IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF WISCONSIN

NOKIA CORPORATION, Plaintiff, v. APPLE INC., Defendant.	Civil Action No. 10-CV-249 **JURY TRIAL DEMANDED**
APPLE INC., Counterclaim-Plaintiff, v. NOKIA CORPORATION and NOKIA INC., Counterclaim-Defendants.	

NOKIA'S OPENING MARKMAN BRIEF

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases

Statutes

TABLE OF EXHIBITS

Ex. 22. Office Action issued during prosecution of the 559 Patent dated September 10, 2007

Ex. 23. Response to Office Action filed during prosecution of the 559 Patent dated November 29, 2007

Ex. 24. U.S. Patent No. 7,380,116

Ex. 25. Office Action issued during prosecution of the 116 Patent dated April 20, 2007

Ex. 26. Amendment filed during prosecution of the 116 Patent dated July 20, 2007

Ex. 27. Declaration of William C. Simpson dated December 16, 2010

Ex. 28. Excerpts from Webster's 9th New Collegiate Dictionary (1983)

Ex. 29. U.S. Patent No. 7,054,981

Ex. 30. Office Action issued during prosecution of the 981 Patent dated November 5, 2004

Ex. 31. Amendment A filed during prosecution of the 981 Patent dated March 4, 2005

Ex. 32. Amendment B filed during prosecution of the 981 Patent dated August 19, 2005

Ex. 33. Patent Examiner's Amendment and Interview Summary issued during prosecution of the 981 Patent dated December 28, 2005

Ex. 34. U.S. Patent No. 7,532,680

Ex. 35. U.S. Patent No. 5,117,201

Ex. 36. U.S. Statutory Invention Registration H965

Ex. 37. CML Semiconductor Products FX009A Datasheet (July 1994)

Ex. 38. Analog Devices AD8320 Datasheet (1998)

Ex. 39. U.S. Patent No. 5,752,172

Ex. 40. U.S. Patent No. 6,603,431

Ex. 41. U.S. Patent No. 6,348,894

Ex. 42. Excerpt from The Compact Edition of the Oxford English Dictionary, Vol. 1 (1971)

Ex. 43. U.S. Patent No. 6,317,083

Ex. 44. U.S. Patent No. 7,558,696

INTRODUCTION

Nokia asks the Court to construe 7 terms from 5 of the 7 Apple patents in suit. As set forth on a patent-by-patent basis below, construction of these terms will help the Court resolve infringement and validity disputes between the parties. Similarly, Apple is moving for construction of 7 terms in 6 of the 7 Nokia patents in suit. However, Nokia disagrees that Apple's proposed constructions of these terms are appropriate or necessary. Nokia's positions on Apple's proposed constructions are also set forth below on a patent-by-patent basis. The 14 total terms between both parties were narrowed down from a list of 16 originally proposed terms because the parties were able to reach agreement on two of the terms and limit the issues necessary for briefing. For the reasons set for the below, Nokia respectfully requests that the Court adopt Nokia's proposed constructions and find that the terms proposed by Apple do not require construction.

ARGUMENT

I. CONSTRUCTION OF APPLE'S PATENTS

A. Apple's U.S. Patent No. 5,946,647 ("the 647 Patent").

1. Proposed constructions for the 647 Patent.

One phrase of the 647 Patent was submitted for construction. The parties' proposed constructions for this phrase (which appears in two, similar forms) are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"linking actions to the detected structures" (Claim 1) "linking at least one action to the detected structure"	upon detection of structure(s) in the data, linking the detected structure(s) to computer subroutine(s) that cause the CPU to perform a sequence	These terms does not require construction. Plain and ordinary meaning applies.

(Claims 15 and 22)	of operations on the detected structure(s)	To the extent construction is necessary, Apple proposes: linking detected structures to one or more computer subroutines that cause the CPU to perform a sequence of operations on the particular structures to which they are linked

The disputed claim phrase is shown below in the context of asserted Claims 1, 15, and 22:

> 1. A computer-based system for detecting structures in data and performing actions on detected structures, comprising:
>
> an input device for receiving data;
>
> an output device for presenting the data;
>
> a memory storing information including program routines including
>
> an analyzer server for detecting structures in the data, and for *linking actions to the detected structures*;
>
> a user interface enabling the selection of a detected structure and a linked action; and
>
> an action processor for performing the selected action linked to the selected structure; and
>
> a processing unit coupled to the input device, the output device, and the memory for controlling the execution of the program routines.
>
> 15. In a computer having a memory storing actions, a method for causing the computer to perform an action on a structure identified in computer data, comprising the steps of:
>
> receiving computer data;
>
> detecting a structure in the data;

linking at least one action to the detected structure;

enabling selection of the structure and a linked action; and

executing the selected action linked to the selected structure.

22. A computer-based method for causing a computer to identify, select and perform an action on a structure in computer data received from a concurrently running application, said application presenting the computer data to the user, the method comprising the steps of:

receiving computer data from the application;

detecting a structure in the computer data;

linking at least one action to the detected structure;

communicating with the application to determine the location of the detected structure as presented by the application, to enable selection of the detected structure and a linked action, and to determine if the detected structure and a linked action have been selected; and

performing a selected action linked to the detected pattern.

2. Background of the 647 Patent.

The 647 Patent relates generally to a system for performing actions on structures identified in computer data (Ex. 1 at 1:8-11). As admitted in the patent specification, prior art systems included pattern analysis units, such as parsers, to automatically identify structures, such as dates, addresses, phone numbers, or names, in email messages and documents (*id.* at 1:13-35). Prior art systems also enabled users to select structures, such as phone numbers, in a message or document and request that an application automatically perform an action on the structure, such as dialing the phone number (*id.* at 1:51-54). The purported novelty of the 647 Patent is to combine these features and provide a system that detects structures in computer data, links actions to the detected structures, enables the user to select the detected structure and the linked action, and automatically performs the selected action on the structure (*id.* at 1:66-2:2).

3. Construction of the "linking" phrase will resolve a disputed issue of infringement.

Each of the asserted claims requires, among other things, (i) "detecting" structure(s), (ii) "linking" action(s) to the detected structure(s), and (iii) "enabling" the selection of a detected structure and a linked action. As explained below, the claimed "linking" of actions to structures should be construed to occur "upon detection of structures in the data." The phrase "upon detection [identification] of structures" is used repeatedly in the specification as shorthand to mean (i) immediately or very soon *after* the claimed "detecting" of structures and (ii) *prior* to the claimed "enabling" selection of a detected structure. In other words, in accordance with the claimed invention, actions are linked to structures as soon as the structures are detected, rather than waiting until the user may select the structure and seek to perform an action on the structure.

The relevant Nokia functionality, by contrast, does not perform the accused "linking" functionality upon or in connection with the accused "detecting" functionality. Instead, the accused "linking" functionality takes place, if at all, *after* the accused "enabling" functionality and after the user has chosen to select an alleged structure. The Nokia functionality accused by Apple therefore does not link detected structure(s) to computer subroutine(s) "upon detection of structure(s) in the data."[1] Consequently, if the Court adopts Nokia's proposed construction of the disputed "linking" phrase, there will be no infringement.

[1] Nokia reserves the right to contend that the accused functionality does not link detected structure(s) to computer subroutine(s) at all, but for the purposes of this claim construction dispute focuses on the patent specification's requirement that such linking occur "upon detection of structure(s) in the data."

4. The Court should adopt Nokia's proposed construction of the "linking" phrase.

Nokia's Proposed Construction	Apple's Proposed Construction
upon detection of structure(s) in the data, linking the detected structure(s) to computer subroutine(s) that cause the CPU to perform a sequence of operations on the detected structure(s)	These terms does not require construction. Plain and ordinary meaning applies. To the extent construction is necessary, Apple proposes: linking detected structures to one or more computer subroutines that cause the CPU to perform a sequence of operations on the particular structures to which they are linked

The parties appear to agree that the term "actions" in the disputed phrase refers to computer subroutines that cause the CPU to perform a sequence of operations on the linked structures. The dispute centers on when the actions must be linked to the detected structures. Following *Phillips*, the claimed "linking" phrase must be construed in the context of the specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (*en banc*) (the specification is the "single best guide to the meaning of a disputed term"). Although the concept of linking detected structures to actions could be a broad one, the linking that is a part of the claimed invention is more limited by the context of the specification to the scope of what the inventors described as their invention.

The specification makes clear that the "linking" functionality in the invention is performed in connection with the "detecting," or parsing, process and before the process for "enabling" the selection of detected structures. *First*, the written description repeatedly, consistently, and without exception describes the linking as taking place

"upon detection [or identification] of a structure" and prior to enabling the selection of structures:

> "*Upon detection of a structure*, the analyzer server links actions to the detected structure." (Ex. 1 at 2:30-31) (recited in the Summary of Invention section);
>
> "*Upon detection of a structure*, analyzer server 220 links actions associated with the responsible pattern to the detected structure, using conventional pointers." (*id.* at 3:65-67);
>
> "*After identifying structures and linking actions*, application program interface 230 communicates with application 167 to obtain information on the identified structures so that user interface 240 can successfully present and enable selection of the actions." (*id.* at 4:1-5);
>
> "*Upon identification of a structure in the text*, parser 310 links the actions associated with the grammar to the identified structure." (*id.* at 4:65-66); and
>
> "*When analyzer server 220 identifies an address* using the 'e-mail address' grammar, actions for sending e-mail to the identified address and putting the identified address in an e-mail address book are linked to the address." (*id.* at 5:15-18).

Second, the patent figures confirm that the claimed linking is performed upon the detection of structures and prior to enabling selection. Figure 8, reproduced below, shows that actions are linked to the detected structures (step 825) immediately after the structures are detected through scanning (step 820). Further, the detected structures are not enabled for selection until after a request is received to display the detected structures (step 860).

647 Patent Fig. 8

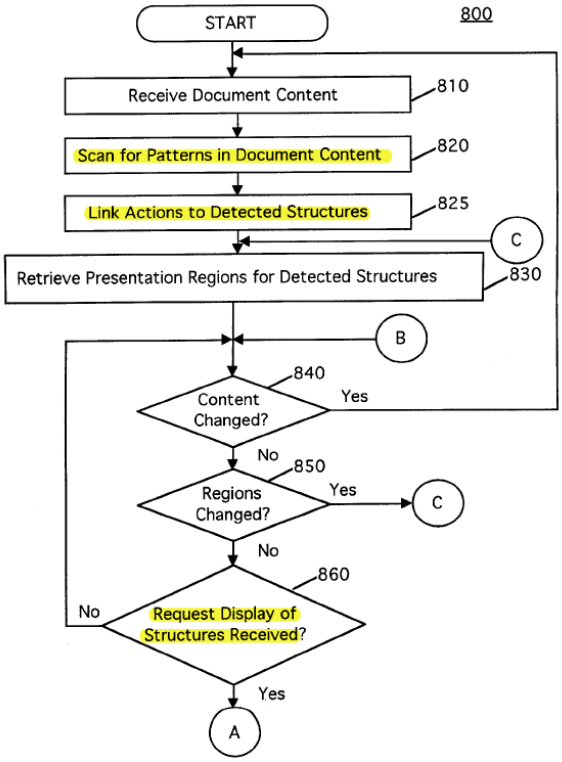
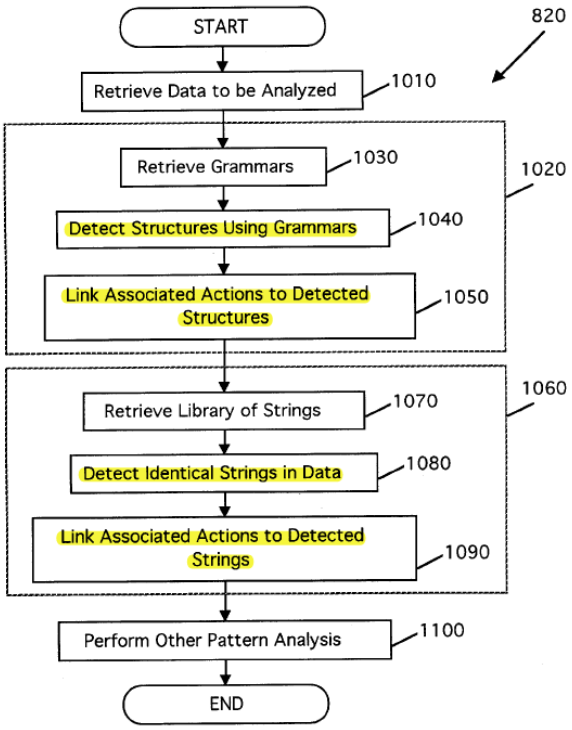


Figure 10, below, is a flowchart showing a method for "scanning and detecting patterns in a document" (*id.* at 6:35-36). The depicted method includes two pattern analysis processes (1020 and 1060) (*id.* at 6:38-50). Each pattern analysis process is shown to include the step of linking actions to the detected structures. Moreover, in both processes, the linking takes place immediately after the structures are detected. Consistent with the remainder of the written description, Figure 10 shows that the claimed "linking" takes place in connection with the parsing process and prior to enabling the selection of actions (which occurs later, and is not shown in the figure).

