes similar computer code that creates an event object in response to user input. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

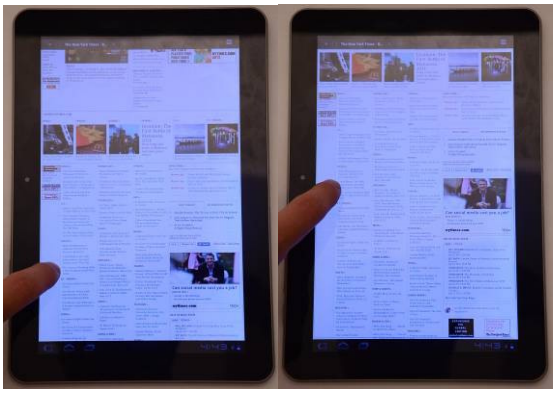
325. Furthermore, Ioi Lam confirmed at his 30(b)(6) deposition that the Android Platform has "event objects." See Ioi Lam Depo. Tr., Mar. 8, 2012 (75:17-76:23).

326. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from creating an event object in response to the user input, and accomplishes the same function in the same way to achieve the same result.

327. **Claim 1 – Element [c]: "determining whether the event object invokes a scroll or gesture operation 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"** In my opinion, each of the Accused Products performs this step of claim 1.

328. The Accused Products determine whether an event object invokes a scroll or gesture operation by distinguishing between a single input point (one finger) applied to the touch-sensitive display that is interpreted as the scroll operation and two or more input points (more than one finger) applied to the touch-sensitive display that are interpreted as the gesture operation.

329. For example, the Galaxy Tab 10.1 tablet distinguishes between a scroll operation when one finger is applied to the touch-sensitive display and a gesture operation when two or more fingers are applied to the touch-sensitive display.



(Scroll operation when one input point is applied.)

(Gesture operation when two or more input points are applied.)

330. For example, the Galaxy S II phone distinguishes between a scroll operation when one finger is applied to the touch-sensitive display and a gesture operation when two or more fingers are applied to the touch-sensitive display, as illustrated below:

(Scroll operation when one input point is applied.)

(Gesture operation when two or more input points are applied.)

331. For example, in the Galaxy Tab 10.1 tablet, which runs Android 3.1, the WebView class's handleQueuedMotionEvent() method interprets the input points associated with the MotionEvent object it processes. The handleQueueMotionEvent() method distinguishes between a single input point (ev.getPointerCount 1) and two or more input points (ev.getPointerCount > 1). (*See* WebView.java:10281-10314 [SAMDNCA-C000002857].) If one input point is

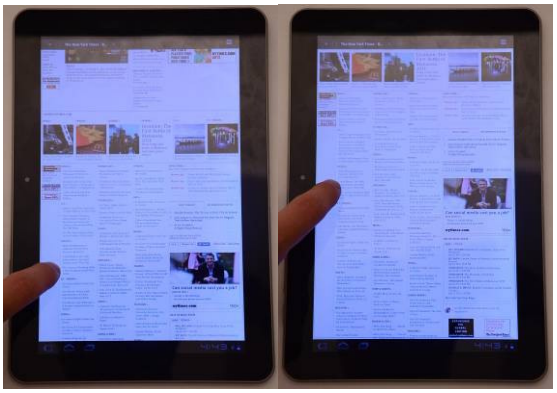
detected, the contact is interpreted as a scroll operation in handleTouchEventCommon(). (*See* WebView.java:10312 [SAMNDCA-C000002857].) If two or more input points are detected, the contact is interpreted as a gesture operation via a call to handleMultiTouchInWebView(). (*See* WebView.java:10302 [SAMNDCA-C000002857]; WebView.java:7887-7944 [SAMNDCA-C000002858].)

332. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that distinguishes between a single input point (one finger) applied to the touch-sensitive display that is interpreted as the scroll operation and two or more input points (more than one finger) applied to the touch-sensitive display that are interpreted as the gesture operation. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

333. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from determining whether the event object invokes a scroll or gesture operation 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, and accomplishes the same function in the same way to achieve the same result.

334. **Claim 1 – Element [d]: "issuing at least one scroll or gesture call based on invoking the scroll or gesture operation."** Each of the Accused Products issues a scroll call or a gesture call based on invoking the scroll or gesture operation.

335. For example, as illustrated below, the Galaxy 10.1 tablet issues a scroll call when the scroll operation is invoked. Alternatively, the tablet issues a gesture call when the gesture operation is invoked.



(Scroll call when scroll operation is invoked.)

(Gesture call (scaling) when gesture operation is invoked.)

336. For example, the Galaxy S 2 phone issues a scroll call when the scroll operation is invoked.

(Scroll operation when one input point is applied.)

337. The phone issues a gesture call when the gesture operation is invoked.

(Gesture operation when two or more input points are applied.)

338. For example, in the Galaxy 10.1 tablet, if one input point is detected, handleQueuedMotionEvent() will call handleTouchEventCommon() (WebView.java:10312 [SAMNDCA-C000002926]), which issues a scroll call to doDrag() or doFling().

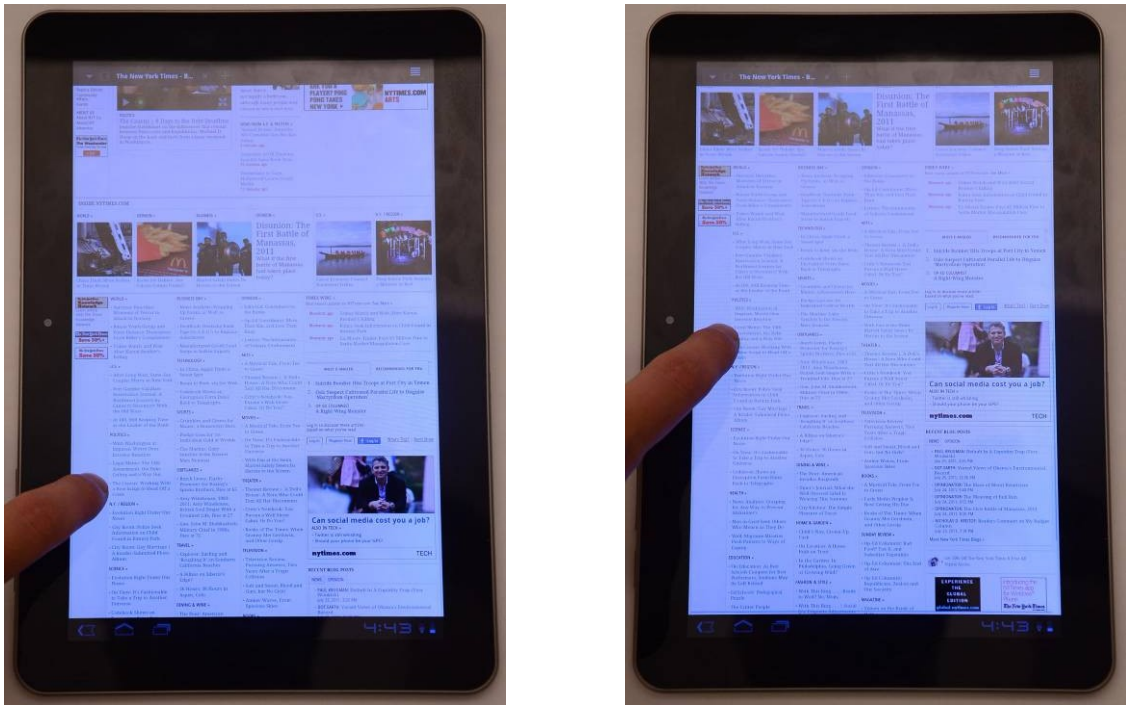
(WebView.java:7617, 7772 [SAMNDCA-C000002926, -C000002930]) If two or more input points are detected, the contact is interpreted as a gesture operation and a call to handleMultiTouchInWebView() is made. (*See* WebView.java:10302 [SAMNDCA-C000002857]; WebView.java:7887-7944 [SAMNDCA-C000002858].)

339. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that issues at least one scroll or gesture call based on invoking the scroll or gesture operation. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

340. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from issuing at least one scroll or gesture call based on invoking the scroll or gesture operation, and accomplishes the same function in the same way to achieve the same result.

341. **Claim 1 – Element [e] "responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input."** Each of the Accused Products responds to a scroll call, if issued, by scrolling a window having a view associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input.

342. For example, the Galaxy 10.1 tablet will respond to at least one scroll call by scrolling a window having a view associated with the MotionEvent object, based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input, as illustrated below.



(Screenshot of the Samsung Galaxy Tab 10.1 scrolling an image.)

343. For example, the Galaxy S2 phone will respond to at least one scroll call by scrolling a window having a view associated with the MotionEvent based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input, as illustrated below.

344. For example, in the Galaxy 10.1 tablet, the handleTouchEventCommon() method calls doFling() for a scroll operation. (*See* WebView.java:7272-7821 [SAMNDCA-C000002919 to C000002931] (call done at 7772).) doFling() then calls the Overscroller.fling() method. (*See* WebView.java:9236-9376 [SAMNDCA-C000002932 to C000002935].) Overscroller.fling() itself calls two instances of the SplineOverScroller class, each of which is responsible for scrolling in one axis (i.e., one scrolls horizontally and the other scrolls vertically). (*See* OverScroller.java:406-448 [SAMNDCA-C000002945].) The SplineOverScroller class thus maintains state information for the fling. (*See id.*)

345. The SplineOverScroller class tracks the start points, start time, duration, total distance, and the final position for the fling. (OverScroller.java:748-782 [SAMNDCA-C000002952 to C000002953].) The SplineOverScroller.fling() function thus determines the final position of the fling before beginning the fling operation begins.

346. The actual rendering of the fling occurs subsequently as part of the drawing cycle. At the end of an event processing cycle, the method computeScroll() is called to compute which part of the view should be rendered to the user. (*See* WebView.java:3568-3654 [SAMNDCA-C000002958 to C000002959]. The computeScroll() method uses the SplineOverScroller class to extract the state information for the fling. (*See id.*) Afterwards, it calls WebView.overScrollBy() to scroll the content this method calculates maximums for the distance the user can scroll beyond the edge of the content and whether content should be fixed to a particular axis. (*See id.*; *see also* View.java:11663-11715 [SAMNDCA-C000002960 to C000002961] (WebView.overScrollBy()).) onOverScrollBy() itself calls onOverScroller() to ensure the intended scroll coordinates are valid and then calls View.scrollTo() to invoke the scroll operation. (*See* View.java:11663-11715 [SAMNDCA-C000002960 to C000002961]; WebView.java:3130-3162 [SAMDNCA-2962].) View.scrollTo() scrolls the window (setting mScrollX and mScrollY) based on the amount of a scroll with the scroll stopped at a "predetermined position in relation to the user input." (*See* WebView.java:3130-3162 [SAMDNCA-2962].)

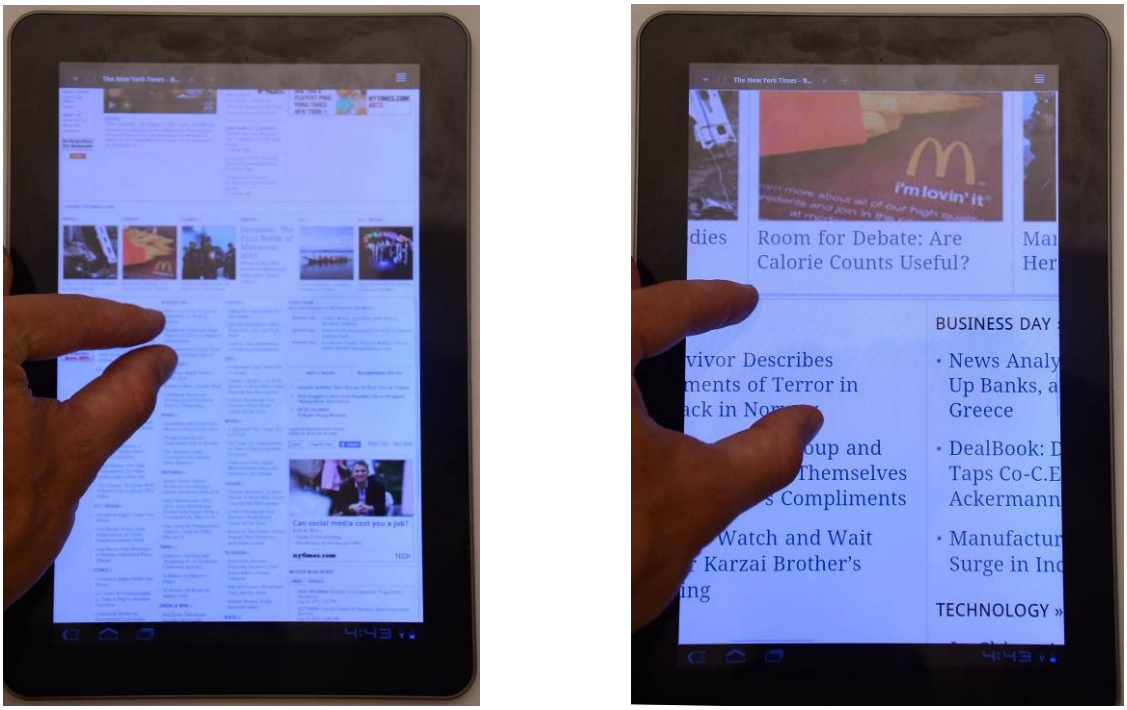
347. Alternatively, it is my opinion that the scroll stops at a "predetermined position in relation to the user input" because after the mScrollX and mScrollY fields are set (or determined), the WebView.onDraw() method is subsequently called to translate and draw the view shown to the user. (*See* WebView.java:4261-4418 [SAMNDCA-C000002965 to C000002968] (with call to trackFPS() at 4416); WebView.java:8757-8791 [SAMNDCA-C000002964] (trackFPS() translates based on mScrollX and mScrollY then draws).)

348. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that responds to at least one scroll call by scrolling a window having a view associated with the MotionEvent based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

349. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input, and accomplishes the same function in the same way to achieve the same result.

