UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC AND MOTOROLA MOBILITY LLC,

Petitioners,

v.

MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.,

Patent Owner

Case No. IPR2025-00058

U.S. Patent No. 9,158,494

PATENT OWNER RESPONSE
PURSUANT TO 37 C.F.R. § 42.120

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2. [1.a] "presenting a first page of a first application on a first display of the device, wherein the first page is an auxiliary page;" 40

3. [1.b] "presenting a second page of the first application on a second display of the device, wherein the second page is a primary page," 44

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3. [18.b] "instructions to display a second page of the first application on a second display portion of the device, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page; and"..... 82

4. [18.c] "in response to a first input received from a user to minimize the first application to one of the first and second display portions of the device, display the second page of the first application on one of the first and second display portions of the device and discontinue the display of the first page of the application."..... 86

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1. [19] "The computer readable medium of claim 18, wherein the device includes multiple displays, wherein the first display portion of the device includes a first display of the multiple displays, wherein the second display portion of the device includes a second display of the multiple displays, and wherein in response to one of the first input and a second input received from the user the second page of the first application is displayed on the first display of the device." 90

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CLAIM LISTING[1]

Claim 1

[1.pre] 1. A method for controlling a display of a device, comprising:

[1.a] presenting a first page of a first application on a first display of the device, wherein the first page is an auxiliary page;

[1.b] presenting a second page of the first application on a second display of the device, wherein the second page is a primary page;

[1.c] wherein the first and second pages present different content and are distinct pages, and wherein the auxiliary page is a child of the primary page;

[1.d] receiving a first input from a user, wherein the first input includes an input to minimize the first application to one of the first and second displays of the device, wherein the second page of the first application is displayed by one of the first display of the device and the second display of the device, and wherein the first page of the first application is not displayed.

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[1] The numbering of the limitations is consistent with that presented in the Petition.

Claim 2

[2] The method of claim 1, wherein the first input from the user is received in a gesture capture region of the device, and wherein the gesture capture region is included as part of at least one of the first and second displays of the device.

Claim 4

[4] The method of claim 1, wherein after receiving the first input a first page of a second application is presented by the first display.

Claim 6

[6.a] The method of claim 1, wherein the device is oriented such that the first and second displays are presented in a dual portrait format,

[6.b] and wherein the first input includes a gesture that is input from a side of the device corresponding the first display towards a side of the device corresponding to the second display.

Claim 9

[9] The method of claim 1, wherein the first application is a web browser, and wherein the primary page is a content page that includes web content.

Claim 10

[10] The method of claim 1, further comprising: after receiving the first input, receiving a second input from the user, wherein the second input includes an input to maximize the first application to both of the first and second displays of the

device, wherein the first page of the first application is presented on the first display of the device and the second page is displayed on the second display of the device.

Claim 12

[12.a] The method of claim 10, further comprising: after receiving the first and second inputs, receiving a third input from the user dismissing the first page of the application, wherein one of a first page of a second application or a desktop is presented by the first display of the device;

[12.b] after receiving the third input, receiving a fourth input from the user to maximize the first application to the first and second displays of the device, wherein the second display of the device presents the second page of the first application, and wherein the first display of the device presents the first page of the first application.

Claim 13

[13] The method of claim 1, wherein the first display of the device is the left hand display while the device is in a dual-portrait mode, and wherein the second display of the device is the right hand display while the device is in the dual-portrait mode.

Claim 14

[14.pre] A device comprising:

[14.a] a first display, including:

[14.b] a touch display, wherein the touch display is located within a first area of the first display;

[14.c] a gesture capture region, wherein the gesture capture region is located within a second area of the first display;

[14.d] a second display, including:

[14.e] a second touch display, wherein the second touch display is located within a first area of the second display;

[14.f] a second gesture capture region, wherein the second gesture capture region is located within a second area of the second display

[14.g] memory;

[14.h] a processor in communication with the first display, second display, and memory;

[14.i] application programming stored in the memory and executed by the processor, wherein the application programming is operable to:

[14.j] present a first page of a first application in a first portion of the first display;

[14.k] present a second page of the first application in a second portion of the second display, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page;

[14.l] receive input entered by a user in the gesture capture region;

[14.m] in response to a first input entered by the user to minimize the first application to one of the first and second portions of the display, present the second page of the first application in one of the first and second portions of the display and discontinue the presentation of the first page of the application.

Claim 18

[18.pre] A non-transitory computer readable medium having stored thereon computer-executable instructions, the computer-executable instructions causing a processor to execute a method for selectively presenting an application across a display of a device, the computer-executable instructions comprising:

[18.a] instructions to display a first page of a first application on a first display portion of the device;

[18.b] instructions to display a second page of the first application on a second display portion of the device, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page; and

[18.c] in response to a first input received from a user to minimize the first application to one of the first and second display portions of the device, display the second page of the first application on one of the first and second display portions of the device and discontinue the display of the first page of the application.

Claim 19

[19] The computer readable medium of claim 18, wherein the device includes multiple displays, wherein the first display portion of the device includes a first display of the multiple displays, wherein the second display portion of the device includes a second display of the multiple displays, and wherein in response to one of the first input and a second input received from the user the second page of the first application is displayed on the first display of the device.

Claim 20

[20] The computer readable medium of claim 19, wherein in response to an input received from the user to maximize the first application the first page of the first application is displayed on the first display of the device and the second page of the application is displayed on the second display of the device.

I. INTRODUCTION

U.S. Pat. No. 9,158,494 ("the '494 Patent") was the result of the development of a foldable cellphone known as the "Imerj dual screen phone" that was the subject of an intensive research and development effort involving the inventors of the '494 Patent.

The Petition challenges claims 1, 2, 4, 6, 9, 10, 12-14, and 18-20 ("Challenged Claims") of the '494 Patent. The challenged claims are directed to minimizing and maximizing applications on, e.g., a dual display device.

In particular, the claims pertain to an innovative dual display device (and methods for controlling that device) that allows for presenting distinct pages of the same application on each display (*e.g.*, a first auxiliary page on a first display, and second primary page on the second display). The claims further pertain to minimizing that application (*e.g.*, so that a single page of the application is presented on a single display) and maximizing that application (e.g., so that both pages of the application are presented on the device). The invention thus provides for selectively displaying distinct pages of information within the same application in response to a minimization or maximization operation.

The Imerj project was undertaken by Flextronics in 2009-2011 and ultimately resulted in a fully functional foldable dual-display smartphone, with an innovative feature allowing for minimizing and maximizing distinct pages of

information within the same application. In connection with working on the Imerj project, challenged claims 1, 4, 6, 9, 10, 12, 13, and 18-20 of the '494 Patent were conceived and actually reduced to practice prior to February 10, 2011, the earliest possible effective filing date for the Seo reference that Petitioners rely upon for all grounds asserted in their Petition.[2] And thus, for the reasons set forth herein, the Board should find each of claims 1, 4, 6, 9, 10, 12, 13, and 18-20 of the '494 Patent to be patentable for that reason alone.

In addition to these claims that were conceived and reduced to practice prior to the earliest effective filing date of Seo, Petitioners also challenge claims 2 and 14 of the '494 Patent. In the Institution Decision, the Board determined that Patent Owner has not produced sufficient evidence showing conception or reduction to practice of "a gesture capture region" either "included as part of at least one of the first and second displays of the device" (claim 2) or "located within a second area" of the first and second displays (claim 14). (Paper 11 (Inst. Dec.), at 21). Even if

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[2] Alternatively, these claims were conceived prior to February 10, 2011, and reduced to practice no later than February 22, 2011, with continuous diligence from before February 10, 2011, through February 22, 2011 (as explained further below).

the gesture caption region of the Imerj phone was not part of the phone's displays, that does not mean that claim 14 of '494 Patent should be found unpatentable.[3]

That is, even setting aside whether the Seo reference qualifies as prior art, Petitioner's challenge to claims 14 and 18-20 should fail. Regarding these claims, Petitioner fails to address obviousness for claim limitations 14[m] and 18[c] (both of which require—in response to a first input—discontinuing the presentation of the parent page of the application and continuing the presentation of the child page of the application). Pet., 71, 73; POPR, 79-80. For limitations 14[m] and 18[c], the Petition only cites back to its previous discussion of limitation 1[d]. *Id*. But limitation 1[d] requires the ***opposite*** of limitations 14[m] and 18[c]. Limitation 1[d] requires minimizing a child page, whereas limitations 14[m] and 18[c] require minimizing a parent page. EX1001 ['494 Patent], cl. 1, 14, 18; POPR, 79-80. The Petition nowhere discusses minimizing a parent page (or modifying Seo to do so) and therefore does not address limitations 14[m] or 18[c]. Pet. 29-31. Accordingly, Petitioner's challenge to claims 14 and 18-20 should fail.

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[3] Patent Owner is in the process of filing a statutory disclaimer of claim 2 because the Board in the Institution Decision disagreed with the claim construction being applied by Patent Owner.

II. BACKGROUND

A. The Imerj Dual Display Smartphone

The Imerj dual display smartphone was an innovative smartphone developed by Flextronics from 2009 through 2011. A picture of the smartphone is shown below:

The Imerj dual display smartphone could support a variety of different orientations across its two screens, including, for example, a "Portrait Dual" mode where two pages from the same application are displayed on different screens:

The above example shows an email inbox on the left display and an email from the inbox on the right display. Thus, two different pages from the same email application are simultaneously displayed—a parent (the inbox) and a child (an email message). This functionality was available for various applications developed for the Imerj project, including email, web browser, calendar, and the photo gallery. EX2001 [Sirpal Decl.]; ¶¶13, 53-54; EX 2002 [Cassar Decl.], ¶¶29, 33, 65; EX2035 [Heads Up]. User gestures performed various functions, including maximizing the application to show multiple pages and minimizing the application to show a single page, as well as moving pages from one display to the other. EX2001 [Sirpal Decl.], ¶¶7, 11-12; EX2002 [Cassar Decl.], ¶12. The Imerj

smartphone included a gesture bar that could be used to perform this functionality. EX2002 [Cassar Decl.], ¶26. An example is shown below:

The Imerj smartphone had been in development since late 2009. EX2001 [Sirpal Decl.], ¶7; EX2002 [Cassar Decl.], ¶5; EX2003 [Becze Decl.], ¶5. And, as discussed below, prototypes that worked for their intended purpose of minimizing and maximizing between dual display and single display were functional prior to February 10, 2011. *Infra*, §VII.

B. The '494 Patent

The '494 Patent, entitled "Minimizing and Maximizing Between Portrait Dual Display and Portrait Single Display," is directed to "[m]ethods and devices for minimizing and maximizing displayed output associated with applications."

EX1001 ['494 Pat.], Abstract. As described further below, the invention of the '494 Patent was conceived and reduced to practice in connection with the Imerj project.

The '494 Patent is directed to improvements in user interface capability for and usability provided by folding smartphones and smartphones that use multiple displays. At a high level, the '494 Patent describes that "it is desirable to have a multi-display device that can selectively display pages of information in response to a minimization operation or a maximization operation." *Id*. at 1:54-56. And that it is advantageous for an application on a multi-display device to "present information on multiple pages." *Id*. at 1:58-59.

III. CLAIM CONSTRUCTION

Patent Owner interprets all claim terms in accordance with their plain and ordinary meaning consistent with the specification and file history of the '494 Patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-1318 (Fed. Cir. 2005); Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the PTAB, 83 Fed. Reg. 51,340, 51,342 (Oct. 11, 2018) (to be codified at 37 C.F.R. pt. 42). Patent Owner concurs with the Institution Decision that "at this stage of the proceeding, [] we need not construe any claim terms and phrases to resolve the controversy" between the parties. Paper 11 (Inst. Dec.), 13.

IV. PERSON OF ORDINARY SKILL IN THE ART

For purposes of this response, Patent Owner does not dispute Petitioners' definition of a POSITA as having have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with two years of work experience in the field of user interface technologies, including e.g., graphical user interface technologies, or a related field. *See* Pet., 5-6; EX1002 (Chatterjee Decl.), ¶¶ 20-21.

V. RELEVANT LEGAL STANDARDS

A. Anticipation

Anticipation is an exacting standard: "a claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference." *King Pharm., Inc. v. Eon Labs, Inc*., 616 F.3d 1267, 1274 (Fed. Cir. 2010) (internal citations omitted). A prior art reference anticipates a patent claim under § 102(b) if it discloses "each and every element of the claimed invention … arranged or combined in the same way as in the claim." *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016) (internal citations omitted).

B. Obviousness

A finding of obviousness requires a showing that as of the date of the invention (a) the prior art teaches or suggests each limitation of the claim; (b) there exists an apparent reason to combine the prior art as proposed; and (c) there would

have been a reasonable expectation of success that the proposed combination would operate for its intended purpose. *See KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 418-19 (2007); *Pfizer, Inc. v. Apotex, Inc*., 480 F.3d 1348, 1361 (Fed. Cir. 2007).

C. Antedating Alleged Prior Art

A patent owner may antedate an asserted prior art patent by showing conception of the claimed invention prior to the critical date and either actual reduction to practice prior to the critical date or "reasonably continuous diligence" in reducing the invention to practice until its effective filing date. *See ATI Techs. v. Iancu*, 920 F.3d 1362, 1369 (Fed. Cir. 2019); *Tyco Healthcare Grp. v. Ethicon Endo-Surgery, Inc.*, 774 F.3d 968, 975 (Fed. Cir. 2014). "Conception exists when a definite and permanent idea of an operative invention, including every feature of the subject matter sought to be patented, is known." *Sewall v. Walters*, 21 F.3d 411, 415 (Fed. Cir. 1994). Objective evidence that corroborates an inventor's testimony regarding the conception of the invention is required "because of the danger in post-hoc rationales by an inventor claiming priority." *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1065 (Fed. Cir. 2005). The sufficiency of corroboration is determined according to a "rule of reason." *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993). Under the rule of reason, "all pertinent evidence is examined in order to determine whether the inventor's story is credible."

Fleming v. Escort Inc., 774 F.3d 1371, 1377 (Fed. Cir. 2014) (quoting *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001)).

To establish an actual reduction to practice, a party must establish that: (1) an embodiment or process existed that satisfies every element of the claim at issue; and (2) the invention would work for its intended purpose. *E.I. du Pont De Nemours & Co. v. Unifrax I LLC*, 921 F.3d 1060, 1075 (Fed. Cir. 2019). The same requirement for evidence that corroborates inventor testimony on conception under the rule of reason also applies to the reduction to practice determination. *Id*. at 1076. When a party relies on an earlier conception, it must "connect[ ] the conception with [the inventor's] reduction to practice by reasonable diligence on his part, so that they are substantially one continuous act." *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996).

Notably, however, "[i]n an inter partes review, the burden of persuasion is on the petitioner to prove 'unpatentability by a preponderance of the evidence,' 35 U.S.C. § 316(e), and that burden never shifts to the patentee." *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Thus, while the burden of production may shift to a patentee (*e.g.*, when arguing that the Seo reference does not qualify as prior art), the burden of persuasion remains with the petitioner. *See id*. at 1379. As such, while a patentee bears the burden of coming forward with evidence of earlier conception, diligence, and/or reduction to

practice, the burden of proving that a reference qualifies as prior art remains with the petitioner. *See Freebit AS v. Bose Corp.*, No. IPR2017-01308, 2017 WL 5202106 at *6 (PTAB Nov. 8, 2017).

VI. SUMMARY OF THE GROUNDS OF THE PETITION

The Petition asserts that the Challenged Claims should be found unpatentable under four grounds as follows (Pet., 4):

Ground 1: Claims 1, 2, 4, 6, 10 and 12 are unpatentable under pre-AIA 35 U.S.C. §102 as anticipated by Seo (EX1005).

Ground 2: Claims 1, 2, 4, 6, 10, 12, and 13 are unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo.

Ground 3: Claims 14 and 18–20 are unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo and Yook (EX1007).

Ground 4: Claim 9 is unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo and Choi (EX1010).

For the reasons set forth throughout this Patent Owner Response, the Board should confirm Claims 1, 4, 6, 9, 10, 12-14, and 18-20 as patentable.

VII. THE IMERJ DUAL DISPLAY PHONE ANTEDATES SEO

The challenged claims are not unpatentable because the Imerj dual display smartphone antedates the Seo reference that Petitioners rely on for each ground in the Petition. Pet., 4. As discussed below, the claimed invention was conceived and

actually reduced to practice before the earliest possible effective filing date of Seo (February 10, 2011) by prototypes of the Imerj dual display smartphone. EX2001 [Sirpal Decl.], ¶¶10, 25; EX2002 [Cassar Decl.], ¶25, EX2003 [Becze Decl.], ¶¶20, 25.

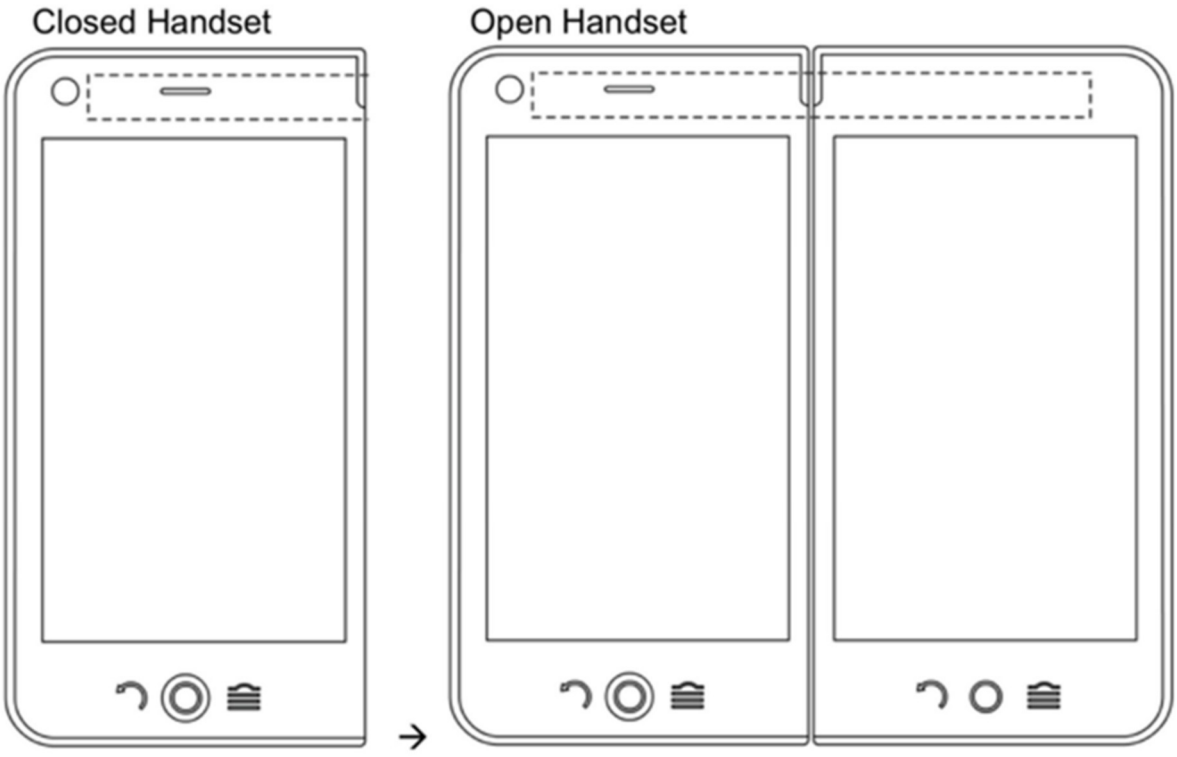
A. The Invention Was Conceived Before February 10, 2011

The functionality of maximizing and minimizing between a dual display and single display was conceived no later than November 18, 2010. EX2001 [Sirpal Decl.], ¶¶9-24; EX2002 [Cassar Decl.], ¶¶10-18; EX2003 [Becze Decl.], ¶¶6-12; EX2006 [UX Overview], 1; EX2012 [Windowing Management]; EX2013 [Browser Interaction Design]. Inventor Sanjiv Sirpal testified that he conceived and reduced to practice the claimed invention prior to February 10, 2011. EX2001 [Sirpal Decl.], ¶10. Mr. Sirpal's testimony is corroborated by documents, things, and testimony by non-inventors. Thus, conception occurred prior to the February 20, 2011 critical date.

Co-inventor Sanjiv Sirpal was the Director of User Experience on the Imerj project. EX2001 [Sirpal Decl.], ¶6; EX2002 [Cassar Decl.], ¶9; EX2003 [Becze Decl.], ¶6. In that capacity, Sanjiv Sirpal was responsible not only for developing and maintaining specifications detailing how the smartphone displays should behave and respond to particular gestures, but also for ensuring that the product being developed met the requirements laid out in the specifications. EX2001

[Sirpal Decl.], ¶¶ 6, 8, 24; EX2002 [Cassar Decl.], ¶¶9, 12; EX2003 [Becze Decl.], ¶¶6, 8.

On November 18, 2020, Sanjiv Sirpal authored a PowerPoint Presentation titled "UX Foundation Overview." EX2001 [Sirpal Decl.], ¶11; EX2002 [Cassar Decl.], ¶11; EX2003 [Becze Decl.], ¶7. This document corroborates Sanjiv Sirpal's testimony that the claimed functionality was conceived no later than November 18, 2010. EX2001 [Sirpal Decl.], ¶¶11-13; EX2002 [Cassar Decl.], ¶¶11-12; EX2003 [Becze Decl.], ¶¶7-8. This document discloses a dual-screen handset with a gesture strip across the top bounded by the dashed rectangle:



EX2006 [UX Overview], 15. *See also id.*, 30; EX2001 [Sirpal Decl.], ¶11; EX2002 [Cassar Decl.], ¶13; EX2003 [Becze Decl.], ¶9. EX2006 discusses that the "Capacitive Gesture Strip" can be "used to track the gestures that are used to 'Move,' 'Maximize,' and 'Minimize.'" EX2006 [UX Overview], 30; EX2002 [Cassar Decl.], ¶14; EX2003 [Becze Decl.], ¶10. EX2006 explains that "[d]ual screen capable applications will first maximize, and then minimize." EX2006 [UX Overview], 31; EX2001 [Sirpal Decl.], ¶11; EX2002 [Cassar Decl.], ¶16.

EX2006 also shows dual display applications in what the Imerj project referred to as "dual portrait mode." These applications display two different pages from a single app. EX2001 [Sirpal Decl.], ¶13; EX2002 [Cassar Decl.], ¶17; EX2003 [Becze Decl.], ¶12. One example is shown below:

Portrait Dual Screen

FLEX Computing | Design. Build. Ship. Service. Flextronics Confidential 79

EX2006 [UX Overview], 79. This shows an internet browser in dual portrait mode with a parent page showing browser content and the child page showing bookmarks. EX2002 [Cassar Decl.], 17. *See also* EX2001 [Sirpal Decl.], ¶13; EX2003 [Becze Decl.], ¶12. Other portions of EX2006 show other applications in dual screen mode for the Imerj project. *See, e.g.*, EX2006 [UX Overview], 33 (dual screen phone dialer), 45-49 (dual screen email, phone dialer, and messaging), 75 (dual screen calendar), 84 (dual screen camera); EX2001 [Sirpal Decl.], ¶13. The UX Overview presentation also discusses exemplary "Deep Dives" for the Calendar (slides 94-104), Messaging (105-112) and Browsing (113- 131),

illustrating example dual screen functionality envisioned as of November 18, 2010. EX2006 [UX Overview], 94-131. EX2001 [Sirpal Decl.], ¶13.

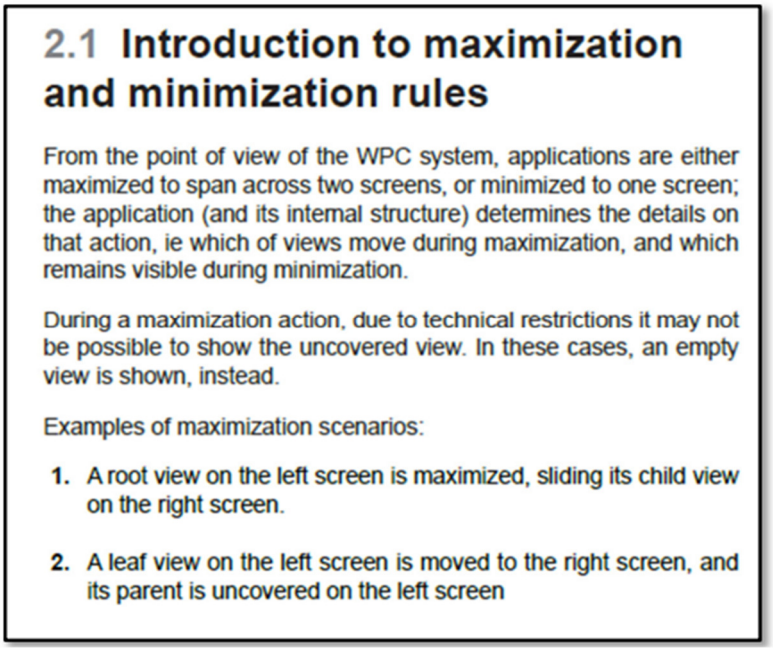
Additionally, EX2012 [Windowing Management], an interaction design specification dated September 10, 2010, and created by Sanjiv Sirpal's design team, corroborates that conception was accomplished by November 18, 2010. EX2001 [Sirpal Decl.], ¶15. The specification defines "WPC operations" (or Window Position Control operations) that could be performed by gesture input, including "maximizing a dual-screen capable application to two screens, or minimizing one to a single-screen," and includes the following table of gestures supported by the UX design:

The following off-screen gestures are supported by the WPC:

Tap	*Currently not utilized*
Long-press	*Currently not utilized*
Drag	**1.** Moves applications from one screen to another **2.** Maximizes and minimizes dual-screen capable applications
Long-drag	Considered a sequence of continuous drag operations.
Flick	**1.** Moves applications from one screen to another **2.** Minimizes dual-screen applications
Pin & drag	Holds the pinned application in place while moving the other applications in the application stack. The pinned application always remains in view.
Pinch	Displays the Application Manager
Spread	Reveals the Desktop

EX2012 [Windowing Management], 4, 8; EX2001 [Sirpal Decl.], ¶16..