647 Patent Fig. 10



Third, the claim language is consistent with the written description and the figures. Claim 1 recites "an analyzer server for detecting structures in the data, and for linking actions to the detected structures" (*id.* at 7:16-17). Thus, the claimed "detecting" and the claimed "linking" are performed by the same component, the analyzer server. Claim 1 provides that a different component (the "user interface") enables selection of the detected structure (*id.* at 7:18-19). This language would indicate to one of skill in the art, particularly in view of the rest of the specification, that the claimed "detecting" and "linking" procedures are intimately connected and separate and apart from the "enabling" process. Claim 1 further requires linking actions to the detected "structures," plural (*id.* at 7:17). One of skill in the art would recognize that such linking would necessarily take place upon detection of the structures and not upon selection of the structures because

only one structure is selected at a time (*see, e.g.*, *id.* at Figure 7). Lastly, all the independent claims (1, 15, and 22) provide that actions are linked to "detected" structures, not "selected" structures, thus indicating that the linking occurs after detection and prior to any selection of a structure.

Because the claims cannot be construed broader than what is supported by the specification, the claimed "linking" phrase must be construed to occur "upon detection of structure(s) in the data." *See, e.g.*, *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006) ("the claims cannot be of broader scope than the invention that is set forth in the specification"); *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1299-1302 (Fed. Cir. 1999) (construing "including" to require permanent attachment because all embodiments in the patent showed permanent attachment). *See also Respironics, Inc. v. Invacare Corp.*, No. 2008-1164, 2008 WL 5216019, at **3-4 (Fed. Cir. Dec. 16, 2008) (unpublished) (construing "selected" pressure magnitudes to require that magnitudes be chosen prior to operation of computer circuitry because the only embodiment in the patent showed the magnitudes to be "preselected"). Where, as here, the "specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims." *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1370 (Fed. Cir. 2003).

B. Apple's U.S. Patent No. 5,612,719 ("the 719 Patent").

1. Proposed constructions for the 719 Patent.

Three terms of the 719 Patent were submitted for construction. The parties' proposed constructions for these three terms are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"pointer" (Claim 7)	any mechanism or device for pointing to a particular location on a screen of a computer display	any mechanism or device for pointing to a particular location on a screen of a computer display, including a finger or stylus
"distinct gestures" (Claim 7)	different types of input from the pointer formed by making different marks upon the display screen	This term does not require construction. Plain and ordinary meaning applies. To the extent construction is necessary, Apple proposes: at least two different gestures
"gesture sensitive button" (Claim 7)	an image provided on the display screen that is sensitive to more than a tap gesture	This term does not require construction. Plain and ordinary meaning applies. To the extent construction is necessary, Apple proposes: image produced on a screen which can be activated by a gesture

The disputed claim terms are shown below in the context of asserted Claim 7, in which they all appear:

> 7. A method for providing and utilizing a *gesture sensitive button* for a graphical user interface, wherein the *gesture sensitive button* has a plurality of *distinct gestures* associated therewith, each *distinct gesture* that is associated with the *gesture sensitive button* having a distinct process associated therewith, the method comprising the steps of:
>
> providing a button image on a computer display screen;

> detecting an inputted gesture made upon said computer display screen by a *pointer*;
>
> determining whether said inputted gesture is associated with said button image by determining whether said gesture contacts said button image and determining whether said gesture is one of the *distinct gestures* that is associated with the *gesture sensitive button*; and
>
> when the inputted gesture is determined to be associated with the button image, performing the following substeps of: (a) providing feedback relative to the button image confirming that the button image has been selected, (b) providing feedback relative to the button image indicative of the process associated with the inputted gesture, and (c) initiating the process associated with said inputted gesture and the button image.

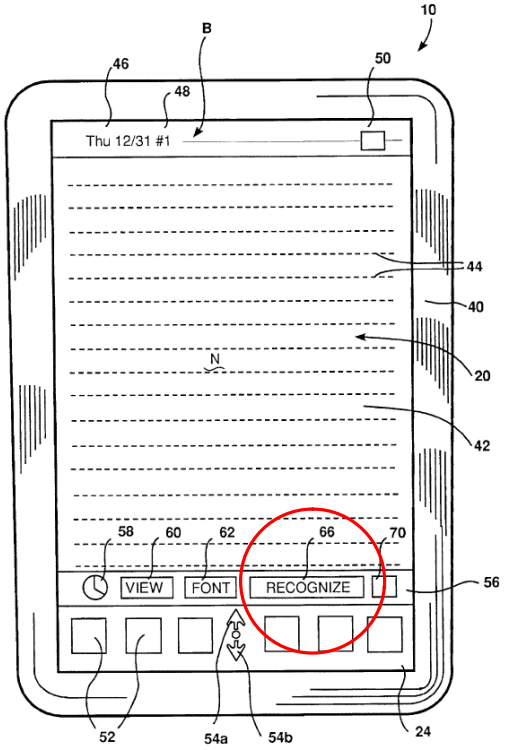
2. Background of the 719 Patent.

The 719 Patent claims a method[2] for providing and utilizing a "gesture sensitive button" for a graphical user interface of a computer system (*see* Ex. 2 at 1:10-12, 9:47-52). The patent specification states that the invention "is well suited for pointer based computer systems such as the pen-based, stylus-based and mouse-based systems that are currently popular" (*id.* at 3:16-18). The use of buttons in pointer based computer systems is not new. Indeed, the inventors admitted in the patent specification that prior art "[p]en-based computer systems often include 'buttons' on their screen which can be 'pressed' to perform a desired function or process" (*id.* at 1:49-51). According to the inventors, prior art buttons performed "only a single function or process upon activation" (*id.* at 1:62-63). The purported novelty of the 719 Patent is to provide a "gesture sensitive button" that has a plurality of "distinct gestures" associated with it, such that a single button can be used to control more than one process (*id.* at 2:7-12, 9:47-52).

[2] Apple is asserting only 1 independent claim of the 719 patent against Nokia, Claim 7, which is a method claim.

An embodiment of the claimed "gesture sensitive button" is shown in Figure 2 of the 719 Patent, reproduced below, as a "recognize button 66" (*see id.* at 5:50-51). The recognize button may be used to control a recognize function for recognizing items such as text or graphics displayed on the screen (*id.* at 6:1-6, Figure 4b).

719 Patent Fig. 2



The specification discloses that the gesture sensitive button can detect "three different types of gestures, a 'tap' 226, a 'check-mark' 228, and an 'X-mark' 230" (*id.* at 8:31-33). The tap, check-mark, and x-mark gestures are illustrated in Figures 6a, 6b, and 6c, respectively, reproduced below.

719 Patent Figs. 6a-6c

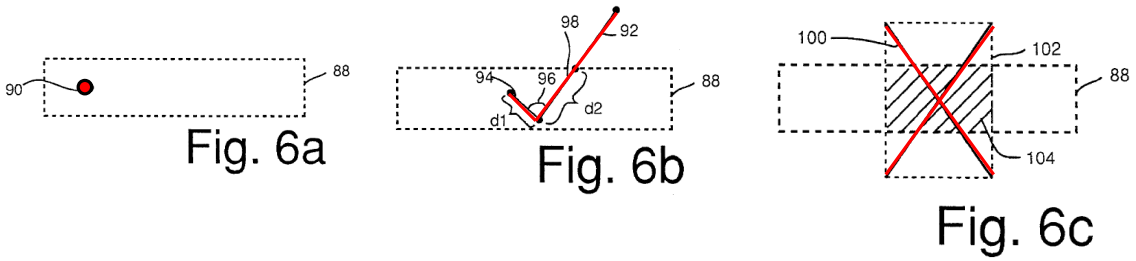


Fig. 6a Fig. 6b Fig. 6c

The asserted claims require a number of steps to perform the claimed method. The required steps include, but are not limited to, providing a button image on a computer display screen, detecting an inputted gesture made upon the display screen by a "pointer," determining whether the gesture is one of the "distinct gestures" that is associated with the "gesture sensitive button," providing two types of feedback relative to the button image, and initiating the process associated with the inputted gesture and the button image (*id.* at 9:47-10:2).

3. Construction of "pointer" will resolve a disputed issue of infringement.

Apple accuses two Nokia products of infringing the 719 Patent: the Nokia N900 and the Nokia N8. Both devices include a touch screen, as shown below.

N900 and Nokia N8

The N900 has a resistive touch screen[3] that is responsive to pressure from a stylus or from the human finger (Ex. 4; Ex. 5 at 16, 24). While the N900 includes a stylus for performing certain activities such as sketching (*see* Ex. 5 at 16), users typically perform the primary touch screen actions, including those accused of infringing the 719 patent, using a finger instead of the stylus (*id.* at 24-25 (describing touch screen actions such as the tap action and the select and hold action as being performed by a finger)).

The N8, by contrast, has a capacitive touch screen[4] responsive to input from the human finger, not from a stylus (Ex. 6; Ex. 7 at 9). The N8 does not include a stylus and Nokia advises end-users of the N8 not to use mechanical objects such as a stylus to avoid scratching the touch screen (Ex. 7 at 9).

The parties' dispute over the term "pointer" centers on whether the term is broad enough to encompass the human finger, as Apple proposes, or is limited to mechanical pointing devices such as a mouse, pen, or stylus, as Nokia explains is required by the patent specification. Because the Nokia N8 does not include a stylus, if the Court adopts Nokia's proposed construction of "pointer," Nokia cannot be held liable for infringement based on the N8. In addition, because Nokia will show that most end-users use their finger to provide input to the N900 touch screen, particularly when performing the accused actions, the Court's adoption of Nokia's proposed construction of "pointer" will significantly limit any liability of Nokia for infringement based on the N900.

---

[3] Resistive touch screens generally have two layers, one resistive and one conductive. When pressure is applied, the two surfaces touch and a circuit is completed. *See* Ex. 3 at 1318.

[4] Capacitive touch screens generally have a conductive film deposited on the back of a glass overlay. The human body's capacitance causes an electrical signal to be generated when an individual touches the overlay. *See* Ex. 3 at 1318.

4. The Court should adopt Nokia's proposed construction of "pointer."

Nokia's Proposed Construction	Apple's Proposed Construction
any mechanism or device for pointing to a particular location on a screen of a computer display	any mechanism or device for pointing to a particular location on a screen of a computer display, including a finger or stylus

The patent specification provides an express definition for the term "pointer": "as used herein, the terms 'pointer', 'pointing device', 'pointing means', and the like will refer to any mechanism or device for pointing to a particular location on a screen of a computer display." (Ex. 2 at 4:19-23). Through this statement, the inventors clearly, deliberately, and precisely defined the term. *See Sinorgchem Co., Shandong v. Int'l Trade Comm'n*, 511 F.3d 1132, 1136-38 (Fed. Cir. 2007) (inventors expressly defined "controlled amount" in the specification by setting it off with quotation marks and following it with a definition).