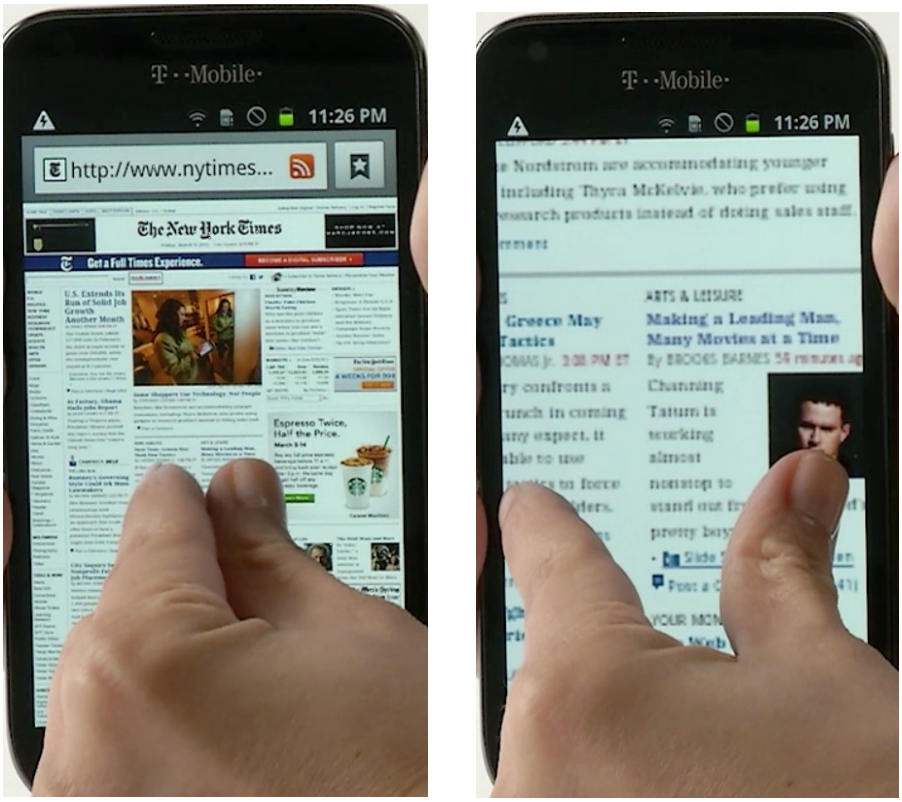
350. **Claim 1 – Element [f] "responding to at least one gesture call, if issued, by scaling the view associated with the event object based on receiving the two or more input points in the form of the user input."** Each of the Accused Products responds to a gesture call, if issued, by calling the view associated with the event object based on receiving the two or more input points in the form of the user input.

351. For example, the Galaxy 10.1 tablet will respond to at least one gesture call by scaling the view (zooming) associated with the MotionEvent object based on receiving two or more input points in the form of the user input, as illustrated below.



(Screenshot of the Samsung Galaxy Tab 10.1 scaling an image.)

352. For example, the Galaxy S 2 phone will respond to at least one gesture call by scaling the view (zooming) by scaling the view associated with the MotionEvent object based on receiving two or more input points in the form of the user input.



353. For example, in the Galaxy 10.1 tablet, the handleMultiTouchInWebView() method calls the WebViewScaleGestureDecetor.onTouchEvent() method to perform the scaling (zoom) operation using the MotionEvent object information, which includes the two or more input points touching the screen. (*See* WebViewScaleGestureDetector.java:189 [SAMNDCA-C000002905].) onTouchEvent() calls setContext(), which records information about the position of the two input points corresponding, for example, to the user's fingers on the screen (WebviewScaleGestureDetector.java:581-630 [SAMNDCA-C000002524 to -C000002525]). As the user moves his fingers relative to one another as in, for example, a pinching or de-pinching gesture the handleScale() method of the ZoomManager class calls the WebviewScaleGestureDetector's getScaleFactor() method to calculate the scale factor based on the ratio of the current distance between the fingers and the previous distance between them (as of the last time the touch screen was polled for input). (ZoomManager.java:1323 [SAMNDCA-C000002410]; WebScaleGestureDetector.java:763-768 [SAMNDCA-C000002528].)

handleScale() then calls setZoomScale(), which uses the calculated scale factor to scale the WebView and all of its child views. ZoomManager.java:1372 [SAMNDCA-C000002411]; ZoomManager.java:851-949 [SAMNDCA-C000002399 to -C000002402].)

354. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that responds 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. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

355. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from 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, and accomplishes the same function in the same way to achieve the same result.

356. **Claim 2.** Claim 2 recites:

> The method as in claim 1, further comprising:
>
> rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll.

357. The following Accused Products infringe claim 1 and also rubberband a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll: Exhibit 4G; Galaxy Ace; Galaxy S II (i9100, AT&T, and Epic 4G Touch variants); Galaxy Tab 7.0; Galaxy Tab 10.1; and Gravity Smart.

358. For example, the Samsung Galaxy Tab 10.1 rubberbands a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll, as illustrated below.

(Screenshots of the Samsung Galaxy Tab 10.1 rubberbanding upon dragging an image.)

359. For example, the predetermined maximum displacement is defined in the Galaxy Tab 10.1 tablet source code to be 1/6 the height and 1/6 the width of the screen for a fling (i.e., a quick, flicking motion of the user's finger on the screen that causes the view to scroll a predetermined distance without further user input). The handleTouchEventCommon() method calls doFling(). (*See* WebView.java:7272-7821 [SAMNDCA-C000002919 to -C000002931] (call done at 7772).) In the doFling() method, if the isElasticEffectEnabled() method returns a true value (i.e., if the device is configured to "rubberband") the variables "overX" and "overY" are set to 1/6 the screen width and 1/6 the screen height, respectively. (*See* WebView.java:9236-9376 [SAMNDCA-C000002932-2935] (particularly lines 9350-9361).) The overX and overY variables are then passed to the Overscroller.fling() method, and they set the maximum amount for rubberbanding displacement. (*See id.*)

360. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll, and accomplishes the same function in the same way to achieve the same result.

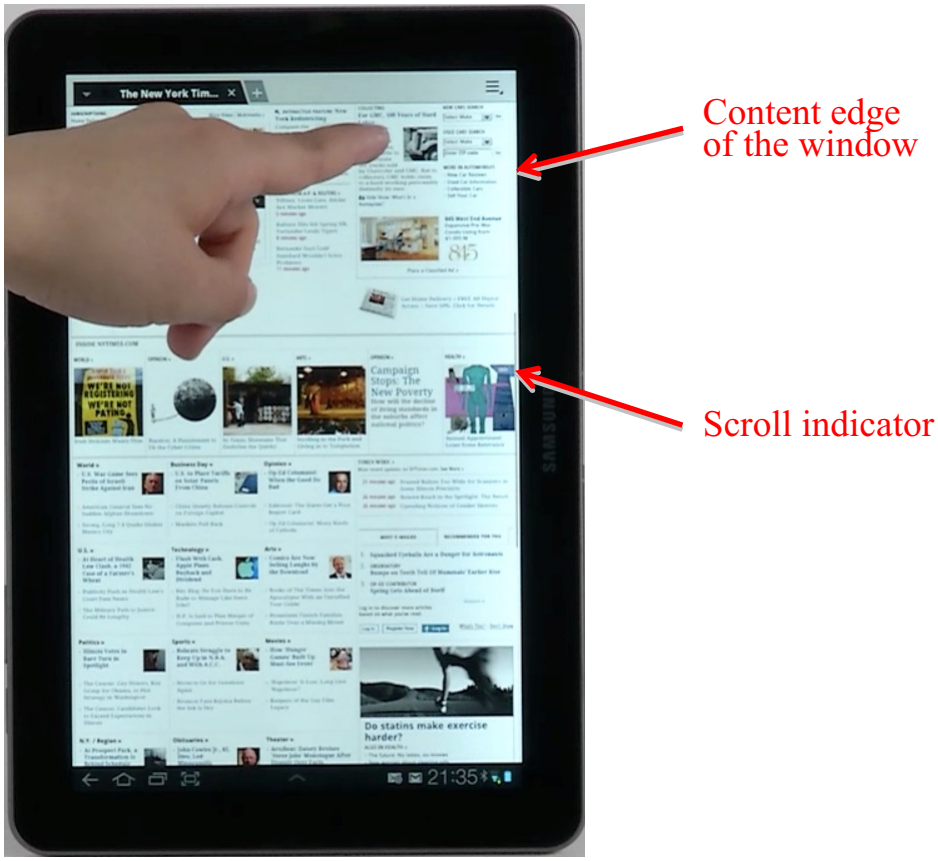
361. **Claim 3.** Claim 3 recites:

The method as in claim 1, further comprising:

attaching scroll indicators to a content edge of the window.

362. The following Accused Products attach scroll indicators to a content edge of the window: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including its T-Mobile, AT&T, Epic 4G Touch and AT&T Skyrocket versions), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant. The videos in Exhibits 18 through 21 show the Galaxy Tab 10.1, the Galaxy S II, the Vibrant, and the Captivate attaching scroll indicators to a content edge of the window.

363. For example, the Galaxy Tab 10.1 attaches scroll indicators to the content edge of the window, as illustrated below.



364. For example, the Galaxy S II attaches scroll indicators to the content edge of the window, as illustrated below.

365. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from attaching scroll indicators to a content edge of the window, and accomplishes the same function in the same way to achieve the same result.

366. **Claim 4.** Claim 4 of the '915 Patent recites:

> The method as in claim 1, further comprising:
>
> attaching scroll indicators to the window edge.

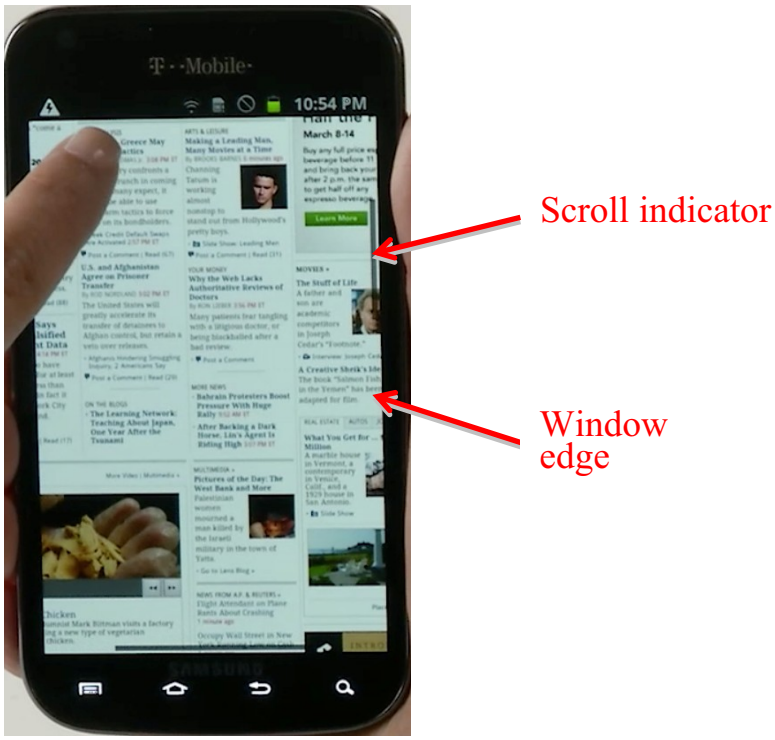
367. The following Accused Products attach scroll indicators to the window edge: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II, (including its T-Mobile, AT&T,

Epic 4G Touch and AT&T Skyrocket versions), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant. The videos in Exhibits 18 through 21 show the Galaxy Tab 10.1, the Galaxy S II, the Vibrant, and the Captivate attaching scroll indicators to the window edge.

368. For example, the Galaxy Tab 10.1 attaches scroll indicators to the window edge, as illustrated below:

(Screenshot of the Samsung Galaxy Tab 10.1 attaching a scroll indicator to the window edge.)

369. For example, the Galaxy S II attaches scroll indicators to the window edge, as illustrated below.



370. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from attaching scroll indicators to the window edge, and accomplishes the same function in the same way to achieve the same result.

371. **Claim 5.** Claim 5 of the '915 Patent recites:

> The method as in claim 1, wherein determining whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period.

372. Each of the Accused Products determines whether the event object invokes a scroll or gesture operation based on receiving a drag user input for a certain time period.

373. For example, the Galaxy Tab 10.1 tablet determines whether the event object invokes the scroll operation based on receiving a drag user input for a certain time period. The handleTouchEventCommon() invokes the fling operation based on the user scrolling within a certain period of time. (*See* WebView.java:7758 [SAMDNCA00002919 to C000002931].)

374. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that determines whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period. The claim chart in Exhibit 17 identifies analogous code that satisfies this element in Android 2.1, 2.2, and 2.3.

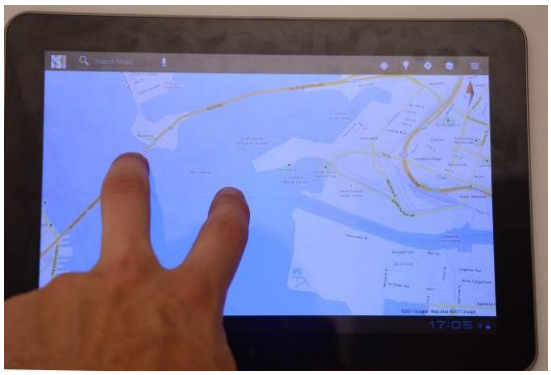
375. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from invoking a scroll or gesture operation is based on receiving a drag user input for a certain time period, and accomplishes the same function in the same way to achieve the same result.

376. **Claim 6.** Claim 6 recites:

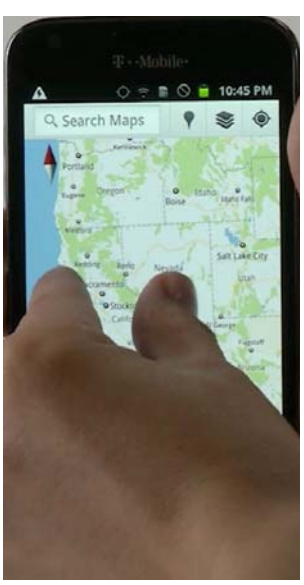
> The method as in claim 1, further comprising:
>
> responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input.

377. The following Accused Products respond to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input: Galaxy S II (including its Epic 4G Touch and AT&T Skyrocket versions), Galaxy Tab 10.1, Nexus S, and Nexus S 4G. A video of the Galaxy Tab 10.1 performing the limitations of this claim is attached as Exhibit 22, and a video of the Galaxy S II performing the limitations of this claim is attached as Exhibit 23.

378. For example, the Galaxy Tab 10.1 responds to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points (plurality of fingers) in the form of the user input.