The specified gestures include: "Drag"—which "[m]oves applications from one screen to another" and/or "[m]aximizes and minimizes dual-screen capable applications"; and "Flick"—which "[m]oves applications from one screen to another" and "[m]inimizes dual screen applications." *Id.*; EX2001 [Sirpal Decl.], ¶16. EX2012 [Window Management] also defines examples of standard rules to be applied in response to receiving gesture input to maximize and minimize dual-screen capable applications. EX2012 [Windowing Management]; EX2001 [Sirpal Decl.], ¶17. For example, this specification illustrates example rules for maximizing and minimizing dual-screen capable applications as follows:



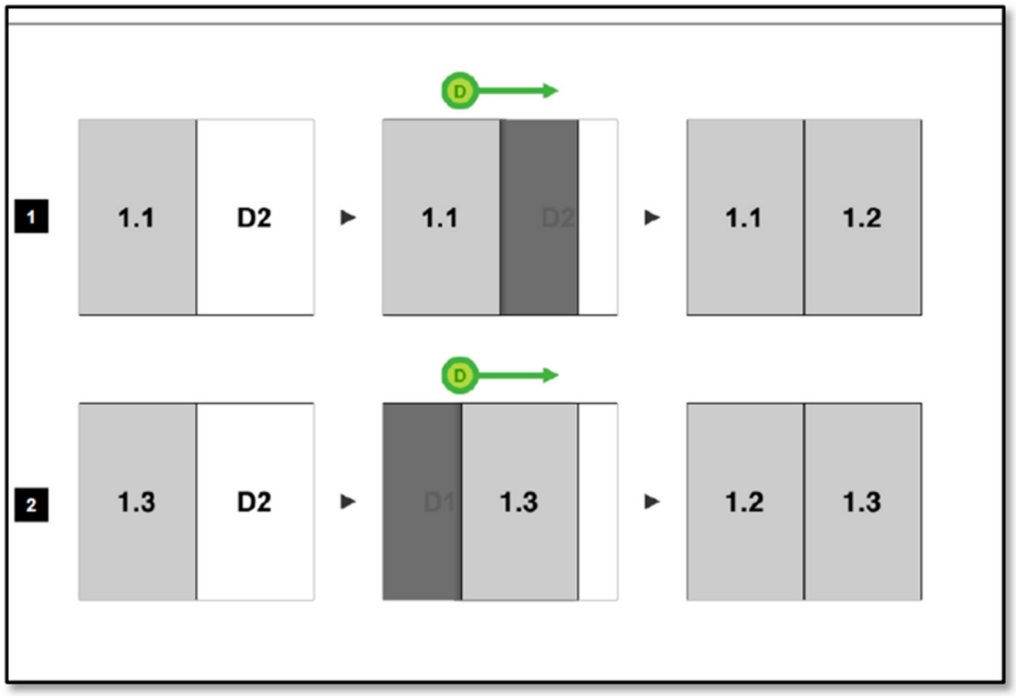
2.1 Introduction to maximization and minimization rules

From the point of view of the WPC system, applications are either maximized to span across two screens, or minimized to one screen; the application (and its internal structure) determines the details on that action, ie which of views move during maximization, and which remains visible during minimization.

During a maximization action, due to technical restrictions it may not be possible to show the uncovered view. In these cases, an empty view is shown, instead.

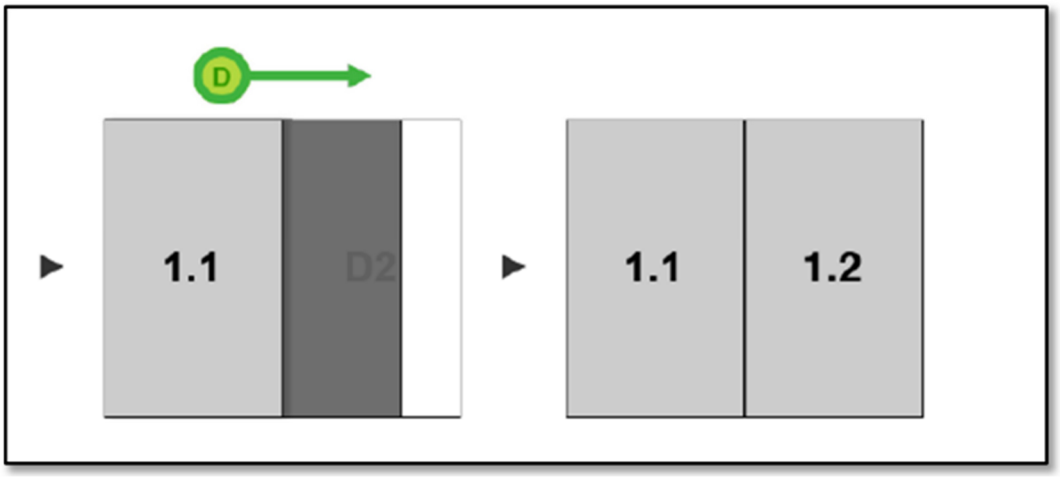
Examples of maximization scenarios:

1. A root view on the left screen is maximized, sliding its child view on the right screen.
2. A leaf view on the left screen is moved to the right screen, and its parent is uncovered on the left screen



EX2012 [Windowing Management], 10 (images excerpted); EX2001 [Sirpal Decl.], ¶17.

The figures above illustrate (for example "1") an initial state with one display showing view "1.1" of a dual-screen application on a left display (*e.g.*, a parent page), and a desktop "D2" on a right display. EX2012 [Windowing Management], 10; EX2001 [Sirpal Decl.], ¶18. In response to a user executing a drag gesture input to maximize the application (drag gesture input shown as the green "D" heading from the left display toward the right display), the application is maximized such that the left side displays the "1.1" view (or page) of the application and the right side displays a second view (or page) of the same application labeled "1.2." *Id*. This is illustrated below:



In this example, "1.2" is a child of "1.1." EX2012 [Windowing Management], 6; EX2001 [Sirpal Decl.], ¶18.

EX2012 provides additional examples of standard rules for maximizing and minimizing dual-screen applications across two displays in response to gesture inputs. EX2012 [Windowing Management], 9-19; EX2001 [Sirpal Decl.], ¶19. For example, standard minimization rules are provided that illustrate how a dual-screen capable application that is being displayed on two displays can be minimized:

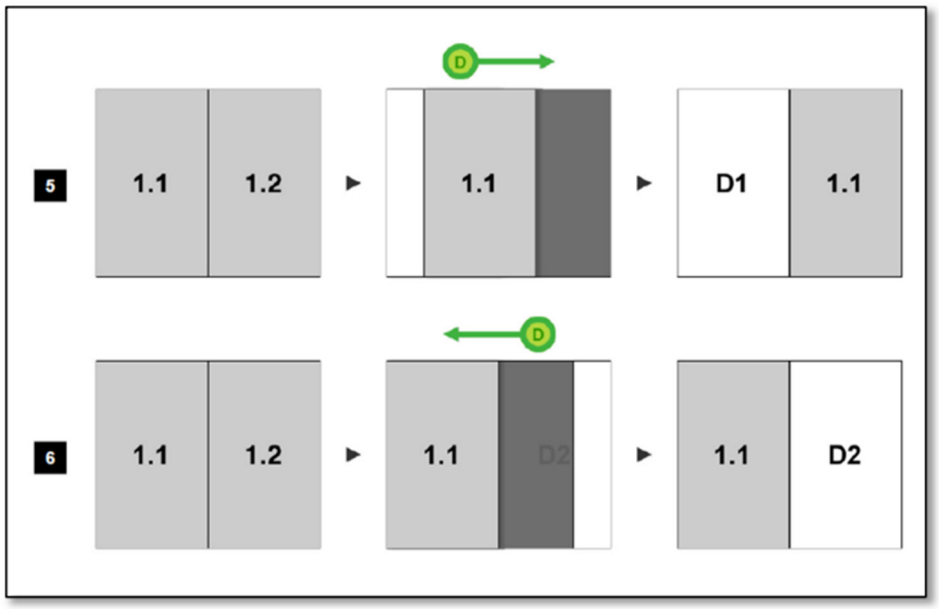
Examples of minimization scenarios:

5. A parent view on the left screen is moved on top of its child view on the right screen.

6. A child view on the right screen is moved underneath a parent view on the left screen.

The motion for minimizing a window is:

MOT.1.4 Minimize



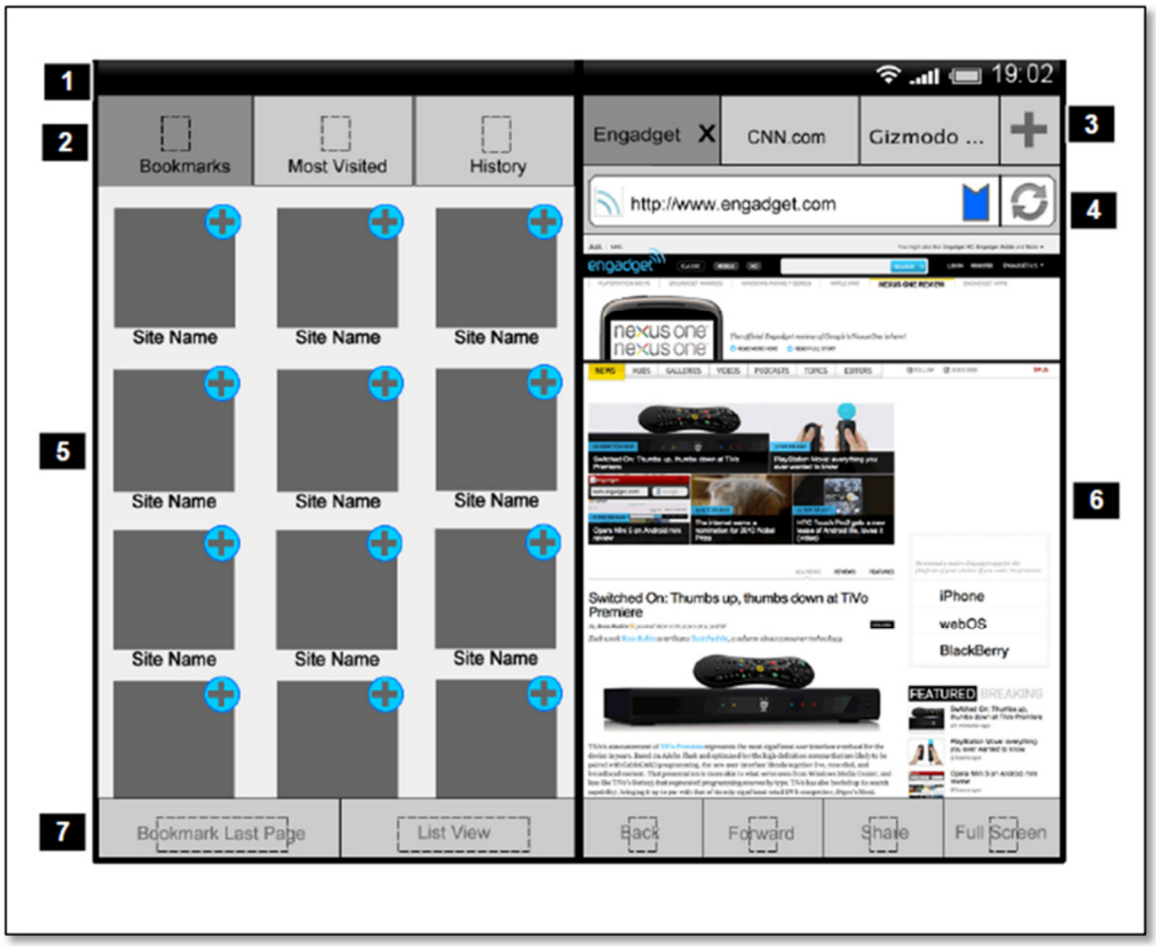
EX2012 [Windowing Management], 12 (images excerpted); EX2001 [Sirpal Decl.], ¶19.

In the two examples illustrated above (examples "5" and "6"), a dual-screen capable application, displaying parent view (or page) "1.1" on the left side and child view (or page) "1.2" on the right side, is minimized, based on gesture input, to show only parent page "1.1" on either the right side (as shown in example "5") or the left side (as shown in example "6"), based on the direction of the drag gesture input (shown in green). *Id.* Under these example rules, dual-screen capable applications minimize such that the parent view (*e.g.*, "1.1") remains displayed while the child view (*e.g.*, "1.2") is no longer displayed. EX2001 [Sirpal Decl.], ¶19.

Additionally, in the Imerj project, some dual-screen applications had additional maximization/minimization rules. EX2001 [Sirpal Decl.], ¶21. The internet browser (or "Browser") was one such application. *Id*. EX2013 [Browser – Interaction Design] demonstrates this functionality was conceived no later than November 18, 2020. EX2001 [Sirpal Decl.], ¶21.

Similarly, the photo gallery application had additional example rules. Non-inventor Ron Cassar, who led the development of system architecture and development for the smartphone firmware, testified that, different than the email and browser applications, when the photo gallery was opened and maximized to two displays, a minimization gesture would result in the parent page minimizing and the child remaining. EX2002 [Cassar Decl.], ¶77.

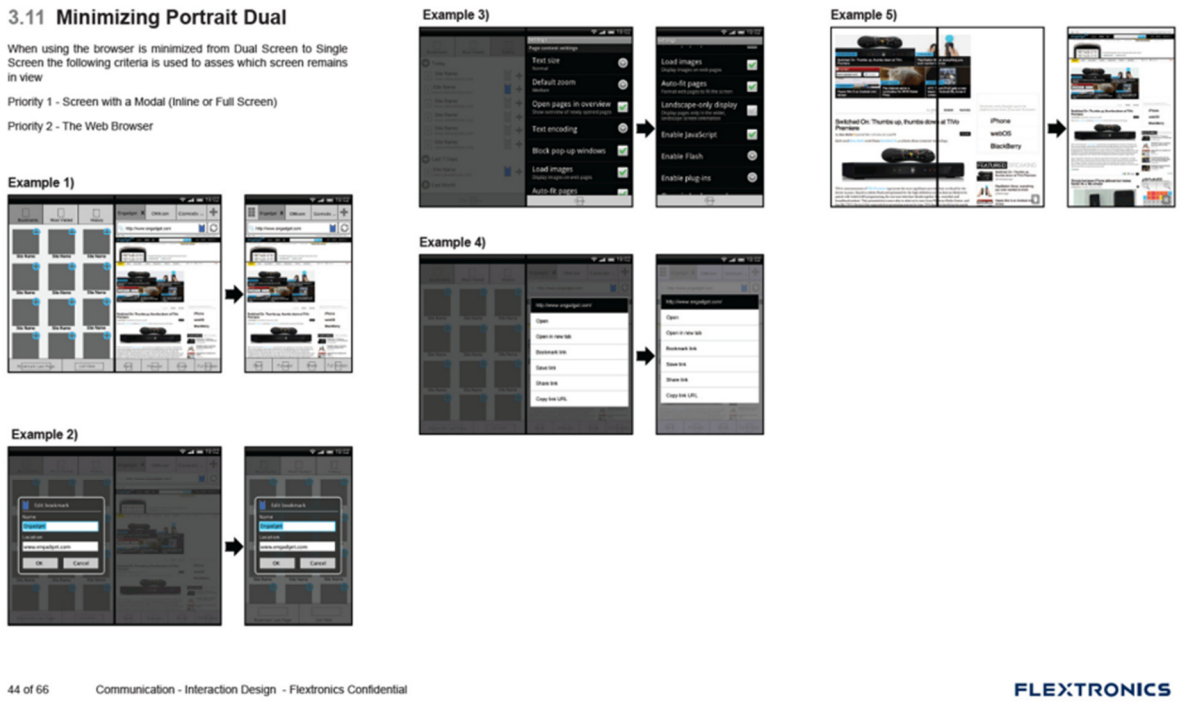
Patent Owner presents additional evidence corroborating inventor Sanjiv Sirpal's testimony that conception occurred prior to February 10, 2010. EX2013 [Browser–Interaction Design] is a UX design specification created by co-inventor Mo Selim, revised by Sanjiv Sirpal, and dated October 6, 2010. EX2013 [Browser–Interaction Design], 1-2; EX2001 [Sirpal Decl.], ¶22. This specification defines the operation of the Browser, including its support for "Portrait Dual" (or "Portrait Dual Screen," or "Dual Portrait," or "PD") mode, which is a mode where the Browser displays two views (or pages) on two displays as shown below:



EX2013 [Browser–Interaction Design], 34; EX2001 [Sirpal Decl.], ¶22.

This specification explains that "The Default view in Portrait Dual displays the Control Page on the Left (with Bookmark tab selected) and the Web Browser view on the right. This is the view that is always seen when the application is maximized in Portrait Mode." EX2013 [Browser–Interaction Design], 34; EX2001 [Sirpal Decl.], ¶22.

In addition, the Browser specification specifies that the "Web Browser" view remains visible on minimization gestures, unless there is a modal on the "Control Page" on the left:



EX2013 [Browser–Interaction Design], 44; EX2001 [Sirpal Decl.], ¶23.

Further, that actual reduction to practice occurred before February 10, 2011 (as explained below) confirms that conception must have occurred prior to that date. Basic gesture functionality for the Imerj project such as moving applications between screens had already been implemented based on the specifications provided by Sanjiv Sirpal and his team on development kits ("dev kits") in early 2010. EX2001 [Sirpal Decl.]. ¶29; EX2002 [Cassar Decl.], ¶¶18, 20; EX2003 [Becze Decl.], ¶15.

By December 2020, prototype smartphones known as "EV-1 prototypes" had been manufactured and had fully tested software implementing maximizing and minimizing dual display applications. EX2033 [Project Plan], rows 55-56, 66; EX2002 [Cassar Decl.], ¶18; EX2003 [Becze Decl.], ¶16; EX2019; EX2001 [Sirpal Decl.], ¶30. This testing and development was done according to the gesture specifications provided by Sanjiv Sirpal and his team, and with the specifications they provided. EX2002 [Cassar Decl.], ¶¶10, 18; EX2003 [Becze Decl.], ¶6; EX2001 [Sirpal Decl.], ¶¶8, 24. That the claimed functionality was implemented and already worked for its intended purpose before February 10, 2011 means that conception occurred earlier. Accordingly, conception occurred no later than November 18, 2010.

B. The Invention Was Actually Reduced To Practice Before February 10, 2011

The Imerj smartphones were reduced to practice prior to February 10, 2011. Inventor Sirpal testified that the concept of minimizing and maximizing dual display applications was reduced to practice prior to February 10, 2011 through sufficient testing to ensure the prototypes worked as intended. EX2001 [Sirpal Decl.], ¶25. The Imerj project manufactured and tested two different series of prototype smartphones, as well as a prototype Smartpad with dual display

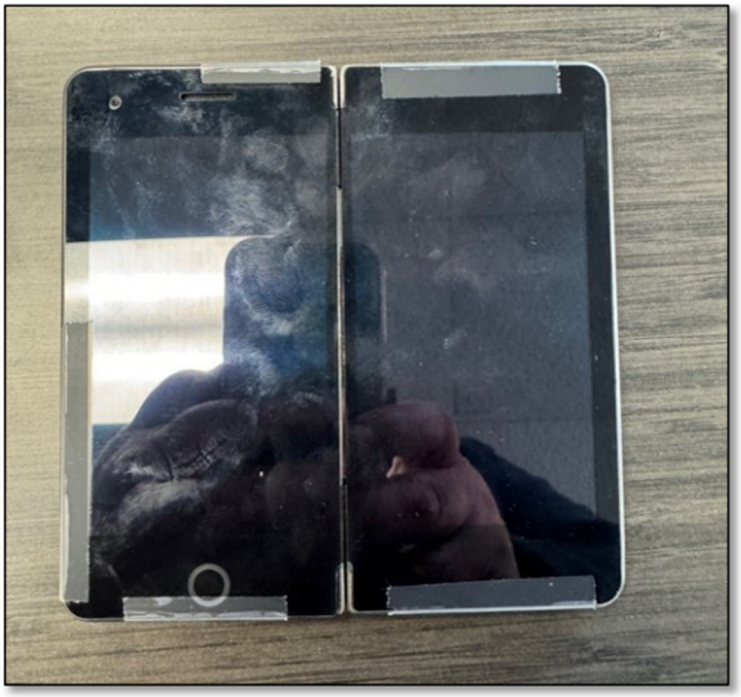
capabilities, and ensured these prototypes worked for their intended purpose before February 10, 2011.

The first functioning smartphone prototypes were referred to as EV-1 prototypes. EX2001 [Sirpal Decl.], ¶30; EX2002 [Cassar Decl.], ¶23; EX2003 [Becze Decl.], ¶16. These prototypes were delivered to the Imerj team during October and November 2010. EX2001 [Sirpal Decl.], ¶30; EX2002 [Cassar Decl.], ¶23; EX2003 [Becze Decl.], ¶¶16-19. Approximately 50 EV-1 prototypes were manufactured, with 20-26 of those used for software testing. EX2003 [Becze Decl.], ¶16. A photo of an EV-1 prototype is shown below:

EX2017; EX2003 [Becze Decl.], ¶18.

The second set of prototypes were referred to as EV-2 prototypes. EX2001 [Sirpal Decl.], ¶32; EX2002 [Cassar Decl.], ¶24; EX2003 [Becze Decl.], ¶21. These prototypes were delivered to the Imerj team in January 2011. EX2002

[Cassar Decl.], ¶24; EX2003 [Becze Decl.], ¶21; EX2036 [Conquest Software Review]; EX2038 [Conquest Project Update]. By the end of January 2011, at least 200 EV-2 prototypes had been distributed to Imerj engineers. EX2038 [Conquest Project Update]; EX2002 [Cassar Decl.], ¶43. A photo of an EV-2 prototype is shown below:

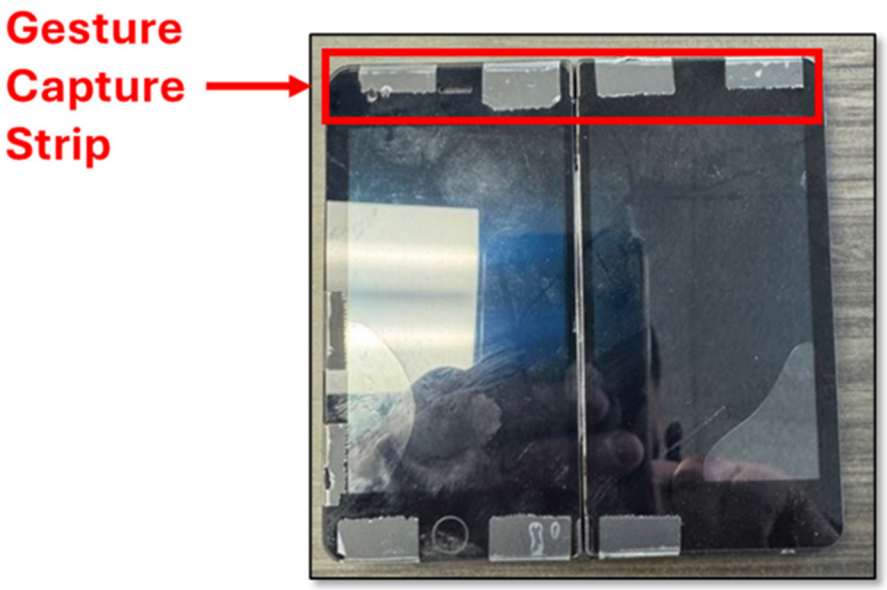


EX2018; EX2003 [Becze Decl.], ¶22. Both the EV-1 and EV-2 prototypes were reduced to practice before February 10, 2011. EX2001 [Sirpal Decl.], ¶¶25-38; EX2002 [Cassar Decl.], ¶¶19-49, 60-62; EX2003 [Becze Decl.], ¶¶16-25; EXS2032-2039 [emails and presentations detailing testing and development on EV-1 and EV-2 prototypes]; EXS2040, 2042-2063 [pre-February 2011 JIRA reports]. In the alternative, actual reduction to practice occurred no later than

February 22, 2011, with diligence between February 10, 2011, and February 22, 2011. EX2001 [Sirpal Decl.], ¶¶39-48; EX2002 [Cassar Decl.], ¶¶5, 50-61; EX2003 [Becze Decl.], ¶¶5, 24; EX2007 [Tiger Team UX Polish]; EX2008 [Feb22_TigerTeam Toronto]; EXS2041, 2043, 2064-2087 [post-February 2011 JIRA reports].

1. EV-1 Prototypes Reduced The Invention To Practice Before February 10, 2011

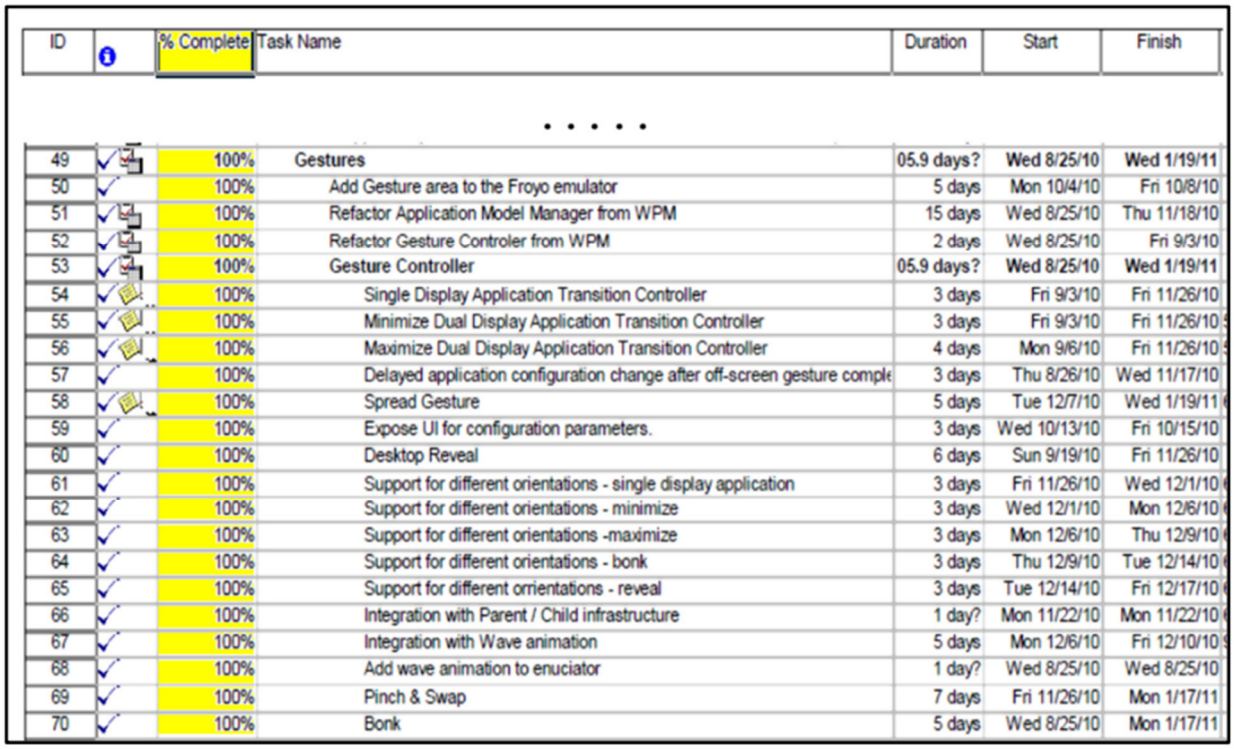
The EV-1 prototypes implemented minimizing and maximizing between dual display and single display no later than February 9, 2011. EX2001 [Sirpal Decl.], ¶32; EX2002 [Cassar Decl.], ¶25; EX2003 [Becze Decl.], ¶20. EV-1 prototypes were manufactured in October and November 2010. EX2003 [Becze Decl.], ¶19; EX2019. A photo of an EV-1 unit is shown below, annotating the gesture capture strip:



EX2017 (annotated); EX2003 [Becze Decl.], ¶18. The gesture functionality in the Imerj smartphones was part of the software referred to as Window Position Controls, or "WPC." EX2002 [Cassar Decl.], ¶27; EX2001 [Sirpal Decl.], ¶12. WPC included gesture functionality in general, as well as other inputs and interactions that could collectively affect how the user could interact with the phone, including (in addition to gestures), orientation, open/close state, what type of application was visible and docking state (phone dock, tablet, laptop). EX2002 [Cassar Decl.], ¶27; EX2001 [Sirpal Decl.], ¶12.