As a result, Apple is bound by the inventors' express definition, even if that definition differs from the ordinary meaning of the term divorced from the specification. *Id.* at 1136; *see also Phillips*, 415 F.3d at 1316 ("[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) ("[A] claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in . . . the specification . . . .").

Nokia's proposed construction of "pointer" is taken verbatim from the inventors' definition and should therefore be adopted. Apple's efforts to expand this definition to include a finger should be denied because the patent specification does not disclose, suggest, or support the use of a finger as a "pointer."

Reading just the inventors' definition of "pointer," one of skill in the art would not understand a "pointer" to include a finger. The inventors explained that "pointer" refers to a "mechanism or device" (Ex. 2 at 4:19-23). The terms "mechanism" and "device" are terms that connote mechanical, inanimate objects. At the relevant time, "mechanism" was known to mean "[a] machine or mechanical appliance" or "[t]he arrangement of connected parts in a machine" (Ex. 8 at 814). "Device" was known to mean "[s]omething devised or constructed for a particular purpose; especially, a machine used to perform one or more relatively simple tasks" (*id.* at 361). These terms would not generally be understood to include the human finger.

Upon reviewing the remainder of the specification and claims, one of skill in the art would be left with no doubt that a finger is not a "pointer." Specifically, a person of ordinary skill would understand that "pointer" is used in the specification as a generic term for *mechanical* pointing devices such as a pen, a stylus, and a mouse. For example, the specification explains that "[t]he present invention is well suited for *pointer based* computer systems such as the *pen-based*, *stylus-based* and *mouse-based* systems that are currently popular" (Ex. 2 at 3:16-18) (emphasis added).[5] A finger is not a "pen" or a "mouse." Further, the specification makes clear that a finger is not a "stylus" by describing a "stylus" as a pen-shaped device manipulated by the user's hand. *See id.* at

Figure 1 (showing element 38, a pen-shaped device referred to in the specification (at e.g. 4:35-37) as a "stylus") & 5:55-57 ("In actual practice, the stylus may move slightly over a number of adjacent pixels due to the unsteadiness of the human hand.").[6] Consistent with the written description, the claims also use "pointer" as a generic term for mechanical pointing devices. For instance, independent claim 7 recites a "pointer" and dependent claim 10 specifies that the pointer is a "stylus" (*id.* at 9:55-56, 10:10-12).

If the inventors had conceived "pointer" to include a finger, they would have said so. Instead, the inventors listed only mechanical devices as embodiments of the claimed "pointer": "While the method of the present invention is described in the context of a pen-based system, other pointing devices such as a computer mouse, a track ball, or a tablet can be used to manipulate a pointer on a screen of a general purpose computer." (*id.* at 4:14-18). Even more, the inventors sought to incorporate three co-pending U.S. patent applications into the 719 patent specification by reference.[7] All of these references related to pointer-based computer systems.[8] All of these references include the same definition provided in the 719 patent for pointer.[9] But *none* of these references disclose the use of a finger as a "pointer."

---

5 *See also* Ex. 2 at Abstract (referring to a "pointer mechanism" and "a pointer such as a stylus, mouse, or trackball").

6 Apple appears to concede that a finger is not a "stylus" by describing them as alternatives in its proposed construction ("a finger or stylus").

7 *See* Ex. 2 at 5: 13-20 (incorporating U.S. Ser. No. 07/868,013, now U.S. Patent No. 5,398,310), 5:37-42 (incorporating U.S. Ser. No. 07/946,970, now U.S. Patent No. 5,588,105), 6:54-60 (incorporating U.S. Ser. No. 07/888,741, now U.S. Patent No. 5,523,775).

8 *See* Ex. 9 at 1:6-10; Ex. 10 at 2:59-63; Ex. 11 at 1:9-12.

9 *See* Ex. 9 at 4:67-5:2 ("as used herein, the terms 'pointing device', 'pointing means', and the like will refer to any mechanism or device for pointing to a particular location on a screen of a computer display"); Ex. 10 at 3:67-4:3 ("as used herein, the

The conspicuous absence of the word "finger" in the specification or in any of the several related patents incorporated by reference demonstrates that the inventors did not conceive their claimed "pointer" to include a finger. Thus, it would be inappropriate to construe the term as Apple proposes. *See, e.g.*, *Decisioning.com, Inc. v. Federated Dep't. Stores, Inc.*, 527 F.3d 1300, 1308 (Fed. Cir. 2008) (construing "admittedly broad" term "remote interface," which ordinarily includes a "consumer-owned personal computer" to exclude personal computers, because the specification did not contemplate personal computers); *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1480 (Fed. Cir. 1998) ("[C]laims may be no broader than the supporting disclosure, and therefore . . . a narrow disclosure will limit claim breadth.") There is simply nothing in the specification to suggest to one of skill in the art that the term "pointer" includes animate objects such as a finger. Any extrinsic evidence cited by Apple for a broader definition of "pointer" will contradict the meaning made clear by the specification and should be rejected. *See Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) ("A court may look to extrinsic evidence so long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record.")

5. Construction of "distinct gestures" will resolve a disputed issue of infringement.

In stark contrast to the tap, check-mark, and x-mark gestures disclosed in the 719 patent, the Nokia touch screen actions identified by Apple as "distinct gestures" are not "different types of input from the pointer" and are not "formed by making different marks

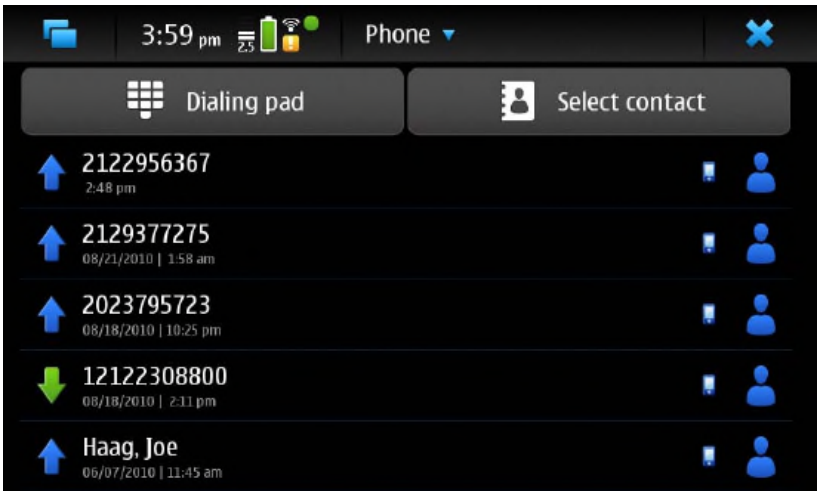
---

terms 'pointer', 'pointing device', 'pointing means', and the like will refer to any mechanism or device for pointing to a particular location on a screen of a computer display"); Ex. 11 at 4:50-53 ("as used herein, the terms 'pointing device', 'pointing means', and the like will refer to any mechanism or device for pointing to a particular location on a screen of a computer display."

upon the display screen." For both the N900 and the N8, the accused actions are based on the same type of input – a touch down event – and are formed by making the same marks – a tap – upon the display screen.

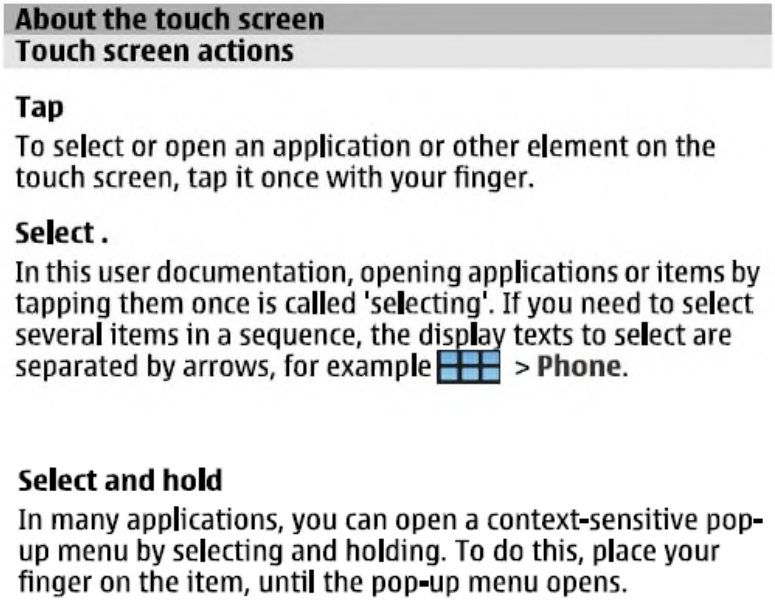
For the N900, Apple accuses functionality relating to the phone application, which can provide a listing of recent calls. Such a listing is shown in the figure below. Apple identifies each item corresponding to either a received or placed call (e.g., the region showing a blue arrow, the number 2122956367, an image of a phone, and an image of a contact) as an alleged "gesture sensitive button."

N900 Recent Calls Listing



Apple contends that the following qualify as the accused "distinct gestures": (i) the "tap" action (also referred to as the "select" action) and (ii) the "select and hold" action (Ex. 5 at 24).

N900 Accused Actions



The accused tap action is performed by pressing against the screen over the recent call item with a finger (a touch down event) and then lifting the finger from the screen (Ex. 5 at 24). The accused select and hold action is performed by pressing against the screen over the recent call item with a finger (exactly as for the tap action) and holding the finger against the screen for a set amount of time (*id.*). Thus, it is the duration of the press that distinguishes the tap action from the select and hold action. The tap action and the select and hold action include the same type of input (a touch down event) and are formed by making the same mark (a tap) upon the display screen. Therefore, if the Court adopts Nokia's proposed construction for "distinct gestures," there is no infringement based on the N900.

For the N8, Apple accuses functionality relating to the home screen, which includes an editing mode wherein the user can remove or rearrange items to suit his or her preferences (Ex. 7 at 21-24, 34-35). Such a home screen is shown in the figure below. Apple identifies each item corresponding to an application (e.g., mail or music

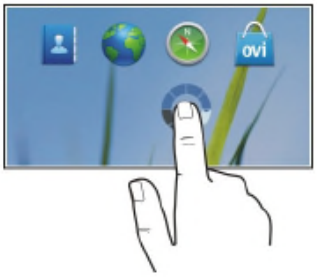
player applications) or a set of shortcuts (e.g., set of shortcuts to contacts, browser, maps, and Ovi store) as an alleged "gesture sensitive button."

N8 Home Screen

Apple identifies the following as alleged "distinct gestures": (i) the "tap and hold" action and (ii) the "tap" action followed by a "drag" action, which are part of operations available for customizing the home screen (Ex. 7 at 21-23, 34-36). The accused tap and hold action may be performed as part of an operation to remove an item from the home screen. As shown below, the user first performs a tap and hold action anywhere on the home screen by contacting the home screen with a finger and holding the finger on the home screen for a set amount of time to activate an "editing mode" (Ex. 7 at 22).

N8 Editing Mode

If you tap and hold the home screen, editing mode is activated.



The user may then perform the accused tap and hold action on an item by contacting the item with a finger (a touch down event) and holding the finger on the item for a set amount of time (*id.*). This action causes a pop-up menu to open with an option to remove the item from the home screen (*id.*). The user may select the "Remove" option and then select "Done" to complete the removal operation (*id.* at 36).