379. For example, the Galaxy S II responds to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points (plurality of fingers) in the form of the user input.



380. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input, and accomplishes the same function in the same way to achieve the same result.

381. **Claim 7.** Claim 7 recites:

> The method as in claim 1, wherein the device is one of: a data processing device, a portable device, a portable data processing device, a multi touch device, a multi touch portable device, a wireless device, and a cell phone.

382. Each of the Accused Products is a portable data processing device, a multi touch device, a multi touch portable device, a wireless device, and a cell phone.

383. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products is insubstantially different from a multi touch portable device, and accomplishes the same function in the same way to achieve the same result.

384. **Claim 8.** Claim 8 recites:

> A machine readable storage medium storing executable program instructions which when executed cause a data processing system to perform a method comprising:
>
> [a] receiving a user input, the user input is one or more input points applied to a touch-sensitive display that is integrated with the data processing system;
>
> [b] creating an event object in response to the user input;
>
> [c] determining whether the event object invokes a scroll or gesture operation 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
>
> [d] issuing at least one scroll or gesture call based on invoking the scroll or gesture operation;
>
> [e] responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object;
>
> [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.

385. **Claim 8 – Preamble "A machine readable storage medium storing executable program instructions which when executed cause a data processing system to perform a method comprising."** Each of the Accused Products is either a smartphone or tablet running a version of the Android operating system, which includes a data processing system. Each '915 Accused Product includes a computer readable storage medium storing executable program

instructions which when executed cause the data processing system to perform the method described in claim 8.

386. **Claim 8 – Element [a] "receiving a user input, the user input is one or more input points applied to a touch-sensitive display that is integrated with the data processing system."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when executed cause a data processing system to receive a user input, where the user input is one or more input points applied to a touch-sensitive display that is integrated with the data processing system, for the same reasons as explained with respect to claim 1, above.

387. **Claim 8 – Element [b] "creating an event object in response to the user input."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when executed cause a data processing system to create an event object in response to the user input, for the same reasons as explained with respect to claim 1.

388. **Claim 8 – Element [c] "determining whether the event object invokes a scroll or gesture operation 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."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when executed cause a data processing system to determine whether the event object invokes a scroll or gesture operation 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, for the same reasons as explained with respect to claim 1.

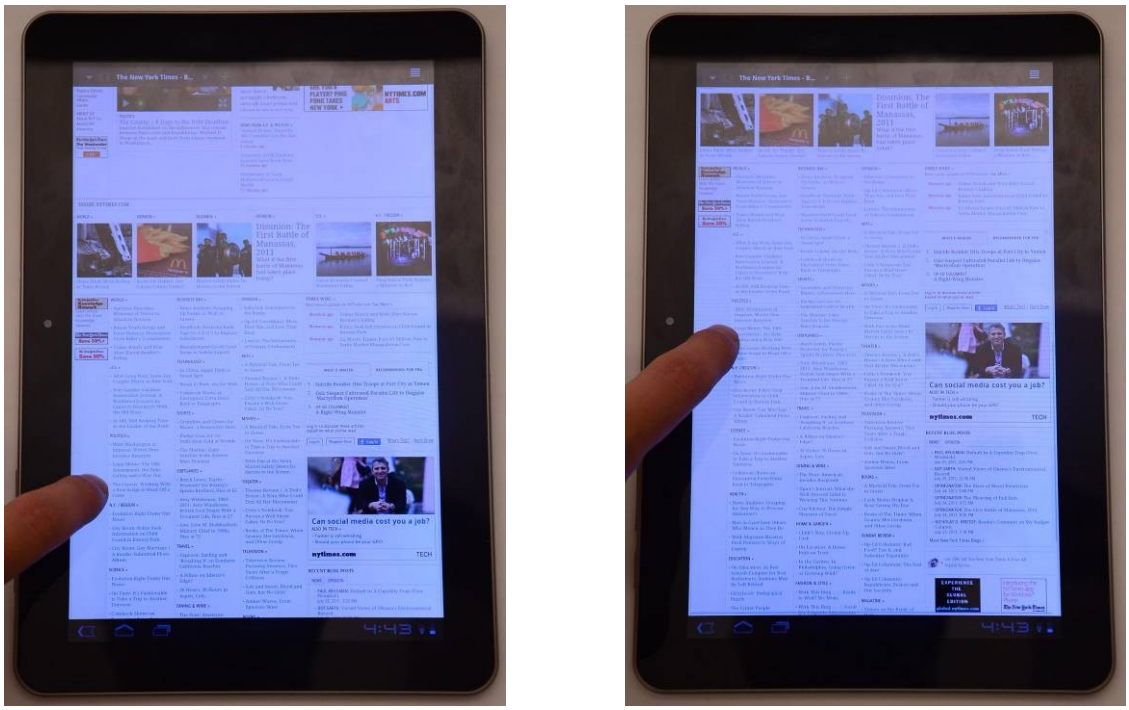
389. **Claim 8 – Element [d] "issuing at least one scroll or gesture call based on invoking the scroll or gesture operation."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when

executed cause a data processing system to issue at least one scroll or gesture call based on invoking the scroll or gesture operation, for the same reasons as explained with respect to claim 1.

390. **Claim 8 – Element [e] "responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when executed cause a data processing system to respond to at least one scroll call, if issued, by scrolling a window having a view associated with the event object.

391. Each of the Accused Products responds to a scroll call, if issued, by scrolling a window having a view associated with the event object based on an amount of a scroll with the scroll stopped at a predetermined position in relation to the user input.

392. For example, the Galaxy 10.1 tablet will respond to at least one scroll call by scrolling a window having a view associated with the MotionEvent object, as illustrated below.



(Screenshot of the Samsung Galaxy Tab 10.1 scrolling an image.)

393. For example, the Galaxy S2 phone will respond to at least one scroll call by scrolling a window having a view associated with the MotionEvent object, as illustrated below.

394. For example, in the Galaxy 10.1 tablet, the handleTouchEventCommon() method calls doFling() for a scroll operation. (*See* WebView.java:7272-7821 [SAMNDCA-C000002919 to C000002931] (call done at 7772).) doFling() then calls the Overscroller.fling() method. (*See* WebView.java:9236-9376 [SAMNDCA-C000002932 to C000002935].) Overscroller.fling() itself calls two instances of the SplineOverScroller class, each of which is responsible for scrolling in one axis (i.e., one scrolls horizontally and the other scrolls vertically). (*See* OverScroller.java:406-448 [SAMNDCA-C000002945].) The SplineOverScroller class thus maintains state information for the fling. (*See id.*)

395. The actual rendering of the fling occurs subsequently as part of the drawing cycle. At the end of an event processing cycle, the method computeScroll() is called to compute which part of the view should be rendered to the user. (*See* WebView.java:3568-3654 [SAMNDCA-C000002958 to C000002959]. The computeScroll() method uses the SplineOverScroller class to extract the state information for the fling. (*See id.*) Afterwards, it calls WebView.overScrollBy() to scroll the content this method calculates maximums for the distance the user can scroll beyond the edge of the content and whether content should be fixed to a particular axis. (*See id.*; *see also* View.java:11663-11715 [SAMNDCA-C000002960 to

C000002961] (WebView.overScrollBy()).) onOverScrollBy() itself calls onOverScroller() to ensure the intended scroll coordinates are valid and then calls View.scrollTo() to invoke the scroll operation. (*See* View.java:11663-11715 [SAMNDCA-C000002960 to C000002961]; WebView.java:3130-3162 [SAMDNCA-2962].) View.scrollTo() scrolls the window (setting mScrollX and mScrollY) based on the amount of a scroll with the scroll stopped at a "predetermined position in relation to the user input." (*See* WebView.java:3130-3162 [SAMDNCA-2962].)

396. Based on my inspection of Samsung source code for each major release of Android running on the Accused Products (Android 2.1, 2.2, 2.3, and 3.1), I have determined that each Accused Product includes similar computer code that responds to at least one scroll call by scrolling a window having a view associated with the MotionEvent object.

397. To the extent that this limitation is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products perform steps insubstantially different from responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object, and accomplishes the same function in the same way to achieve the same result.

398. **Claim 8 – Element [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."** In my opinion, each of the Accused Products includes a machine readable storage medium storing executable program instructions which when executed cause a data processing system to respond 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, for the same reasons as explained with respect to claim 1.

399. **Claim 9.** Claim 9 recites:

> The medium as in claim 8, further comprising:
>
> rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolled region exceeds a window edge based on the scroll.

400. Claim 9 claims the media as in claim 8 and adds a limitation analogous to dependent claim 2 requiring "rubberbanding." Accordingly, the same Accused Products discussed in connection with claim 2 infringe claim 8 for the reasons discussed in connection with claim 2.

401. **Claim 10.** Claim 10 recites:

> The medium as in claim 8, further comprising:
>
> attaching scroll indicators to a content edge of the view.

402. Claim 10 claims the media as in claim 8 and adds a limitation analogous to dependent claim 3 requiring "attaching scroll indicators to a content edge of the view." Accordingly, the same Accused Products discussed in connection with claim 3 infringe claim 9 for the reasons discussed in connection with claim 3.

403. **Claim 11.** Claim 11 recites:

> The medium as in claim 8, further comprising:
>
> attaching scroll indicators to a window edge of the view.

404. Claim 11 claims the media as in claim 8 and adds a limitation analogous to dependent claim 4 requiring "attaching scroll indicators to a window edge of the view." Accordingly, the Accused Products discussed in connection with claim 4 infringe claim 10 for the reasons discussed in connection with claim 4.

405. **Claim 12.** Claim 12 recites:

> The medium as in claim 8, wherein determining whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period.

406. Claim 12 claims the media as in claim 8 and adds a limitation analogous to dependent claim 5 wherein "determining whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period." Accordingly, the Accused Products discussed in connection with claim 5 infringe claim 12 for the reasons discussed in connection with claim 5.

407. **Claim 13.** Claim 13 recites:

> The medium as in claim 8, further comprising:

> Responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input.

408. Claim 13 claims the media as in claim 8 and adds a limitation analogous to dependent claim 6 further comprising "responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input." Accordingly, the Accused Products discussed in connection with claim 6 infringe claim 13 for the reasons discussed in connection with claim 6.

409. **Claim 14.** Claim 14 recites:

> The medium as in claim 8, wherein the data processing system is one of: a data processing device, a portable device, a portable data processing device, a multi touch device, a multi touch portable device, a wireless device, and a cell phone.

410. Claim 14 claims the media as in claim 8 and adds a limitation analogous to dependent claim 7 wherein the data processing system may be a "multi touch portable device." Accordingly, the Accused Products discussed in connection with claim 7 infringe claim 14 for the reasons discussed in connection with claim 7.

411. **Claim 15.** Claim 15 recites:

> An apparatus, comprising:
>
> [a] means for receiving, through a hardware device, a user input on a touch-sensitive display of the apparatus, the user input is one or more input points applied to the touch-sensitive display that is integrated with the apparatus;
>
> [b] means for creating an event object in response to the user input;
>
> [c] means for determining whether the event object invokes a scroll or gesture operation 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;
>
> [d] means for issuing at least one scroll or gesture call based on invoking the scroll or gesture operation;
>
> [e] means for responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object; and
>
> [f] means for 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.

412. **Claim 15 – Preamble "An apparatus, comprising:"** Claim 15 is directed to an apparatus. Each of the Accused Products is an apparatus.

413. **Claim 15 – element [a] "means for receiving, through a hardware device, a user input on a touch-sensitive display of the apparatus, the user input is one or more input points applied to the touch-sensitive display that is integrated with the apparatus."** I have been informed that the limitation "means for receiving, through a hardware device, a user input on a touch-sensitive display of the apparatus" is in "means plus function" form and is governed by section 112.6. The function is receiving, through a hardware device, a user input on a touch-sensitive display of the apparatus. The corresponding structure is one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for receiving, through a hardware device, a user input on a touch-sensitive display of the apparatus.

414. As discussed above, each of the Accused Products includes a processor programmed to execute an algorithm to receive, through a touch screen, a user input. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:37-42, 4:29-6:32, 6:33-36, 12:19-13:40, 21:10-56, 22:5-16, 22:42-48; FIGS. 1, 13, 14, 32, and 33A-C.

415. Claim 15 element [a] also requires that the user input is one or more input points applied to the touch-sensitive display that is integrated with the apparatus. As explained above, each of the Accused Products receives user input in the form of one or more inputs points applied to the touch-sensitive display integrated with the apparatus.

416. **Claim 15 – element [b] "means for creating an event object in response to the user input."** I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is creating an event object in response to the user input. The corresponding structure is one or more special or general purpose processors programmed

with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for creating an event object in response to the user input.

417. As discussed above, each of the Accused Products includes a processor programmed to execute an algorithm for creating an event object in response to the user input. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:37-42, 4:29-6:37, 12:30-32, 21:10-56, 22:5-16, 22:42-48; FIGS. 1, 13, 32, and 33A-C.

418. **Claim 15 – element [c] "means for determining whether the event object invokes a scroll or gesture operation 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."** I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is determining whether the event object invokes a scroll or gesture operation 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. The corresponding structure is one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for determining whether the event object invokes a scroll or gesture operation 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.

419. As discussed above, each of the Accused Products includes a processor programmed to execute an algorithm for determining whether the event object invokes a scroll or gesture operation 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. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification.

See, *e.g.*, '915 Patent at 1:59-67, 2:22-29, 2:37-42, 4:29-6:32, 6:37-48, 6:57-60, 9:61-11:13, 12:19-14:40, 21:10-56, 22:5-16, 22:42-48; FIGS. 1, 7-10, 13, 14, 32, and 33A-C.

420. **Claim 15 – element [d] "means for issuing at least one scroll or gesture call based on invoking the scroll or gesture operation."** I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is issuing at least one scroll or gesture call based on invoking the scroll or gesture operation. The corresponding structure is one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for issuing at least one scroll or gesture call based on invoking the scroll or gesture operation.

421. As discussed above, each of the Accused Products includes a processor programmed to execute an algorithm for issuing at least one scroll or gesture call based on invoking the scroll or gesture operation. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:22-29, 2:37-42, 4:29-6:32, 6:46-48, 9:61-11:13, 12:19-28, 12:34-37, 13:21-50, 21:10-56, 22:5-16, 22:42-48; FIGS. 1, 7-10, 13, 14, 32, and 33A-C.