As testified by non-inventor Ed Becze, the WPC functionality was implemented on EV-1 and remained functionally the same for EV-2. EX2003 [Becze Decl.], ¶20. *See also* EX2033 [Project Plan], rows 49-70 (showing WPC "100%" complete); EX2002 [Cassar Decl.], ¶¶25-29 (discussing same relevant gesture functionality through the Imerj project); 36-39 (discussing completion of relevant functionality in EX2033). Thus, the relevant gesture functionality was largely the same for EV-1 and EV-2. The WPC gesture capability necessary to support the relevant gesture functionality (e.g., minimization, maximization, parent/child relationships) was complete well before February 10, 2011 on EV-1 prototypes. EX2002 [Cassar Decl.], ¶¶36-39; EX2001 [Sirpal Decl.], ¶¶32-34. Specifically, EX2033 [SSA Project Plan] is a project plan Cassar sent to his team on January 14, 2011. *Id.*, EX2032 [Updated Project Plan]; EX2002 [Cassar Decl.],

¶36; EX2001 [Sirpal Decl.], ¶35. Rows 44-98 involve WPC functionality. EX2033 [SSA Project Plan], 1. Rows 49-70 detail progress on "Gestures." *Id*. In the third column, every gesture from row 49-70 is listed as "100%" complete:



ID	% Complete	Task Name	Duration	Start	Finish
49	100%	**Gestures**	05.9 days?	Wed 8/25/10	Wed 1/19/11
50	100%	Add Gesture area to the Froyo emulator	5 days	Mon 10/4/10	Fri 10/8/10
51	100%	Refactor Application Model Manager from WPM	15 days	Wed 8/25/10	Thu 11/18/10
52	100%	Refactor Gesture Controler from WPM	2 days	Wed 8/25/10	Fri 9/3/10
53	100%	**Gesture Controller**	05.9 days?	Wed 8/25/10	Wed 1/19/11
54	100%	Single Display Application Transition Controller	3 days	Fri 9/3/10	Fri 11/26/10
55	100%	Minimize Dual Display Application Transition Controller	3 days	Fri 9/3/10	Fri 11/26/10
56	100%	Maximize Dual Display Application Transition Controller	4 days	Mon 9/6/10	Fri 11/26/10
57	100%	Delayed application configuration change after off-screen gesture comple	3 days	Thu 8/26/10	Wed 11/17/10
58	100%	Spread Gesture	5 days	Tue 12/7/10	Wed 1/19/11
59	100%	Expose UI for configuration parameters.	3 days	Wed 10/13/10	Fri 10/15/10
60	100%	Desktop Reveal	6 days	Sun 9/19/10	Fri 11/26/10
61	100%	Support for different orientations - single display application	3 days	Fri 11/26/10	Wed 12/1/10
62	100%	Support for different orientations - minimize	3 days	Wed 12/1/10	Mon 12/6/10
63	100%	Support for different orientations -maximize	3 days	Mon 12/6/10	Thu 12/9/10
64	100%	Support for different orientations - bonk	3 days	Thu 12/9/10	Tue 12/14/10
65	100%	Support for different orrientations - reveal	3 days	Tue 12/14/10	Fri 12/17/10
66	100%	Integration with Parent / Child infrastructure	1 day?	Mon 11/22/10	Mon 11/22/10
67	100%	Integration with Wave animation	5 days	Mon 12/6/10	Fri 12/10/10
68	100%	Add wave animation to enuciator	1 day?	Wed 8/25/10	Wed 8/25/10
69	100%	Pinch & Swap	7 days	Fri 11/26/10	Mon 1/17/11
70	100%	Bonk	5 days	Wed 8/25/10	Mon 1/17/11

EX2033 [SSA Project Plan] (excerpted and annotated); EX2022 [Cassar Decl.], ¶36; EX2023 [Sirpal Decl.], 35.

Thus, by no later than January 13, 2011, the relevant gesture functionality was complete. *Id*. Moreover, the Project Plan indicates that the minimization, maximization and parent/child relationship features were complete as early as November 2010, as shown in the highlighted rows below.

% Complete	Task Name	Duration	Start	Finish
	• • • • •			
100%	**Gestures**	**05.9 days?**	**Wed 8/25/10**	**Wed 1/19/11**
100%	Add Gesture area to the Froyo emulator	5 days	Mon 10/4/10	Fri 10/8/10
100%	Refactor Application Model Manager from WPM	15 days	Wed 8/25/10	Thu 11/18/10
100%	Refactor Gesture Controler from WPM	2 days	Wed 8/25/10	Fri 9/3/10
100%	Gesture Controller	05.9 days?	Wed 8/25/10	Wed 1/19/11
100%	Single Display Application Transition Controller	3 days	Fri 9/3/10	Fri 11/26/10
100%	Minimize Dual Display Application Transition Controller	3 days	Fri 9/3/10	Fri 11/26/10
100%	Maximize Dual Display Application Transition Controller	4 days	Mon 9/6/10	Fri 11/26/10
100%	Delayed application configuration change after off-screen gesture comple	3 days	Thu 8/26/10	Wed 11/17/10
100%	Spread Gesture	5 days	Tue 12/7/10	Wed 1/19/11
100%	Expose UI for configuration parameters.	3 days	Wed 10/13/10	Fri 10/15/10
100%	Desktop Reveal	6 days	Sun 9/19/10	Fri 11/26/10
100%	Support for different orientations - single display application	3 days	Fri 11/26/10	Wed 12/1/10
100%	Support for different orientations - minimize	3 days	Wed 12/1/10	Mon 12/6/10
100%	Support for different orientations -maximize	3 days	Mon 12/6/10	Thu 12/9/10
100%	Support for different orientations - bonk	3 days	Thu 12/9/10	Tue 12/14/10
100%	Support for different orrientations - reveal	3 days	Tue 12/14/10	Fri 12/17/10
100%	Integration with Parent / Child infrastructure	1 day?	Mon 11/22/10	Mon 11/22/10
100%	Integration with Wave animation	5 days	Mon 12/6/10	Fri 12/10/10
100%	Add wave animation to enuciator	1 day?	Wed 8/25/10	Wed 8/25/10
100%	Pinch & Swap	7 days	Fri 11/26/10	Mon 1/17/11
100%	Bonk	5 days	Wed 8/25/10	Mon 1/17/11

EX2033 [Project Plan], 1 (excerpted and annotated). These confirm that the relevant gesture functionality was implemented in EV-1 units (and, correspondingly, EV-2) prior to February 10, 2011. EX2002 [Cassar Decl.], ¶¶37-39 (confirming the same); EX2001 [Sirpal Decl.], ¶35. Consistent with the November 22, 2010 finish date listed in Ron Cassar's Project Plan for "Integration with Parent / Child infrastructure," a December 1, 2010 email from Paul Reeves states "I understand that ParentChild may have been added to the framework." EX2034 [Re: Parent/Child].

On January 12, 2011, Ron Cassar received an email from Rod Schrock (the manager of the Imerj project) stating that Rod Schrock is "meeting with

Vodaphone and CPW in Europe next week" to "showcase the handset." EX2035 [Heads Up Email]. Thus, Imerj was demonstrating WPC functionality for the phone, email, browser and calendar applications the week of January 17, 2011. *Id.*; EX2002 [Cassar Decl.], ¶33. This demonstrates that WPC functionality (*e.g.*, gesture functionality) was implemented and operating for its intended purpose in apps including the phone, email, browser and calendar apps by January 2011. EX2002 [Cassar Decl.], ¶¶32-35; EX2001 [Sirpal Decl.], ¶¶33, 54.

This confirms Ron Cassar's recollection that gesture functionality worked on the Imerj smartphone in portrait mode as of January 12, 2011 because the gesture functionality of the smartphone was complete before the gesture functionality for the Smartpad tablet. EX2002 [Cassar Decl.], ¶¶34-35. The "Smartpad" was a tablet product that was being developed in conjunction with the Imerj smartphone. *Id.*, ¶34. The Smartpad was essentially a tablet shell that the Imerj smartphone could plug into. *Id*. The Imerj smartphone had the CPU and memory that operated the Smartpad. *Id*. The Imerj smartphone had to support landscape and portrait modes on the Smartpad, in addition to modes on the smartphone. *Id*.

Exhibits 2022 and 2023 are excerpts of a demo video prepared on January 4, 2011 demonstrating functionality of the Imerj Smartpad. EXS2023, 2024; EX2001 [Sirpal Decl.]; ¶79. As discussed below at §V.C.2, these excerpts demonstrate minimization and maximization functionality using the browser application on the

Smartpad in dual display mode. *Id*. EX2001 [Sirpal Decl.], ¶¶79-80. An Imerj EV1 prototype was plugged into the back of the Smartpad and contained the processor and programming that was responsible for the operation of the gesture functionality on the Smartpad. EX2001 [Sirpal Decl.], ¶80.

Since the EV-1 prototype was capable of performing minimization and maximization between dual display and single display on a Smartpad, the EV-1 was already capable of performing the same functions on the EV-1 displays. EX2001 [Sirpal Decl.], ¶81; EX2002 [Cassar Decl.], ¶35. EX2011 [Browser UX Issues] is an Excel spreadsheet used by Sanjiv Sirpal's team to log issues discovered during testing the Imerj browser application. EX2001 [Sirpal Decl.], ¶33. The metadata in the document confirms it was last modified on January 20, 2011, by a member of Sanjiv Sirpal's team. EX2011 [Browser UX Metadata]; EX2001 [Sirpal Decl.], ¶33. Thus, by no later than February 9, 2011, Sanjiv Sirpal and the Imerj team had reduced the claimed invention to practice on EV-1 prototypes. EX2001 [Sirpal Decl.], ¶¶33-35; EX2002 [Cassar Decl.], ¶¶25, 30-39; EX2003 [Becze Decl.], ¶20.

2. The Imerj Smartpad Prototype Was Reduced To Practice Before February 10, 2011

As discussed above in Section V.C.1, Imerj developed a Smartpad tablet companion to the Imerj smartphone. *See, e.g.*, EX2002 [Cassar Decl.], ¶¶34-35.

The "Smartpad" was a tablet product that was being developed in conjunction with the Imerj smartphone. *Id*., ¶34; The Smartpad was essentially a tablet shell that the Imerj smartphone could plug into or dock with. *Id*., [Sirpal Decl.], ¶80. The Imerj smartphone had the CPU and memory that operated the Smartpad. *Id*. The Imerj smartphone had to support landscape and portrait modes on the Smartpad, in addition to the supporting the same modes on the smartphone. *Id*. On January 4, 2011, Sanjiv Sirpal was present for a videotaped demonstration video of the Imerj Smartpad (with an EV-1 prototype plugged into it) that tested the functionality of the Smartpad. EX2001 [Sirpal Decl.], ¶79. Because the Smartpad was a shell device, software on the processor of the EV-1 prototype was actually running the demonstration. EX2001 [Sirpal Decl.], ¶79-80. The test performed minimization and maximization functionality on the Smartpad in dual portrait display mode. *Id*. EXS2023 and 2024 are video excerpts of the demonstration showing dual portrait display minimization and maximization. *Id*. Accordingly, the video clips demonstrate sufficient testing of the Smartpad to determine that the invention worked for its intended purpose of minimizing and maximizing between dual display and single display. EX2001 [Sirpal Decl.], ¶¶79-80; EX2023; EX2024.

3. EV-2 Prototypes Reduced The Invention To Practice Before February 10, 2011

The EV-2 prototypes implemented minimizing and maximizing before February 10, 2011. EX2001 [Sirpal Decl.], ¶¶37-38, 82-83; EX2002 [Cassar Decl.], ¶24; EX2003 [Becze Decl.], ¶¶22, 25. EV-2 prototypes were manufactured in January 2011. EX2003 [Becze Decl.], ¶23; EX2020.

On January 17, 2011, Ron Cassar received an email from Rod Schrock detailing "an ad hoc multi-hour review of" an EV-2 handset. EX2036 [Conquest Software Review]; EX2002 [Cassar Decl.], ¶40. Thus, the email indicates testing was performed on an EV-2 handset by January 17, 2011. EX2002 [Cassar Decl.], ¶40.

On January 25, 2011, Sanjiv Sirpal and Ron Cassar received an email from Rod Schrock titled "EV-2 – Whole Lotta Use Case Refinement Needed." EX2037; EX2001 [Sirpal Decl.], ¶38; EX2002 [Cassar Decl.], ¶42. In the email, Rod Schrock states "The EV2 units are now relatively functional smartphones." *Id*. This confirms Sanjiv Sirpal and Ron Cassar's recollection that, that, as of January 25, 2011, the EV-2 prototypes were functional. EX2001 [Sirpal Declaration], ¶38; EX2002 [Cassar Declaration], ¶42.

Before this email, the project was geared toward establishing core functionality on the EV-1 and EV-2 prototypes (including making sure dual

display apps such as browser, email, photo gallery, etc. were operational.) *Id*. After this email, the project turned "to the refined user experience stage of [the] design" (i.e., polishing) to ensure the experience is "smooth and intuitive for the user." EX2037; EX2001 [Sirpal Decl.], ¶82. The January 25, 2011 project turning point evidenced in EX2037 is corroborated by the user experience polish testing performed by the Tiger Team. EX2001 [Sirpal Decl.], ¶83.

Thus, as of January 25, 2011, the EV-2 prototypes had been tested sufficiently ("relatively functional smartphones"). EX2001 [Sirpal Decl.], ¶83.

C. Alternately, The Invention Was Actually Reduced To Practice No Later Than February 22, 2011

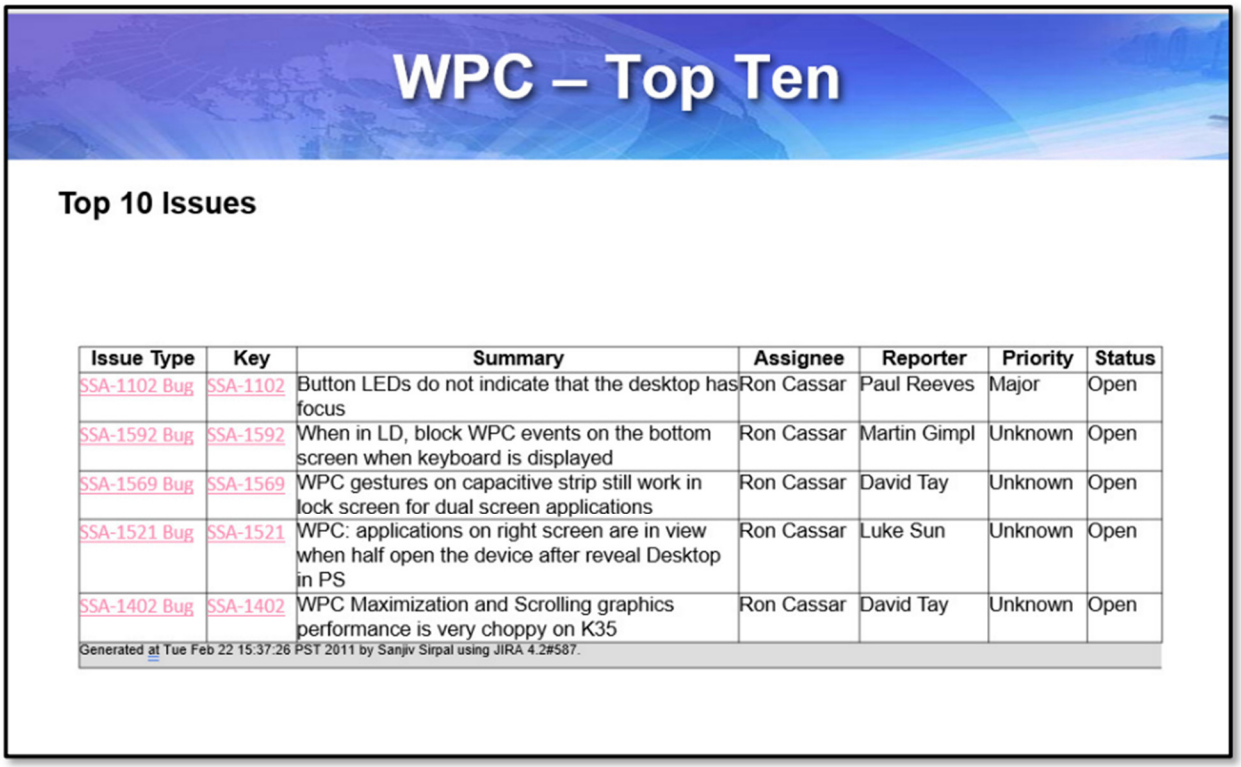
In the alternative, by February 22, 2011, the EV-2 prototypes had successfully implemented maximizing and minimizing because members of the Imerj team had begun "polish" testing on the EV-2 prototypes. EX2001 [Sirpal Decl.], ¶39; EX2002 [Cassar Decl.], ¶; EX2003 [Becze Decl.], ¶28; EX2007 [UX Polish], EX2008 [Feb22_TigerTeamToronto]. The term "polish" in EX2007 refers to refinement that is done on mature products that have core functionality already implemented and already tested to show they work for their intended purpose. EX2001 [Sirpal Decl.], ¶40; EX2002 [Cassar Decl.], ¶50; EX2003 [Becze Decl.], ¶¶28-29; EX2007 [UX Polish], 1. By this point, core functionality like maximizing and minimizing windows in dual portrait mode was complete. EX2001 [Sirpal

Decl.], ¶40; EX2002 [Cassar Decl.], ¶50; EX2003 [Becze Decl.], ¶29. Accordingly, by no later than February 22, 2011, EV-2 prototypes had been tested to confirm they were operational for their intended purpose.

1. Diligence Was Continuous From Before February 10, 2011 Through February 22, 2011

There was more than reasonably continuous diligence on the EV-2 prototypes from before February 10, 2011 through February 22, 2011. The entire Imerj team was working on a daily basis throughout 2010 and 2011 testing and developing the EV-2 prototype. EX2002 [Cassar Decl.], ¶¶5, 60; EX2003 [Becze Decl.], ¶5.

EX2008 [Feb22_TigerTeamToronto] corroborates this diligence. EX2008 is an issue tracker for the Imerj project's internal Tiger Team of user experience testers that shows Top Ten issues being reported, assigned, and resolved on a near-daily basis during the time period of January 26, 2007 through February 22, 2007. EX2008 [Feb22_TigerTeamsToronto], 1, 3, 5, 7, 9; *see also* EX2001 [Sirpal Decl.], ¶44; EX2002 [Cassar Decl.], ¶55; EX2003 [Becze Decl.], ¶¶31-32. An example of the "Top Ten" open issues for WPC as of February 22, 2011 is shown below:



WPC – Top Ten

Top 10 Issues

Issue Type	Key	Summary	Assignee	Reporter	Priority	Status
SSA-1102 Bug	SSA-1102	Button LEDs do not indicate that the desktop has focus	Ron Cassar	Paul Reeves	Major	Open
SSA-1592 Bug	SSA-1592	When in LD, block WPC events on the bottom screen when keyboard is displayed	Ron Cassar	Martin Gimpl	Unknown	Open
SSA-1569 Bug	SSA-1569	WPC gestures on capacitive strip still work in lock screen for dual screen applications	Ron Cassar	David Tay	Unknown	Open
SSA-1521 Bug	SSA-1521	WPC: applications on right screen are in view when half open the device after reveal Desktop in PS	Ron Cassar	Luke Sun	Unknown	Open
SSA-1402 Bug	SSA-1402	WPC Maximization and Scrolling graphics performance is very choppy on K35	Ron Cassar	David Tay	Unknown	Open

Generated at Tue Feb 22 15:37:26 PST 2011 by Sanjiv Sirpal using JIRA 4.2#587.

EX2008 [Feb22_TigerTeamsToronto], 4.

EX2007 [Tiger Team UX Polish] explains how the Tiger Team operated. EX2007 shows roughly 40 team members drawn from the Imerj software development, design and QA teams were spread across eight Tiger Teams to identify issues on a daily basis with the daily EV-2 builds. EX2007 [Tiger Team Kick Off], 4; *see also* EX2001 [Sirpal Decl.], ¶41; EX2002 [Cassar Decl.], ¶52. Thus, Tiger Team members were using the EV-2 prototypes on a daily basis to report and fix issues. EX2001 [Sirpal Decl.], ¶41-42; EX2002 [Cassar Decl.], ¶53.

There were also other members of the Imerj project involved in testing during this timeframe. EX2002 [Cassar Decl.], ¶¶51-52. Moreover, the Imerj

project used the JIRA project management software to track and resolve software development issues. EX2002 [Cassar Decl.], ¶¶54-59. Exhibits 2040-2087 are several dozen examples of thousands of JIRA reports generated over the course of the Imerj project on a daily basis as software issues were logged and resolved. EX2002 [Cassar Decl.], ¶59. These records were generated and stored as part of regular conducted business on the Imerj project. EX2002 [Cassar Decl.], ¶59. EXS2041 and 2064-2087 are dated from February 1, 2011 through February 22, 2011. EX2002 [Cassar Decl.], ¶60. During the period of February 11, 2011 through February 22, 2011, an average of 11-12 cases (*i.e.*, new issues reported) were opened every day. EX2002 [Cassar Decl.], ¶61. Thus, there was daily diligence from February 10 to February 22, 2011 in the form of dozens of team members, testing the EV-2 prototypes, logging issues, assigning issues, and resolving issues.

VIII. THE EV-1 AND EV-2 IMERJ PROTOTYPES EVIDENCE THE CONCEPTION AND REDUCTION TO PRACTICE OF ALL LIMITATIONS OF CHALLENGED CLAIMS

The EV-1 and EV-2 Prototypes of the Imerj Dual Display smartphone (that were designed in accordance with the design specifications provided by Sanjiv Sirpal and reduced to practice as described above) included minimizing and maximizing functionalities covered by Challenged Claims 1, 4, 6, 9, 10, 12, 13, 18-20. As such, Seo does not qualify as prior art, and all grounds with respect to these claims asserted in the Petition must fail for relying on Seo. Below is an analysis

showing how the EV-1 and EV-2 prototypes were an embodiment of each of these Challenged Claims. This is laid out in the testimony of Mr. Sirpal, and further corroborated by the testimony of Messrs. Cassar and Becze, as well as the exhibits cited therein.

A. Claim 1

1. [1.pre] "A method for controlling a display of a device, comprising:"

To the extent the preamble is limiting, the EV-1 and EV-2 prototypes performed this limitation. For example, as described above and with respect to the limitations below, the EV-1 and EV-2 prototypes were dual screen devices that ran dual display applications—where two different application pages from the same application could be displayed on the different screens of the device.

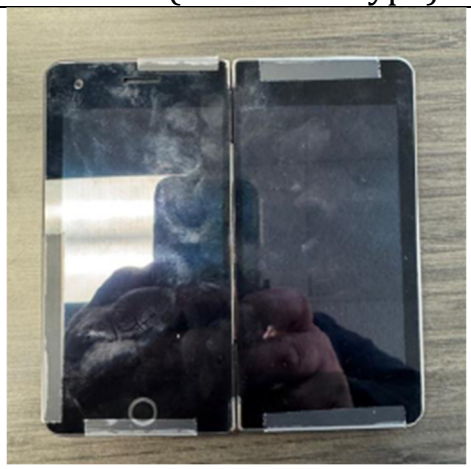
The prototypes were operable such that the user could control whether one or both pages of the application were displayed on the screens of the device by inputting gestures to minimize or maximize the application. *See, e.g.*, EX2006 [UX Overview], 15, 30, 31, 34-36, 45-49, 53, 79,118, 119, 129; EX2012 [Window Management – Interaction Design], 8-23; EX2013 [Browser – Interaction Design], 33, 34, 44; EX2022 (video showing minimization of child page); EX2023 (video showing maximization of child page); EX2001 [Sirpal Decl.], ¶53-54; EX2002 [Cassar Decl.], ¶¶28, 29, 64, 65 (describing how the Imerj smartphones could

maximize and minimize child pages repeatedly); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

2. [1.a] "presenting a first page of a first application on a first display of the device, wherein the first page is an auxiliary page;"

The EV-1 and EV-2 prototypes performed this limitation of presenting a first application on a first display of the device, wherein the first page is an auxiliary page. *See, e.g.*, EX2001 [Sirpal Decl.], ¶¶53-54.

Each of the EV-1 and EV-2 prototypes had two displays.

EX2017 (EV-1 Prototype)	EX2018 (EV-2 Prototype)
	

Further, the EV-1 and EV-2 prototypes both permitted displaying two pages from a single application on the two different displays of the prototypes. For example, this functionality could be performed using the Browser application, as well as other applications such as email, camera, photo galleries, etc. *See*, *e.g.*, EX2006, 79 (Browser); *see id.*, 33 (dual screen phone dialer), 45-49 (showing dual

screen email app, phone dialer, and messaging), 75 (dual screen calendar), 84 (dual screen camera), 94-104 (calendar), 105-112 (messaging), 113-131 (Browsing).

As an example, for the Browser application, the claimed "first page," which is an auxiliary page, is the Bookmarks / Control page highlighted below. As explained further below for limitation 1[b], the Browser Content page is the primary page.