N8 Removal Operation

Remove a widget from the home screen

1 Tap and hold the home screen.

2 Select the widget, and from the pop-up menu, select **Remove**.

3 Select **Done**.

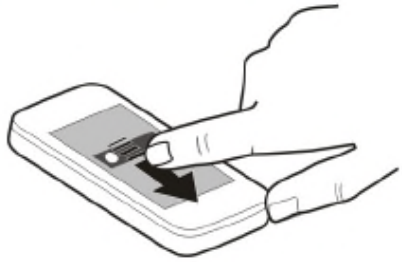
The accused tap action followed by a drag action may be performed as part of an operation to rearrange items on the N8 home screen. The user first activates the "editing mode" by performing a tap and hold action anywhere on the home screen by contacting the home screen with a finger and holding the finger on the home screen for a set amount of time (Ex. 7 at 22). *See* Figure showing N8 Editing Mode, above. The user may then perform a tap action on an item by contacting the item with a finger (exactly as for the accused tap and hold action) for a brief moment, followed by a drag action by sliding the finger over the screen (*id.* at 23, 35). The item follows the finger to a new location on the home screen (*id.* at 35). The user may then select "Done" to complete the rearrange operation (*id.*).

N8 Rearrange Operation

Rearrange items in the home screen

1 Tap and hold the home screen.

2 Drag and drop items to a new location.



3 Select **Done.**

Thus, it is the duration of the contact that distinguishes the accused tap and hold action from the accused tap action followed by a drag action. The tap and hold action and the tap action followed by a drag action include the same type of input (a touch down event) and are formed by making the same mark (a tap) upon the display screen. Therefore, if the Court adopts Nokia's proposed construction for "distinct gestures," there is no infringement based on the N8.

6. The Court should adopt Nokia's proposed construction of "distinct gestures."

Nokia's Proposed Construction	Apple's Proposed Construction
different types of input from the pointer formed by making different marks upon the display screen	This term does not require construction. Plain and ordinary meaning applies. To the extent construction is necessary, Apple proposes: at least two different gestures

The term "distinct gestures" is not used in the patent specification. As explained below, this term was added during prosecution to distinguish the claimed invention from

the prior art. The specification explains, however, that the claimed gesture sensitive button is responsive to different "types" of gestures. For example, the specification states that "[a] gesture is determined to be associated with the button if . . . it is one of the types of gestures associated with that button" (Ex. 2 at 2:30-33). The inventors provided three examples of different types of gestures – a tap, a check-mark, and an x-mark. *See id.* at 8:32-33 ("In this example, a button detects three different types of gestures, a 'tap' 226, a 'check-mark' 228, and an 'X-mark' 230") & 12:1-2 ("A method as recited in claim 17 wherein the gestures [sic] types include a tap, a check-mark, and an X-mark").

The specification further reveals that the different "types" of gestures are formed by making different marks upon the display screen. As shown in Figures 6a-6c below, the user makes different marks on the screen to form the tap gesture, the check-mark gesture, or the x-mark gesture.

719 Patent Figs. 6a-6c

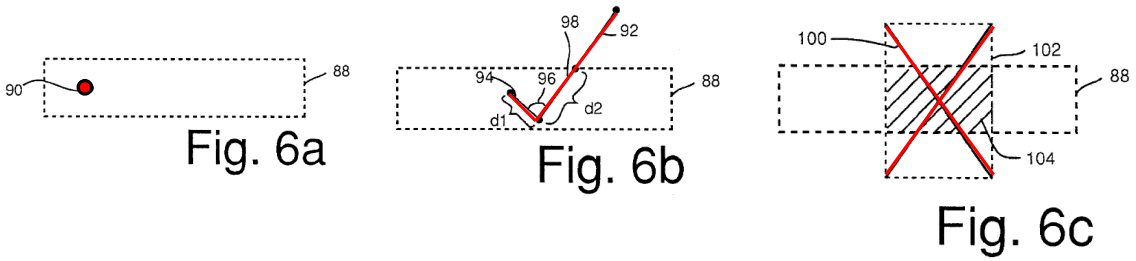


Fig. 6a Fig. 6b Fig. 6c

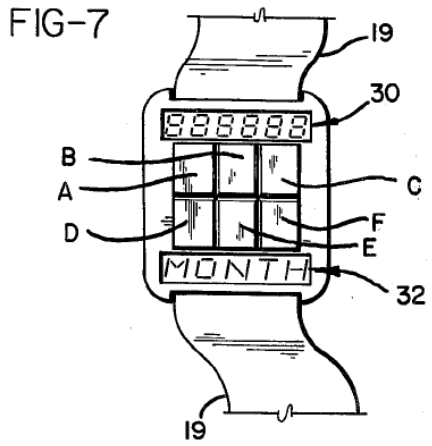
The process for distinguishing among these gestures is described to include collecting data points as the stylus moves on the display. *See id.* at 8:11-14 ("After the stylus has been lifted from the screen, it is determined in a step 210 whether the collection of data points forms a gesture associated with a button in step 210). Thus, one "type" of gesture is distinguished from another "type" of gesture based on the mark made on the screen.

When two gestures are formed by making the same mark, they are deemed to be the same type of gesture. Taking the tap gesture, for instance, the specification defines this type of gesture as "one where the tip of the stylus 38 contacts the surface of the screen 42 at substantially one point" (*id.* at 5:53-55). The specification also explains that "the distinguishing feature of a 'tap' is that the stylus is not moved substantially over the surface of the screen but, rather, contacts the screen 42 in substantially one point" (*id.* at 64-67). Thus, a tap gesture is distinguished from other types of gestures based on the mark made on the screen, not on some other basis, such as the duration of contact. Consequently, one of skill in the art would understand from this description that two tap gestures formed by contacting the screen in substantially one point (i.e., formed by making the same marks on the screen) but having meaningfully different durations of contact (e.g., a tap versus a tap and hold) would both constitute the same "type" of gesture (i.e., a tap gesture) and therefore not be "distinct" in view of the specification. As a result, Apple's proposed construction, which merely requires "two different gestures," is flawed.

The prosecution history reveals that the term "distinct gestures" was added to the claims to refer to this concept, disclosed in the specification, of recognizing different "types" of gestures formed by making different marks upon the display screen, and to require more than simply detecting "different gestures." During prosecution, the examiner rejected then-pending, independent Claim 8 (which ultimately issued as asserted Claim 7) as obvious in view of U.S. Patent No. 4,139,837 to Liljenwall (Ex. 12 at 5-6). Liljenwall discloses a wristwatch with a touch sensitive face having one or more

segments (Ex. 13 at Abstract). As shown in Liljenwall Figure 7, reproduced below, in one embodiment the face comprises six segments, labeled A-F.

Liljenwall Fig. 7



(*Id.* at Fig. 7). Liljenwall discloses that a user of the wristwatch can make a variety of strokes across the face to enter all the digits and instructions needed for a simple electronic calculator and watch (*id.* at 1:59-2:11).

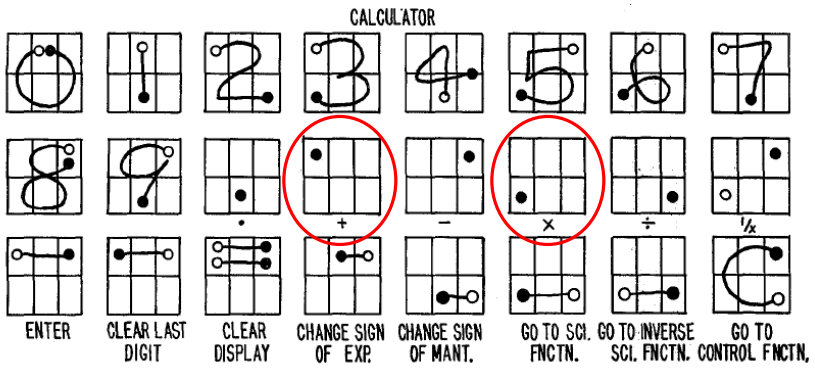
In rejecting the claims, the examiner stated that Liljenwall taught "a button (the array of button segments A, B, C . . . which form a single button as if the segments were part of a low resolution touch screen – see arguments section) that is responsive to at least *two different button gestures*" (Ex. 12 at 2) (emphasis added; ellipsis in original). In response, Apple amended claim 8 to recite that "the gesture sensitive button has a plurality of *distinct gestures* associated therewith" (Ex. 14 at 2) (emphasis added). Apple argued that while Liljenwall taught a button responsive to the same gesture – a tap – made at different locations on the display, the reference failed to disclose a button associated with "distinct gestures":

> [I]n Fig. 8 of Liljenwall, a six button segment display is shown where the location of a "tap" made on the display determines its meaning. In

> calculator mode for instance, a "tap" in the upper left segment is interpreted as a plus operation and a "tap" in the lower left segment is a multiply operation. Thus the same gesture made in different button segments does not initiate the execution of the same function. . . .
>
> Claim 8 was amended to specifically state that the gesture sensitive button has a plurality of distinct gestures associated with it . . . .

(Ex. 14 at 5, 6) Liljenwall Figure 8 is reproduced below, and has been highlighted to show the different operations identified in Apple's remarks.

Liljenwall Figure 8



(Ex. 13 at Fig. 8).

These remarks demonstrate that "distinct gestures" does not mean the same thing as "different gestures," which was taught by the prior art and distinguished during prosecution. Apple's proposed construction – "at least two different gestures" – contradicts the prosecution history and is therefore incorrect. *See Phillips*, 415 F.3d at 1317 ("[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.").

To understand the meaning of "distinct gestures," one of skill in the art would refer back to the specification which discloses the use of different *types* of gestures, wherein different types of gestures are gestures formed by making different marks – such as a tap, a check-mark, or an x-mark – upon the display screen. Nokia's proposed construction is the appropriate construction because it is fully supported and entirely consistent with the intrinsic evidence.

7. Construction of "gesture sensitive button" will resolve a disputed issue of infringement.

As described above, each Nokia touch screen element identified by Apple as the alleged "gesture sensitive button" is responsive to a tap action, but not to more complex actions such as the check-mark or x-mark gestures disclosed in the patent specification. Consequently, the accused Nokia elements are not "sensitive to more than a tap gesture." Therefore, if the Court adopts Nokia's proposed construction for "gesture sensitive button," there is no infringement based on the N900 or the N8.

8. The Court should adopt Nokia's proposed construction of "gesture sensitive button."

Nokia's Proposed Construction	Apple's Proposed Construction
an image provided on the display screen that is sensitive to more than a tap gesture	This term does not require construction. Plain and ordinary meaning applies. To the extent construction is necessary, Apple proposes: image produced on a screen which can be activated by a gesture

The parties agree that the term "gesture sensitive button" refers to an image on the screen. This aspect of the term is evident from the inventors' definition of "button" from the specification: "buttons, sometimes referred to as 'soft' buttons, *are images produced*

on the screen by the CPU which can be activated by placing the tip of a stylus on the button image in a gesture often referred to as a 'tap'" (Ex. 2 at 1:51-54 (emphasis added)). The remainder of Apple's proposed construction – "which can be activated by a gesture" – appears to be derived from the remainder of the inventors' definition above. The definition above, however, is for the word "button," not the claim phrase "gesture sensitive button" as used in the claims.

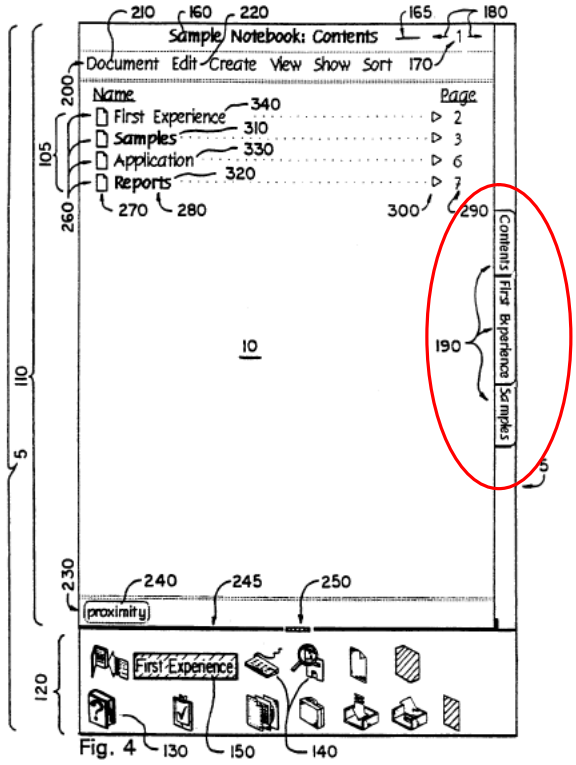
The inventors admitted that "buttons" sensitive to a tap gesture were known in the prior art. *See id.* at 1:49-51 (stating, in the Background of the Invention Section of the specification, that "[p]en-based computer systems often include 'buttons' on their screen which can be 'pressed' to perform a desired function or process.") The inventors used the term "gesture sensitive button" to refer to their purported invention. *See, e.g.*, *id.* at Title ("Gesture Sensitive Button for Graphical User Interfaces"), 2:7-8 ("The present invention provides a gesture sensitive button . . . ."), 8:65-66 ("What is claimed is: 1. A gesture sensitive button . . . ."). The claimed "gesture sensitive button" must therefore be more than a simple prior art "button."