422. **Claim 15 – element [e] "means for responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object."** I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object.

423. As discussed above, each of the Accused Products includes a display and a processor programmed to execute an algorithm for responding to at least one scroll call, if issued, by scrolling a window having a view associated with the event object. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification.

See, *e.g.*, '915 Patent at 1:59-67, 2:37-42, 4:29-6:32, 6:46-56, 8:4-25, 9:61-11:13, 18:25-19:61, 20:50-21:56, 22:5-16, 22:42-48; FIGS. 1, 4, 7-10, 28, 29, 30A-B, 32, and 33A-C.

424. **Claim 15 – element [f] "means for 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."** I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is 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. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for 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.

425. As discussed above, each of the Accused Products includes a display and a processor programmed to execute an algorithm for 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. The Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:22-29, 2:37-42, 4:29-6:32, 6:57-60, 8:4-25, 12:19-14:40, 18:25-19:61, 20:50-21:56, 22:5-16, 22:42-48; FIGS. 1, 4, 13-15, 16A-C, 28-29, 30A-B, 32, and 33A-C.

426. In summary, in my opinion each of the Accused Products is an apparatus that practices Claim 15. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products accomplishes the same function in the same way to achieve the same result.

427. **Claim 16.** Claim 16 recites:

> The apparatus as in claim 15, further comprising: means for rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll.

428. Claim 16 claims the apparatus as in claim 15 and adds a limitation analogous to dependent claim 2 further comprising "means for rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll." Accordingly, the Accused Products discussed in connection with claim 2 infringe claim 16 for the reasons discussed in connection with claim 2.

429. I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll.

430. As discussed above, each of the above-listed products includes a display and a processor programmed to execute an algorithm for rubberbanding a scrolling region displayed within the window by a predetermined maximum displacement when the scrolling region exceeds a window edge based on the scroll. The above-listed products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:11-21, 2:37-42, 4:29-6:32, 7:46-8:3-25, 8:61-9:60, 18:25-19:61, 20:50-21:56, 22:5-16, 22:21-26, 22:42-48, 22:53-58; FIGS. 1, 3, 4, 6A-D, 28, 29, 30A-B, 32, and 33A-C.

431. In summary, in my opinion each of the above-listed products is an apparatus that practices Claim 16. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the above-listed products accomplishes the same function in the same way to achieve the same result.

432. **Claim 17.** Claim 17 recites:

> The apparatus as in claim 15, further comprising: means for attaching scroll indicators to a content edge of the window.

433. Claim 17 claims the apparatus in claim 15 and adds a limitation analogous to dependent claim 3 further comprising "means for attaching scroll in indicators to a content edge of the window." Accordingly, the Accused Products discussed in connection with claim 3 infringe claim 17 for the reasons discussed in connection with claim 3.

434. I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is attaching scroll indicators to a content edge of the window. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for attaching scroll indicators to a content edge of the window.

435. As discussed above, each of the above-listed products includes a display and a processor programmed to execute an algorithm for attaching scroll indicators to a content edge of the window. The above-listed products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:11-21, 2:37-42, 4:29-6:32, 7:46-8:3-25, 8:61-9:60, 18:25-19:61, 20:50-21:56, 22:5-16, 22:21-26, 22:42-48, 22:53-58; FIGS. 1, 3, 4, 6A-D, 28, 29, 30A-B, 32, and 33A-C.

436. In summary, in my opinion each of the above-listed products is an apparatus that practices Claim 17. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the above-listed products accomplishes the same function in the same way to achieve the same result.

437. **Claim 18.** Claim 18 recites:

> The apparatus as in claim 15, further comprising: means for attaching scroll indicators to the window edge.

438. Claim 18 claims the apparatus in claim 15 and adds a limitation analogous to dependent claim 4 further comprising "means for attaching scroll indicators to the window edge." Accordingly, the Accused Products discussed in connection with claim 4 infringe claim 18 for the reasons discussed in connection with claim 4.

439. I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is attaching scroll indicators to the window edge. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for attaching scroll indicators to the window edge.

440. As discussed above, each of the above-listed products includes a display and a processor programmed to execute an algorithm for attaching scroll indicators to the window edge. The above-listed products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:11-21, 2:37-42, 4:29-6:32, 7:46-8:3-25, 8:61-9:60, 18:25-19:61, 20:50-21:56, 22:5-16, 22:21-26, 22:42-48, 22:53-58; FIGS. 1, 3, 4, 6A-D, 28, 29, 30A-B, 32, and 33A-C.

441. In summary, in my opinion each of the above-listed products is an apparatus that practices Claim 18. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the above-listed products accomplishes the same function in the same way to achieve the same result.

442. **Claim 19.** Claim 19 recites:

> The apparatus as in claim 15, wherein determining whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period.

443. Claim 19 claims the apparatus in claim 15 and adds a limitation analogous to dependent claim 5 wherein "determining whether the event object invokes a scroll or gesture operation is based on receiving a drag user input for a certain time period." Accordingly, the Accused Products discussed in connection with claim 5 infringe claim 19 for the reasons discussed in connection with claim 5. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the Accused Products accomplishes the same function in the same way to achieve the same result.

444. **Claim 20.** Claim 20 recites:

> The apparatus as in claim 15, further comprising: means for responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input.

445. Claim 20 claims the apparatus in claim 15 and adds a limitation analogous to dependent claim 6 further comprising "means for responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input." Accordingly, the Accused Products discussed in connection with claim 6 infringe claim 20 for the reasons discussed in connection with claim 6.

446. I have been informed that this limitation is in "means plus function" form and is governed by section 112.6. The function is responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input. The corresponding structure is a display coupled with one or more special or general purpose processors programmed with special-purpose software to execute an algorithm, the special-purpose software including computer instructions for responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input.

447. As discussed above with respect to Claim 13, each of the Accused Products discussed in Claim 13 includes a processor programmed to execute an algorithm for responding to at least one gesture call, if issued, by rotating a view associated with the event object based on receiving a plurality of input points in the form of the user input. These Accused Products perform the claimed function in manner equivalent to the manner described in the specification. *See*, *e.g.*, '915 Patent at 1:59-67, 2:37-42, 4:29-6:37, 12:30-32, 21:10-56, 22:5-16, 22:42-48; FIGS. 1, 13, 32, and 33A-C. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the above-listed products accomplishes the same function in the same way to achieve the same result.

448. **Claim 21.** Claim 21 recites:

> The apparatus as in claim 15, wherein the apparatus is one of: a data processing device, a portable device, a portable data processing device, a multi touch device, a multi touch portable device, a wireless device, and a cell phone.

449. Claim 21 claims an apparatus in claim 15 and adds a limitation analogous to claim 7, "wherein the apparatus is one of: a data processing device, a portable device, a portable data processing device, a multi touch device, a multi touch portable device, a wireless device, and a cell phone." Accordingly, the Accused Products discussed in connection with claim 7 infringe claim 21 for the reasons discussed in connection with claim 6. To the extent that this claim is not met literally, in my opinion it is met under the doctrine of equivalents because each of the above-listed products accomplishes the same function in the same way to achieve the same result.

E. Samsung's Devices Have Been Modeled on Apple's iOS

450. Based on documents that I have reviewed, Samsung appears to have modeled the scrolling, pinch zoom and rotation features in its products after those in Apple's iOS.

451. In December 2009, Samsung's C.E.O. issued "instruction items" for 2010, stating that "going forward our comparison standard is Apple iPhone. In High End cases, evaluate with iPhone standard." (SAMNDCA10907803.) The then principal engineer of Samsung's Mobile R & D, Dongsub Kim, reiterated this sentiment in an email to several at the company, saying, "Henceforth our standard for comparison is the Apple iPhone." (SAMNDCA1097800 at -801.)

452. In an email from Senior Designer Eunjung Chang in December 2009 to an undisclosed number of recipients, Chang summarized the results of a UX informational meeting with several European subsidiaries. Chang reported that many "strongly request multi-touch (pinch interaction)." (SAMNDCA10015268 at -273.) Furthermore, several at the meeting informed about "the market's need for this [pinch interaction] in a variety of features such as a browser, game, photo. "They feel that whether this is installed in a product is an important factor when customers make purchases because it is convenient and fun." Others went as far as to say the pinch interaction was "absolutely necessary for multimedia contents and Internet browsing." (*Id.*)

453. In February 2011, Tae Woo Rhim stated, "Enabling zoom in all mobile versions is a directive from Head of Verification group." (S-ITC-003401550.)

454. Many Samsung documents show that Samsung measured the implementation of pinch zoom and scrolling on its phones against Apple's products. Usually, these head-to-head

comparisons are in the form of charts measuring smoothness, response time, and feel of these features. (SAMNDCA00229419; SAMNDCA00229399; SAMNDCA00201351; SAMNDCA00201642; SAMNDCA00229449; SAMNDCA00525362; SAMNDCA00525359; S-ITC-003680292 at -299; S-ITC-003409246 at -253; S-ITC-003524055.)

455. Samsung developed patches to improve zoom and scroll functionality in comparison to Apple. After one such U1 browser scrolling patch was applied to a Samsung product, Ioi Lam wrote Jaegwan Shin saying, "initial response for scroll looks good. However, they feel like zoom-in is a little bit heavy compared to iPhone after applying the patch." (SAMNCA00229440.)

F. The '915 Patent Could Not Be Designed Around Without Rendering the Accused Products Much Less Useable

456. I have been asked to consider whether the Accused Products could be re-designed so that they do not infringe the '915 patent. In my opinion, any such re-design would make the Accused Products much less useable, render them inconvenient for users, and deprive them of intuitive functionality that smartphone and tablet users have come to expect.

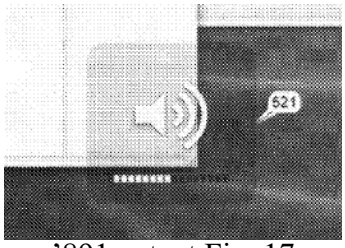
457. The '915 patent provides functionality that is central to all of the Accused Products: the ability to distinguish automatically between a one-finger scroll call and a two-finger gesture such as a zoom or rotate gesture. This functionality is highly intuitive; indeed, many users who experiment with devices equipped with this functionality immediately understand how to use them without any explanation. Scrolling, zooming and rotating are among the most common actions users take with the Accused Products, and are used in multiple applications.

458. Potential alternative designs that do not practice the '915 patent would be far less useful. A smartphone that required users to press a key in order to zoom or un-zoom, for example, would be much less intuitive and would provide a much less satisfying user experience. than devices that practice the '915 patent.

VII. DETAILED OPINION REGARDING THE '891 PATENT

A. Summary of the '891 Patent

459. Apple's '891 patent, titled "Method and Apparatus for Displaying a Window for a User Interface" claims methods and an apparatus for providing a visual overlay of information that automatically disappears. I have been informed that the claims of the '891 patent discussed in this Report were conceived of by Imran Chaudri and Bas Ording in 2000, and that the claims were wholly or substantially reduced to practice in March 2001. Apple Inc.'s Fifth Am. Obj. and Response to Samsung's Interrogatory No. 1 to Apple, 3:12-17; Ording Dep. 130:8-134:2, Oct. 25, 2011. The application that resulted in the issuance of the patent was filed February 1, 2008 and the patent claims priority to an application filed July 10, 2002. The invention in this patent may be most familiar to mobile device users as a volume adjustment indicator or "pop-up window," depicted below.



'891 patent Fig. 17

460. After appearing briefly (and in the same position on the screen) this type of window then automatically disappears without a user having to, for example, click an "X" button on the corner of the window. The window is displayed independently of a position of a cursor on the screen.

461. The '891 patent discloses and claims different embodiments of this basic invention. The user interface window, referred to as a "first window," may open in response to a user input or as a result of some other occurrence, and then closes automatically in response to the expiration of a timer or upon the occurrence of some other condition. In some embodiments the timer can be restarted by a second user input. Depending upon the embodiment, the "first window" may or may not be capable of being closed by a user's input. In some but not all

embodiments, the "first window" is translucent so that a "second window" is visible underneath the first window. In some but not all embodiments the first window closes by "fading out." In sum, the '891 patent discloses and claims a variety of useful ways for providing unobtrusive visual feedback in a digital processing system, such as a desktop or laptop computer, a smartphone, or a tablet computer.

462. In my opinion, a person of ordinary skill in the relevant art of the '891 patent at the time of the invention would have a Bachelor's degree in computer science or electrical engineering or an equivalent, and one or more years experience working on designing and/or implementing user interfaces. I have interpreted the '891 patent claims according to how I believe such a person of ordinary skill would have understood the claims at the time of the invention in light of the patent specification and file history. In addition, I have applied the parties' agreed definition that "starting a timer" means "initiating a time-keeping process."

B. Apple's Practice of the '891 Patent

463. Although according to the testimony of the co-inventors of the '891 patent the invention was originally implemented in Apple's notebook computers, it is my opinion that Apple's iPhone and iPad products practice one or more of the asserted claims of the '891 patent. In Apple's iPhone and iPad products, when the user touches the volume button, a translucent "first window" appears on top of the "second window" displaying a different application. Touching the volume button starts a timer, and the volume window "fades out" when the timer expires. A repeated touch on the volume control extends the time the volume window is open. Finally, the volume window in the Apple iPhones and iPad appears centered horizontally on the display, independently of the position of a cursor on the screen. The video attached as Exhibit 24, which was shown in Apple's *Markman* Tutorial, as well as the screenshot of it below, show the features of the '891 patent demonstrated on an iPhone 4. The deposition of Bas Ording, an inventor on the '891 patent, confirmed that Apple practices it. (Ording Dep. Tr. at 149:17-24.) Apple's products embody one or more of the asserted apparatus and system claims of the '891 patent, and their ordinary and intended use practices one or more of the asserted method claims of the '891 patent, which are discussed in greater detail below.

C. Samsung's Infringement of the '891 Patent

464. In the discussion that follows, I analyze whether certain Samsung Accused Products embody the apparatus claims of the '891 patent and whether the ordinary and intended use of the Samsung Accused Products would practice the method claims of the patent. For purposes of this section of my Report, the "Samsung Accused Products" include the following: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Galaxy Tab 10.1, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant.