See, e.g., EX2006, 79 (annotations added showing the claimed first page):

Portrait Dual Screen

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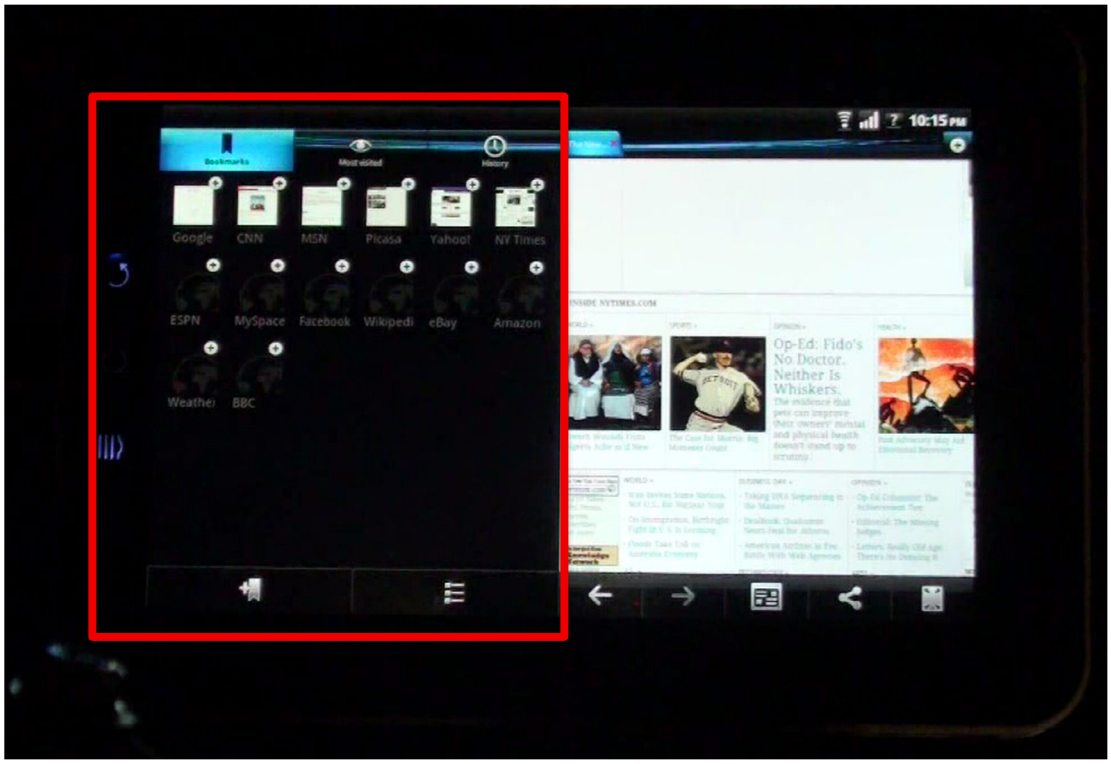
See also, e.g., EX2023, 0:01(annotations added showing the claimed first page):

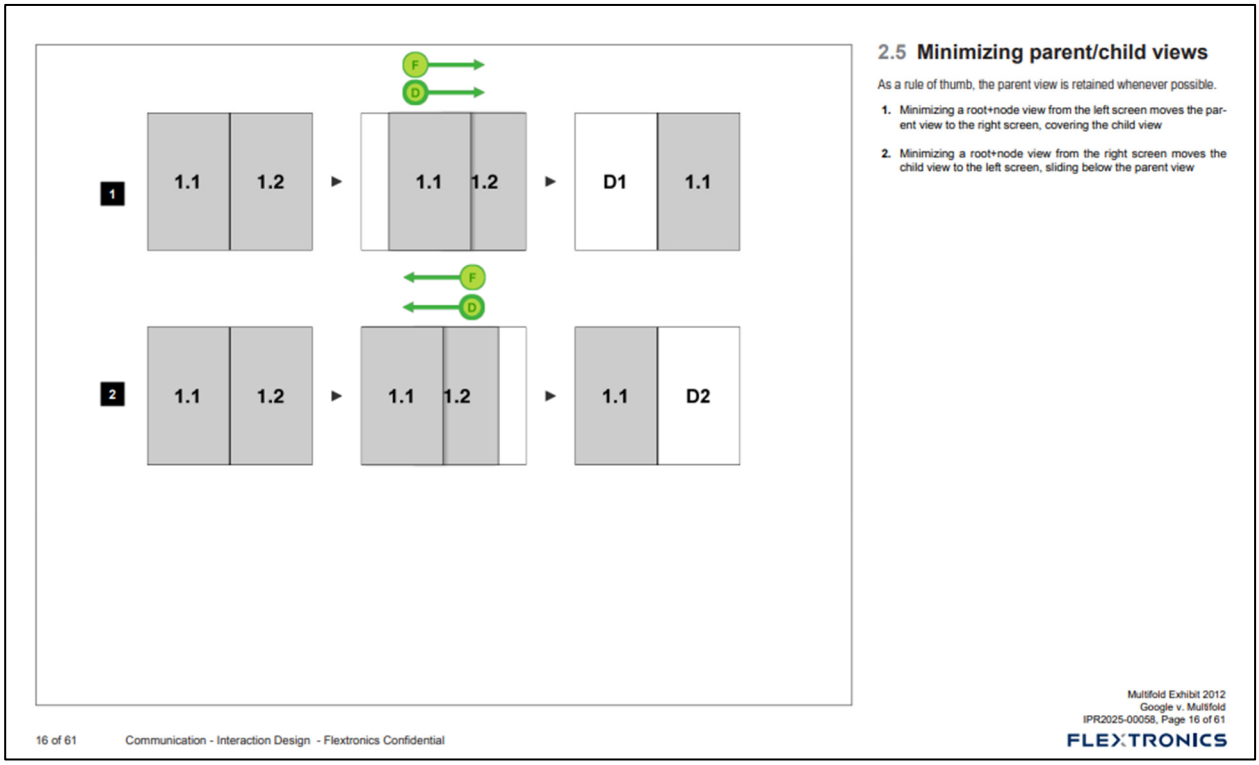


In the Browser application example, the Bookmark / Control page is the auxiliary page and the Browser Content page is the primary page because the Browser Content page is the default view (EX2013, 9), and when the Browser application is minimized from Dual Screen to Single Screen, "priority" is given to the Browser Content view page when assessing which screen remains in view (*id.*, 44). This aligns with Petitioner's description of why, in Seo, messaging screen 820 is the auxiliary page to main messaging screen 800. *See* Petition, 21-24.

As described above, the EV-1 and EV-2 prototypes implemented the gesture functionality set forth in the design specifications. *See, e.g.*, EX2001 [Sirpal

Decl.], ¶24 ("I was responsible ... for ensuring that the product being developed met the requirements laid out in the specifications."); EX2001 [Sirpal Decl.], ¶55 ("Also, EV-1 and EV-2 both implemented WPC specification EX2012 [Window Management – Interaction Design]"); EX2002 [Cassar Decl.], ¶10 ("I directed implementation of the gesture functionality in the Imerj software based on specifications provided by Sanjiv [Sirpal]. … Sanjiv and his team provided specifications and helped ensure that the software met the specified functionality."); EX2003 [Becze Decl.], ¶6 ("Sanjiv provided the specifications for the gesture functionality and helped ensure that the smartphone met the specified gesture functionality. My team and I developed hardware prototypes based on the designs provided by Sanjiv."). Thus, the design specifications disclose how the prototypes operated to display and minimize applications.

Accordingly, the EV-1 and EV-2 prototypes were capable of presenting a first page of a first application on a first display of the device, wherein the first page is an auxiliary page. For example, as shown below, the prototypes were capable of displaying page 1.1 of an application in one display, and page 1.2 of the same application in another display of the device, where "1.1 is the parent of 1.2." *See* EX2012, 16 (shown below), 6. As such, "page 1.2" is the claimed "first page" of limitation 1[a].

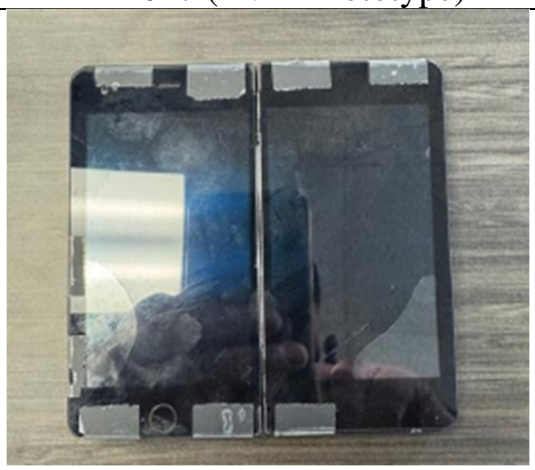
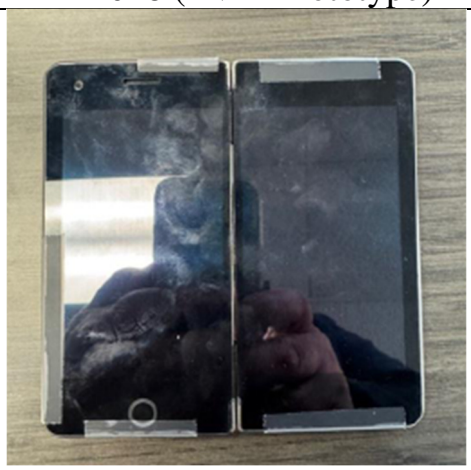


See also, e.g., EX2001 [Sirpal Decl.], ¶53; EX2002 [Cassar Decl.], ¶¶28, 29, 64, 65 (describing how the Imerj smartphones could maximize and minimize child pages repeatedly); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

3. [1.b] "presenting a second page of the first application on a second display of the device, wherein the second page is a primary page,"

The EV-1 and EV-2 prototypes performed this limitation of presenting a second page of the first application on a second display of the device, wherein the second page is a primary page. *See, e.g.*, EX2001 [Sirpal Decl.], ¶¶53-54.

Each of the EV-1 and EV-2 prototypes had two displays.

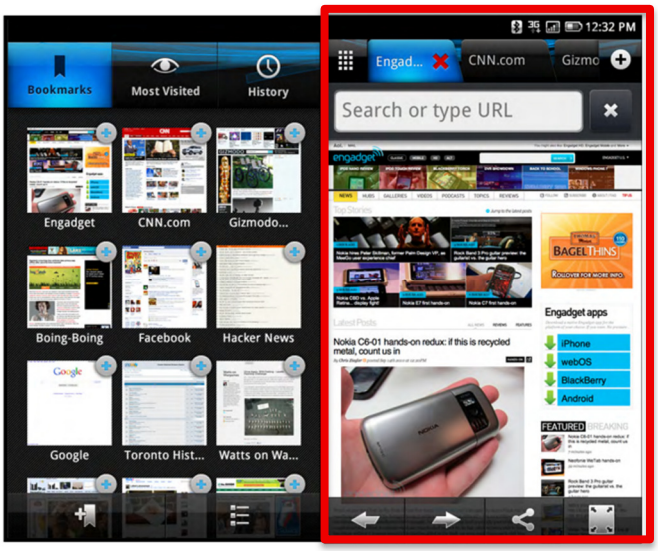
EX2017 (EV-1 Prototype)	EX2018 (EV-2 Prototype)
	

As described above for limitation 1[a], the EV-1 and EV-2 prototypes both permitted displaying two pages from a single application on the two different displays of the prototypes. For example, this functionality could be performed using the Browser application, as well as other applications such as (email, camera, photo galleries, etc.). *See*, *e.g.*, EX2006, 79 (Browser); *see also id.*, 33, 45-49, 75, 84, 94-104, 105-112, 113-131; *supra*, §VIII.A.1.2.

As an example, with respect to the Browser application, the claimed "second page," which is a primary page, is the Browser Content page highlighted below.

See, e.g., EX2006, 79 (annotations showing the claimed second page):

Portrait Dual Screen



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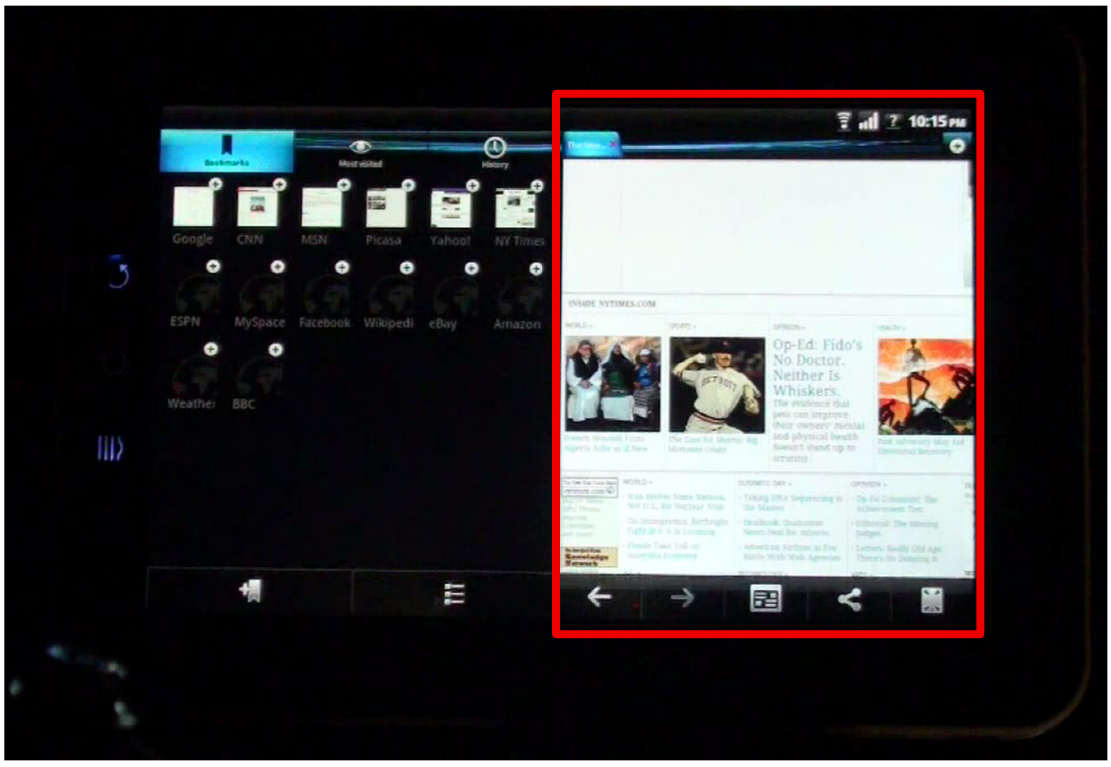
See also, e.g., EX2023, 0:01(annotations added showing the claimed second page):

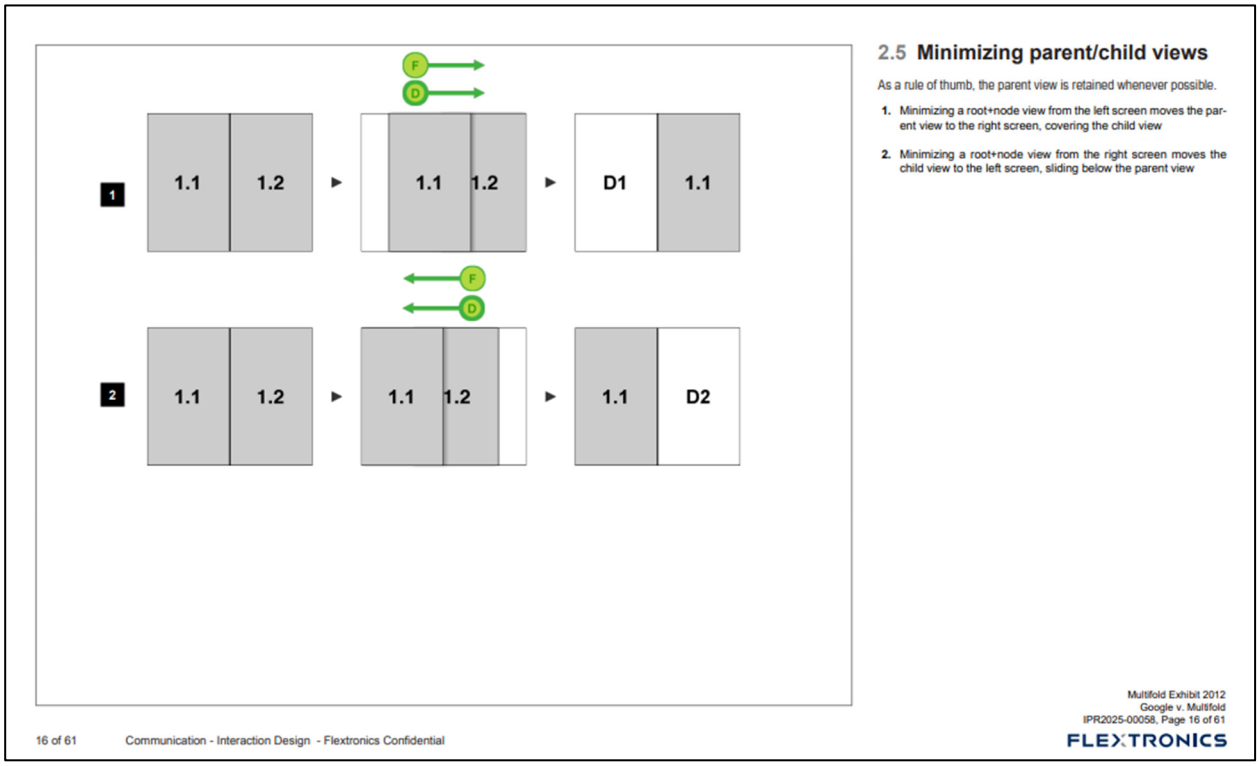


As discussed above, in the Browser application example for the EV-1 and EV-2 prototypes, the Bookmark / Control page is the auxiliary page and the Browser Content page is the primary page because the Browser Content page is the default view (EX2013, 9), and when the Browser application is minimized from Dual Screen to Single Screen, "priority" is given to the Browser Content view page when assessing which screen remains in view (*id*., 44). This aligns with Petitioners' description of why, in Seo, main messaging screen 800 is the claimed primary page. *See* Petition, 21-24, 26.

As described above, the EV-1 and EV-2 prototypes implemented the functionality set forth in the design specifications regarding gesture functionality. *See, e.g.*, *supra,* §VIII.A.3 (citing to EX2001 [Sirpal Decl.], ¶¶24, 55; EX2002 [Cassar Decl.], ¶10; EX2003 [Becze Decl.], ¶6). And thus, the design specifications disclose how the prototypes operated to display and minimize applications.

Accordingly, the EV-1 and EV-2 prototypes were capable of presenting a second page of the first application on a second display of the device, wherein the second page is a primary page. For example, as shown below, the prototypes were capable of displaying page 1.1 of an application in one display, and page 1.2 of the same application in another display of the device, where "1.1 is the parent of 1.2."

See EX2012, 16 (shown below), 6. As such, "page 1.1" is the claimed "second page" of limitation 1[b].

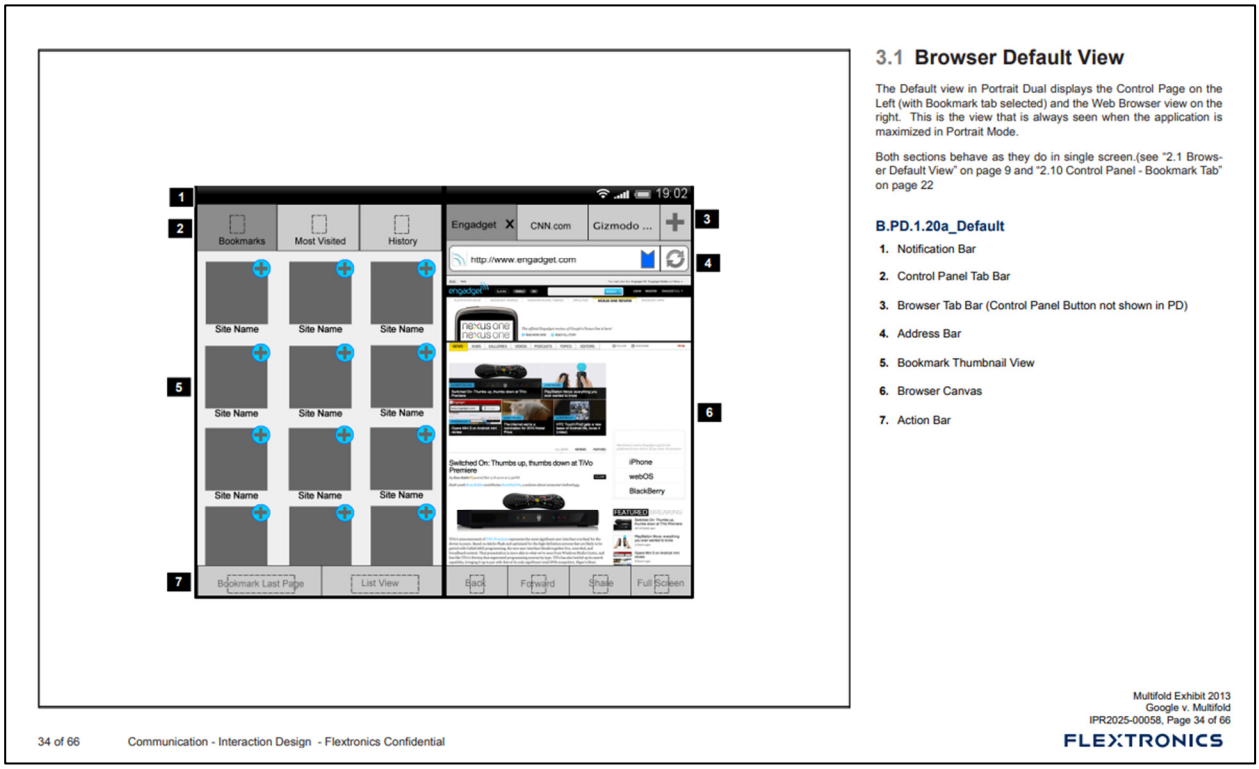


See also, e.g., EX2001 [Sirpal Decl.], ¶53; EX2002 [Cassar Decl.], ¶¶28, 29, 64, 65 (describing how the Imerj smartphones could maximize and minimize child pages repeatedly); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

4. [1.c] "wherein the first and second pages present different content and are distinct pages, and wherein the auxiliary page is a child of the primary page;"

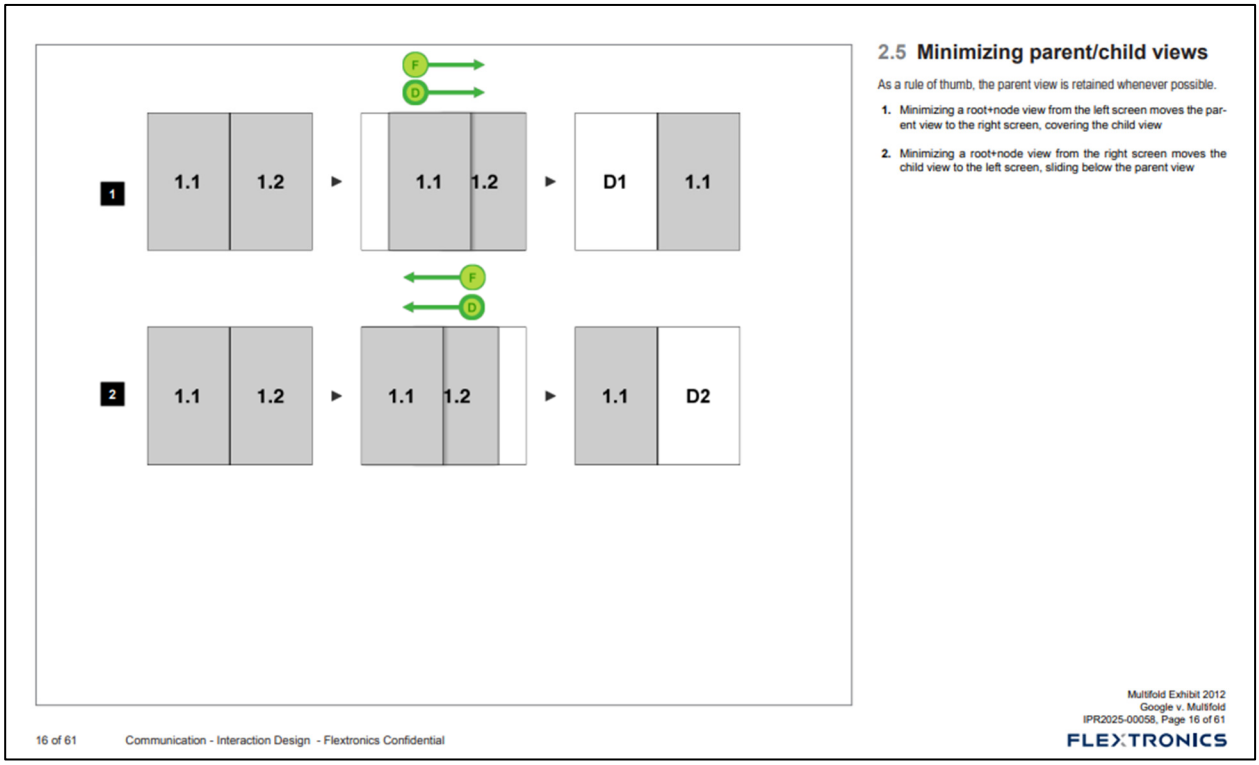
The EV-1 and EV-2 prototypes performed this limitation of wherein the first and second pages present different content and are distinct pages, and wherein the auxiliary page is a child of the primary page. *See, e.g.*, *supra* §VIII.A.2-3; *see also* EX2001 [Sirpal Decl.], ¶¶53-54.

For example, for the Browser application, the Bookmark / Control page ("first page") and the Browser Content page ("second page"), present different content and are distinct pages, and the Bookmark / Control page is a child of the Browser Content page. *See, e.g.*, EX2013, 9 (describing the Browser Content page as the "default view of the browser in Portrait Single mode"), 22 (describing the Bookmark / Control page as a separate potential page of the Browser application in Portrait Single mode), 31 (depicted below, and describing how when displayed together in Portrait Dual mode, "[b]oth [pages] behave as they do in single screen.").



Further, as described above, the EV-1 and EV-2 prototypes implemented the functionality set forth in the design specifications regarding gesture functionality. *See, e.g.*, *supra* §VIII.A.3 (citing to EX2001 [Sirpal Decl.], ¶¶24, 55; EX2002 [Cassar Decl.], ¶10; EX2003 [Becze Decl.], ¶6). And thus, the design specifications disclose how the prototypes operated to display and minimize applications with parent and child pages (e.g., browser, email, messaging).

Accordingly, the EV-1 and EV-2 prototypes were capable of presenting applications wherein the first (auxiliary) and second (primary) pages present different content and are distinct pages, and wherein the auxiliary page is a child of the primary page. For example, as shown below, the prototypes were capable of displaying page 1.1 of an application in one display, and page 1.2 of the same application in another display, where "1.1 is the parent of 1.2." *See* EX2012, 16 (shown below), 6 (explaining applications with "parent /child structure").



See also, e.g., EX2001 [Sirpal Decl.], ¶53; EX2002 [Cassar Decl.], ¶¶28, 29, 64, 65 (describing how the Imerj smartphones could maximize and minimize child pages repeatedly); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

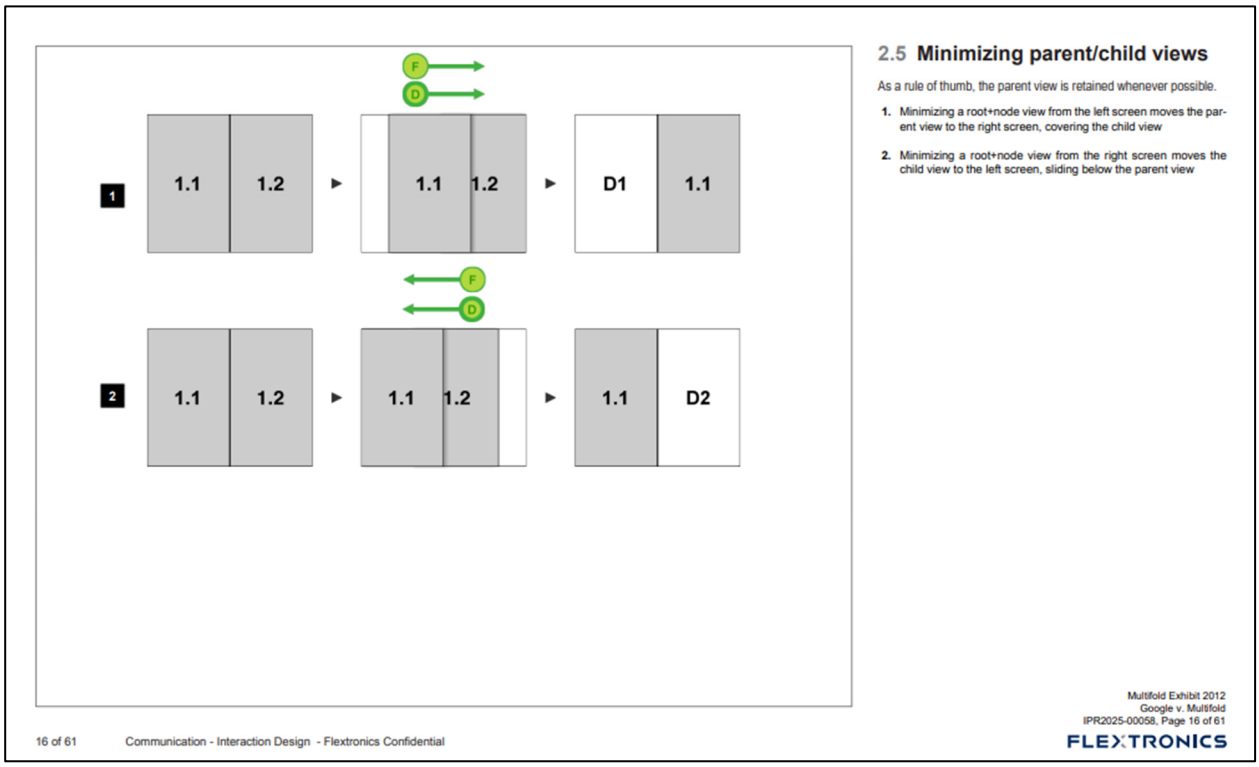
5. [1.d] "receiving a first input from a user, wherein the first input includes an input to minimize the first application to one of the first and second displays of the device, wherein the second page of the first application is displayed by one of the first display of the device and the second display of the device, and wherein the first page of the first application is not displayed."