The specification consistently describes the claimed "gesture sensitive button" invention as being sensitive to more than a tap gesture. For instance, in the Summary of the Invention section of the specification, the inventors explain that: "One of the detected gesture [sic] is preferably a tap gesture, while the one or more additional gestures are more complex gestures such as a 'check-mark', an 'X-mark', etc." (*id.* at 2:33-36). The invention therefore requires that at least one of the detected gestures be "more complex" than a tap. *See C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004) ("Statements that describe the invention as a whole are more likely to be found in certain

sections of the specification, such as the Summary of the Invention.") *See also* Ex. 2 at 8:4-27 & Fig. 9 (describing a process for "providing a gesture sensitive button" that includes the steps of determining whether a gesture is a tap gesture and, if it is not a tap gesture, determining whether the gesture is an alternative gesture).

The file history confirms that a "gesture sensitive button" is sensitive to more than a tap gesture. During prosecution, the examiner rejected the claims as being obvious in view of U.S. Patent No. 5,347,295 to Agulnick et al. (Ex. 15 at 2). Agulnick discloses a stylus-based computer system having a notebook appearance, with visible pages, page-turn effects, tabbed bookmarks and a table of contents (Ex. 16 at 3:6-12). Agulnick describes displaying objects such as text fragments, buttons, and documents that can be operated on using various gestures (*id.* at 3:32-35). With reference to Agulnick Figure 4, reproduced below, the examiner stated that Agulnick taught "a button image (190) (see figure 4) for detecting gestures (single tap (621) and double-tap (622)) (see figures 4, 45, and column 11, lines 4-18) made by the pointer (4)" (Ex. 15 at 2).

Agulnick Fig. 4



(Ex. 16 at Fig. 4.)

In response, Apple argued that the cited elements in Agulnick (tab markers labeled 190 in Fig. 4 above) are "gesture areas" that do not qualify as the claimed gesture sensitive button (Ex. 17 at 2-3). Apple quoted a passage from the Agulnick reference describing the difference between the disclosed "gesture areas" and "buttons":

> [I]n the present invention, *the gesture area which is sensitive to the command gesture is preferably much larger than the corresponding button or the like which may be tapped to accomplish the same command*. This is due to the fact that a given region of the display can distinguish between many gestures and can display changeable information, *while a button must be labeled in some static way and can only accept a tap*.

(*Id.* at 2-3 (emphasis in original)). Based on this selected passage, the inventors argued that Agulnick taught two elements – (i) "gesture areas" and (ii) buttons that "can only

accept a tap" – and that neither of those elements constituted a gesture sensitive button as claimed (Ex. 17 at 2).

In another passage, the Agulnick reference expressly defines "button" as "a region of the display demarcated by shading or outline and *sensitive to some small set of simple gestures such as tapping*" (Ex. 16 at 1:62-64) (emphasis added). *See also* Agulnick Figure 4, above (showing a shaded "button" labeled "First Experience" as element 150). The inventors explained that their invention requires more, stating that Agulnick "maintains the prior art's teaching with respect to buttons, i.e., Agulnick teaches a graphical user interface in which buttons are responsive to a single gesture only to initiate a single response, and, therefore, does not show or suggest the present invention" (Ex. 17 at 3).

In view of these remarks, one of ordinary skill in the art would understand that Apple expressly distinguished its claimed "gesture sensitive button" from the Agulnick "button" disclosed as being sensitive to only a tap gesture. Therefore, Nokia's proposed construction, which requires that the "gesture sensitive button" be "sensitive to more than a tap gesture," is mandated by the intrinsic evidence.

C. Apple's U.S. Patent No. 7,760,559 ("the 559 Patent").

1. Proposed constructions for the 559 Patent.

One term of the 559 Patent was submitted for construction. The parties' proposed construction for this term is set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"during use" (Claims 1, 5, and 7)	Indefinite.	This term does not require construction.

		Plain and ordinary meaning applies.

The disputed claim term is shown below in the context of asserted Claims 1, 5, and 7:

1. An integrated circuit comprising:

at least one logic circuit operating in a first voltage domain *during use*, the first voltage domain receiving power from at least one first input to the integrated circuit *during use*; and

at least one memory circuit coupled to the logic circuit, wherein the at least one memory circuit comprises a plurality of static random access memory (SRAM) cells operating in a second voltage domain *during use*, the second voltage domain receiving power from at least one second input to the integrated circuit *during use*;

wherein the memory circuit is configured to be read and written responsive to the logic circuit with the first voltage domain having a lower voltage than the second voltage domain.

5. An integrated circuit comprising:

at least one logic circuit in a first voltage domain, the first voltage domain receiving power from at least one first input to the integrated circuit *during use*; and

at least one memory circuit coupled to the logic circuit, wherein the at least one memory circuit comprises a plurality of static random access memory (SRAM) cells in a second voltage domain, the second voltage domain receiving power from at least one second input to the integrated circuit *during use*;

wherein the memory circuit is configured to be read and written responsive to the logic circuit with the first voltage domain having a lower voltage than the second voltage domain.

7. An integrated circuit comprising:

at least one logic circuit in a first voltage domain corresponding to a first supply voltage provided to the integrated circuit; and

> at least one memory circuit coupled to the logic circuit, wherein the at least one memory circuit comprises a plurality of static random access memory (SRAM) cells in a second voltage domain corresponding to a second supply voltage provided to the integrated circuit, and
>
> wherein the memory circuit is configured to be read and written responsive to the logic circuit even in the case that the first supply voltage is less than the second supply voltage *during use*.

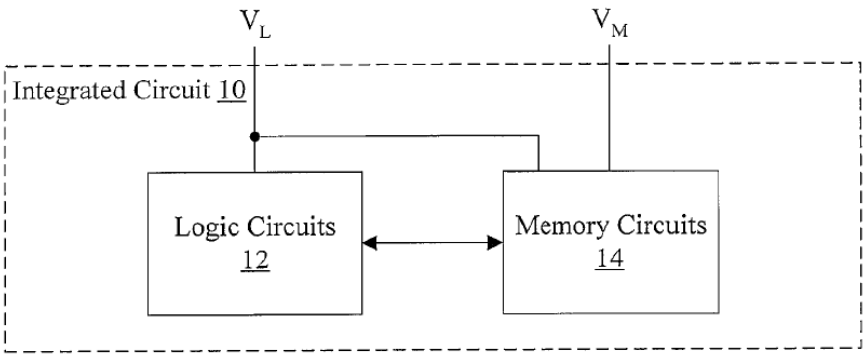
2. Background of the 559 Patent.

The 559 Patent generally relates to supplying power to an integrated circuit that includes a logic circuit and a memory circuit (Ex. 18 at 1:15-18, 2:8-14). It was well-known in the prior art that one way to manage and reduce power consumption in an integrated circuit is to reduce the supply voltage provided to the integrated circuit. It was also well-known that, in integrated circuits having integrated memories such as static random access memory ("SRAM") and a single power supply to both the logic circuit and the memory circuit, the stability of the memory serves to limit the amount by which the supply voltage can be reduced. Specifically, it was known that reducing the supply voltage below a certain voltage would negatively affect the SRAM's ability to operate, retain state, and be reliably read and written to, without negatively affecting the operation of the logic circuit. The purported novelty of the 559 Patent is to use voltage domains powered with different supply voltages so that (i) the supply voltage provided to the voltage domain containing the logic circuit may be reduced below the level at which the memory circuit can operate robustly, in order to conserve power, and (ii) the supply voltage provided to the voltage domain containing the memory circuit may be maintained at a higher voltage that provides for reliable operation (*id.* at 3:26-32).

An embodiment of the claimed integrated circuit (10) is shown in Figure 1 of the 559 Patent, reproduced below. In the claimed invention, the memory circuit (14) is

configured to be read and written responsive to the logic circuit (12) even in the case that the supply voltage provided to the logic circuit (V_L) is less than the supply voltage provided to the memory circuit (V_M) during use (*id.* at 12:29-32).

559 Patent Fig. 1



3. Construction of "during use" will resolve a disputed issue of invalidity.

If the Court finds that the term "during use" is insolubly ambiguous and no narrowing construction can properly be adopted, all of the asserted claims of the 559 Patent are invalid for indefiniteness under 35 U.S.C. § 112 ¶ 2. *See Honeywell Int'l, Inc. v. Int'l Trade Comm'n.*, 341 F.3d 1332, 1338 (Fed. Cir. 2003). Nokia will thus move for summary judgment of invalidity.

4. The Court should determine that "during use" is not amenable to construction.

Nokia's Proposed Construction	Apple's Proposed Construction
Indefinite.	This term does not require construction. Plain and ordinary meaning applies.

Apple contends that the plain and ordinary meaning of "during use" should apply, but does not state what it believes that meaning is. That is because the term "during use"

did not have an ordinary and customary meaning in the relevant art as of the priority date of the 559 Patent (Ex. 19 ¶ 9). "Use" in the context of an integrated circuit is not a binary condition, like "on" and "off" might be for a light switch (*id.* ¶ 10). An integrated circuit is not simply in use or not in use (*id.* ¶ 11). As known at the relevant time, integrated circuits and processors can be configured for various modes, or states, such as "active mode," "idle mode," "standby mode," and "sleep mode" (*id.* ¶ 12). It would be unclear to one of skill in the art where the line between use and non use of an integrated circuit might be drawn, as the term "use" was not generally recognized as referring to any one particular mode or combination of modes (*id.* ¶ 13). As explained below, adopting Apple's proposal for an unspecified plain and ordinary meaning would effectively permit "during use" to encompass any kind of "use" of any part of an integrated circuit (e.g., simply supplying power to portions of the circuit to retain state).

A brief explanation of the conventional power modes and how they could be achieved may assist in explaining the ambiguity of "during use" in the context of an integrated circuit. One skilled in the art at the time of the invention would have been familiar with various techniques for managing power in an integrated circuit (*id.* ¶ 14). Such techniques generally involved placing all or certain parts of the integrated circuit in a low-power state, or interrupting the power supply to all or certain parts of the integrated circuit, during periods of inactivity (*id.* ¶ 15). Specific techniques known at the relevant time included "dynamic voltage scaling," "clock gating," and "power gating" (*id.* ¶ 16). Dynamic voltage scaling involves increasing or decreasing the voltage supply to certain components based on the current operating frequency requirements (*id.* ¶ 17). Clock gating disables the clock to certain components to stop activity and thereby eliminate

most of the components' power consumption (*id.* ¶ 18). In power gating, the power supply is cut off to components while they are not functionally required (*id.* ¶ 19). By employing one or more of these and other techniques, an integrated circuit could be configured for a variety of power management modes or states (*id.* ¶ 20).

For example, the Intel "PXA27x" family of processors, which were available at the time of the invention,[10] were configured for at least six processor power modes:

> Normal mode – wherein power is supplied to all internal power domains including the processor and memory, and all clocks are running;
>
> Idle mode – wherein power is supplied to all internal power domains and most clocks are running, but the processor clock is stopped during periods of inactivity by setting a control register;
>
> Deep-idle mode – another idle mode wherein the CPU PhaseLockedLoop circuit is disabled and instead a more power efficient13MHz oscillator is enabled;
>
> Standby mode – wherein power consumption is reduced, both peripheral and CPU clocks are stopped such that internal activity has stopped, but the state of the memory may be preserved;
>
> Sleep mode – wherein power consumption is reduced further, most power supplies including those to the processor and memory can be cut off, most clocks are stopped, and CPU state is lost; and
>
> Deep-sleep mode – another sleep mode that offers the lowest power consumption by further disabling most IO pins of the integrated circuit.