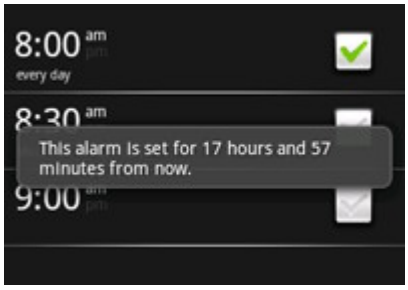
465. In performing this analysis I reviewed the '891 patent and its file history, tested the operation of these Samsung Accused Products, reviewed source code that Samsung produced prior to the March 8 fact discovery cutoff, and reviewed other materials described in this Report. Because the Samsung source code is built upon the foundation of publicly-available Android code, I reviewed portions of that Android code and its accompanying documentation. I have analyzed Samsung source code on at least one Accused Product representative of each major release of

Android that appears on the Accused Products. I reviewed source code that implements the accused functionalities of the '891 patent on, among other devices, the Samsung Captivate (Android 2.1), the Samsung Vibrant, (Android 2.2), the Samsung Galaxy S II (Android 2.3), and the Samsung Galaxy Tab 10.1 (Android 3.1). I have compared portions of the relevant code on each of these devices to analogous code (where available) on other Accused Products running that version, as well as the publicly available version of each major Android release. Based on those comparisons, I conclude that, for each major Android release, all of the Accused Products based on that release implement the accused functionalities of the '891 patent in substantially the same way as the representative device for that release whose source code I have analyzed and cited in this Report.

466. Two features provided in the Android code, "toast" notifications (for all the Samsung Accused Products other than the Galaxy Tab 10.1) and "dialogs" (for the Galaxy Tab 10.1) are particularly relevant to the analysis of the Samsung source code in the context of the '891 patent, and I therefore present a short summary of those Android features before discussing the '891 claims and the Samsung code in detail.

467. The relevant Samsung code for all of the Samsung Accused Products other than the Galaxy Tab 10.1 uses "toast" notifications to implement the display for volume adjustment. Android Developers (developer.android.com), which is the official site for Android developers, explains the function of "toast" notifications as follows:

> A toast notification is a message that pops up on the surface of the window. It only fills the amount of space required for the message and the user's current activity remains visible and interactive. The notification automatically fades in and out, and does not accept interaction events.
>
> The screenshot below shows an example toast notification from the Alarm application. Once an alarm is turned on, a toast is displayed to assure you that the alarm was set.



See http://developer.android.com/guide/topics/ui/notifiers/toasts.html.

468. As the description and image above confirm, a "toast" (1) is a window displayed on the screen in response to user input (such as setting an alarm or adjusting volume), (2) is displayed concurrently with a portion of a second window, (3) closes automatically, by fading out, rather than in response to user input, and (4) does not respond to input from the user. An alternative, more general mechanism for performing the same function as a "toast" in Android is the "dialog," which Samsung uses in the Galaxy Tab 10.1.

469. A "dialog" (1) is a window displayed on the screen in response to user input, (2) is displayed concurrently with a portion of a second window showing underlying activity, and (3) accepts user input. Samsung use of "toast" notifications and "dialogs" to display and close windows in connection with user inputs to adjust the volume levels of its Accused Products are discussed in greater detail below.

470. In the paragraphs that follow, I will set forth the claims of the '891 patent for which it is my opinion that Samsung Accused Products, or the ordinary and intended use of Samsung Accused Products, meets every limitation of the claim. By "ordinary and intended use" in this section of my Report, I mean actions that virtually every user of a Samsung Accused Product would perform when using the Accused Product, and which Samsung encouraged and intended the user to perform. As discussed in greater detail below, any user touching the volume button on a Samsung Accused product would trigger an automatic series of steps that would practice all the method steps of almost all of the asserted method claims. In addition, a user often would touch the volume button while some other application window was being displayed, thus infringing the dependent "second application window" claims. Any user who happened to tap the

button twice, a very common occurrence in either moving the volume up or down (for example, in muting the ringer, a very common user action), would practice the dependent claims for "restarting" a timer. Accordingly, it is my opinion that all or virtually all users of the Samsung Accused products would engage in direct infringement of the '891 patent.

471. In addition, the volume button in the Samsung Accused Products discussed below does not have a non-infringing use. Virtually any input using the volume button causes the performance of all of the steps of one or more of the method claims of the '891 patent. The volume button is one of a small number of physical buttons on the Samsung Accused Products, and Samsung's user manuals for the Samsung Accused Products instruct users on the location of the volume button and the touching of that button that automatically causes the performance of the steps of the method claims as discussed below. Based on these facts, and for the other reasons stated in this Report, it is my opinion that the Samsung defendants have indirectly infringed the method claims of the '891 patent discussed below.

472. With respect to the claims of the '891 patent that claim an apparatus, device, system or media, it is my opinion that a Samsung defendant who makes, uses, sells, imports or offers to sell the Samsung Accused Product in the United States has engaged in direct infringement of the '891 claims discussed below.

473. Attached as Exhibits 25 and 26 are exemplary claim charts that illustrate the infringement of the claims below by the Galaxy Tab 10.1 (Exhibit 25) and the Galaxy Prevail (Exhibit 26). Where source code is cited in the Galaxy Prevail claim chart, reference is made to Android 2.3 (as exemplified by the Galaxy S II), Android 2.2 (as exemplified by the Samsung Vibrant) and Android 2.1 (as exemplified by the Samsung Captivate).

474. **Claim 1.** Claim 1 of the '891 patent recites:

> A method to display a user interface window for a digital processing system, the method comprising:
>
> [a] displaying a first window in response to receiving a first input from a user input device of the digital processing system which is capable of displaying at least a portion of a second window concurrently with the first window on a screen;
>
> [b] starting a timer; and

> [c] closing the first window in response to a determination that the timer expired;
>
> [d] wherein the first window does not close in response to any input from a user input device of the digital processing system, wherein the first window has been displayed independently from a position of a cursor on the screen

475. In my opinion, the ordinary and intended use of the following Samsung Accused Products: Acclaim, Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Ace, Galaxy Prevail, Galaxy S (i9000), Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Gem, Gravity Smart, Indulge, Infuse 4G, Intercept, Mesmerize, Nexus S, Nexus S 4G, Replenish, Sidekick, Transform, and Vibrant (all of the Samsung Accused Products other than the Galaxy Tab 10.1) literally infringes claim 1 of the '891 patent.

476. **Claim 1, Preamble: "A method to display a user interface window for a digital processing system, the method comprising:"** All the Samsung Accused Products are digital processing systems containing a CPU, memory, and operating system software and application programs. For example, the Samsung Galaxy S II phones contain a "1.5 GHz, Dual Core (Qualcomm Snapdragon S3)" processor (Ex. 6 at APLNDC-Y0000066880); and the Galaxy Tab 10.1contains a "1GHz Dual Core Nvidia Tegra2 Processor" (Ex. 7 at APLNDC-Y0000066821). The earlier Galaxy phones also contained processors. These systems run variations of the Android operating system and a variety of application programs.

477. All of the Samsung Accused Products are either smartphones (like the Galaxy S II) or tablet computers (like the Galaxy Tab 10.1). These devices employ processors and run software that performs functions typically performed on computers. The Samsung Accused Products all display user interface windows that convey information to the user and allow the user to interact with the system. Therefore, the ordinary and intended use of all the Samsung Accused Products meets the preamble of claim 1.[9]

[9] I understand that the preamble of a patent claim may or may not be construed as a claim limitation. I offer no opinion on that issue in my Report, since the Samsung Accused Products all meet the recitations in the preambles of the various asserted claims.

478. **Claim 1, Element [a] "displaying a first window in response to receiving a first input from a user input device of the digital processing system which is capable of displaying at least a portion of a second window concurrently with the first window on a screen;"** Based upon my personal observation, all the Samsung Accused Products display "a first window in response to receiving a first input from a user input device of the digital processing system," such as by displaying a Volume window in response to receiving user input from a user input device (e.g. the volume key) of the Samsung digital processing system. The video attached as Exhibit 27 demonstrates this element on a Galaxy Prevail.

479. All the Samsung Accused Products also display "at least a portion of a second window" such as a Messaging Window, a Browser window, or the window of an application program "concurrently with the first window" (e.g. the volume window) on the screen. For example, shown below is a photo of the Samsung Galaxy Prevail mobile phone, which is representative of the Samsung Accused Products with respect to the independent claims of the '891 patent. The Galaxy Prevail phone also infringes certain dependent claims, such as those requiring a "translucent" first window, or that the window close by "fading out," and is representative of the subset of the Samsung Accused Product phones that infringe those claims.

480. **Claim 1, Element [b] "starting a timer" and [c] "closing the first window in response to a determination that the timer expired;"** Based upon my observation of the Samsung Accused Products in operation and my review of the source code produced by Samsung prior to the close of fact discovery in this litigation, all of the Samsung Accused Products "start a

timer" and then "close the first window [e.g. the Volume window] in response to a determination that the timer expired." I have observed that the Volume window appears to stay on for approximately two seconds in response to a single user input to the volume control button, and my review of the Samsung source code indicates that the Volume window closes in response to a determination that the timer has expired.

481. The accused Samsung smartphone products running variations of the Android 2.1, 2.2 and 2.3 operating systems display and then automatically close the Volume window using a series of software instructions. When the user touches a volume adjustment button, the method PhoneWindowManager.handleVolumeKey is called. (SAMNDCA-C000007049; SAMNDCA-C000007258; SAMNDCA-C000007337.)[10] The handleVolumeKey() method invokes, through adjustSuggestedStreamVolume(), the AudioService.adjustStreamVolume() method. (SAMNDCA-C000007050; SAMNDCA-C000007259; SAMNDCA-C000007347.) The adjustStreamVolume() method determines how to handle the event, depending upon whether the adjustment is up or down. Other methods are invoked and an MSG_VOLUME_CHANGED message is sent that is eventually processed by the VolumePanel.onVolumeChanged() method. (SAMNDCA-C000007064; SAMNDCA-C000007270; SAMNDCA-C000007388.) This, in turn, through onVolumeChanged(), invokes the onShowVolumeChnaged() method, which adjusts the user interface to display a "first window" via mToast.show(). (SAMNDCA-C000007056; SAMNDCA-C000007264; SAMNDCA-C000007382.) Before the mToast.show() method is called to display the Volume window, the Toast.setDuration() method is called to set the timer for the Toast. (*Id.*) The handleTimeout() method of the NotificationManagerService class calls the cancelToastLocked() method (SAMNDCA-C000007090; SAMNDCA-C000007294; SAMNDCA-C000007411), which calls the ToastRecord.callback.hide() method to cause the "Toast" (the Volume window) to disappear from the display as a result of the determination that

[10] The citations in this section of my Report that are composed of three Bates pages refer, respectively, to the locations of the referenced source code either at the page of the start of the method or at the page of a particular relevant line in Android 2.3 (as exemplified by the Galaxy S II), Android 2.2 (as exemplified by the Vibrant), and Android 2.1 (as exemplified by the Captivate).

the timer has expired. (SAMNDCA-C000007089; SAMNDCA-C000007294; SAMNDCA-C000007411.)

482. **Claim 1 Element [d] "wherein the first window does not close in response to any input from a user input device of the digital processing system, wherein the first window has been displayed independently from a position of a cursor on the screen."** Based upon my observation of the Samsung Accused Products in operation and source code review, for all of the Samsung products accused of infringing claim 1 (namely, all of the Samsung Accused Products other than the Galaxy Tab 10.1), "the first window does not close in response to any input from a user input device of the digital processing system."[11] (The '891 patent specification makes clear that shutting off power to the digital processing system is not a "user input from a user input device" as contemplated by this claim. ('891 patent at 7:37-47.))

483. Finally, claim 1 requires that "the first window has been displayed independently from a position of a cursor on a screen." Under Apple's proposed construction of this claim limitation, all the Samsung Accused Products meet this limitation as well. For example, the Volume window appears at the same position on the screen (horizontally centered near the top of the screen) if a text entry cursor is positioned at the left edge, center, or right edge of a text-entry bar, and the Volume window is displayed independently of whether the cursor or text entry bar associated with an application displayed in the "second window" is positioned at the top, center, or other location on the screen. For example, the location of a Toast window, such as that used to display the Volume window in Android 2.x, is controlled by the Toast's "gravity." When a new Toast is constructed, its gravity is set to "Gravity.CENTER_HORIZONTAL | Gravity.BOTTOM," which sets its default position to be horizontally centered near the bottom of the screen. (SAMNDCA-C000007066.) Before the Toast is displayed, a call to setGravity() modifies the vertical component of its placement to be near the top of the screen (SAMNDCA-C000007060), but there is no component of its default or modified position that depends on a

[11] In the Galaxy Tab 10.1, when the VolumePanel is displayed, the user can touch the "New Tab" control on the touch screen to cause the VolumePanel to close prior to the expiration of the timer.

position of a cursor on a screen. The Toast is therefore displayed independently from such a cursor position. Accordingly, use of the volume control button for its ordinary and intended purpose in all of the Samsung Accused Products accused of infringing claim 1 literally performs every limitation of claim 1 of the '891 patent.

484. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 1, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. I have been instructed by counsel not to apply the doctrine of equivalents to element [d] of claim 1. With respect to the preamble and elements [a] through [c] of claim 1, it is my opinion that the Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in those claim elements, and that any differences between the operation of the Samsung Accused Products and those claim elements is insubstantial.

485. **Claim 2.** Claim 2 recites:

> A method as in claim 1 wherein the first window is translucent; and the portion of the second window is visible while under the first window.

486. The ordinary and intended use of four Samsung Accused Products infringes dependent claim 2 of the '891 patent. Claim 2 of the '891 patent depends from claim 1, adding the limitation "wherein the first window is translucent; and the portion of the second window is visible while under the first window." Samsung's accused Acclaim, Intercept, Galaxy Prevail and Nexus S phones that infringe claim 1 also have translucent Volume windows that allow the second window to be seen while under the Volume window. For example, the video attached as Exhibit 28 shows the translucent Volume window on the Galaxy Prevail. Accordingly, the ordinary and intended use of these four Samsung Accused Products literally infringes claim 2.

487. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 2, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 2, and that any

differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

488. **Claim 5.** Claim 5 recites:

> A method as in claim 1 wherein said closing the first window comprises: fading out an image of the first window.