The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, *supra* §VIII.A.2-3; *see also* EX2001 [Sirpal Decl.], ¶¶53-54.

For example, the EV-1 and EV-2 prototypes could receive a first input from a user to minimize the displayed dual screen application to one of the first and

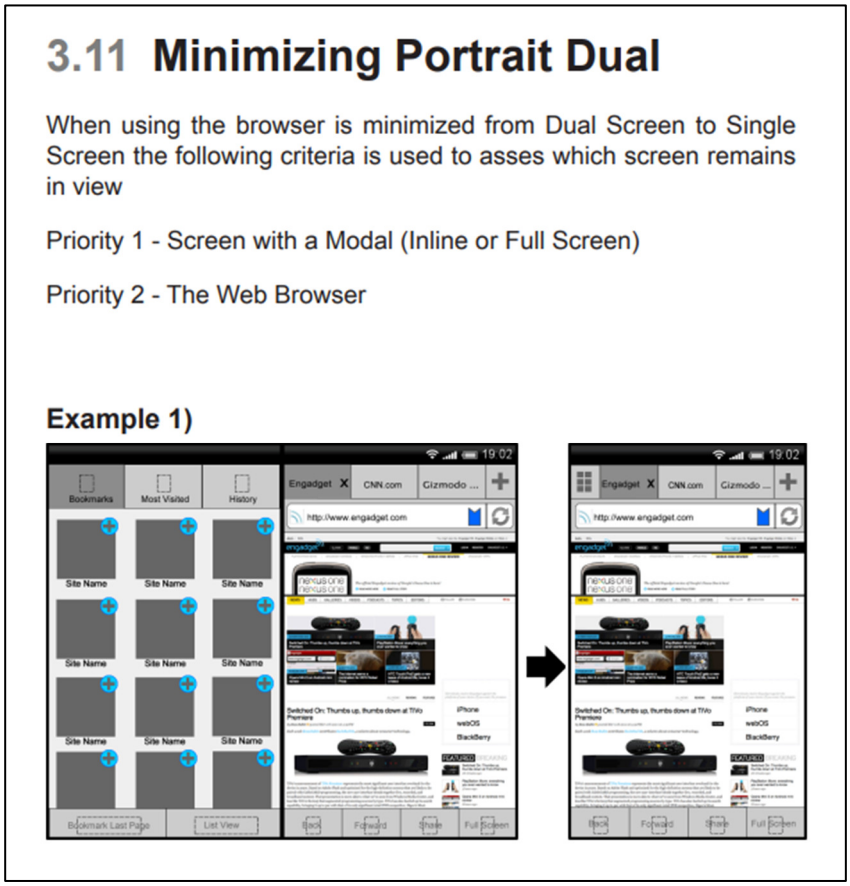
second displays of the device. *See, e.g.*, EX2012, 8 (describing the drag gesture as "[m]aximiz[ing] and minimiz[ing] dual-screen capable applications" and the flick gesture as "[m]inimiz[ing] dual-screen capable applications").

Further, upon receipt of the minimization input, the EV-1 and EV-2 prototypes would display the "second" (primary/parent) page of the application on one of the device's displays, and not display the "first" (auxiliary/child) page of the application. For example, upon receipt of a minimization input, parent page 1.1 of the application (the "second page") is displayed, and child page 1.2 (the "first page") is not displayed. *See, e.g.*, EX2012, 16.

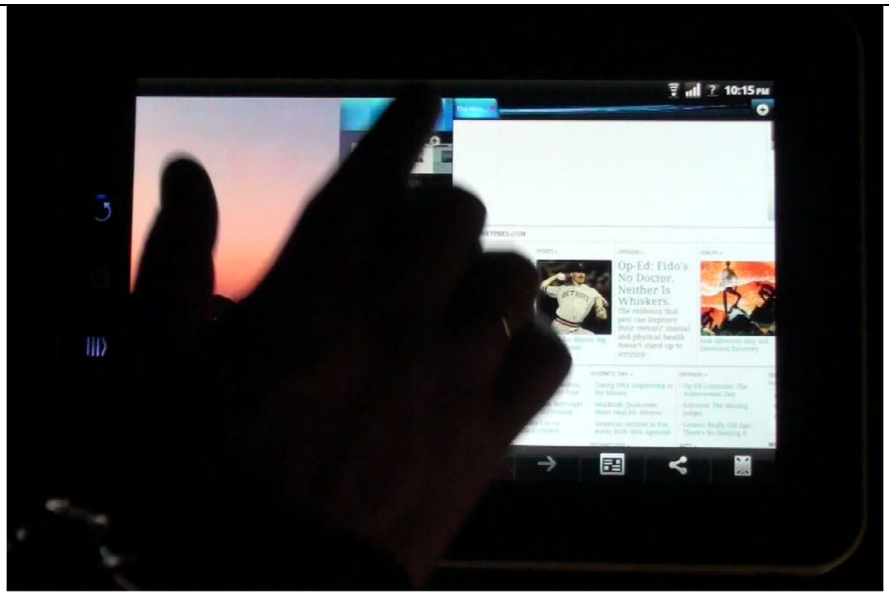
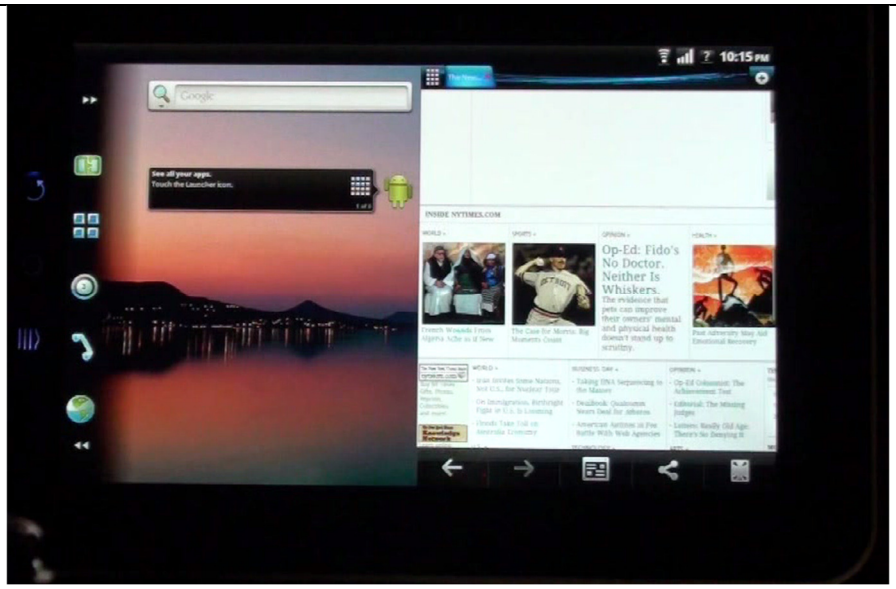


For example, for the Browser application, upon receipt of a minimization input, the EV-1 and EV-2 prototypes would display the Browser Content page (the

"second page"), and not the Bookmarks / Control page (the "first page"). *See, e.g.*, EX2013, 44 (example 1 depicted below):



See also, e.g., EX2023, 0:05 (showing user input to minimize the displayed Browser application to one of the two displays) *and* 0:07 (showing the result of the minimization input, with the Browser Content page ("second page") still displayed on the device, but the Bookmarks / Control page ("first page") no longer displayed).

EX2023, 0:05	
EX2023, 0:07	

See also, e.g., EX2001 [Sirpal Decl.], ¶53; EX2002 [Cassar Decl.], ¶¶28, 29, 64, 65 (describing how the Imerj smartphones could maximize and minimize child pages repeatedly); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

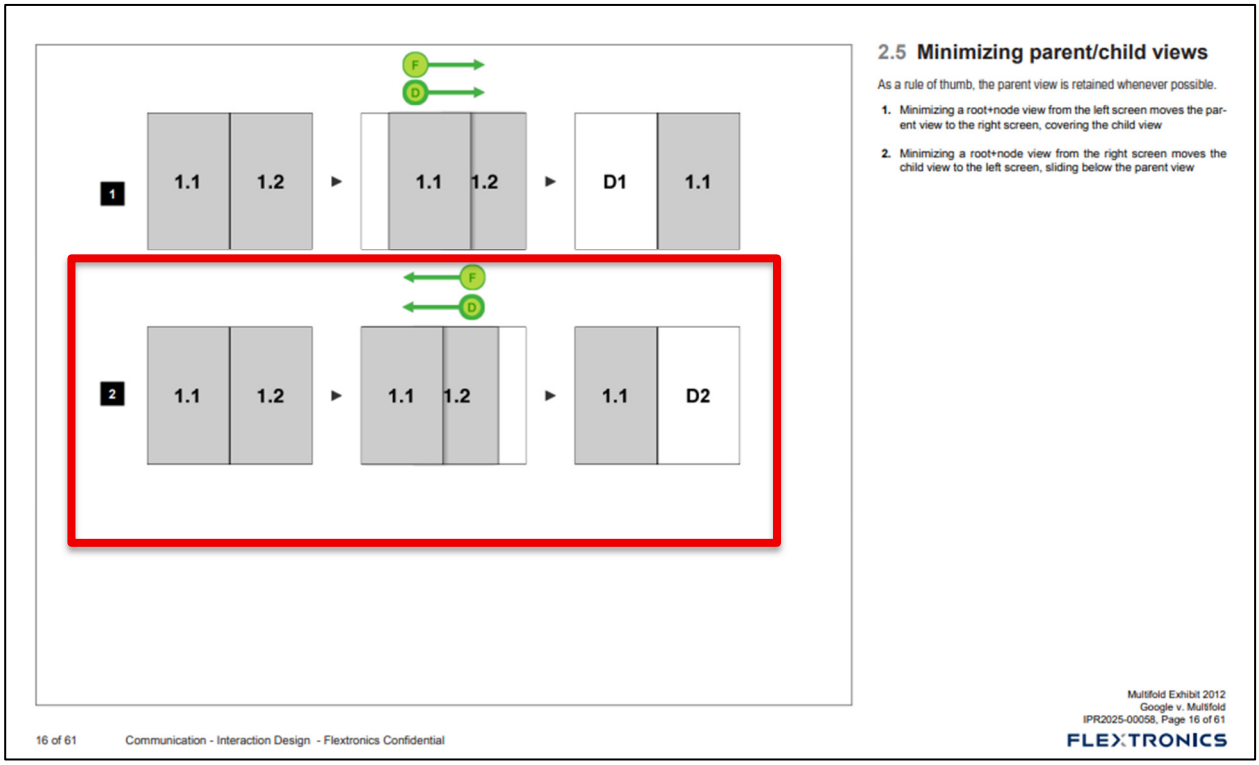
B. Claim 4

1. [4] "The method of claim 1, wherein after receiving the first input a first page of a second application is presented by the first display."

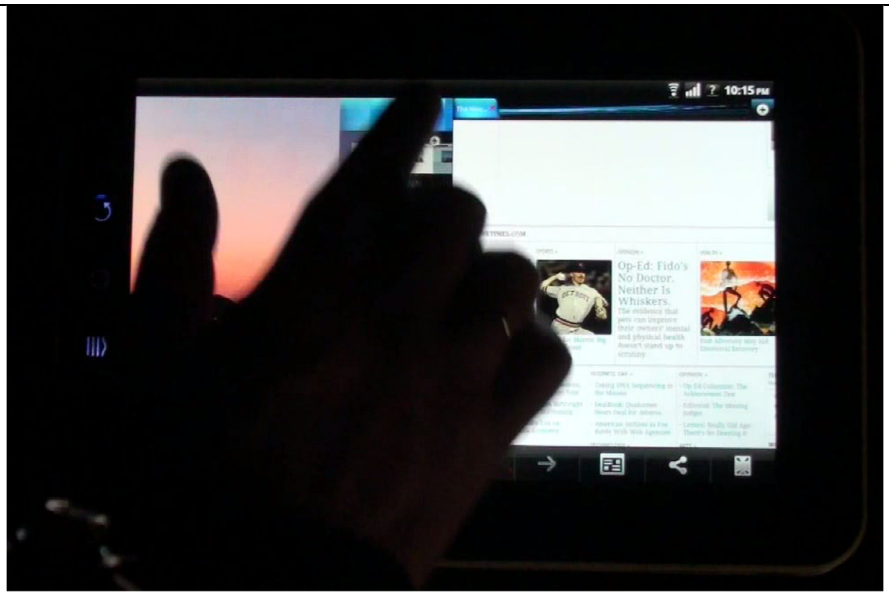
The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶56.

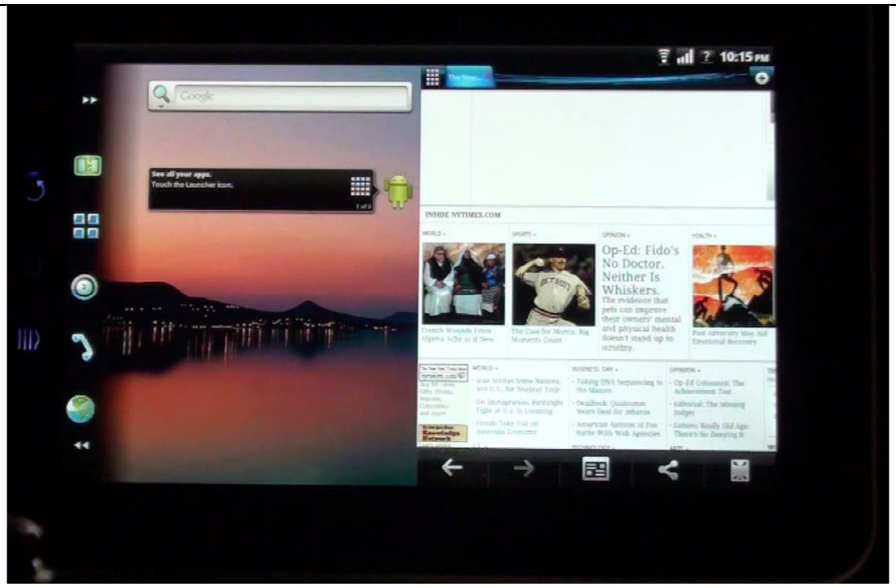
As described above, the EV-1 and EV-2 prototypes performed the method of claim 1. *See supra*, §VIII.A. As seen above, the prototypes allowed for the end result of the minimization input received by the device (the "first input" of limitation 1[d]) to be that the "second page" (the primary page) of the first application would be displayed on the second display of the device.

See, e.g., EX2012, 16 (example 2 below showing that page 1.1 ends up where it was initially displayed – on the second display).



See also, e.g., EX2023 (showing that, for the Browser application, the second page—the Browser Content page—remains on the second display after minimization).

EX2023, 0:05	

EX2023, 0:07	

After the minimization input resulted in the second page of the first application being displayed on the second display of the device, the EV-1 and EV-2 prototypes allowed for a first page of a second application to be presented by the first display (e.g., if there was another application open in the stack). *See* EX2001 [Sirpal Decl.], ¶56. As explained by Mr. Cassar, "[t]he EV-1 and EV-2 prototypes were devices ***where a second application could be displayed on the screen where the child application had just been minimized from***. For example, when an email (or browser) window is minimized, the EV-1 and EV-2 screens would then either display the desktop ***or a second application***, if a second application were previously open and placed on the display." EX2002 [Cassar Decl.], ¶¶29, 68. *See also, e.g.*, EX2003 [Becze Decl.], ¶¶12, 20, 25.

C. Claim 6

1. [6.a] "The method of claim 1, wherein the device is oriented such that the first and second displays are presented in a dual portrait format,"

The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶57.

As described above, the EV-1 and EV-2 prototypes performed the method of claim 1. *See supra*, §VIII.A. In particular, the prototypes could perform the method when the device is oriented such that the first and second displays are presented in a dual portrait format—e.g., when the device's displays are each oriented and displayed in a portrait orientation. *See id.* (showing examples of the device oriented in dual portrait format).

See also, e.g., EX2006, 79 (showing Browser in Portrait Dual Screen):

Portrait Dual Screen

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See, e.g., EX2013, 44 (depicting "Minimizing Portrait Dual"):

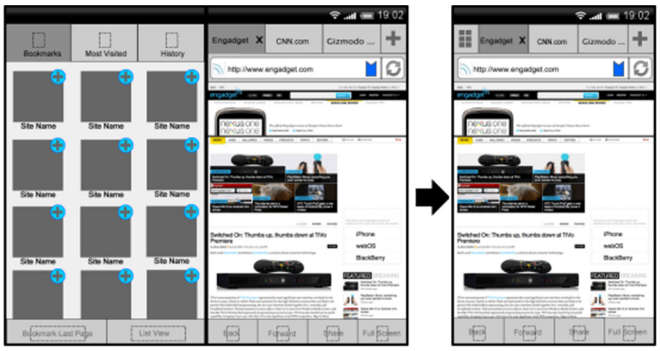
3.11 Minimizing Portrait Dual

When using the browser is minimized from Dual Screen to Single Screen the following criteria is used to asses which screen remains in view

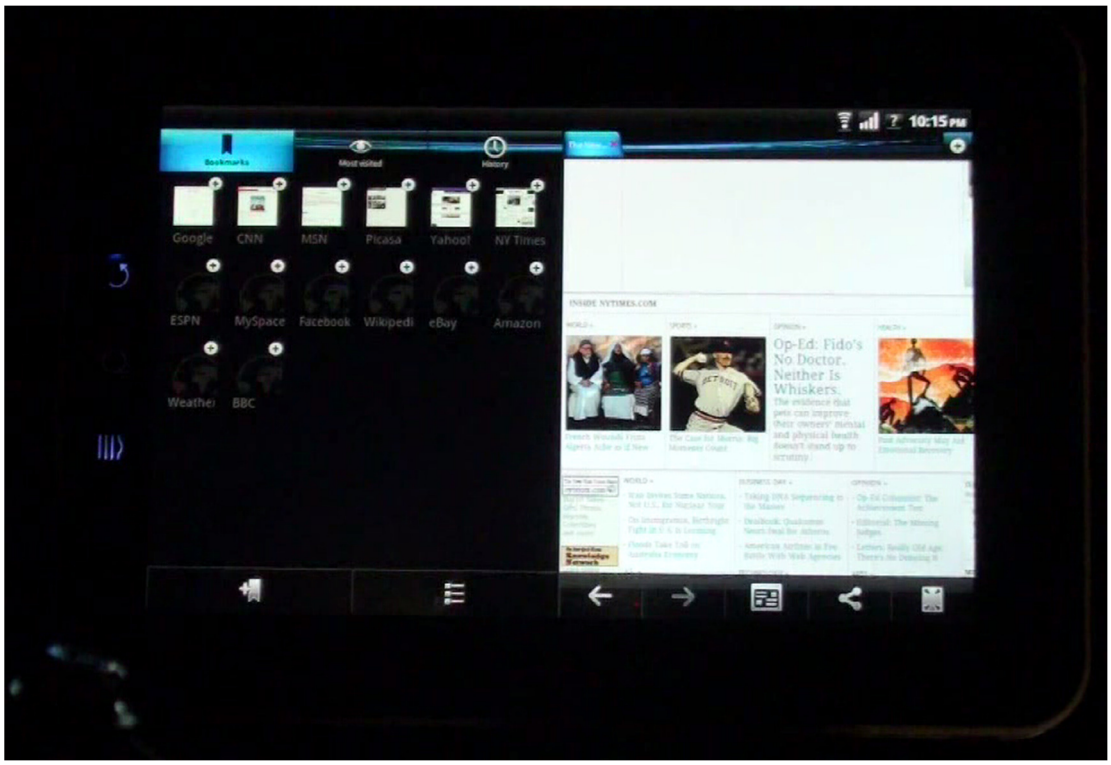
Priority 1 - Screen with a Modal (Inline or Full Screen)

Priority 2 - The Web Browser

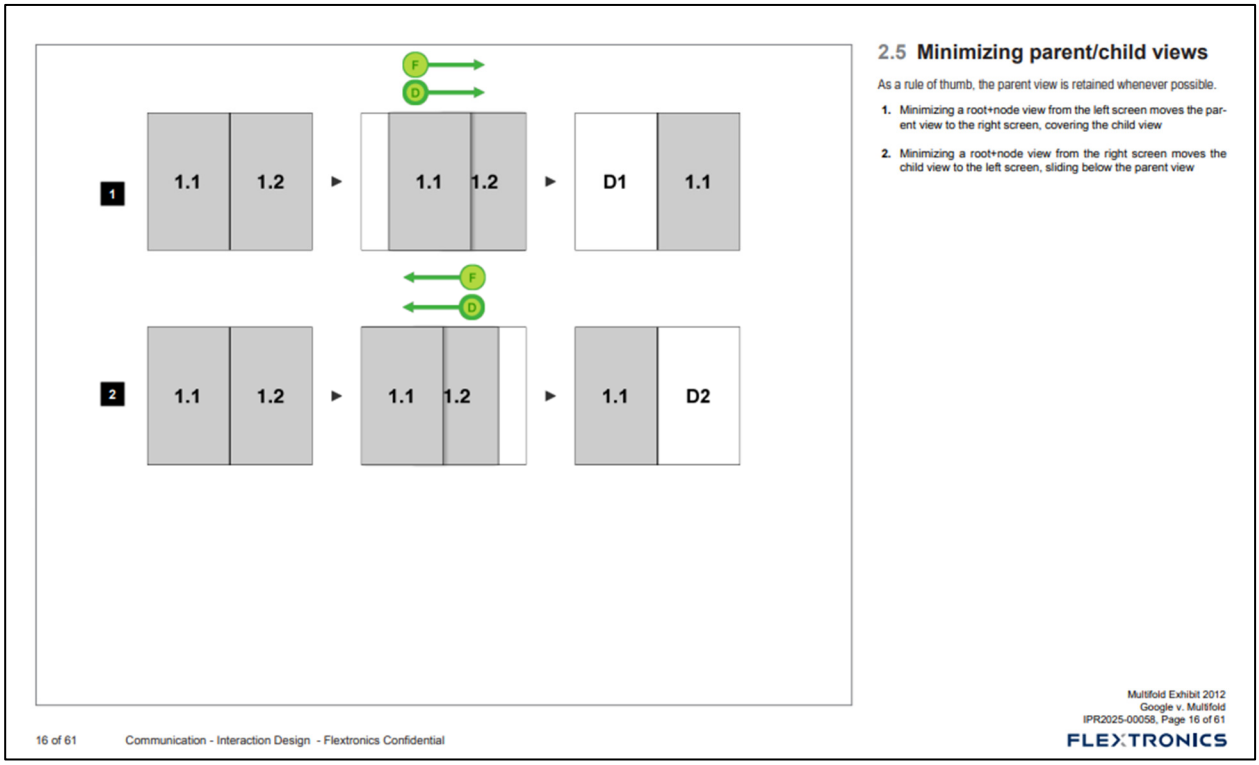
Example 1)



See also, e.g., EX2023 (video showing minimization of Browser application in dual portrait mode):



See, e.g., EX2012, 16 (showing minimization examples in portrait dual mode, which would apply to various dual display applications (e.g., email, messenger, browser, etc.)).

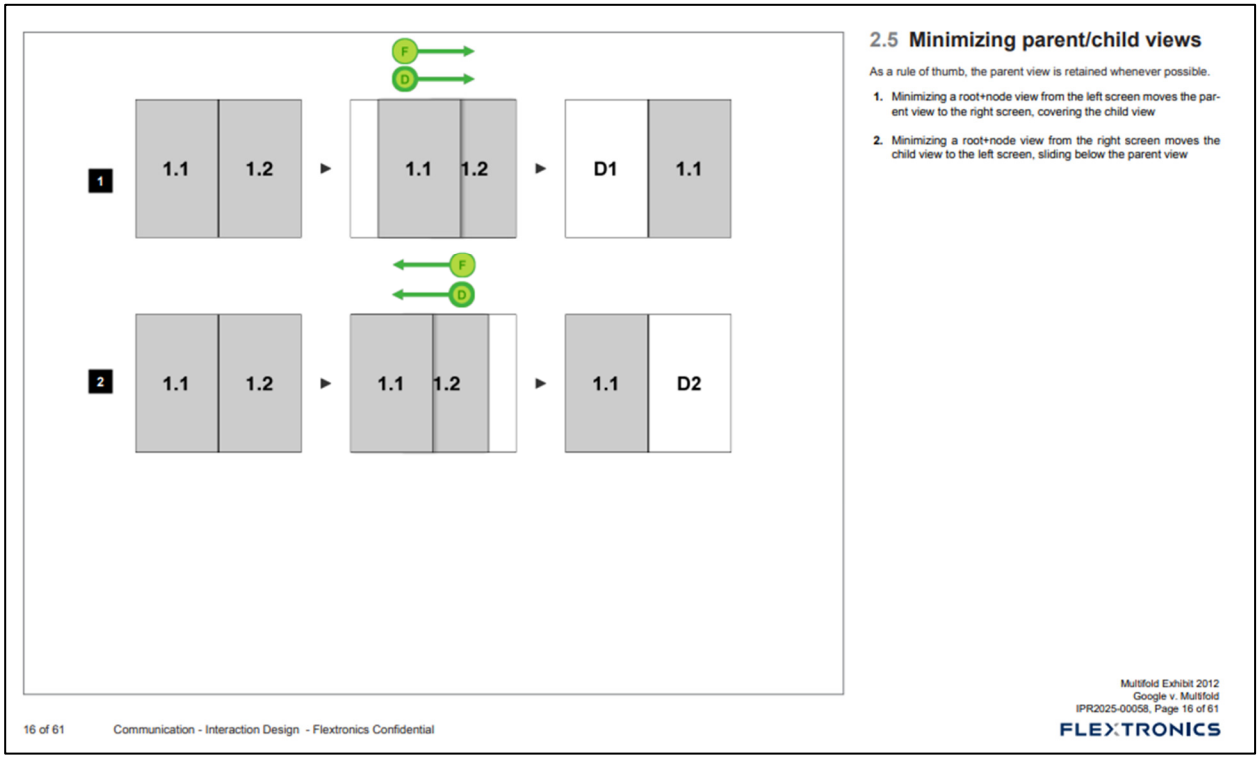


See also, e.g., EX2002 [Cassar Decl.], ¶¶29, 69 ("The EV-1 and EV-2 could be in dual portrait mode and receive a first input that is a gesture from the side of a left display moving toward the right display. This is essentially the long drag gesture described above to minimize a page."); EX2003 [Becze Decl.], ¶¶20 (dual portrait functional on EV-1), 25 (dual portrait functional on EV-2).

2. [6.b] "and wherein the first input includes a gesture that is input from a side of the device corresponding the first display towards a side of the device corresponding to the second display."