(Ex. 21] at 3-33 to 3-50; Ex. 19 ¶ 21).

Notably, there was no "use" mode for the Intel processors (Ex. 19 ¶ 22). Further, it would be unclear to one of skill in the art which mode or modes would be in effect "during use" of the integrated circuit (*id.* ¶ 23). One skilled in the art might consider only

---

[10] The Intel PXA27x processors were integrated system-on-a-chip microprocessors for low-power portable handheld and hand-set devices (*see* Ex. 20 at 2-1). The PXA27x processors were released at least as early as 2004, and were available as of the priority date of the 559 Patent (*id.* at vii).

the normal mode to include "use" of the device because that is the mode in which the entire device – processor, memory, and peripheral components – is fully active (*id.* ¶ 24). Another skilled in the art might also include one or more of the idle modes as "use" because most of the components including the memory are powered and clocked and the processor continues to monitor one or more internal or external interrupt lines for activity to indicate the need to restore the processor to normal mode (*id.* ¶ 25). Still another person skilled in the art might conclude that the device is still in "use" during the standby mode because the state of the memory can be maintained and thus the integrated circuit can at least be "used" to store data (*id.* ¶ 26). Further, some skilled in the art might even consider one or more of the sleep modes as "use" because some critical components (e.g., the real time clock (RTC) and the IO pins) are still active and the processor is still monitoring a restricted set of interrupt lines that restore the processor to normal mode; thus, at least some parts of the device are being "used" (*id.* ¶ 27). Reasonable minds would differ, however, on which mode(s) qualify as "use" because the term "during use" did not have a generally accepted meaning in the art (*id.* ¶ 28).

As a result, a person of ordinary skill in the art would have had to rely on the claim language and the specification to try to understand this term. "During use" appears numerous times in the claims of the 559 patent. It first appears in Claim 1, which is directed to an integrated circuit, as part of the phrase "at least one logic circuit operating in a first voltage domain during use" (Ex. 18 at 11:9-10). In view of this phrase, one of skill in the art would understand that "during use" of the integrated circuit the logic circuit can operate in the first voltage domain. To avoid reading the term "during use" out of the claim, this phrase must also be interpreted to mean that the logic circuit could

be operating in the first voltage domain when the integrated circuit is *not* in use. Thus, "use" may not encompass all modes in which the logic circuit is operating, but only a subset. The next claim phrase provides that "the first voltage domain receiving power from at least one first input to the integrated circuit during use" (*id.* at 11:10-12). Thus, the first voltage domain can receive power during use. Again, to avoid reading the term out of the claim, one of skill in the art would interpret this phrase to mean that the first voltage domain could receive power when the integrated circuit is not in use. Therefore, "use" may not encompass all modes in which the first voltage domain is powered, but only a subset.

The claim continues on to recite that "the at least one memory circuit comprises a plurality of static random access memory (SRAM) cells operating in a second voltage domain during use," and that "the second voltage domain receiving power from at least one second input to the integrated circuit during use (*id.* at 11:14-19). A person of ordinary skill in the art would read these phrases about the memory cells and the second voltage domain and come away with impressions similar to those above. Namely, that "use" could encompass a subset of the modes in which the memory cells are operating and the second voltage domain is powered. The claims provide no guidance, however, as to what operating modes of the logic circuit and the memory cells involve "use" of the integrated circuit and which do not. For example, is a "normal," fully-active mode required or would one or more "idle" modes suffice? If only the normal mode qualifies as operating, then what subset of operating points (dynamic voltage scaling settings) qualify as "use"?

Turning to the specification, one of skill in the art would find no definition for "during use" and no clear guidance as to the meaning of the term. The only significant use of the term appears in the following passage:

> By separating the supply voltage for the logic circuits 12 and the memory circuits 14, the supply voltage for the logic circuits 12 (V_L) may be reduced below the level at which the memory circuits 14 may operate robustly. The supply voltage for the memory circuits 14 (V_M) may be maintained at the minimum supply voltage that provides for robust memory operation (or greater, if desired). Thus, the V_L supply voltage may be less than the V_M supply voltage *during use*. At other times, the V_L supply voltage may exceed the V_M supply voltage *during use* (e.g. at times when higher performance is desired and higher power consumption is acceptable to achieve the higher performance). Alternatively, the V_M supply voltage may be increased to match the V_L supply voltage if the V_L supply voltage would otherwise exceed the V_M supply voltage.

(*Id.* at 3:26-40 (emphasis added).) This passage might suggest that "during use" means during robust memory operation, which one of skill in the art would understand to mean that the memory may be written to, may be read, and may retain state without incurring significant errors. One of skill would further understand robust memory operation to be equivalent to the memory cells "operating" as recited in the claims. *See id.* at 11:14-16 ("a plurality of static random access memory (SRAM) cells operating in a second voltage domain"). In other words, describing memory cells as "operating" implies that the memory is operating robustly (i.e., correctly). But, as explained above, the claims suggest that "during use" is only a subset of modes in which the memory cells are operating. Therefore, the passage above fails to clarify the meaning of this term.

In sum, the claim language and the specification ultimately fail to "resolve any ambiguity in [this] disputed claim term." *Honeywell*, 341 F.3d at 1340 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996)).

A review of the patent file history leads to still more confusion. During prosecution, the examiner rejected the then-pending claims as anticipated by U.S. Patent No. 7,120,061 to Daga (Ex. 22 at 2). The inventors responded by arguing that Daga, which disclosed an integrated circuit with *non-volatile* memory, was distinguishable from their invention because the claimed integrated circuit included *volatile* memory. The inventors amended the claims to include a limitation that "the memory array comprises a plurality of memory cells that are continuously supplied by the second supply voltage during use" and argued that the memory arrays taught by Daga, by contrast, "are designed to retain values without any power applied" (Ex. 23 at 2, 7). Although this limitation does not appear in the claims that ultimately issued in the 559 patent, the inventors' amendments and remarks would indicate to one of skill in the art that "during use" could include all modes in which the state of the memory is retained. The prosecution history thus reveals another possible interpretation that cannot be squared with the specification and claims.

"[T]he patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent claims." *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008). Here, the bounds of the definition of "during use" are so unclear that the public cannot determine the limits of the 559 Patent and, consequently, cannot design around or improve upon the patent. Granted, the line between use and non-use of the claimed integrated circuit must exist somewhere between a fully powered and active circuit and a circuit that has been completely turned off. The intrinsic record, however, provides no clear guidance on where that line is. The claims

require an integrated circuit configured to perform certain functions "during use." Thus, an integrated circuit configured to perform those same functions while not "during use" would not infringe the claims. But competitors cannot design such a non-infringing circuit with any certainty due to the ambiguity of this term. For instance, if "during use" means during only an active mode, then a competitor could design around the patent by supplying power to the logic and memory from a single power pin in active mode while supplying power to the memory from a separate pin in one of the low power modes. If "during use" encompasses additional modes, however, this would not be permitted.

Because the term "during use" had no ordinary and customary meaning at the relevant time, and the claims, the specification and the file history fail to provide one of skill in the art with sufficient clues to understand the inventors' intended meaning for "during use," the term is not amenable to construction. *See Honeywell*, 341 F.3d at 1338-41 (holding claims indefinite when specification and prosecution history failed to resolve ambiguity in a disputed claim term).

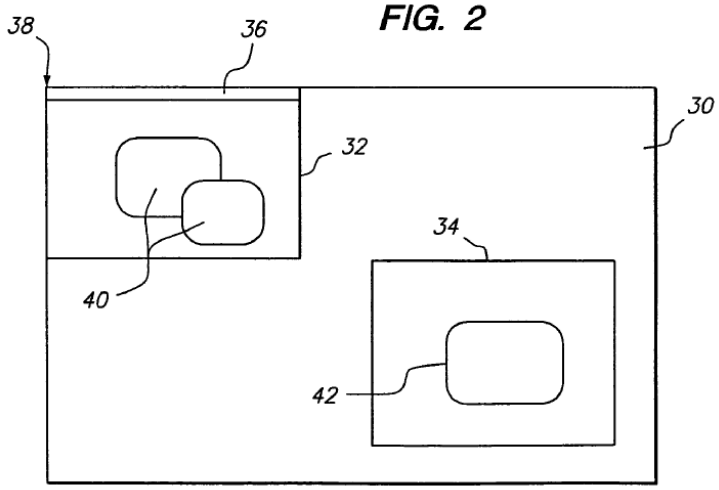
D. Apple's U.S. Patent No. 7,380,116 ("the 116 Patent").

1. Background of the 116 Patent.

The 116 Patent is related generally to a method and system for handling the addition or removal of display and video devices (such as video monitors and video cards) in a computer display system (Ex. 24 at 2:32-57). It was well known in the art at the time of the alleged invention of the 116 Patent to add or remove display and video devices when they were connected to a computer system before the system started or when the system was in a suspended state (*id.* at 1:47-2:7). The 116 Patent purportedly provided a system that would immediately make a newly added display available for use—so called "hot plugging" (*id.* at 2:22-27). To accomplish this, the 116 Patent's

inventors disclosed a system for assigning different portions of a global coordinate display space to different display devices upon the addition or removal of a display and a video card corresponding to the display (*id.* at 2:15-20). Figure 2 and the accompanying description of the 116 Patent exemplify the disclosure of the 116 Patent in this regard. According to the 116 Patent, global display space 30 in Figure 2 represents the display space, and 32 and 34 represent portions of that display space associated with two different display devices (*i.e.*, video monitors).

116 Patent Fig. 2



The alleged invention of the 116 Patent contemplates displaying portions (32, 34) of a display space (30) on two different monitors connected to a computer (*id.* at 4:36-44, Fig. 3). That is, a laptop computer may have its own integrated display (in the lid) that is assigned to a portion 32 of the display space 30. The laptop may be attached to an external video card and monitor that displays a portion 34 of the display space 30 (*id.* at 4:49-51, 5:45-47, Fig. 3). Windows 40 and 42 represent the user interfaces of programs running on the laptop that are displayed on the different monitors (*id.* at 4:42-44). Claim 1 of the 116 Patent purportedly claims the method in which a computer system is

reconfigured to accommodate changes to the video display environment (such as when a monitor is added or removed) (*id.* at 9:2-14).

Upon initial review of the 116 patent, the Examiner rejected the claims of the 116 Patent as unpatentable over the prior art (Ex. 25). In response, Apple argued that the invention of the 116 Patent was distinguished from the prior art because whereas the prior art "expressly discloses that the end-user must manually inform the USER program code of an addition or removal of a display device," the claims of the 116 Patent require that any change "occurs automatically upon addition or removal of a display device" (Ex. 26 at 15).

2. Proposed constructions for the 116 Patent.

The lone disputed term in the 116 Patent is present in asserted claim 1.

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"modifying the allocation of display space"	Indefinite. To the extent not indefinite, "automatically making a change to a portion of the two-dimensional global coordinate display space to be displayed"	Plain meaning. To the extent construction is necessary, "reconfiguring the display space"

Claim 1 of the 116 Patent is reproduced below with the disputed term italicized:

> 1. A method for reconfiguring a computer system to accommodate changes in a display environment, comprising the steps of:
>
> detecting the addition or removal of a display device in the computer system;
>
> providing a notification to a component of an operating system executing on said computer system that a video device has been added or removed, in response to said detection; and

modifying the allocation of display space to display devices via said operating system component, in response to said notification and in accordance with the addition or removal of a video device.

3. A finding of indefiniteness or construction of "modifying the allocation of display space" will resolve disputed issues of infringement and invalidity.