489. Claim 5 depends from claim 1 "wherein said closing of the first window comprises: fading out an image of the first window." Based upon my observation of the Samsung Accused Products in operation, the Volume window "first window" fades out rather than disappearing immediately or abruptly upon the expiration of the timer in the following Samsung Accused Products that also infringe claim 1: Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Prevail, Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Gem, Indulge, Infuse 4G, Mesmerize, Nexus S, Nexus S 4G, Replenish, and Vibrant. Accordingly, use of the volume control button for its ordinary and intended purpose in all of these Samsung Accused Products performs every limitation of claim 5 of the '891 patent and thus literally infringes the claim.

490. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 5, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 5, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

491. **Claim 6.** Claim 6 recites:

> A method as in claim 1 wherein the second window, if displayed, does close in response to an input from a user input device of the digital processing system.

492. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also literally infringes dependent claim 6 of the '891 Patent. Claim 6 of the '891 patent depends from claim 1, adding the limitation "wherein the second window, if displayed, does close in response to an input from a user input device of the digital processing system." Based upon my observations of the Samsung Accused Products, all of the products whose use infringes claim 1 also meet the additional limitation of claim 6. In all the Samsung Accused Products, a "second window" (such as a Messaging Window, Browser window, or other application window) can be closed by input from a user input device, for example by tapping on the Home icon.

493. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 6, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 7, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

494. **Claim 14.** Claim 14 recites:

> A method as in claim 1 further comprising: determining a position on a display of the digital processing system independent of a position of a cursor on the display; wherein the first window is displayed at the position.

495. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also literally infringes dependent claim 14 of the '891 Patent. Claim 14 of the '891 patent depends from claim 1, adding the limitation: "determining a position on a display of the digital processing system independent of a position of a cursor on the display; wherein the first window is displayed at the position." As discussed above in connection with claim 1 of the '891 patent, I have observed that the position of the Volume window "first window" is independent of the position of a cursor on the display. Moreover, the source code produced by Samsung relating to the drawing of the "first window" demonstrates that the location of the

window is determined, independent of a position of a cursor on the display, by the "gravity" of the associated Toast, as discussed above in connection with element [d] of claim 1.

496. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 14, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitations added in claim 14, and that any differences between the operation of the Samsung Accused Products and those limitations is insubstantial.

497. **Claim 15.** Claim 15 recites:

> A method as in claim 14 wherein the position is centered horizontally on the display.

498. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also literally infringes dependent claim 15 of the '891 Patent. Claim 15 of the '891 patent depends from claim 14, adding the limitation "wherein the position [of the first window] is centered horizontally on the display." All of the Samsung Accused Products have a Volume window "first window" that is horizontally centered on the display. As discussed above in connection with element [d] of claim 1, the position-determining "gravity" of the Toast associated with the Volume window is set to "Gravity.CENTER_HORIZONTAL | Gravity.BOTTOM" when the Toast is constructed, which sets its default position to be horizontally centered near the bottom of the screen. (SAMNDCA-C000007066.) Before the Toast is displayed, a call to setGravity() modifies the vertical component of its placement to be near the top of the screen (SAMNDCA-C000007060), but neither this call to setGravity() nor anything else alters the horizontal centering imposed when the Toast was constructed. The Toast is therefore centered horizontally on the display when it is shown. Accordingly, the ordinary and intended use of the Samsung Accused Products that infringe claim 1 also literally infringes claim 15.

499. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 15, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 15, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

500. **Claim 16.** Claim 16 recites:

> A method as in claim 1 further comprising: restarting the timer in response to receiving a second input for the first window.

501. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also infringes dependent claim 16 of the '891 Patent. Claim 16 of the '891 patent depends from claim 1, adding the limitation "restarting the timer in response to receiving a second input for the first window." In all the Samsung Accused Products, I observed that an additional tap on the volume control button causes the Volume window "first window" to be displayed for the same approximately two-second duration following the additional tap as occurs following an initial tap. The source code produced by Samsung indicates that the sequence of instructions that includes setting the timer for the "Toast" Volume window is initiated by the same handleVolumeKey() and Toast.show() methods on initial and subsequent touches of the volume button, as discussed in connection with element [c] of claim 1 above. On each subsequent press of the volume button, the onShowVolumeChanged() method calls mToast.setDuration(Toast.LENGTH_SHORT), which restarts the timer that ultimately dismisses the Toast by adding to it the duration of Toast.LENGTH_SHORT. (SAMNDCA-C000007056; SAMNDCA-C000007264; SAMNDCA-C000007382.) Accordingly, the ordinary and intended use of the Samsung Accused Products that infringe claim 1 also literally infringes claim 16.

502. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 16, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these

Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 16, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

503. **Claim 17.** Claim 17 recites:

> A method as in claim 16 wherein the second input is received from a user input device of the digital processing system.

504. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also infringes dependent claim 17 of the '891 Patent. Claim 17 of the '891 patent depends from claim 16, adding the limitation "wherein the second input is received from a user input device of the device of the digital processing system." As noted in the previous paragraph, a 'second input" is received from the volume control button, which is a "user input device of the digital processing system." Accordingly, the ordinary and intended use of the Samsung Accused Products that infringe claim 1 also literally infringes claim 17.

505. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 17, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 17, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

506. **Claim 18.** Claim 18 recites:

> A method as in claim 16 wherein the first window is created by a first application and the second window is created by a second application, wherein the first application is different from the second application.

507. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also infringes dependent claim 18 of the '891 Patent. Claim 18 of the '891 patent depends from claim 16, adding the limitation "wherein the first window is created by a first application and the second window is created by a second application, wherein the first

application is different from the second application." In all the Samsung Accused Products the "first window" is created by a "first application program" such as the Android AudioManager service,[12] while the "second window" is created by a second, different application, such as the Messaging application or the Browser application. In light of the fact that the '891 specification uses a volume control window as an example of a "first window created by a first application," a person of ordinary skill would understand that the AudioManager service constitutes a "first application." A person of ordinary skill in the art would understand applications like the Browser to be a different "second application" that creates a "second window." Accordingly, the ordinary and intended use of the Samsung Accused Products that infringe claim 1 also literally infringes claim 18.

508. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 18, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 18, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

509. **Claim 19.** Claim 19 recites:

> A method as in claim 1 wherein the user input device is one of:
>
> a) a keyboard;
>
> b) a mouse;
>
> c) a track ball;
>
> d) a touch pad;
>
> e) a touch screen;
>
> f) a joy stick; and

[12] In Android, a "service" is, according to the official Android Developer's Guide, "an application component that can perform long-running operations in the background." (http://developer.android.com/guide/topics/fundamentals/ services.html).

g) a button.

510. The ordinary and intended use of all of the Samsung Accused Products that infringe claim 1 also infringes dependent claim 19 of the '891 Patent. Claim 19 of the '891 patent depends from claim 1, adding the limitation that the "user input device is one of" any of seven listed input devices, including: a) "a keyboard;" […] e) "a touch screen;" […] and g) "a button." Because the Volume window "first window" in the Samsung Accused Products is displayed in response to user input via the volume control button, the ordinary and intended use of the Samsung Accused Products that infringe claim 1 also literally infringes claim 19.

511. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 19, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 19, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

512. **Claim 20.** Claim 20 recites:

> A method to display a user interface window for a digital processing system, the method comprising:
>
> displaying a first window, the first window being translucent, at least a portion of a second window being capable of being displayed on the digital processing system under the first window, the portion of the second window, when present, being visible under the first window on a screen; and
>
> closing the first window without user input, wherein the first window has been displayed independent from a position of a cursor on the screen.

513. Claim 20 is similar to claim 2 of the '891 patent, in that it requires that the first window is "translucent" so that a portion of the second window is visible under the first window. Unlike claim 2 (which depends from claim 1) claim 20 does not require that the first window is closed by the expiration of a timer, nor does it require that the first window cannot be closed by a user input device. The ordinary and intended use of five Samsung Accused Products that display

a "translucent" Volume window the Acclaim, Intercept, Galaxy Prevail and Nexus S phones, and the Galaxy Tab 10.1 tablet infringes claim 20. The ordinary and intended use of these four Samsung phones infringes claim 20 for the reasons discussed above at paragraphs 474-487 in connection with claims 1 and 2 of the '891 patent. The Galaxy Tab 10.1 also displays a translucent Volume window "first window" (also known as the VolumePanel) as required by claim 20. All five of these Samsung Accused Products close the first window without user input when a timer expires.

514. For example, the Galaxy Tab 10.1 displays a Volume window with translucent pixels, as demonstrated in the video attached as Exhibit 29. I confirmed this in the relevant source code by inspection of the image resource used to generate the window. When the Dialog associated with the Volume window is constructed, a particular visual "theme" for the Dialog is specified. (SAMNDCA-C000008401.) The dialogTheme is mapped, in the file /frameworks/base/core/res/res/values/themes.xml, to "Theme.Holo.Dialog." (SAMNDCA-C000008474.) This theme, in turn, specifies the image resource file that forms the basis for the Volume window, which is dialog_full_holo_dark.9.png, located at / frameworks/base/core/res/res/drawable-hdpi/dialog_full_holo_dark.9.png. (SAMNDCA-C000008489.) This image is in the PNG format, in which each pixel can be specified by color values (e.g., red, green, and blue) with an alpha value to specify the pixel's transparency between fully opaque and fully transparent. (*See* Portable Network Graphics (PNG) Specification (Second Edition), *available at* http://www.w3.org/TR/PNG/ #4Concepts.PNGImage.) I confirmed that some of the pixels of the image that forms the Volume window are translucent. A partial printout of pixel values of this image, prepared using the ImageMagick program, appears at SAMNDCA-C000008543 through SAMNDCA-C000008591.

515. The source code for opening and closing the "Toast" volume window without user input in response to the expiration of a timer for the Samsung phones was summarized in paragraphs 478-483 above in my discussion of claim 1. The Galaxy Tab 10.1 running variations of the Android 3.x operating system also displays a Volume window (called the VolumePanel), starts a timer, and closes the window upon the expiration of the timer. When the user touches a

volume adjustment input device the onShowVolumeChanged() method sets the volume display bar (the SeekBar) based on the new volume setting with a call to SeekBar.setProgress(). (SAMNDCA-C000006860.). The small window that displays the VolumePanel is known as a "Dialog." If the Dialog associated with the VolumePanel is not showing (as when the user first presses the volume adjustment button), a call to mDialog.show() displays it. (SAMNDCA-C000006863, line 547.) The VolumePanel.onProgressChanged() method calls the VolumePanel.resetTimeout() method to disable any pending timers and start a new timer (SAMNDCA-C000006868), which is set to expire based on the TIMEOUT_DELAY constant value. (SAMNDCA-C000006867.) When the TIMEOUT_DELAY has elapsed, a MSG_TIMEOUT message is sent, which results in the mDialog.dismiss() method being called to cause the VolumePanel window to disappear without user input. (SAMNDCA-C000006867.) Accordingly, the ordinary and intended use of the Galaxy Tab 10.1 practices all of the limitations of claim 20 of the '891 patent and therefore literally infringes this claim.

516. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 20, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. I have been instructed by counsel not to apply the doctrine of equivalents to the final subparagraph of claim 20. With respect to the preamble and the first subparagraphs of claim 20 quoted above, it is my opinion that the Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in those claim elements, and that any differences between the operation of the Samsung Accused Products and those claim elements is insubstantial.

517. **Claim 21.** Claim 21 recites:

> A method as in claim 20 further comprising: starting a timer; wherein said closing the first window is in response to expiration of the timer.

518. The ordinary and intended use of the five Samsung Accused Products that infringe claim 20 also infringes dependent claim 21 of the '891 Patent. Claim 21 of the '891 patent depends from claim 20, adding the limitation "starting a timer; wherein said closing of the first

window is in response to expiration of a timer." For the reasons discussed in connection with claims 1 and 20 above, all of the Samsung Accused Products start a timer, and the closing of the first window in all of the Samsung Accused Products occurs in response to the expiration of a timer. Accordingly, the ordinary and intended use of the five Samsung Accused Products that infringe claim 20 of the '891 patent also literally infringes claim 21.

519. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 21, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 21, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

520. **Claim 23.** Claim 23 recites:

> A method as in claim 20 further comprising: determining whether or not a condition is met; wherein said closing the first window is in response to a determination that the condition is met.

521. The ordinary and intended use of the five Samsung Accused Products that infringe claim 20 also infringes dependent claim 23 of the '891 Patent. Claim 23 of the '891 patent depends from claim 20, further comprising "determining whether or not a condition is met; wherein said closing the first window is in response to a determination that the condition is met." Because the Samsung Accused Products determine whether the condition of the expiration of a timer had been met, and close the first window if that condition has been met, the ordinary and intended use of the five Samsung Accused Products that infringe claim 20 also literally infringes claim 23.

522. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 23, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitations added in claim 23, and that any

differences between the operation of the Samsung Accused Products and those limitations is insubstantial.

523. **Claim 24.** Claim 24 recites:

> A method as in claim 20 wherein said closing the first window comprises: fading out an image of the first window.

524. The ordinary and intended use of the Galaxy Tab 10.1, the Galaxy Prevail, and the Nexus S infringes dependent claim 24 of the '891 patent. Claim 24 of the '891 patent depends from claim 20, adding the limitation "wherein said closing the first window comprises: fading out an image of the first window." Based upon my observation, the Galaxy Tab 10.1, Galaxy Prevail and Nexus S fade out the image of the first window when the window closes. (*See* Exs. 27-29.) Accordingly, the ordinary and intended use of these Samsung Accused Products also literally infringes dependent claim 24.

525. Although it is my opinion that the ordinary and intended use of the Samsung Accused Products as described above literally infringes claim 24, in the alternative it is my opinion that such use would infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 24, and that any differences between the operation of the Samsung Accused Products and that limitation is insubstantial.

526. **Claim 26.** Claim 26 recites:

> A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to display a user interface window, the method comprising:
>
> [a] displaying a first window in response to receiving a first input from a user input device of the digital processing system which is capable of displaying at least a portion of a second window concurrently with the first window on a screen;
>
> [b] starting a timer; and
>
> [c] closing the first window in response to a determination that the timer expired;

> [d] wherein the first window does not close in response to any input from a user input device of the digital processing system, wherein the first window has been displayed independently from a position of a cursor on the screen.