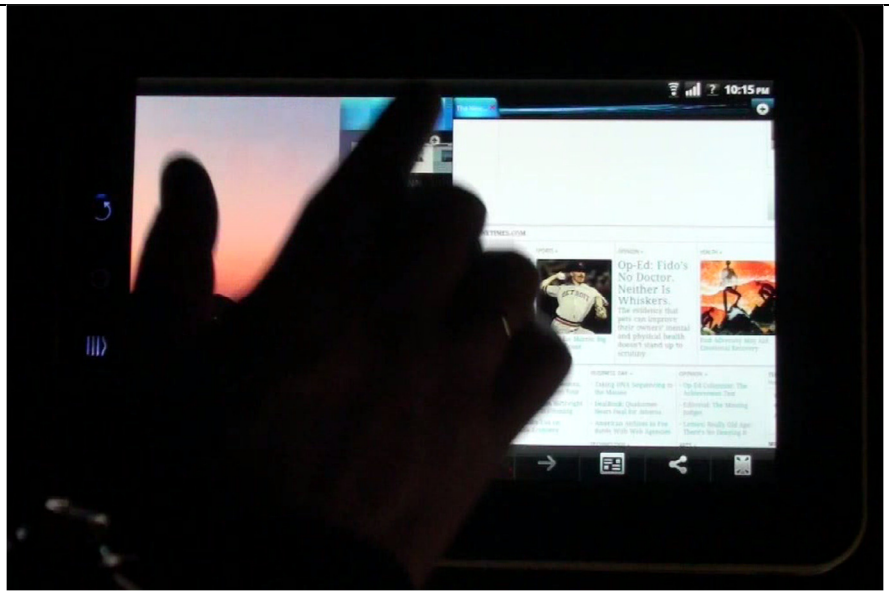
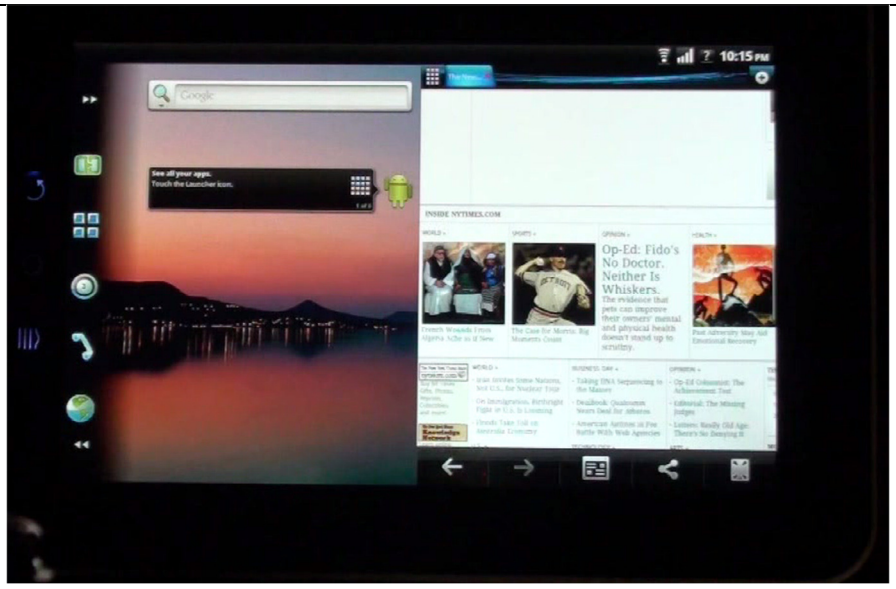
The EV-1 and EV-2 also prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶57.

For example, the minimization gesture for the EV-1 and EV-2 prototypes could be a "drag" or "flick." *See supra*, §VIII.A.5. As shown below, the minimizing gesture could be a drag or flick performed from the left screen of the device toward the right screen of the device, or a drag or flick performed from the right screen of the device toward the left screen of the device. *See, e.g.*, EX2012, 16 (Examples 1 and 2):



Thus, because the minimization gesture could be performed in either direction, in the EV-1 and EV-2 prototypes, the "first input includes a gesture that is input from a side of the device corresponding the first display towards a side of the device corresponding to the second display."

An example of this functionality is seen below regarding the Browser application, where a minimization gesture is input from the left display (the first display displaying the Bookmark / Controls page) towards the right display (the second display displaying the Browser Content page).

EX2023 (e.g., 0:05)	
EX2023 (e.g., 0:07)	

See also, e.g., EX2002 [Cassar Decl.], ¶¶29, 69 ("The EV-1 and EV-2 could be in dual portrait mode and receive a first input that is a gesture from the side of a left display moving toward the right display. This is essentially the long drag gesture described above to minimize a page."); EX2003 [Becze Decl.], ¶¶20 (dual portrait functional on EV-1), 25 (dual portrait functional on EV-2).

D. Claim 9

1. [9] "The method of claim 1, wherein the first application is a web browser, and wherein the primary page is a content page that includes web content."

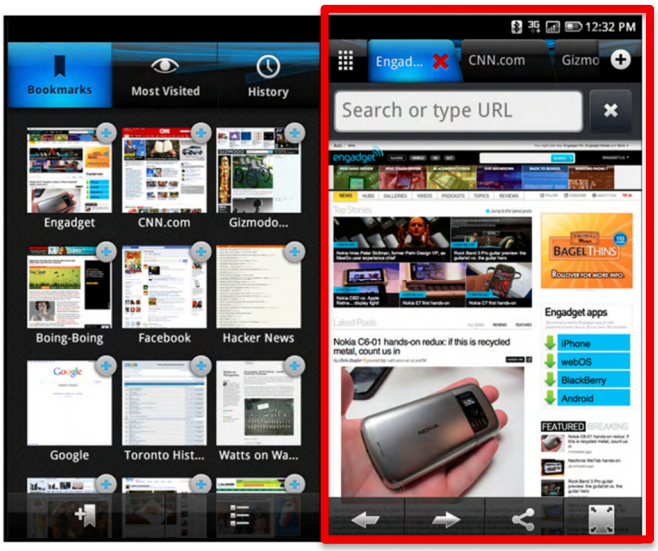
The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶¶53-54.

As described above, the EV-1 and EV-2 prototypes performed the method of claim 1. *See supra*, §VIII.A.

Further, as set forth above regarding claim 1, the prototypes had a web browser ("the first application") that was dual screen capable. *Id*. For the Browser application, the claimed "primary page," (i.e., the second page of claim 1) is the Browser Content page highlighted below, which is "a content page that includes web content." *See supra*, §VIII.A.3 (discussing limitation 1[b]).

See also, e.g., EX2006, 79 (annotations added showing the claimed primary page):

Portrait Dual Screen



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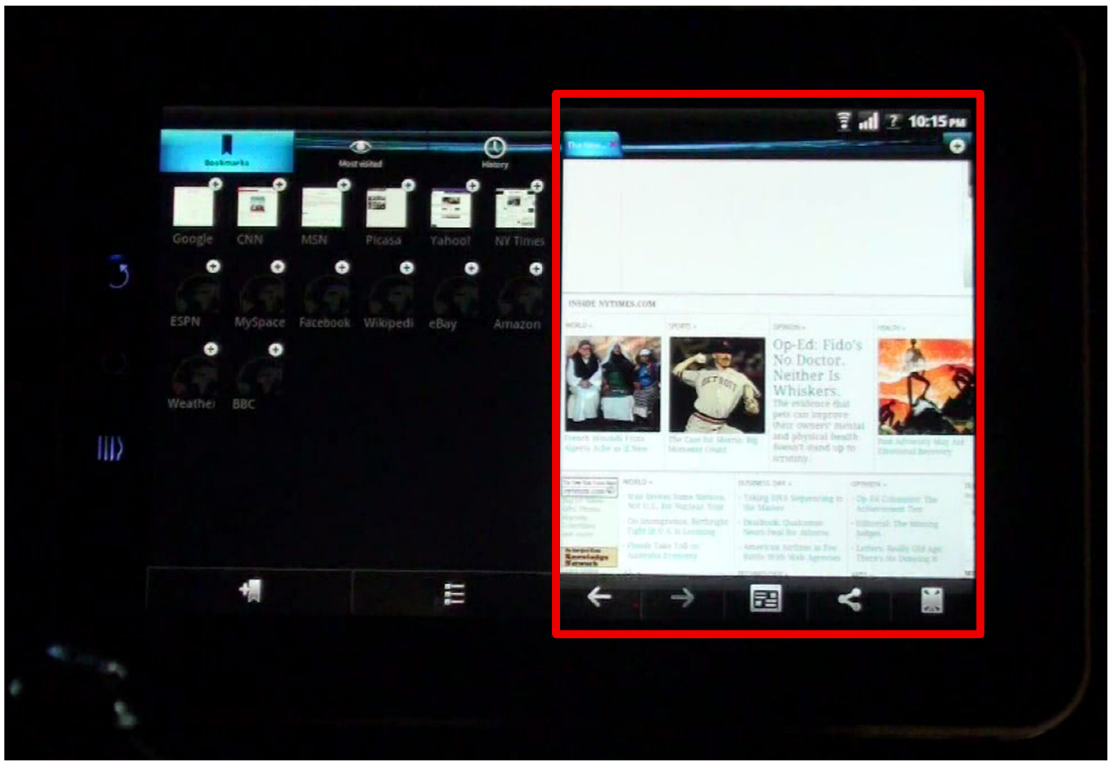
See also, e.g., EX2023, 0:01(annotations added showing the claimed primary page):



The Browser Content page is the primary page because the Browser Content page is the default view (EX2013, 9), and when the Browser application is minimized from Dual Screen to Single Screen, "priority" is given to the Browser Content view page when assessing which screen remains in view (*id*., 44).

See also, e.g., EX2002 [Cassar Decl.], ¶¶17, 28, 33, 35, 64, 65-66 (browser content is part of primary page), 66 (dual portrait mode minimization and maximization available for web browser), 75; EX2003 [Becze Decl.], ¶¶12.

E. Claim 10

1. [10] "The method of claim 1, further comprising: after receiving the first input, receiving a second input from the user, wherein the second input includes an input to maximize the first application to both of the first and second displays of the device, wherein the first page of the first application is presented on the first display of the device and the second page is displayed on the second display of the device."

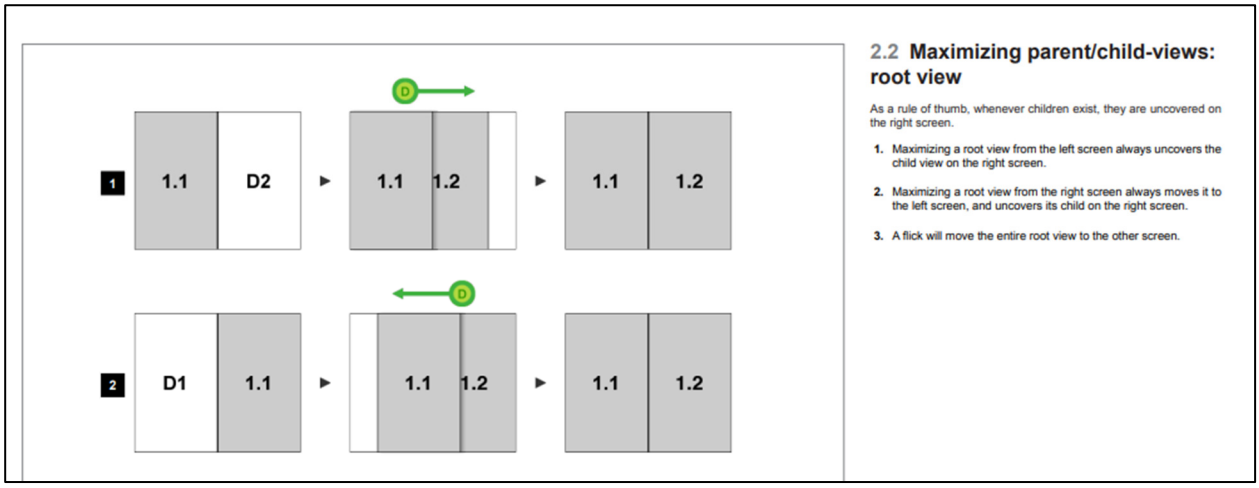
The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶58.

As described above, the EV-1 and EV-2 prototypes performed the method of claim 1. *See supra*, §VIII.A. Moreover, the prototypes could (after performing a minimization), receive a second input to maximize the first application to both displays of the device, resulting in the "first" (auxiliary / child) page of the application being displayed on the first display of the device (where it was

displayed in limitation 1[a]) and the "second" (primary / parent) page of the application being displayed on the second display of the device (where it was displayed in limitation 1[b]).

For example, the EV-1 and EV-2 prototypes could receive a second input from a user to maximize the application to be displayed on both of the first and second displays of the device. *See, e.g.*, EX2012, 8 (describing the drag gesture as "[m]aximiz[ing] … dual-screen capable applications").

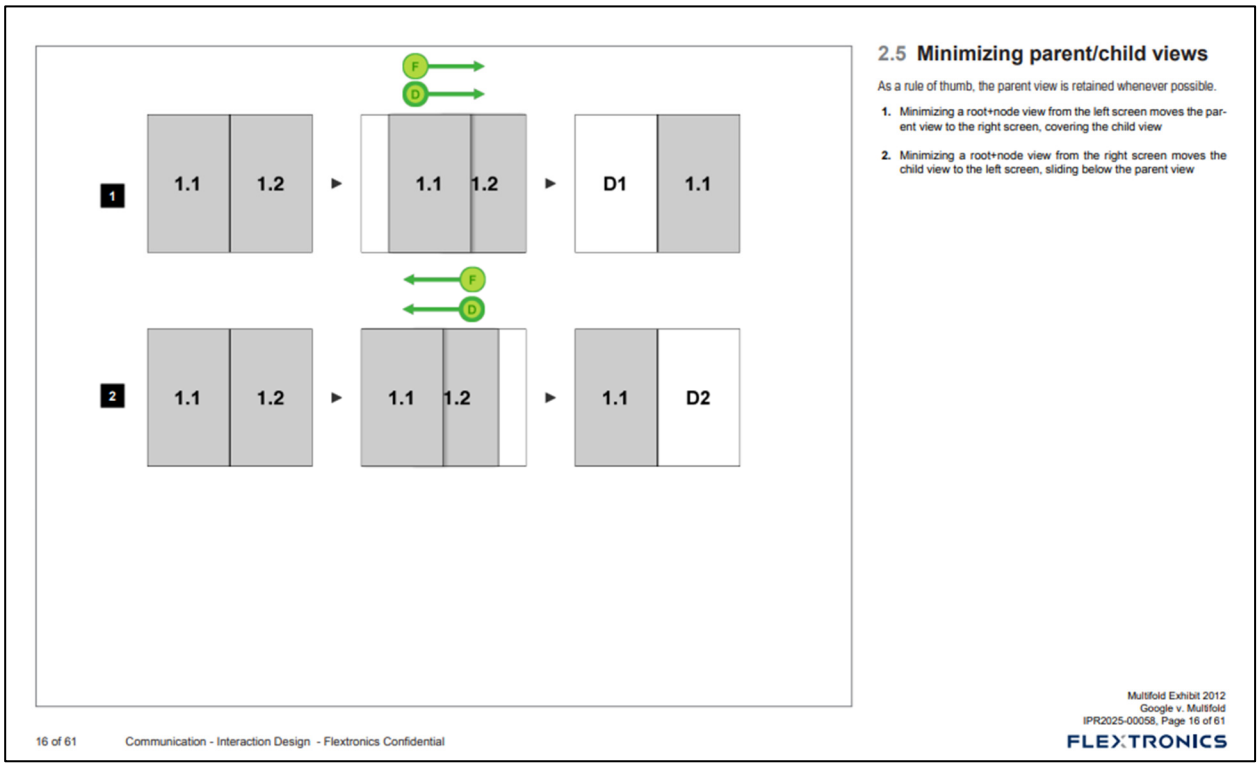
Examples of a maximization command resulting in the display of the application on both of the first and second displays of the device are shown below. Here, in both examples 1 and 2, page 1.1 is the parent page, and page 1.2 is the child page. *See* EX2012, 13 (showing maximization examples).



The EV-1 and EV-2 prototypes allowed such maximization commands to be received for dual display applications (e.g., browser, email, messenger) ***after having received*** a minimization command that resulted in one of the pages of the

application no longer being displayed. *See also, e.g.*, EX2002 [Cassar Decl.], ¶¶29, 70 ("The EV-1 and EV-2 prototypes could receive a second input that maximizes an application across both display screens. … Maximizing and minimizing the dual portrait mode could be repeated indefinitely on EV-1 and EV-2 prototypes.").

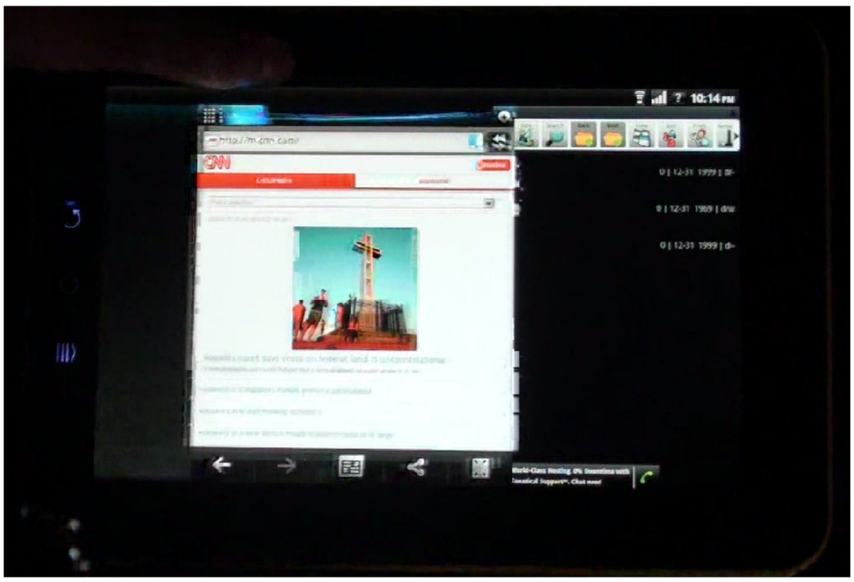
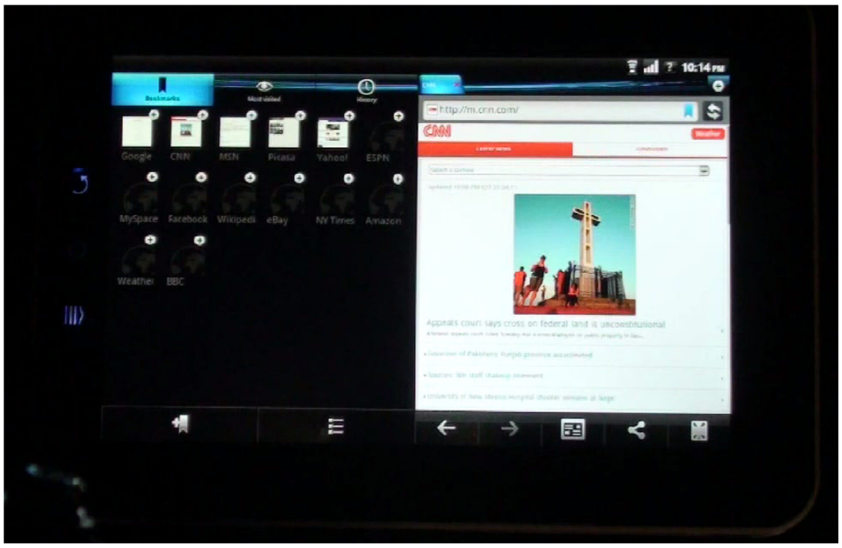
For example, as explained by Mr. Sirpal (EX2001 ¶58) and as shown above for limitation 1[d], the prototypes allowed for receipt of a minimization input that would result in parent page 1.1 of an application (the claimed "second page") being displayed, and child page 1.2 (the "first page") no longer being displayed. *See, e.g.*, EX2012, 16 (showing minimization examples).



Here, the end point of minimization example 1 is the beginning point of maximization example 2 (depicted above), and the end point of minimization

example 2 is the beginning point of maximization example 1 (depicted above). Accordingly, by allowing for maximization example 2 to be performed after minimization example 1 (and/or allowing for maximization example 1 to be performed after minimization example 2), the prototypes practiced this limitation because the end result would be the first page of the first application (page 1.2) being presented on the first display of the device (where it initially started) and the second page of the first application (page 1.1) being displayed on the second display of the device (where it initially started).

As another example, for the Browser Application, the prototypes allowed for a maximization command that would result in the "first page" (the Bookmarks / Control page) being displayed on the left display of the device, and the "second page" (the Browser Content page) being displayed on the right display. *See* EX2022 (depicted below).

EX2022, 0:05 (showing user input)	
EX2022, 0:08 (showing end result of maximization)	

Accordingly, for the Browser application of the EV-1 and EV-2, a maximization input as shown in EX2022 that took place after a minimization input as shown in EX2023, would result in the "first page" (the Bookmarks / Control page) being displayed on the left display of the device (e.g., the first display as

shown in limitation 1[a]) and the "second page" (the Browser Content page) being displayed on the right display of the device (e.g., the second display as shown in limitation 1[b]).

See also, e.g., EX2003 [Becze Decl.] ¶12, 20, 25, 29, 31.

F. Claim 12

1. [12.a] "The method of claim 10, further comprising: after receiving the first and second inputs, receiving a third input from the user dismissing the first page of the application, wherein one of a first page of a second application or a desktop is presented by the first display of the device;"

The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶60.

As described above, the EV-1 and EV-2 prototypes performed the method of claim 10. *See supra*, §VIII.E. After having received the maximization command of claim 10 ("the second input'), the EV-1 and EV-2 prototypes allowed for receipt of a third input (e.g., a minimization command) from the user dismissing the first page (auxiliary / child page) of the application, and resulting in a first page of a second application or a desktop being displayed on the first display of the device (e.g., where auxiliary / child page was originally displayed). *See e.g.*, EX2002 [Cassar Decl.], ¶¶29, 70, 71 ("Maximizing and minimizing the [child page] of the dual portrait mode could be ***repeated indefinitely*** on EV-1 and EV-2 prototypes.").

For example, returning to the minimization and maximization examples of EX2012 (discussed in claim 10 above), the EV-1 and EV-2 prototypes allowed for the following sequence:

- Receiving first minimizing input (from limitation 1[d]) as the input from minimization example 2 (from page 16 of EX2012);
- Receiving the second maximizing input (from limitation 10) as the input from maximization example 1 (from page 13 of EX2012);
- Receiving the "third input" (from limitation 12[a]) as the input from minimization example 2 (from page 16 of EX2012).

As shown in EX2012, the result of the third input would be that the "first page of the application" (e.g., child page 1.2) would be dismissed, and a desktop (e.g., D2) would be displayed on the first display of the device (e.g., which originally was displaying child page 1.2).

See also, e.g., EX2003 [Becze Decl.] ¶12, 20, 25, 29, 31.

2. [12.b] "after receiving the third input, receiving a fourth input from the user to maximize the first application to the first and second displays of the device, wherein the second display of the device presents the second page of the first application, and wherein the first display of the device presents the first page of the first application."

The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶60.

After having received the "third input" of limitation 12[a], the EV-1 and EV-2 prototypes allowed for receipt of a fourth input (e.g., a maximization command) from the user maximizing the application to both displays of the device, and resulting in the second page (primary page) of the first application being displayed on the second display of the device (e.g., where the second page was originally displayed), and the first page (auxiliary / child page) of the first application being displayed on the first display of the device (e.g., where the first page was originally displayed). *See e.g.*, EX2002 [Cassar Decl.], ¶¶29, 70, 71 ("Maximizing and minimizing the [child page] of the dual portrait mode could be ***repeated indefinitely*** on EV-1 and EV-2 prototypes.").

For example, returning to the minimization and maximization examples of EX2012 (discussed in claim 12[a] above), the EV-1 and EV-2 prototypes allowed for the sequence of 12[a] to continue as follows (after the third input):

- Receiving the "fourth" input (from limitation 12[b]) as the input from maximization example 1 (from page 13 of EX2012).

As shown in EX2012, the result of the fourth input would be that the "second page of the first application" (e.g., parent page 1.1) would be displayed on the second display of the device (e.g., which originally was displaying parent page 1.1), and the "first page of the first application" (e.g., child page 1.2) would be

displayed on the first display of the device (e.g., which originally was displaying child page 1.2).

See also, e.g., EX2003 [Becze Decl.] ¶12, 20, 25, 29, 31.

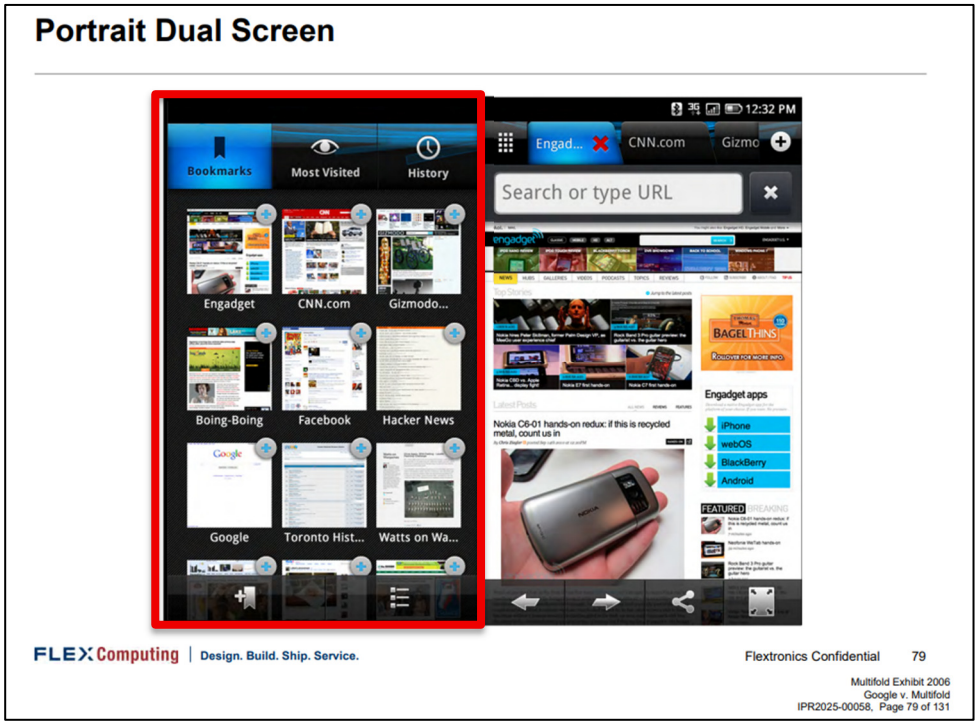
G. Claim 13

1. [13] "The method of claim 1, wherein the first display of the device is the left hand display while the device is in a dual-portrait mode, and wherein the second display of the device is the right hand display while the device is in the dual-portrait mode."