Apple has accused the Nokia N8 of infringing the 116 Patent by its use of an HDMI out cable that provides video output to a television or monitor. The term "modifying the allocation of display space" occurs in Claim 1, the only asserted claim of the 116 Patent. If the Court finds that the term is ambiguous and no construction can properly be adopted, the asserted claim is invalid under 35 U.S.C. § 112 ¶ 2. *See Honeywell*, 341 F.3d at 1338. If the Court finds this lone asserted claim of the 116 Patent to be invalid, Apple and Nokia's claims and counterclaims relating to the 116 Patent will be resolved.

In the event the Court finds that the term "modifying the allocation of display space" is not indefinite and can be properly construed, the construction will resolve the issue of Nokia's non-infringement of the 116 patent. No use of the Nokia N8 results in the performance of the method of claim 1 under Nokia's proposed construction.

4. The term "modifying the allocation of display space" is indefinite because it is not taught in the intrinsic record and is not defined in the relevant art.

The term "modifying the allocation of display space" is indefinite in the context of the 116 Patent. The specification and file history of the 116 Patent fail to provide any guidance as to its scope. Indeed, discussions and descriptions in relation to this claim term are seemingly absent from both the 116 Patent and the prosecution history. Nor does the knowledge of one of ordinary skill in the art shed any light as to the meaning of this claim term—the term "modifying the allocation of display space" was not a term of

art commonly used or understood by persons having ordinary skill in the art at the time of filing of the 116 Patent (nor is it currently) (Ex. 27). Even if one can objectively understand the phrase "display space" in the context of the 116 Patent, the wide range of possible meanings of the phrase "modifying the allocation of display space" prevents an objective interpretation of the scope of this claim term.

For a patent to be valid, its claim terms must be definite. 35 U.S.C. § 112 ¶ 2. "Indefiniteness is a matter of claim construction, and the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction." *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008) (citing *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342 (Fed. Cir. 2005)).

To be definite, claim terms must "reasonably apprise those skilled in the art of the scope of the invention." *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1342 (Fed. Cir. 2003). The definiteness requirement "assures that claims in a patent are 'sufficiently precise to permit a potential competitor to determine whether or not he is infringing.'" *Id.* at 1342 (citation omitted).

Insoluble ambiguity in claim scope makes a claim indefinite. *Halliburton*, 514 F.3d at 1249-50. When one of ordinary skill cannot discern the boundaries of a claim based on the claim language, the specification, and the prosecution history, as well as their knowledge of the relevant art, that claim is indefinite (*id.*). Even if a definition for a claim term can be articulated, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into a meaningfully precise claim scope (*id.* at 1251).

The phrase "modifying the allocation of display space" in claim 1 of the 116 Patent is not a mere change in language from the specification to the claims of the 116 Patent; it is an expansive departure from what is taught by the 116 Patent—a departure that introduces more questions than answers.

The 116 Patent discloses a system that "can be immediately responsive to the addition or removal of video hardware, so that the capabilities of a revised configuration can be employed without the need to change the operating state of the computer." (Ex. 24 at 6:11-15). To accomplish this result, the 116 Patent generally discloses a multi-step process for dealing with the addition or removal of a display device and a video device. This is best depicted in FIG. 5 of the 116 Patent:

116 Patent Fig. 5

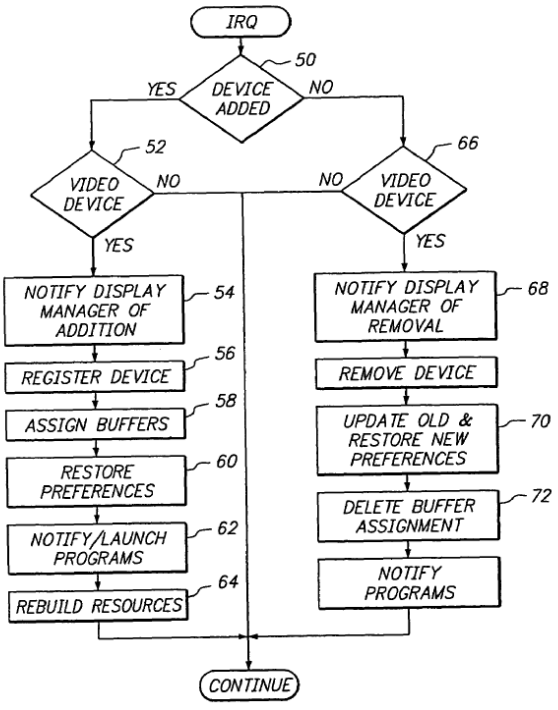


FIG. 5

As detailed in the portions of the specification corresponding to FIG. 5, the 116 Patent discusses how a display manager program assigns a display device (i.e., a monitor) to a frame buffer associated with the video card to which the display device is connected (*see id.* at 6:59-65). Even in the case where a display device is disconnected from one video card and connected to a different video card, the 116 Patent discusses "mov[ing] objects within the global display space 30 so that they are presented to the appropriate frame buffer for the display devices" (*see id.* at 6:62-7:6). In other words, the specification of the 116 Patent discusses adding or deleting an assignment of a portion of the display space to a frame buffer of an added or removed video card with a display device connected to that video card.

Claim 2 of the 116 Patent informs the meaning of "modifying the allocation of display space." *See Phillips*, 415 at 1314 ("[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms."). Claim 2, which depends on independent claim 1, further requires that the "modifying step" include adding or deleting an assignment of a portion of the display space to the frame buffer of an added or removed video device (Ex. 24 at 9:15-20). However, the doctrine of claim differentiation "create[s] a presumption that each claim in a patent has a different scope." *Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F. 3d 1343, 1351 (Fed. Cir. 2005) (quoting *Comark Commc'ns, Inc. v. Harris Corp.,* 156 F.3d 1182, 1187 (Fed. Cir. 1998)). Because interpreting the phrase "modifying the allocation of display space" to mean "adding or deleting an assignment of a portion of the display space to the frame buffer of an added or removed video device" would result in claims 1 and 2 obtaining identical scope, the doctrine of claim differentiation requires that the term mean something different.

However, the patent's discussions are limited to the frame buffer assignment scheme covered in claim 2. Consequently, one of ordinary skill in the art is still left to wonder: "What is encompassed with the claimed 'modifying the allocation of display space' step in claim 1?"

The specification of the 116 Patent fails to provide any guidance as to the boundaries of this claimed step. With respect to display space 30 of Figure 2, the 116 Patent specification states that "[o]bjects and other information to be displayed can be positioned anywhere within this [display] space, as determined by the user and/or the software program that generates the information." (*See* Ex. 24 at 4:11-14.) The 116 Patent also describes that multiple display devices can be accommodated by the global display space (*see*, *e.g.*, 4: 36-44, FIG. 2). What it fails to disclose or address in any way is what is meant by "modifying the allocation of display space" or, more particularly, what implementations are encompassed by that term.[11]

Similarly, the knowledge available to those of ordinary skill in the art at the time of the invention does not rescue this term because this term would not have had an unambiguous meaning to a person having ordinary skill in the art (Ex. 27). Specifically, the words "modifying" and "allocation" are generic terms without any special meaning in the art. As such, their use in the phrase "modifying an allocation of display space" conveys no particularized meaning to one of ordinary skill in the art.

---

[11] The file history of the 116 Patent does not remedy the inadequacies of the disclosure with regard to this claim term. The file history of the 116 Patent includes a single Office Action and Response, neither of which addresses the meaning of or the extent of the coverage of the "modifying the allocation of display space" phrase of the claim art (Ex. 26). Instead, the Office Action and Response focus on whether the prior art discloses the "automatic" addition or removal of a display device (*id.* at 15). No focus

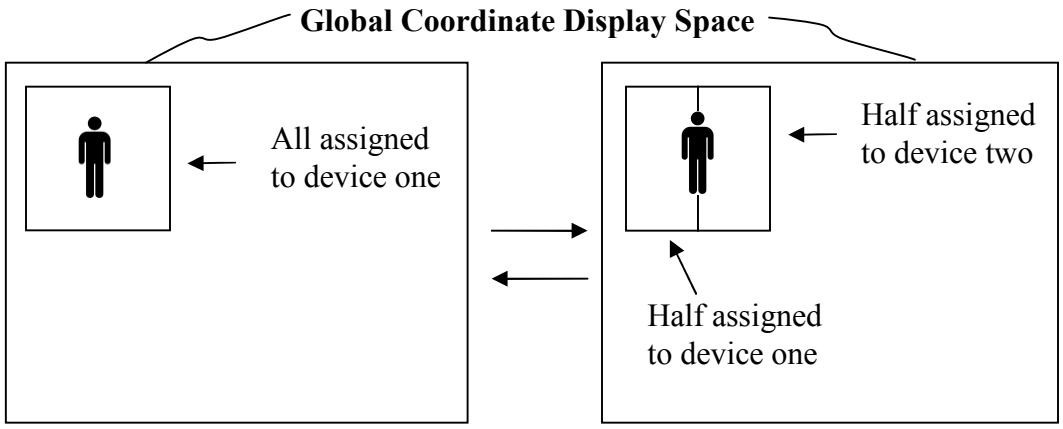
Without any guidance from the intrinsic record or the knowledge of one of ordinary skill in the relevant art, one is left without any guidance as to what infringes. This is not simply a theoretical exercise. As the following real world scenarios demonstrate, one of ordinary skill has no way of knowing what is and is not within the reach of this claim term.

For example, do the following activities fall within the scope of this term?

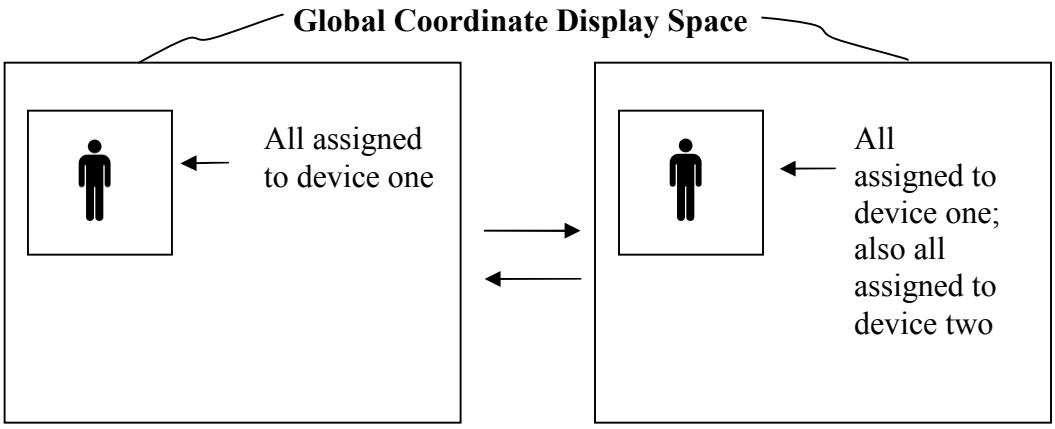
(i) Adding a second display to a computer such that what was previously displayed on a single display is split equally between the two displays, as illustrated in the figure below. Is this a "modification of the allocation of display space"? One could argue 'yes' because the portion of the display space that was assigned to the first display device was reduced and now only contains half of the image data that it previously displayed. Then again, the area assigned to display devices has remained the same, possibly meaning that the original allocation was unchanged. If so, does the addition of a second display constitute a "modification of the allocation of display space"? Without more direction regarding the meaning of the term, this cannot be definitively answered.