527. All of the Samsung Accused Products whose use practices claim 1 of '891 patent (namely, all the Samsung Accused Products other than the Galaxy Tab 10.1) also embody all of the limitations of independent claim 26 of the '891 patent. Claim 26 in essence claims machine-readable media containing executable program instructions that cause a digital processing system to perform the steps listed in claim 1. As discussed above, all of the Samsung Accused Products are "digital processing systems" that contain machine-readable media containing executable program instructions that cause the systems to operate. Indeed, such instructions are necessary for the systems to perform the various methods of operation discussed above in connection with claim 1. I have also reviewed source code produced by Samsung prior to the close of fact discovery. Samsung's source code must be compiled into executable program instructions that enable the Samsung Accused Products to operate as intended. Accordingly, for the reasons discussed above in connection with claim 1, all of the Samsung Accused Products other than the Galaxy Tab 10.1 literally infringe claim 26 of the '891 patent.

528. Although it is my opinion that the Samsung Accused Products as described above literally infringe claim 26, in the alternative it is my opinion that they infringe under the doctrine of equivalents. I have been instructed by counsel not to apply the doctrine of equivalents to element [d] of claim 26. With respect to the preamble and elements [a] through [c] of claim 26, it is my opinion that the Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in those claim elements, and that any differences between the Samsung Accused Products and those claim elements is insubstantial.

529. **Claim 27.** Claim 27 recites as follows:

> A media as in claim 26 wherein the first window is translucent; and the portion of the second window is visible while under the first window.

530. Four Samsung Accused Products infringe dependent claim 27. Claim 27 claims the media as in claim 26 and adds the limitation "wherein the first window is translucent; and the portion of the second window is visible while under the first window." This limitation is analogous to dependent claim 2, which also requires a "translucent" first window. Accordingly, the four Samsung Accused Products discussed in connection with claim 2 the Acclaim, Intercept, Galaxy Prevail and Nexus S phones literally infringe claim 27 for the reasons discussed in connection with claim 2 at paragraph 486 above.

531. Although it is my opinion that the Samsung Accused Products as described above literally infringe claim 27, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that the Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 27, and that any differences between the Samsung Accused Products and the limitations added in claim 27 is insubstantial.

532. **Claim 30.** Claim 30 recites:

> A media as in claim 26 wherein said closing the first window comprises: fading out an image of the first window.

533. Dependent claim 30 claims the media as in claim 26, adding the limitation "wherein closing the first window comprises: fading out an image of the first window." This is in essence the same limitation added in claim 5, discussed at paragraph 489 above. Accordingly, the same Samsung Accused Products whose ordinary and intended use infringes claim 5 literally infringe claim 30 for the reasons discussed in connection with claim 26 at paragraph 527 and claim 5 at paragraph 489. Those Samsung Accused Products are: Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Prevail, Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Gem, Indulge, Infuse 4G, Mesmerize, Nexus S, Nexus S 4G, Replenish, and Vibrant.

534. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 30, in the alternative it is my opinion that they infringe under the

doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 30, and that any differences between these Samsung Accused Products and the limitation added in claim 30 is insubstantial.

535. **Claim 31.** Claim 31 recites:

> A media as in claim 26 wherein the second window, if displayed, does close in response to an input from a user input device of the digital processing system.

536. All the Samsung Accused Products that infringe claim 26 also infringe dependent claim 31 of the '891 patent. Claim 31 of the '891 patent claims the same media as in claim 26, adding the limitation "wherein the second window, if displayed, does close in response to an input from a user input device of the digital processing system." This additional limitation is the same as the limitation added in dependent claim 6. For the reasons discussed in connection with claim 26 at paragraph 527 and claim 6 at paragraph 492 above, all the Samsung Accused Products that infringe claim 26 also literally infringe claim 31.

537. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 31, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 31, and that any differences between these Samsung Accused Products and the limitation added in claim 31 is insubstantial.

538. **Claim 39.** Claim 39 recites:

> A media as in claim 26 wherein the method further comprises: determining a position on a display of the digital processing system independent of a position of a cursor on the display; wherein the first window is displayed at the position.

539. All the Samsung Accused Products that infringe claim 26 also infringe dependent claim 39 of the '891 patent. Claim 39 of the '891 patent claims the media as in claim 26, adding the limitation that the method further comprises: "determining a position on a display of the digital processing system independent of a position of a cursor on the display; wherein the first

window is displayed at the position." This limitation is the same as the limitation added in claim 14, discussed above at paragraph 495. For the reasons discussed above in connection with claim 26 at paragraph 527 and in connection with claim 14 at paragraph 495, all the Samsung Accused Products that infringe claim 26 also literally infringe dependent claim 39.

540. **Claim 40.** Claim 40 recites:

> A media as in claim 39 wherein the position is centered horizontally on the display.

541. All the Samsung Accused Products that infringe claim 26 also infringe dependent claim 40 of the '891 patent. Claim 40 of the '891 patent claims the same media as in claim 39, adding the limitation "wherein the position [of the first window] is centered horizontally on the display." This additional limitation is the same as in claim 15, discussed above at paragraph 498. For the same reasons discussed in connection with claims 26 and 39 at paragraphs 527 and 539 above and in connection with claim 15 at paragraph 498, all of the Samsung Accused Products that infringe claims 26 and 39 also literally infringe dependent claim 40.

542. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 40, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 40, and that any differences between these Samsung Accused Products and the limitation added in claim 40 is insubstantial.

543. **Claim 41.** Claim 41 recites:

> A media as in claim 26 wherein the method further comprises: restarting the timer in response to receiving a second input for the first window.

544. All the Samsung Accused Products that infringe claim 26 also infringe dependent claim 41 of the '891 patent. Claim 41 claims the same media as in claim 26, adding the limitation "wherein the method further comprises: restarting the timer in response to receiving a second input for the first window." This additional limitation is the same as in dependent claim 16. For the reasons discussed in connection with claim 26 at paragraph 527 above and claim 16 at

paragraph 501 above, all of the Samsung Accused Products that infringe claim 26 also literally infringe dependent claim 41.

545. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 41, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 41, and that any differences between these Samsung Accused Products and the limitation added in claim 41 is insubstantial.

546. **Claim 42.** Claim 42 recites:

> A media as in claim 41 wherein the second input is received from a user input device of the digital processing system.

547. All the Samsung Accused Products that infringe claims 26 and 41 also infringe dependent claim 42 of the '891 patent. Claim 42 claims the same media as in claim 41, adding the limitation "wherein the second input is received from a user input device of the digital processing system." This additional limitation is the same as in dependent claim 17. For the reasons discussed in connection with claims 26 and 41 at paragraphs 527 and 544, and claim 17 at paragraph 504 above, all of the Samsung Accused Products that infringe claims 26 and 41 also literally infringe dependent claim 42.

548. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 42, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 42, and that any differences between these Samsung Accused Products and the limitation added in claim 42 is insubstantial.

549. **Claim 43.** Claim 43 recites:

> A machine readable media as in claim 41 wherein the first window is created by a first application and the second window is created by a second application, wherein the first application is different from the second application.

550. All the Samsung Accused Products that infringe claims 26 and 41 also infringe dependent claim 43 of the '891 patent. Claim 43 claims the same media as in claim 41, adding the limitation "wherein the first window is created by a first application and the second window is created by a second application, wherein the first application is different from the second application." This limitation is the same as the limitation added in dependent claim 18. For the reasons discussed in connection with claims 26 and 41 at paragraphs 527 and 544 and claim 18 at paragraph 507 above, all of the Samsung Accused Products that infringe claims 26 and 41 also literally infringe dependent claim 43.

551. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 43, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 43, and that any differences between these Samsung Accused Products and the limitation added in claim 43 is insubstantial.

552. **Claim 44.** Claim 44 recites:

> A media as in claim 26 wherein the user input device is one of:
>
> a) a keyboard;
>
> b) a mouse;
>
> c) a track ball;
>
> d) a touch pad;
>
> e) a touch screen;
>
> f) a joy stick; and
>
> g) a button.

553. All the Samsung Accused Products that infringe claim 26 also infringe dependent claim 44 of the '891 patent. Claim 44 of the '891 patent claim the media as in claim 26, adding the limitation that the "user input device is one of" any of seven listed input devices, including: a)"a keyboard;" […] e) "a touch screen;" […] and g) "a button." This limitation is the same as the limitation added in dependent claim 19. For the reasons discussed in connection with claim

26 at paragraph 527 and claim 19 at paragraph 510 above, all of the Samsung Accused Products that infringe claim 26 also literally infringe dependent claim 44.

554. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 44, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 44, and that any differences between these Samsung Accused Products and the limitation added in claim 44 is insubstantial.

555. **Claim 45.** Claim 45 recites:

> A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to display a user interface window, the method comprising:
>
> [a] displaying a first window, the first window being translucent, at least a portion of a second window being capable of being displayed on the digital processing system under the first window, the portion of the second window, when present, being visible under the first window on a screen; and
>
> [b] closing the first window without user input, wherein the first window has been displayed independent from a position of a cursor on the screen.

556. Five Samsung Accused Products infringe independent claim 45 of the '891 patent. Claim 45 in essence claims machine-readable media containing executable program instructions that cause a digital processing system to perform the steps listed in claim 20. All of the Samsung Accused Products are digital processing systems that contain machine-readable media containing executable program instructions that cause the systems to operate. Indeed, such instructions are necessary for the systems to perform the various methods of operation discussed above. I have also reviewed source code produced by Samsung prior to the close of fact discovery. Samsung's source code must be compiled into executable program instructions that enable the Samsung Accused Products to operate as intended. Accordingly, for the reasons discussed in connection with claim 20 at paragraphs 513-515 above, five Samsung Accused Products that display a "translucent" first window, close the first window without user input, and display the first

window independent of the position of a cursor on the screen the Acclaim, Intercept, Galaxy Prevail and Nexus S phones, and the Galaxy Tab 10.1 tablet literally infringe claim 45 of the '891 patent.

557. Although it is my opinion that the five Samsung Accused Products as described above literally infringes claim 45, in the alternative it is my opinion that they would infringe under the doctrine of equivalents. I have been instructed by counsel not to apply the doctrine of equivalents to element [b] of claim 45. With respect to the preamble and element [a] of claim 45 quoted above, it is my opinion that the Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in those claim elements, and that any differences between the operation of the Samsung Accused Products and those claim elements is insubstantial.

558. **Claim 46.** Claim 46 recites:

> A media as in claim 45 wherein the method further comprises: starting a timer; wherein said closing the first window is in response to expiration of the timer.

559. The five Samsung Accused Products that infringe independent claim 45 also infringe dependent claim 46. Claim 46 of the '891 patent claims the same media as in claim 45, adding the limitation that the method further comprises: "starting a timer; wherein said closing of the first window is in response to expiration of a timer." This additional limitation is the same as the limitation added in dependent claim 21. All of the Samsung Accused Products start a timer and close the first window in response to the expiration of a timer. For the reasons discussed in connection with claim 45 at paragraph 556 and claim 21 at paragraph 518 above, the five Samsung Accused Products that infringe claim 45 also literally infringe dependent claim 46.

560. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 46, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 46, and that any differences between these Samsung Accused Products and the limitation added in claim 46 is insubstantial.

561. **Claim 48.** Claim 48 recites:

> A media as in claim 45 wherein the method further comprises: determining whether or not a condition is met; wherein said closing the first window is in response to a determination that the condition is met.

562. The five Samsung Accused Products that infringe independent claim 45 also infringe dependent claim 48. Claim 48 of the '891 patent claims the same media as in claim 45, "wherein the method further comprises: determining whether or not a condition is met; wherein said closing the first window is in response to a determination that the condition is met." This is in essence the same limitation added in dependent claim 23. Determining that a timer has expired is one method of determining whether a condition has been met. For the reasons discussed in connection with claim 45 at paragraph 556 and claim 23 at paragraph 521 above, the five Samsung Accused Products that infringe claim 45 also literally infringe dependent claim 48.

563. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 48, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 48, and that any differences between these Samsung Accused Products and the limitation added in claim 48 is insubstantial.

564. **Claim 49.** Claim 49 recites:

> A media as in claim 45 wherein said closing the first window comprises: fading out an image of the first window.

565. The Galaxy Tab 10.1, the Galaxy Prevail, and the Nexus S infringe dependent claim 49 of the '891 patent. Claim 49 of the '891 patent claims the media as in claim 45, adding the limitation "wherein said closing the first window comprises: fading out an image of the first window." The limitation added in claim 49 is the same as the limitation added in dependent claim 24. For the reasons discussed in connection with claim 45 at paragraph 556 and claim 24 at paragraph 524 above, the Samsung Galaxy Tab 10.1, Galaxy Prevail and Nexus S all literally infringe dependent claim 49.

566. Although it is my opinion that these Samsung Accused Products as described above literally infringe claim 49, in the alternative it is my opinion that they infringe under the doctrine of equivalents. It is my opinion that these Samsung Accused Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results as in the limitation added in claim 49, and that any differences between these Samsung Accused Products and the limitation added in claim 49 is insubstantial.

567. **Claim 51.** Claim 51 recites:

> A digital processing system to display a user interface window, the system comprising:
>
> [a] means for displaying a first window in response to receiving a first user input from a user input device of the digital processing system, which is capable of displaying at least a portion of a second window concurrently with the first window on a screen;
>
> [b] means for starting a timer; and
>
> [c] means for closing the first window in response to a determination that the timer expired;
>
> [d] wherein the first window does not close in response to any input from a user input device of the digital processing system, wherein the first window has been displayed independently from a position of a cursor on the screen.

568. In my opinion the same Samsung Accused Products that infringe claims 1 and 26, namely all of the Samsung Accused Products other than the Galaxy Tab 10.1, infringe claim 51.

569. **Claim 51, preamble: "A digital processing system to display a user interface window":** For the reasons discussed in connection with claim 1 at paragraph 477 above, all of the Samsung Accused Products are "digital processing systems" that display a "user interface window."

570. **Claim 51, Element [a] "means for displaying a first window in response to receiving a first user input from a user input device of the digital processing system, which is capable of displaying at least a portion of a second window concurrently with the first window on a screen;".** I have been informed that this claim is a "means plus function" claim in which the patent specification must identify a structure corresponding to the "means" described in the claim. To infringe, the accused apparatus must have the same or equivalent structures that

performs the same functions recited in the claim. With respect to this element, the '891 specification discloses the following corresponding structures: A display device coupled to one or more special or general purpose processors programmed with special-purpose software, the special-purpose software including computer instructions for displaying a first window in response to receiving a first user input from a user input device of the digital processing system, which is capable of displaying at least a portion of a second window concurrently with the first window on a screen. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14, 16-21). As discussed in connection with claim 1 at paragraph 479 above, all of the Samsung Accused Products have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) that allows the systems to display a first window (e.g. the Volume window) in response to receiving a first user input on a user input device (the volume control button) while concurrently displaying at least a portion of a second window (e.g. a Messaging, Browser, or other application program window).