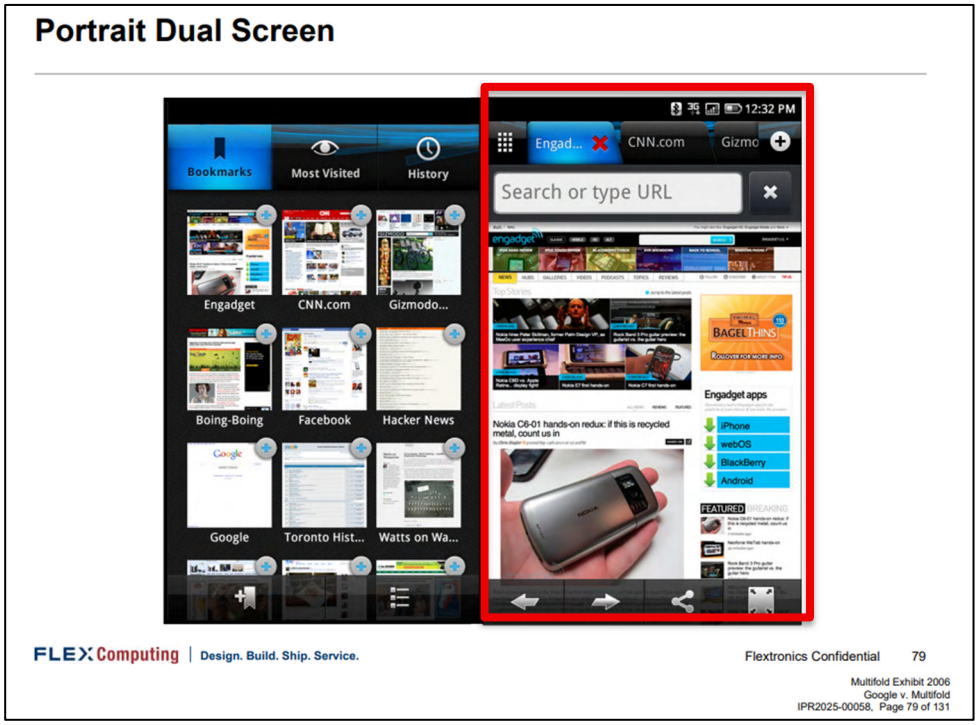
The EV-1 and EV-2 prototypes performed this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶61.

As described above, the EV-1 and EV-2 prototypes performed the method of claim 1. *See supra*, §VIII.A. Moreover, the prototypes could operate in dual screen portrait mode with the "first display" being left display of the device, and the "second display" being the right display of the device. *See, e.g.*, EX2001 [Sirpal Decl.], ¶61.

For example, for the Browser application, as seen above in limitation 1[a], the "first display" displaying the "first page" of the application was the left display. *See supra*, §VIII.A.2. *See also, e.g.*, EX2006, 79 (annotations added showing the claimed first page on the first display):



And, as seen above in limitation 1[b], the "second display" displaying the "second page" of the application was the right hand display. *See supra*, §VIII.A.3. *See, e.g.*, EX2006, 79 (annotations added showing the claimed second page on the second page):



See also, e.g., EX2002 [Cassar Decl.], ¶¶29, 69, 75; EX2003 [Becze Decl.] ¶8, 12, 20, 25, 29, 31.

H. Claim 18

1. [18.pre] "A non-transitory computer readable medium having stored thereon computer-executable instructions, the computer-executable instructions causing a processor to execute a method for selectively presenting an application across a display of a device, the computer-executable instructions comprising:"

To the extent the preamble is limiting, the EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶67.

For example, the EV-1 and EV-2 prototypes both had processors and memories with computer-executable instructions stored thereon. Among other things, those instructions governed the touch and gesture inputs of the devices, and

implemented the Windows Position Control functionality. Accordingly, the instructions caused the processor to impact the display of applications (including dual display applications) on the displays of the device. *See, e.g.*, EX2002 [Cassar Decl.], ¶74 ("The EV-1 and EV-2 prototypes both had processors and memories); *see also id*., ¶¶27-29; EX2003 [Becze Decl.], ¶17.

See also, e.g., EX2002 [Cassar Decl.], ¶¶28, 76-77 (discussing modal view and photo gallery application minimize the parent page); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

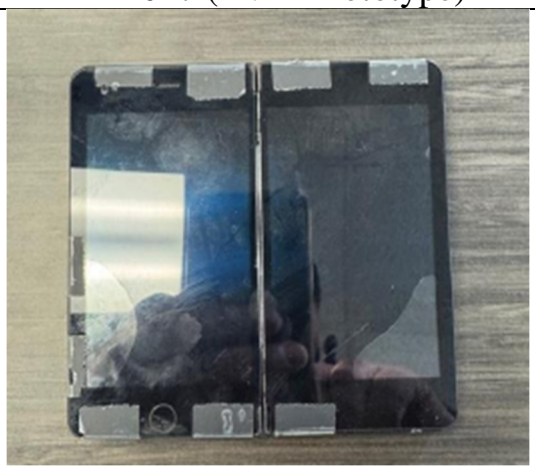
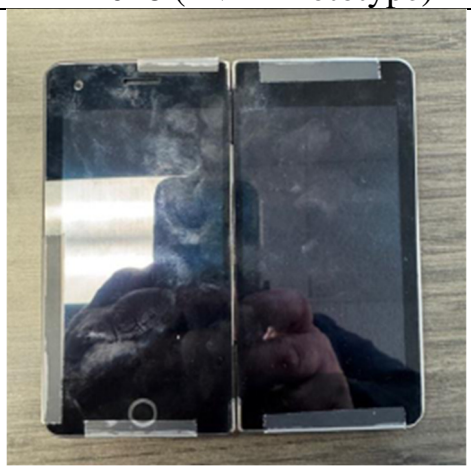
See also supra, §VIII.A.1.

2. [18.a] "instructions to display a first page of a first application on a first display portion of the device;"

The EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶67.

The prototypes had instructions (*see, e.g.*, limitation 18[pre]) to display a first page of a first application on a first display portion of the device.

For example, each of the EV-1 and EV-2 prototypes had two displays, and each display is a "display portion of the device."

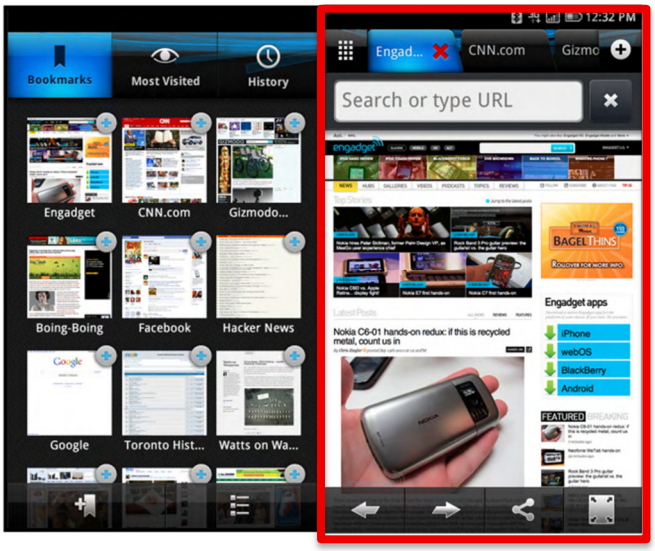
EX2017 (EV-1 Prototype)	EX2018 (EV-2 Prototype)
	

Further, the EV-1 and EV-2 prototypes both permitted displaying two pages from a single application on the two different displays of the prototypes. *See, e.g.*, *supra*, §VIII.A.2-3 (discussing limitations 1[a] and 1[b]).

As an example, for the Browser application, the claimed "first page," is the Browser Content page highlighted below, and the first display portion is the display on the right side of the device. (As explained below regarding limitation 18[b], for the Browser application the Bookmark / Control page is the second page).

See, e.g., EX2006, 79 (annotations added showing the claimed first page):

Portrait Dual Screen



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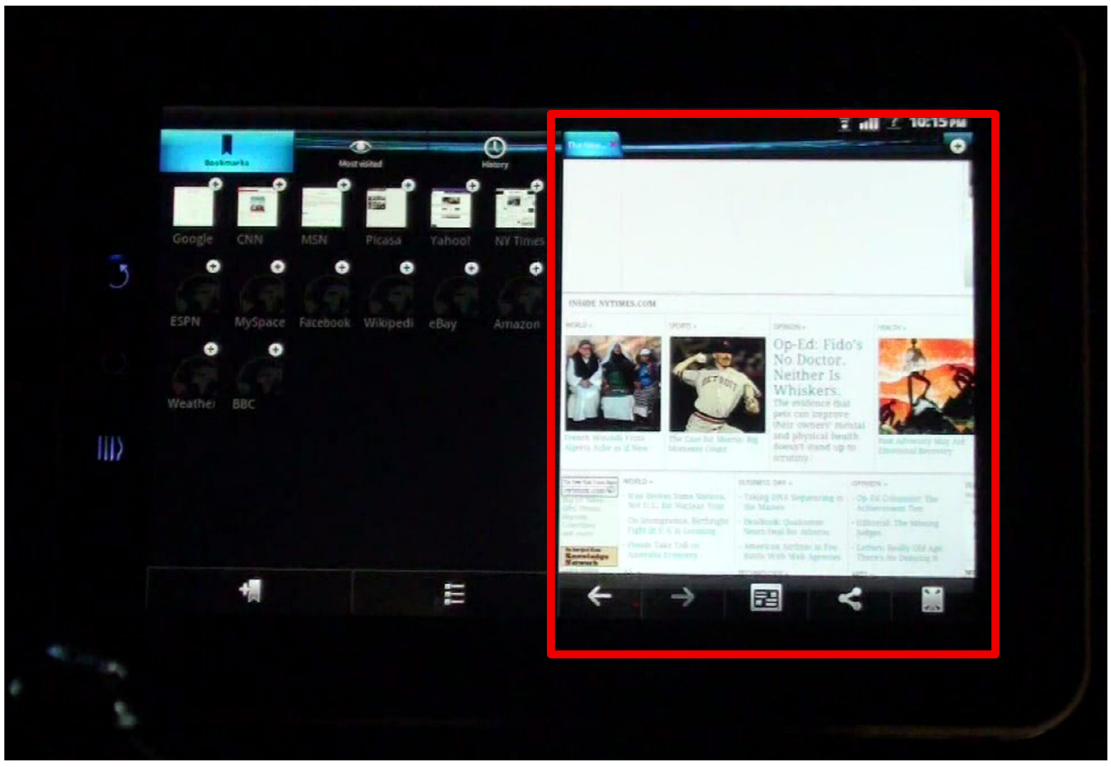
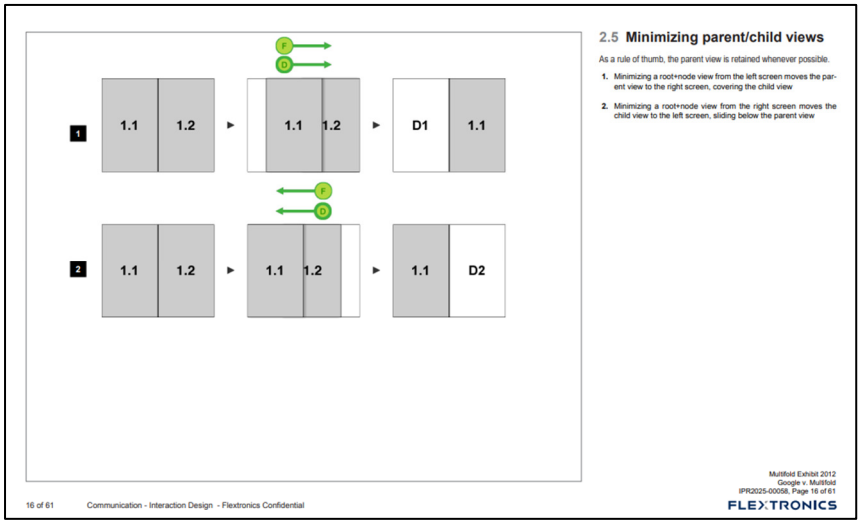
See also, e.g., EX2023, 0:01(annotations added showing the claimed first page):



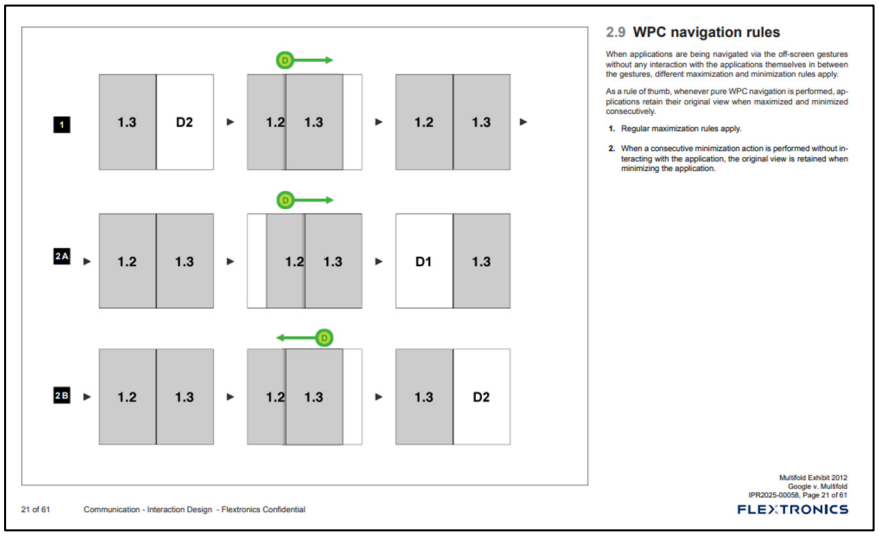
Also, in addition to the Browser application, as described above for limitations 1[a] and 1[b], the EV-1 and EV-2 prototypes implemented the gesture functionality set forth in the design specifications (e.g., the functionality set forth in EX2012). *See, e.g.*, *supra*, §VIII.A.2-3 (discussing limitations 1[a] and 1[b]). And thus, the design specifications disclose how the prototypes operated when displaying and minimizing applications.

Accordingly, the EV-1 and EV-2 prototypes were capable of presenting a first page of a first application on a first display of the device.

- In a first example, as shown below, the prototypes were capable of displaying page 1.1 of an application in one display, and page 1.2 of the same application in another display, where "1.1 is the parent of 1.2." *See* EX2012, 16 (shown below), 6. As such, "page 1.1" is an example of the claimed "first page" of limitation 18[a], and the left display is the "first display portion."



- In a second example, as shown below, the prototypes were capable of displaying page 1.2 of an application in one display, and page 1.3 of the same application in another display of the device, where "1.2 [is] the parent of 1.3." *See* EX2012, 21 (shown below), 6. As such, in this example, "page 1.2" is an example of the claimed "first page" of limitation 18[a], and the left display is the "first display portion."



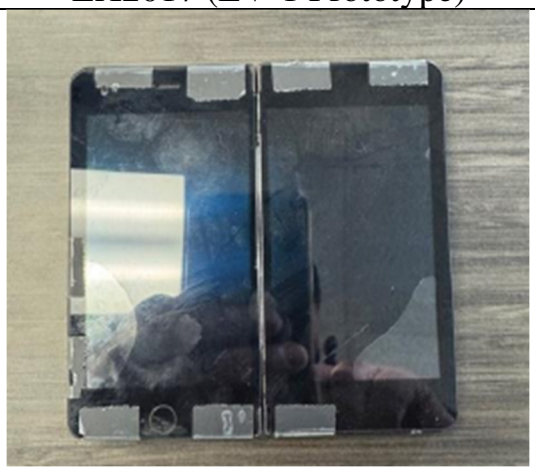
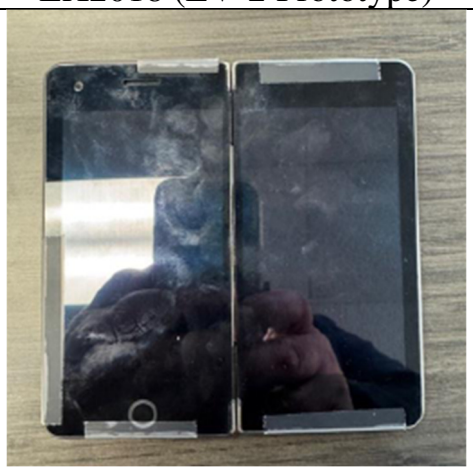
See also, e.g., EX2002 [Cassar Decl.], ¶¶28, 76-77 (discussing modal view and photo gallery application minimize the parent page); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

3. [18.b] "instructions to display a second page of the first application on a second display portion of the device, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page; and"

The EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶67.

The prototypes had instructions (*see, e.g.*, limitation 18[pre]) to display a second page of the first application on a second display portion of the device.

For example, each of the EV-1 and EV-2 prototypes had two displays, and each display is a "display portion of the device."

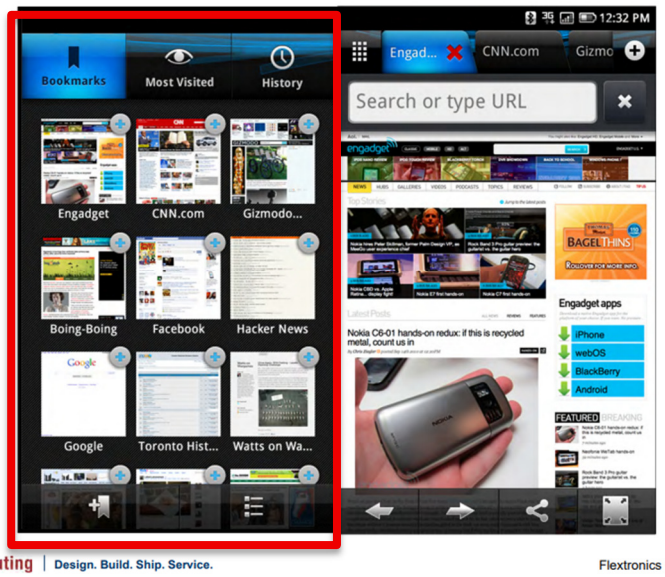
EX2017 (EV-1 Prototype)	EX2018 (EV-2 Prototype)
	

Further, the EV-1 and EV-2 prototypes both permitted displaying two pages from a single application on the two different displays of the prototypes. *See, e.g.*, *supra*, §VIII.A.2-3 (discussing limitations 1[a] and 1[b]).

As an example, for the Browser application, the claimed "second page," is the Bookmark/Control page highlighted below, and the second display portion is the display on the left side of the device.

See, e.g., EX2006, 79 (annotations added showing the claimed second page):

Portrait Dual Screen



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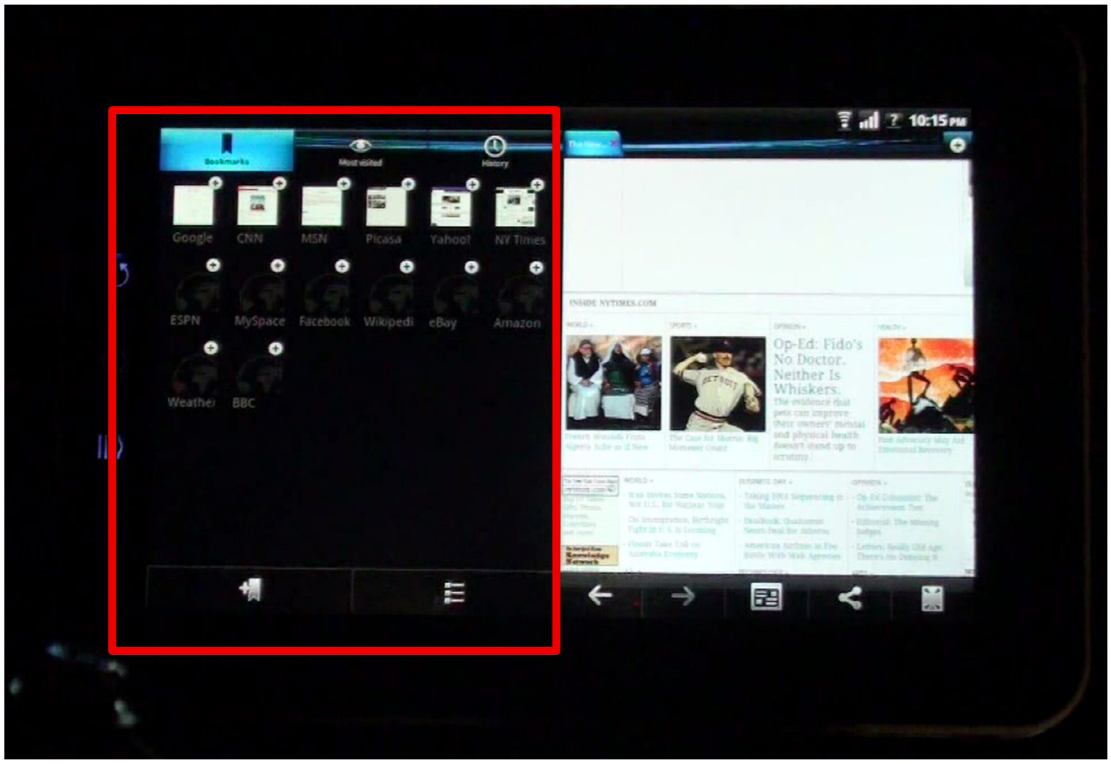
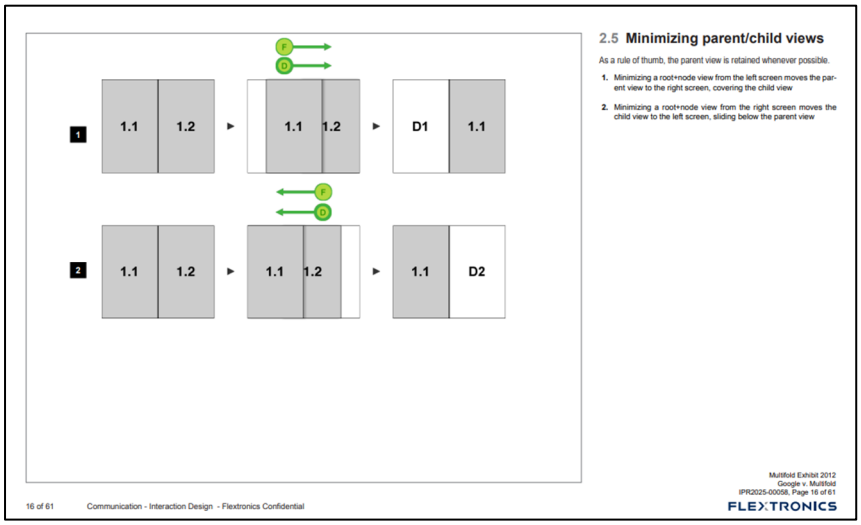
See also, e.g., EX2023, 0:01(annotations added showing the claimed second page):



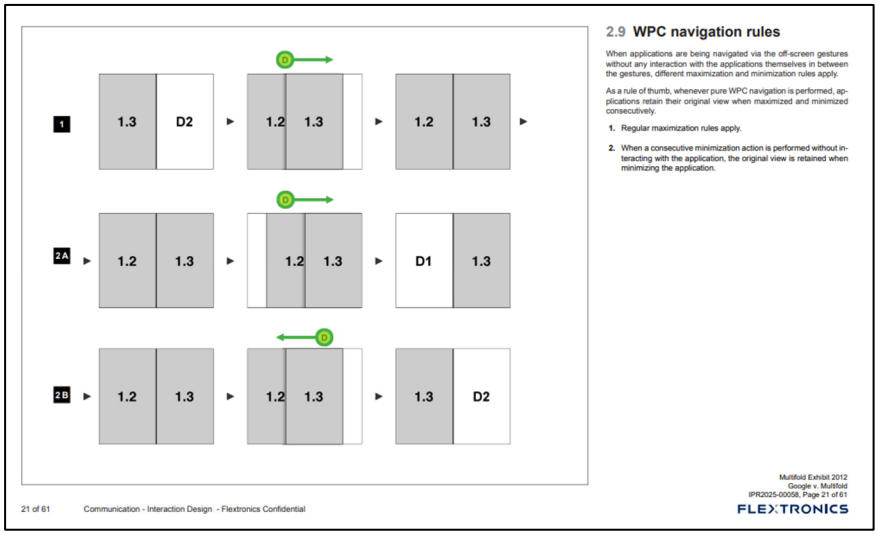
Also, in addition to the Browser application, as described above for limitations 1[a] and 1[b], the EV-1 and EV-2 prototypes implemented the gesture functionality in the design specification documents (e.g., the functionality set forth in EX2012). *See, e.g.*, *supra*, §VIII.A.2-3 (discussing limitations 1[a] and 1[b]). And thus, the design specifications disclose how the prototypes operated to display and minimize applications.

Accordingly, the prototypes were capable of presenting a second page of the first application on a second display portion of the device.

- In a first example, as shown below, the prototypes were capable of displaying page 1.1 of an application in one display, and page 1.2 of the same application in another display of the device, where "1.1 is the parent of 1.2." *See* EX2012, 16 (shown below), 6. As such, "page 1.2" is an example of the claimed "second page" of limitation 18[b], and the right display is the "second display portion."



- In a second example, as shown below, the prototypes were capable of displaying page 1.2 of an application in one display, and page 1.3 of the same application in another display of the device, where "1.2 [is] the parent of 1.3." *See* EX2012, 21 (shown below), 6. As such, in this example, "page 1.3" is an example of the claimed "second page" of limitation 18[b], and the right display is the "first display portion."



In each of the three examples (for the Browser application, page 16 of EX2012, and page 21 of EX2012), the identified "first" and "second" pages present different content and are distinct pages, and "the second page is a child of the first page." *See supra*, §VIII.A.4 (discussing limitation 1[c]); *see also* EX2012, 6 ("1.1 is the parent of 1.2, which is the parent of 1.3").

See also, e.g., EX2002 [Cassar Decl.], ¶¶28, 76-77 (discussing modal view and photo gallery application minimize the parent page); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

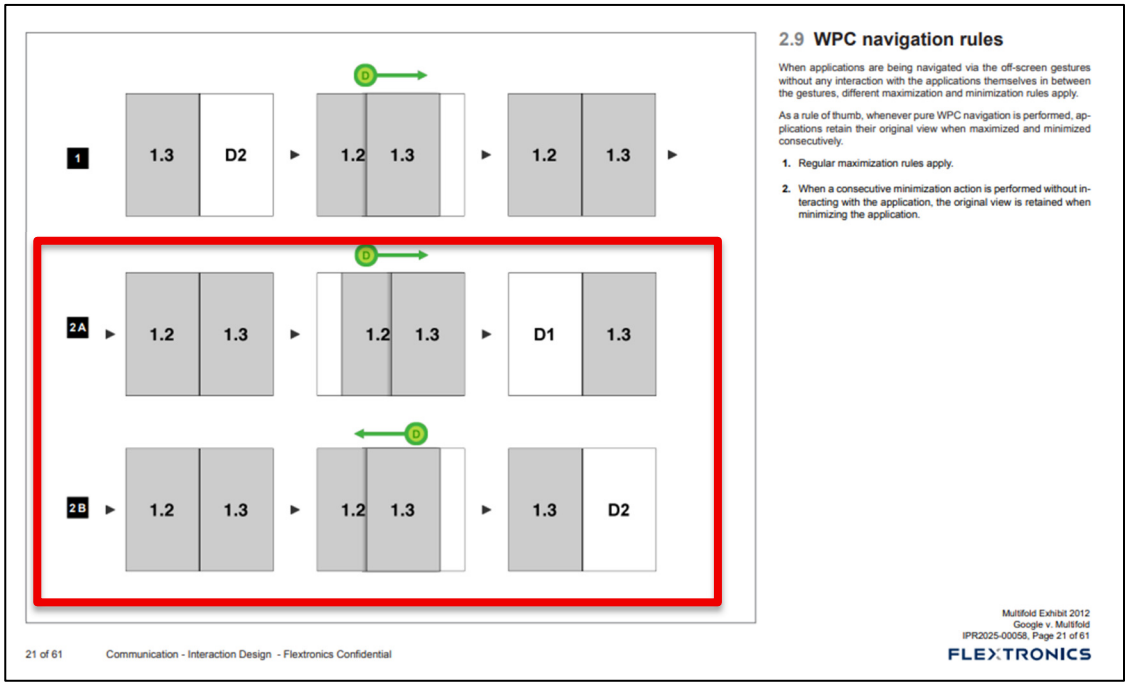
4. [18.c] "in response to a first input received from a user to minimize the first application to one of the first and second display portions of the device, display the second page of the first application on one of the first and second display portions of the device and discontinue the display of the first page of the application."

The EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶67.

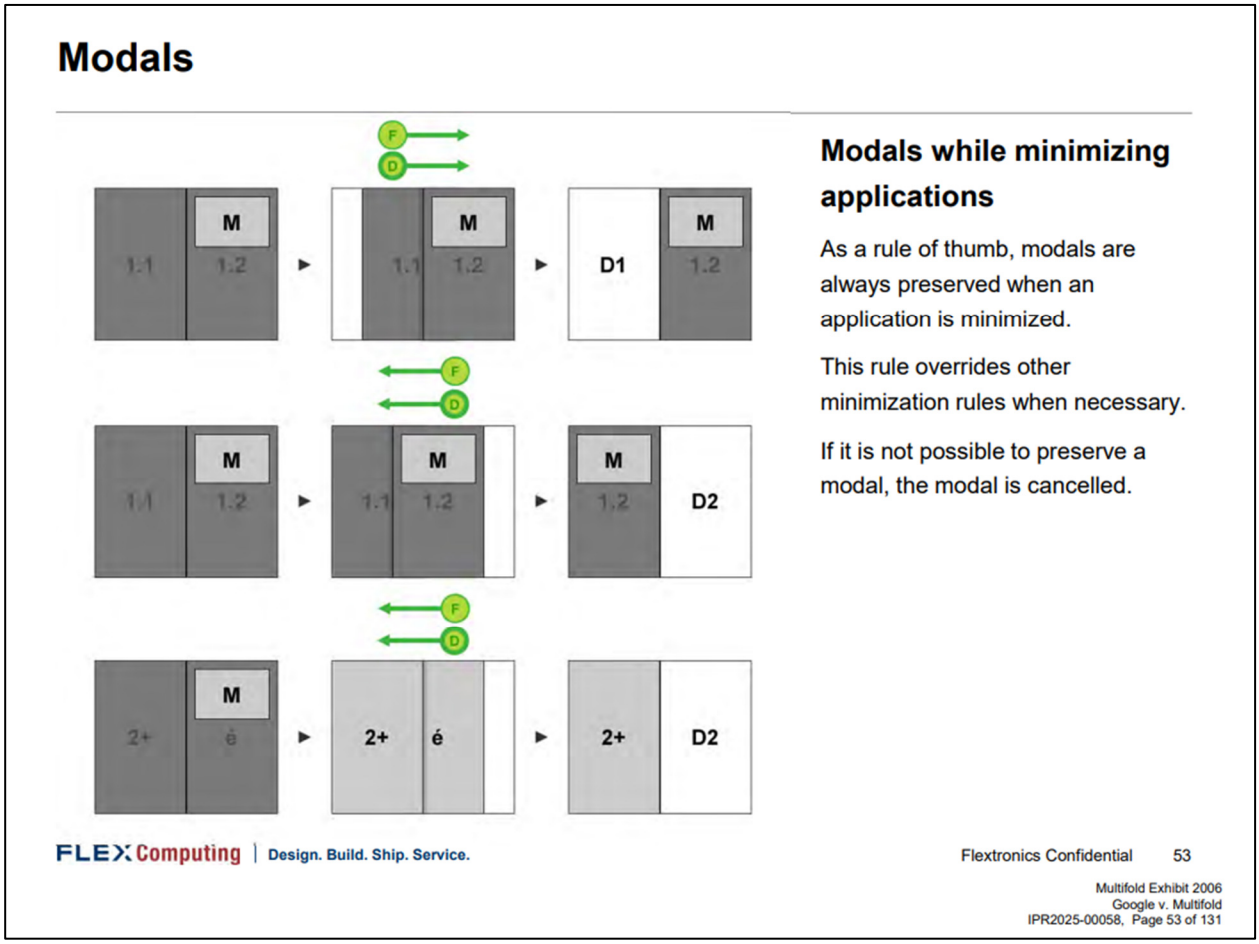
The prototypes had instructions (*see, e.g.*, limitation 18[pre]) to, in response to an input to minimize the application to one of the display portions of the device, display the second page (child page) of the first application, and discontinue the display of the first page of the application.

For example, the EV-1 and EV-2 prototypes could receive a first input from a user to minimize the displayed dual screen application to one of the first and second display portions of the device. *See, e.g.*, EX2012, 8 (describing the drag gesture as "[m]aximiz[ing] and minimiz[ing] dual-screen capable applications" and the flick gesture as "[m]inimiz[ing] dual-screen capable applications").

Further, upon receipt of the minimization input, the prototypes would display the "second" (child) page of the application on one of the device's displays, and not display the "first" (e.g., parent) page of the application. For example, regarding the example on page 21 of EX2012, child page 1.3 of the application (the "second page") is displayed, and page 1.2 (the "first page") is not displayed. *See, e.g.*, EX2012, 21 (at examples 2a and 2b).



For further example, regarding the Browser application and the example from page 16 of EX2012 discussed in limitations 18[a] and 18[b] above, upon receipt of a minimization input, the EV-1 and EV-2 prototypes would display the "second page" (child page), and not the "first page" if a modal was present. *See, e.g.*, EX2013, 44 ("When using the browser is minimized from Dual Screen to Single Screen the following criteria is used to assess which screen remains in view: ***Priority 1 – Screen with a Modal***"). *See also* EX2012, 20 ("As a rule of thumb, the view containing the modal will always be visible after a minimization action whenever possible."); EX2006, 53 (depicted below):



See also, e.g., EX2002 [Cassar Decl.], ¶¶28, 76-77 (discussing modal view and photo gallery application minimizing the parent page); EX2003 [Becze Decl.] ¶¶12, 20, 22, 25, 29, 31.

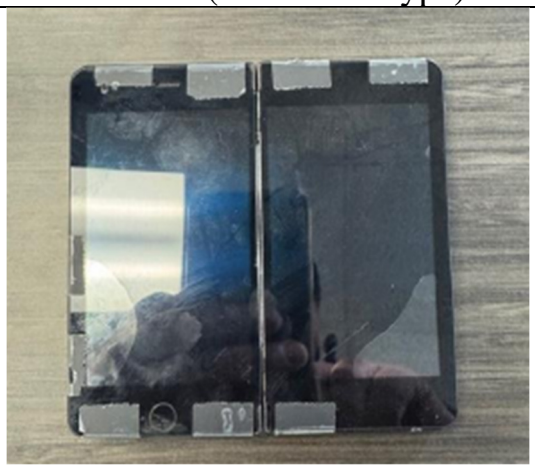
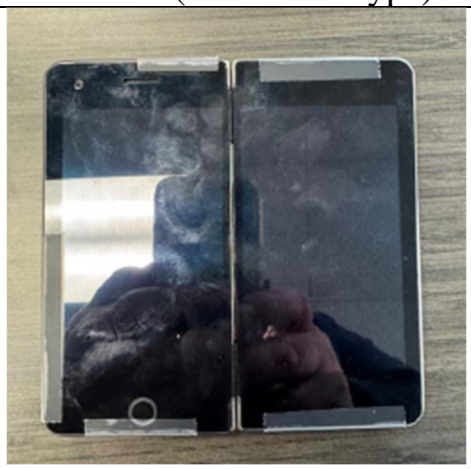
I. Claim 19

1. [19] "The computer readable medium of claim 18, wherein the device includes multiple displays, wherein the first display portion of the device includes a first display of the multiple displays, wherein the second display portion of the device includes a second display of the multiple displays, and wherein in response to one of the first input and a second input received from the user the second page of the first application is displayed on the first display of the device."

The EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶68.

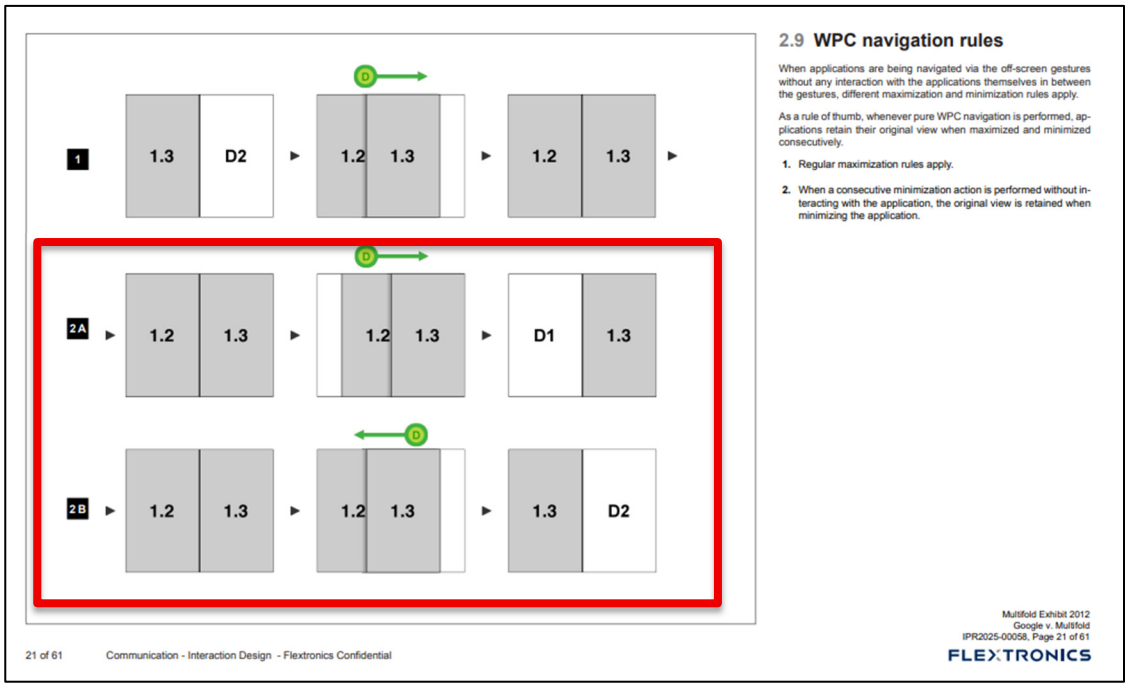
As described above, the EV-1 and EV-2 prototypes embody the limitations of claim 18. *See supra*, §VIII.H.

The prototypes also satisfied the requirements of claim 19, because as recited above for limitations 18[a] and 18[b], each of the EV-1 and EV-2 prototypes had two displays, and each of the first and second "display portions of the device" includes a display of the device (e.g., the left display or right display).

EX2017 (EV-1 Prototype)	EX2018 (EV-2 Prototype)
	

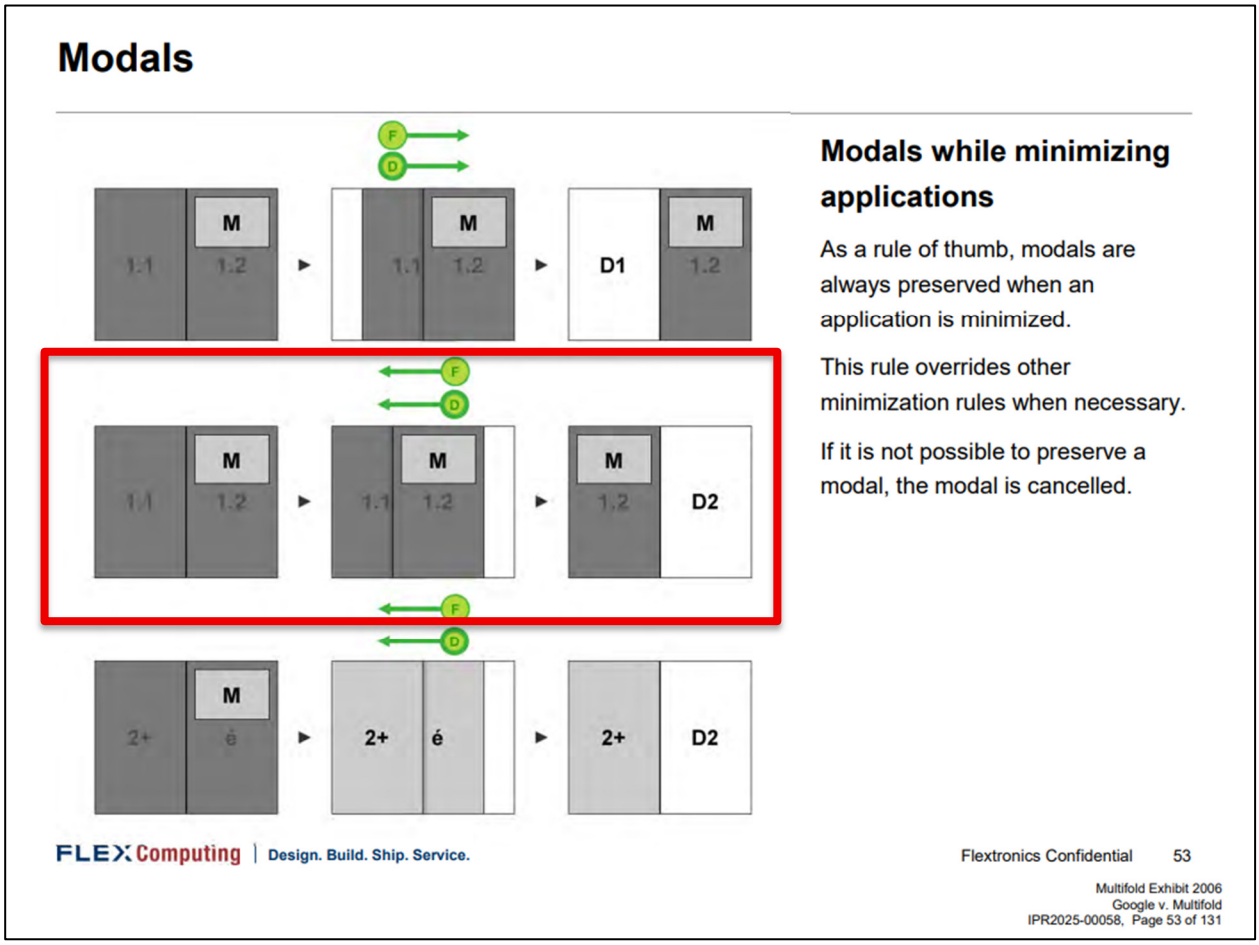
Further, the EV-1 and EV-2 also embodied the requirement that, in response to one of the first input and a second input received from the user, the second page of the first application is displayed on the first display of the device.

For example, regarding the example on page 21 of EX2012, upon receiving the minimization inputs (described at examples 2a and 2b), child page 1.3 of the application (the "second page") is displayed on the left display of the device ("the first display of the device"). *See, e.g.*, EX2012, 21 (at examples 2a and 2b).



Furthermore, regarding the Browser application and the example from page 16 of EX2012 discussed in limitations 18[c] above, upon receipt of a minimization input from the direction of second page to the first page, the EV-1 and EV-2 prototypes would display the "second page" (child page) on the first display of the

device. *See, e.g.*, EX2012, 20 ("As a rule of thumb, the view containing the modal will always be visible after a minimization action whenever possible."); EX2006, 53 (annotated below):



See also, e.g., EX2002 [Cassar Decl.], ¶¶28, 72, 76 ("The EV-1 and EV-2 prototypes had the ability for user input to minimize a parent application page while the child application remained maximized. One example I recall is modal views in the child page."), 77; EX2003 [Becze Decl.] ¶¶12, 18, 20, 25, 29, 31.

J. Claim 20

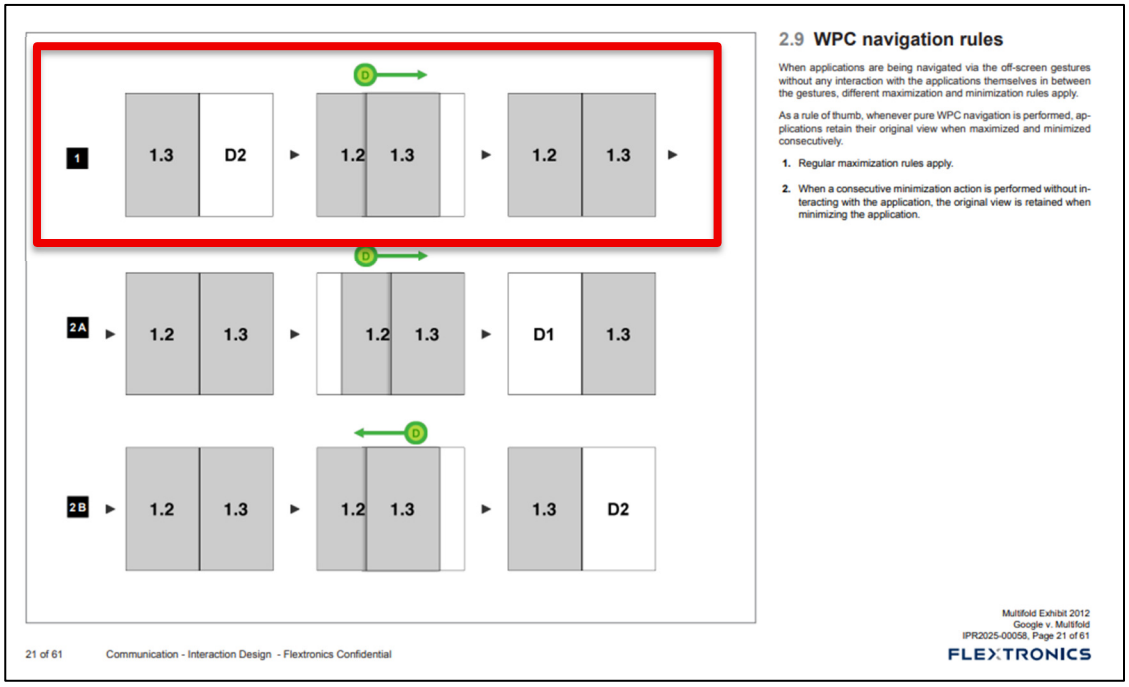
1. [20] "The computer readable medium of claim 19, wherein in response to an input received from the user to maximize the first application the first page of the first application is displayed on the first display of the device and the second page of the application is displayed on the second display of the device."

The EV-1 and EV-2 prototypes embodied this limitation. *See, e.g.*, EX2001 [Sirpal Decl.], ¶68.

As described above, the EV-1 and EV-2 prototypes embody the limitations of claim 19. *See supra*, §VIII.I.

The prototypes also satisfied the requirements of claim 20, because as recited above for Claim 10, the EV-1 and EV-2 prototypes could receive a maximization input after receiving a minimization input. *See supra*, §VIII.E. As described further below, in response to the maximization input, the first page of the first application is displayed on the first display, and the second page (child page) of the first application is displayed on the second display.

For example, regarding the example on page 21 of EX2012, after receiving the minimization inputs of claims 18-19 (described at examples 2a and 2b), the EV-1 and EV-2 prototypes could receive a maximization input (e.g., as shown in example 1 of EX2012 at page 21, highlighted below).



As a result, page 1.2 of the application (the "first page") is displayed on the left display of the device ("the first display of the device"), and child page 1.3 of the application (the "second page") is displayed on the right display of the device ("the second display of the device").

See also, e.g., EX2002 [Cassar Decl.], ¶77 (gallery application maximizes both pages to both displays as recited in claim 20 from a minimized state); [Becze Decl.], ¶¶20, 25 (gesture functionality for "maximizing apps in dual portrait mode" was functional on EV-1 and EV-2 prototypes).

IX. CLAIMS 14 AND 18-20 ARE NOT OBVIOUS

A. Claims 14 and 18: The Petition does not identify with particularity evidence that "in response to a first input ... to minimize the first application ... , discontinue the display of the first page of the application" is obvious

Petitioner's sole arguments as to claims 14 and 18-20 are obviousness arguments in Ground 3 of the Petition. However, for limitations 14[m] and 18[c], Petitioners have identified no evidence that Seo (or Yook for that matter) render obvious that, in response to a first input to minimize the application, the child page of the application is displayed and the presentation of the parent page of the application is discontinued. Thus, because the Petition provides no rationale for the obviousness of limitations 14[m] and 18[c], Petitioner cannot prevail on Claims 14 or 18, or on dependent claims 19-20.

Claims 14 and 18 each require presenting/displaying a "first page of a first application" and a "second page of the first application…, wherein the first and second pages present different content and are distinct pages, ***and wherein the second page is a child of the first page***." EX1001 ['494 Pat], cl. 14, 18. Claim 14 and 18 each end by reciting that, in response to an input to minimize the application, "***[present/display] the second page*** of the first application … and ***discontinue the [presentation/display] of the first page*** of the application." *Id.*, 14[m], 18[c]. In other words, for claims 14 and 18, in response to the

minimization input, the child page is displayed, and display of the parent page is discontinued.

The Petition's only argument for obviousness of the minimization function recited in Claims 14[m] and 18[c] is a recitation back to Claim 1[d]. Petition, 71 ("Seo discloses, suggests, and/or renders obvious this claim limitation for the same reasons discussed for claim element 1[d]."); Petition, 73 ("Seo discloses and/or suggests the claimed instructions for the reasons discussed for claim elements 1[d] and 14[m]"). But, fatal to Petitioners' analysis, claim 1[d] requires the opposite of limitations 14[m] and 18[c].

For example, claim 1 requires "presenting a first page of a first application…, ***wherein the first page is an auxiliary page***" and "presenting a second page of the first application…, ***wherein the second page is a primary page***, wherein the first and second pages present different content and are distinct pages, and ***wherein the auxiliary page is a child of the primary page***." EX1001 ['494 Pat], cl. 1. Claim 1 ends by reciting that, in response to an input to minimize the application, "the ***second page of the first application is displayed*** … [and] ***the first page of the first application is not displayed***." *Id*. In other words, for claim 1, in response to the minimization input, the parent page is displayed, and the child page is discontinued.

In analyzing limitation 1[d], Petitioner points to Seo's alleged disclosure that: "figure 8B discloses gesture input 882/883 ('a first input from a user') that minimizes the messaging application to the left-side touch screen 190a ('the second display[] of the device'), ***such that the main messaging screen 800 remains displayed*** on the left-side touch screen 190a ('second page of the first application is displayed by…the second display of the device') and the ***messaging screen 820 is no longer displayed*** on the right-side touch screen 190b ('the first page of the first application is not displayed.')." Petition, 29. *See also id.*, 30 (relying on annotated image below, accompanying description above):

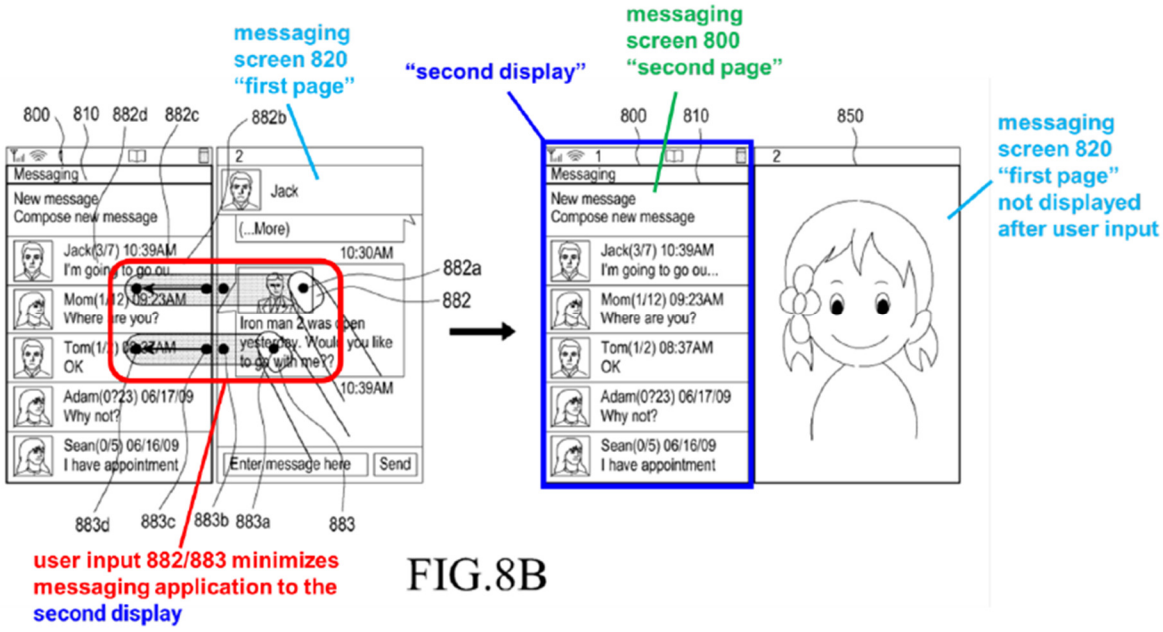


FIG.8B

Thus, in response to the minimization input, Petitioner relies upon Seo's disclosure that "main messaging screen 800" remains on the screen and display of "messaging screen 820" is discontinued. But, according to Petitioner, "a POSITA

would have recognized messaging screen 820 as 'a child of the primary page' [main messaging screen] 800." *See* Petition, 29. Thus, Petitioner is pointing to its analysis of Seo that, in response to a minimization input, child page 820 is no longer displayed.

However, this functionality of Seo of discontinuing the display of the child page 820 (that is incorporated by reference into Petitioners' analysis of limitations 14[m] and 18[c]), is the opposite of the minimization function claimed by Claims 14 and 18—which require displaying the child page and discontinuing display of the parent page. As such, Seo does not disclose limitations 14[m] and 18[c].

Besides blanketly reciting that "Seo discloses, suggests, and/or renders obvious" claim limitations 14[m] and 18[c] with no further analysis, the Petition never sets forth any attempt to explain how Seo's minimization of child page 820 (as set forth in claim 1) renders obviousness minimizing the parent page and continuing to display the child page (as recited in Claims 14 and 18). For example, Petitioner does not explain: (1) any proposed modification to Seo that would incorporate the claimed functionality, (2) any motivation for doing so, or (3) any reasonable expectation of success. Nor does Petition cite to any expert testimony or art evidencing that it was known to minimize a parent page (instead of a child page) in the manner claimed in limitation 14[m] and 18[c]. As such, the Petition does not address how the references allegedly suggest or render obvious limitations

14[m] and 18[c]. Because the Board may only consider arguments made ***in the Petition*** and may not institute an IPR of its own design, Petitioner has failed to meet its burden under 35 U.S.C. § 312(a)(3) for claims 14 and 18-20. *See Apple Inc. v. MPH Techs. Oy*, No. 2021-1355, 2021-1356, 2022 WL 4103286, *15-17 (Fed. Cir. Sep. 8, 2022).

Therefore, the Petition's Ground 3 challenging Claims 14 and 18-20 as obvious must fail for this additional reason.

X. CONCLUSION

For the reasons set forth above, the Board should confirm Claims 1, 4, 6, 9, 10, 12-14, and 18-20 as patentable.

Dated: August 29, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Response consists of 13,926 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The Response complies with the type-volume limitation of 14,000 words as set forth in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Dated: August 29, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on August 29, 2025, I caused a true and correct copy of the foregoing Patent Owner Response to be served on the following counsel for Petitioners by electronic mail to the following email addresses:

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