571. **Claim 51, Element [b] "means for starting a timer."** With respect to this claim element, the '891 specification discloses the following corresponding structure: One or more special or general purpose processors programmed with special-purpose software, the special-purpose software including computer instructions for starting a timer. ('891 patent at 4:28-5:31, 5:54-6:8, 7:21-50, 8:16-49; FIGS. 1, 13, 14). As discussed in connection with claim 1 at paragraph 481 above, all of the Samsung Accused Products have computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) that allows the systems to "start a timer."

572. **Claim 51, Element [c] "means for closing the first window in response to a determination that the timer expired".** With respect to this claim element, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software including computer instructions for closing a window in response to a determination that a timer has expired. ('891 patent at 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13,

14, 16-21). As discussed in connection with claim 1 at paragraph 481 above, all of the Samsung Accused Products have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) that allows the systems to close the first window in response to a determination that the timer has expired.

573. **Claim 51, Element [d]: "wherein the first window does not close in response to any input from a user input device of the digital processing system, wherein the first window has been displayed independently from a position of a cursor on the screen."** With respect to this claim element, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software, the special-purpose software including computer instructions for closing a window without user input, wherein the first window has been displayed independently of the position of a cursor on the screen. ('891 patent at 2:42-3:14, 4:28-5:31, 5:54-6:8, 6:21-40, 7:21-50, 8:4-49, 9:34-63; FIGS. 1, 12, 14, 16-21). As discussed in connection with claim 1 at paragraph 483 above, all of the Samsung Accused Products accused of infringing this claim have computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to display the first window independently from the position of a cursor on the screen where the first window does not close in response to any input from a user input device. For the reasons discussed above, all of the Samsung Accused Products accused of infringing this claim (all of the Samsung Accused Products other than the Galaxy Tab 10.1) have structures equivalent to those described in the '891 patent that perform the functions set forth in claim 51, and therefore infringe this claim.

574. **Claim 52.** Claim 52 of the '891 patent recites:

> A digital processing system as in claim 51 wherein the first window is translucent; and the portion of the second window is visible while under the first window.

The structures described in the '891 specification that perform these functions are the same as those for claim 51. Claim 52, like method claim 2, adds the limitation of a "translucent" first window. The Samsung Acclaim, Intercept, Galaxy Prevail and Nexus S phones that infringe

claim 51 also have translucent Volume windows that allow the second window to be seen while under the Volume window. These five Samsung Accused Products perform the functions recited in claim 52 using the same structures that are equivalent to those found in the '891 patent as in claim 51. These five Samsung Accused Products therefore infringe dependent claim 52.

575. **Claim 55.** Claim 55 of the '891 patent recites:

> A digital processing system as in claim 51 wherein said means for closing the first window comprises: means for fading out an image in the first window.

With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software, the special-purpose software including computer instructions for fading out an image of a window. (4:28-5:31, 6:21-25, 7:21-50, 9:7-63; FIGS. 1, 8-10, 12-14, 20, 21). The limitation of closing the first window comprising "fading out an image of the first window" also appears in method claim 5. All of the Samsung Accused Products discussed in connection with claim 5[13] perform the function of closing a first window by "fading out an image of the first window." All of these Samsung Accused Products have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the function of closing a first window by "fading out an image of the first window." For the reasons discussed above, all of the Samsung Accused Products accused of infringing this claim have structures equivalent to those described in the '891 patent that perform the functions set forth in claim 55, and therefore infringe this claim.

576. **Claim 56.** Claim 56 recites:

> A digital processing system as in claim 51 wherein the second window, if displayed, does close in response to an input from a user input device of the digital processing system.

[13] Captivate, Continuum, Droid Charge, Epic 4G, Exhibit 4G, Fascinate, Galaxy Prevail, Galaxy S 4G, Galaxy S II (including the i9100, T-Mobile, AT&T, Epic 4G Touch and Skyrocket variants), Galaxy S Showcase (i500), Galaxy Tab 7.0, Gem, Indulge, Infuse 4G, Mesmerize, Nexus S, Nexus S 4G, Replenish, and Vibrant.

This limitation is very similar to the limitation in method claim 6 discussed above at paragraph 492. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 51, where the second window can be closed in response to input from a user. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 51 at paragraphs 569-573 and in connection with method claim 6 at paragraph 492, all of the Samsung Accused Products accused of infringing claim 51 also infringe dependent claim 56. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 51 and also to close the "second window" in response to input from a user. For the reasons discussed above, these Samsung Accused Products infringe claim 56.

577. **Claim 64.** Claim 64 recites:

> A digital processing system as in claim 51 further comprising: means for determining a position on a display of the digital processing system independent of a position of a cursor on the display; wherein the first window is displayed at the position.

578. This limitation in dependent claim 64 is very similar to the limitation in method claim 14 discussed above at paragraph 495. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 51, where the system is capable of determining a position on a display independent of a position of a cursor and displaying the first window at that position. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 51 at paragraphs 569-573 and in connection with method claim 14 at paragraph 495, all of the Samsung Accused Products accused of infringing claim 51 also infringe dependent claim 64. These Samsung Accused Products all have display devices coupled to computer processors programmed

to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 51 and also to determine a position on a display independent of a position of a cursor and displaying the first window at that position. For the reasons discussed above, these Samsung Accused Products infringe claim 64.

579. **Claim 65.** Claim 65 recites:

> A digital processing system as in claim 64 wherein the position is centered horizontally on the display.

580. This limitation in dependent claim 65 is very similar to the limitation in method claim 15 discussed above at paragraph 498. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 51, where the system is capable of determining a position on a display independent of a position of a cursor and displaying the first window at that position, and the first window is centered horizontally on the display. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14-20). For the reasons discussed above in connection with claim 51 at paragraphs 569-573 and in connection with method claim 15 at paragraph 498, all of the Samsung Accused Products accused of infringing claim 51 also infringe dependent claim 65. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 51 and also to determine a position on a display independent of a position of a cursor and displaying the first window at that position, and the window is centered horizontally on the display. For the reasons discussed above, these Samsung Accused Products infringe claim 65.

581. **Claim 66.** Claim 66 recites:

> A digital processing system as in claim 51 further comprising:
>
> means for restarting the timer in response to receiving a second input for the first window.

582. This limitation in dependent claim 66 is very similar to the limitation in method claim 16 discussed above at paragraph 501. With respect to this claim limitation, the '891

specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 51, where the system can restart the timer in response to receiving a second input for the first window. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 51 at paragraphs 569-573 and in connection with method claim 16 at paragraph 501, all of the Samsung Accused Products accused of infringing claim 51 also infringe dependent claim 66. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 51 and also to restart the timer in response to receiving a second input for the first window. For the reasons discussed above, these Samsung Accused Products infringe claim 66.

583. **Claim 67.** Claim 67 recites:

> A digital processing system as in claim 66 wherein the second input is received from a user input device of the digital processing system.

584. This limitation in dependent claim 67 is very similar to the limitation in method claim 17 discussed above at paragraph 504. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 66, and a user input device such as a button to provide a second input to restart the timer. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 66 at paragraph 582 and in connection with method claim 16 at paragraph 501, all of the Samsung Accused Products accused of infringing claim 66 also infringe dependent claim 67. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 66 and also have user

input devices such as volume buttons to provide a second input to restart the timer. For the reasons discussed above, these Samsung Accused Products infringe claim 66.

585. **Claim 68.** Claim 68 recites:

> A digital processing system as in claim 66 wherein the first window is created by a first application and the second window is created by a second application, wherein the first application is different from the second application.

586. This limitation in dependent claim 68 is very similar to the limitation in method claim 18 discussed above at paragraph 507. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 66, where the first window and the second window are created by different applications. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 66 at paragraph 582 and in connection with method claim 18 at paragraph 507, all of the Samsung Accused Products accused of infringing claim 66 also infringe dependent claim 68. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 66 and have different applications to create the first window and the second window. For the reasons discussed above, these Samsung Accused Products infringe claim 68.

587. **Claim 69.** Claim 69 recites:

> A digital processing system as in claim 51 wherein the user input device is one of: a) a keyboard; b) a mouse; c) a track ball; d) a touch pad; e) a touch screen; f) a joy stick; and g) a button.

588. This limitation in dependent claim 69 is very similar to the limitation in method claim 19 discussed above at paragraph 510. With respect to this claim limitation, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described above in connection with claim 51, and a user input device that

can be any of the seven devices listed in claim 69. ('891 patent, at: 4:28-5:31, 5:54-6:8, 6:21-25, 7:7-50, 8:16-49, 9:7-63; FIGS. 1, 7-11, 13, 14). For the reasons discussed above in connection with claim 51 at paragraphs 569-573 and in connection with method claim 19 at paragraph 509, all of the Samsung Accused Products accused of infringing claim 51 also infringe dependent claim 69. These Samsung Accused Products all have display devices coupled to computer processors programmed to run special purpose software (such as Samsung's computer code produced in this litigation) to perform the functions described in claim 51 and also have user input devices such as buttons and touch screens to provide user input. For the reasons discussed above, these Samsung Accused Products infringe claim 69.

589. **Claim 70.** Claim 70 recites:

> A digital processing system to display a user interface window, the system comprising:
>
> [a] means for displaying a first window, the first window being translucent, at least a portion of a second window being capable of being displayed on the digital processing system under the first window, the portion of the second window, when present, being visible under the first window on a screen, and
>
> [b] means for closing the first window without user input, wherein the first window has been displayed independent from a position of a first cursor on the screen.

This means plus function claim includes some of the elements of claim 52, in that it requires that the first window be translucent, but it does not require that the first window does not close in response to user input, or require that the first window closes in response to the expiration of a timer. Claim 70 in essence claims a system with the means for performing the same functions that are recited as steps of the method in claim 20, discussed above at paragraph 513. With respect to this claim, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software including computer instructions for displaying a first window independent of the position of a cursor on the screen, and for closing the first window without user input, where the first window is translucent and the second window can be seen under the first window. ('891 patent, at 4:28-5:31, 5:54-6:8, 6:21-40, 7:21-50, 8:4-49, 9:34-63; FIGS. 1,

12, 14-21). The same Samsung Accused Products discussed in connection with claim 20 the Acclaim, Intercept, Galaxy Prevail and Nexus S phones and the Galaxy Tab 10.1 tablet have display devices coupled to one or more special or general purpose processors programmed with special-purpose software to perform all the functions described in claim 70. See the discussion of claim 20 at paragraph 513 above. These five Samsung Accused Products all have structures that are equivalent to the structures described in the '891 patent that perform the functions recited in claim 70. Accordingly, these five Samsung Accused Products infringe claim 70.

590. **Claim 71.** Claim 71 recites:

> A digital processing system as in claim **70** further comprising:
>
> means for starting a timer;
>
> wherein the first window is closed in response to the expiration of a timer.

The limitation added in dependent Claim 71 is analogous to the limitation added in method claim 21. With respect to claim 71, the '891 patent discloses the same corresponding structures as in claims 51 and 70. The same Samsung Accused Products discussed in connection with claim 70 the Acclaim, Intercept, Galaxy Prevail and Nexus S phones and the Galaxy Tab 10.1 tablet have display device coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described in claim 70 and also to start a timer and close a first window in response to the expiration of the timer. See the discussion of claims 20, 21 and 70 at paragraphs 513-515, 518, and 589 above. The structures in these five Samsung Accused Products that perform the functions in claim 71 are equivalent to the structures that perform those functions as described in the '891 patent. Accordingly, these Samsung Accused Products infringe claim 71.

591. **Claim 73.** Claim 73 recites:

> A digital processing system as in claim **70** further comprising:
>
> means for determining whether or not a condition is met;
>
> wherein the first window is closed in response to a determination that the condition is met.

The limitation added in dependent Claim 73 is analogous to the limitation added in method claim 23. Because the five Samsung Accused Products that infringe claim 70 determine whether the condition of the expiration of a timer had been met, and close the first window if that condition has been met, they also perform the functions recited in claim 73. The corresponding structures in the '891 patent for claim 73 are the same as those for claim 70, discussed above. The five Samsung Accused Products that infringe claims 70 and 71 infringe claim 73 for the same reasons that they infringe claims 70 and 71. These Samsung Accused Products all have display devices coupled to one or more special or general purpose processors programmed with special-purpose software to perform all the functions described in claim 73 that are equivalent to the structures disclosed in the '891 patent that perform those functions.

592. **Claim 74.** Claim 74 recites:

> A digital processing system as in claim **70** wherein said means for closing the first window comprises:
>
> means for fading out an image of the first window.

The limitation added in dependent Claim 74 is analogous to the limitation added in method claim 24. With respect to this claim, the '891 specification discloses the following corresponding structure: A display device coupled to one or more special or general purpose processors programmed with special-purpose software, the special-purpose software including computer instructions for displaying a first window independent of the position of a cursor on the screen, and for closing the first window without user input, where the first window is translucent and the second window can be seen under the first window, and where closing the window comprises fading out an image of the first window. ('891 patent, at 4:28-5:31, 5:54-6:8, 6:21-40, 7:21-50, 8:4-49, 9:34-63; FIGS. 1, 12, 14-21). The following Samsung Accused Products that infringe claim 70 the Galaxy Tab 10.1, Galaxy Prevail and Nexus S also fade out the image of the first window when the window closes, using display devices coupled to one or more special or general purpose processors programmed with special-purpose software to perform the functions described in claim 74. (See discussion of claim 24 at paragraph 524 above.) These structures are

equivalent to the corresponding structures described in the '891 patent for performing the functions in claim 74. Accordingly, these three Samsung Accused Products infringe claim 74.

VIII. CONCLUSION

593. My opinions are subject to change based on additional opinions that Samsung's experts may present and information I may receive in the future or additional work I may perform. I reserve the right to supplement this Report with new information and/or documents that may be discovered or produced in this case, or to address any new claim constructions offered by Samsung or ordered by the court. With this in mind, based on the analysis I have conducted and for the reasons set forth above, I have preliminarily reached the conclusions and opinions in this Report.

594. In connection with my anticipated testimony in this action, I may use as exhibits various documents produced in this Action 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 exhibits to assist in the presentation of my testimony and opinions as described herein or to summarize the same or information cited in this Report. Again, those exhibits have not yet been created.

Dated: March 22, 2012

/s/ Karan Singh