---

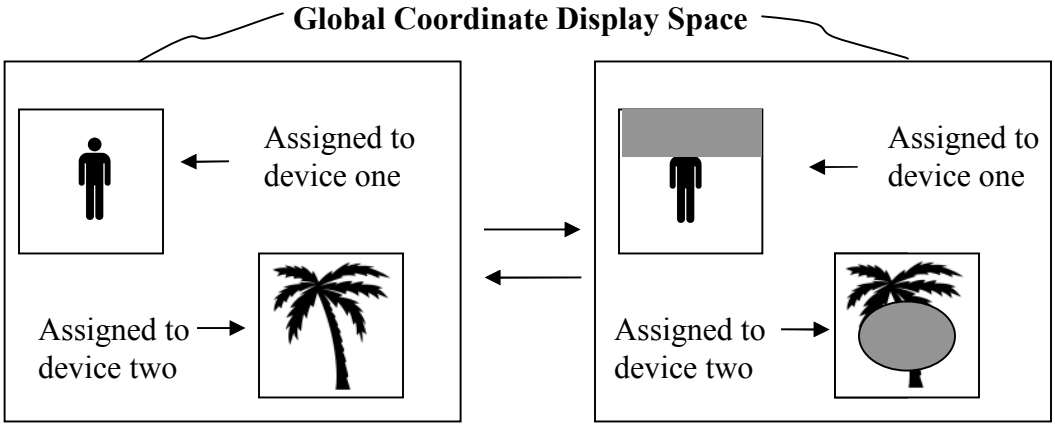
was directed toward determining what constitutes "modifying an allocation of display space."



(ii) Adding a second display to a computer such that exactly what was previously displayed on a single display is now also being displayed on the second device, as illustrated in the figure below. This does not appear to be a "modification of the allocation of display space" because the display space remains unchanged, and the original allocation to the first device remains untouched. The same area of the display space is assigned to be displayed both before and after the addition of a new device. However, this could be interpreted as a "modification of the allocation of display space" if the new assignment to a second device is a modification of the allocation, even though the display space itself remains unchanged.



(iii) Adding additional overlay(s) to the areas of the display space already being displayed, as illustrated in the figure below. This could be interpreted as "modifying the allocation of display space" because portions of the display space that were originally displayed to a device are now not being displayed because they have been covered by an overlay, which is being displayed instead. However, the same areas of the display space are still assigned to the same devices, which could also mean that the allocation remains unchanged under another interpretation of the claim term.



There are many other examples of alterations to a display environment that may or may not constitute a modification of the allocation of display space. For instance, does adding a second display to a system that displays exactly the same image as the first display, but alters the resolution, constitute a "modification of the allocation of display space"? The same portion of the display space is being "allocated" to the first and second display devices so there is arguably no "modification." However, a change in resolution may alter the number of pixels displayed on each device; can this constitute a modification of the allocation of the display space?

There are other problematic examples where the same portion of the display space is being shown on devices 1 and 2, but the characteristics of what is displayed are different. For example, can changing the brightness, opening/closing a window, moving objects within a display area, or moving objects from an existing display area to another existing display area constitute a modification of the allocation of display space? The mere conclusion that any or some of the scenarios described above fall within the claim term does not end the inquiry. 35 U.S.C. § 112 requires more than that for a claim to be definite. *Halliburton*, 514 F.3d at 1251. One of ordinary skill in the art must be able to glean from any definition a precise claim scope (*id*.). In the case of the "modifying the allocation of display space" term of claim 1, neither the intrinsic evidence nor the knowledge generally available to those of ordinary skill in the art provide any precision regarding the scope of the claim. How is the public able to determine whether or not what they are doing infringes claim 1 of the 116 Patent? As explained above, the public cannot make such a determination. The "modifying the allocation of the display space" term is insolubly ambiguous and must be found indefinite.

5. Nokia's proposed construction is the best attempt to construe the term "modifying the allocation of display space."

The term "modifying the allocation of display space" is indefinite. In the event the Court disagrees, Nokia proposes that the following construction be adopted: "automatically making a change to a portion of the two-dimensional global coordinate display space to be displayed."

The 116 Patent describes how a computer system handles the addition and removal of video cards and monitors attached to those video cards (*see generally*, Ex. 24 at 6:11-7:6). Image data is routed to frame buffers associated with a particular display device (*id.* at 6:55-66). As a result of the association between newly added and removed video cards and display devices, areas of a global display space are displayed in accordance with the data in the frame buffer assigned to a particular video card (*id.*). Although the 116 Patent provides no teaching to inform one of ordinary skill as to the bounds of what constitutes "modifying the allocation of display space," Nokia's proposed construction, including the following analyses, is based on what is discussed in the 116 Patent.

The first aspect of Nokia's proposed construction is that the method step must occur "automatically." Apple argued during prosecution that the steps of the alleged invention must occur "automatically" in order to distinguish the claimed invention from the prior art (Ex. 26 at 12, 15). In order to overcome a prior art reference, applicants emphasized in an amendment that:

> claims 1, 12 and 15 recite a method, system and program in which the reconfiguration of the display environment occurs *automatically* upon the addition or removal of a display device, i.e. a true 'hot-plugging' capability, whereas Hogle discloses an arrangement that requires user

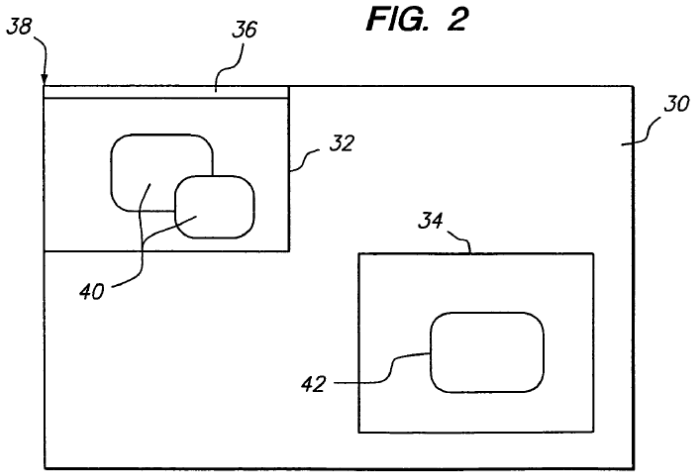
> input after a physical change has occurred before the reconfiguration is effected.

(*Id.* at 15 (emphasis added).) The inclusion of the term "automatically" in the construction accounts for this position taken by Apple during prosecution of the 116 Patent. To find otherwise would impermissibly allow applicants to recover in claim construction material that had been disclaimed during prosecution. *See Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (citing *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.,* 849 F.2d 1430, 1438 (Fed. Cir. 1988)) ("Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims.") An applicant cannot construe a claim one way during prosecution to obtain approval and construe it in a different way against alleged infringers. *Id.* (citing *Unique Concepts, Inc. v. Brown,* 939 F.2d 1558, 1562 (Fed. Cir. 1991)).

Next, Nokia's proposed construction properly interprets the "display space" in the disputed term to be a "two-dimensional global coordinate display space." The 116 Patent specification equates these terms—"display space" and "two-dimensional global coordinate display space"—when it references the space 30 in Figure 2, which it refers to interchangeably as the "display space," "global space," "global coordinate space," "coordinate display space," and "global display space" (Ex. 24 at 4:9-10, 4:23-24, 4:28-29, 4:36-38, 4:62-64, 6:57-59, 6:64-65). "Global coordinate display space" in Nokia's proposed construction encompasses the meaning of the "display space" term as used in the specification of the 116 Patent. Furthermore, this space is defined to be two-dimensional. For example, the specification teaches that the origin of the coordinate

space is a "0,0 coordinate point" (*id.* at 4:14-16). That is, 0,0 correspond to points on two axes resulting in a point in two-dimensional space. Figure 2, which identifies the global coordinate display space 30 as having an origin "0, 0 point 38," also demonstrates that this space is intended to be a two-dimensional space (*id.* at 4:26).

116 Patent Fig. 2



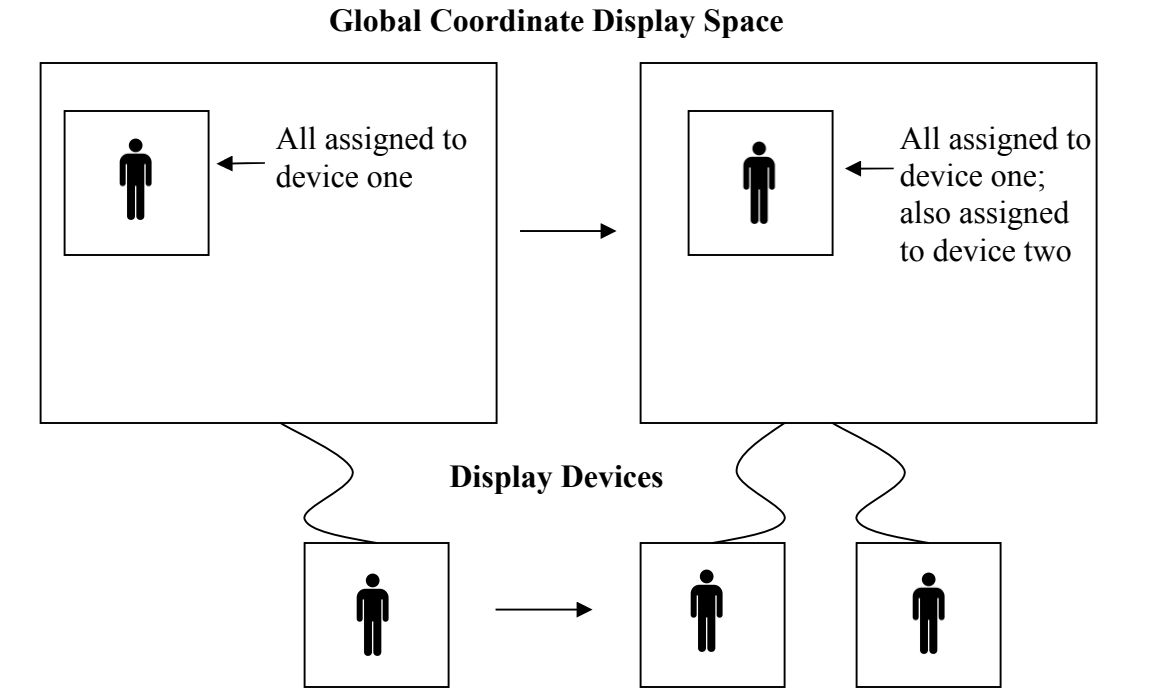
In no portion of the of the 116 Patent or its prosecution history is the "display space" contemplated as being anything other than two-dimensional.

The term "modifying the allocation" should be construed to mean "making a change to a portion [of the display space] to be displayed." "Modifying" means "making a change" (*See, e.g.*, Ex. 28 at 763 (defining "modify" as, contrastingly, "to make minor changes in" and "to make basic or fundamental changes in often to serve a new end")). In addition, the only modification that the 116 Patent teaches is adding or removing assignments of areas of the global display space to frame buffers in video cards and of those video cards to display devices (*see*, *e.g.*, Ex. 24 at 6:55-7:6). For example, the portion of the display space to be displayed changes when an assignment to a new device is added (because a new display area in the display space is added), and when an

assignment to an existing device is removed (because a display area in the display space is removed) (*see id.*). Accordingly, the construction requires that the portions of the global display space that are to be displayed (for example, the areas corresponding to display devices 32 and 34 in FIG. 2 of the 116 Patent) must change. Changes in system configuration that do not result in a change of the portions of the global display space that are to be displayed do not comport with the claim and are not covered.

Because the 116 Patent is entirely devoid of any meaningful discussion of what "modifying an allocation of display space" means, it is helpful to outline the contours of the scope of Nokia's construction. Whereas Nokia's construction, as discussed above, demonstrates what constitutes modifying the allocation of display space in accordance with the proper construction for this claim term, it is also helpful to have a similar discussion as to what does not constitute modifying the allocation of display space. Accordingly, what follows is a discussion, based on what can be gleaned from the teachings of the patent, of what would be excluded from Nokia's construction.

Nokia's construction would not cover the situation where a portion of the display space is displayed to one screen, and the exact same portion is then displayed on a second, newly added, device. In this case, the portion of the display space that is displayed has not been modified in any way; instead the same portion of the display space is simply displayed on two display devices. No change occurs in the global coordinate display space in this case, even though a change might seem apparent to the end user. This process is illustrated in the figure below.

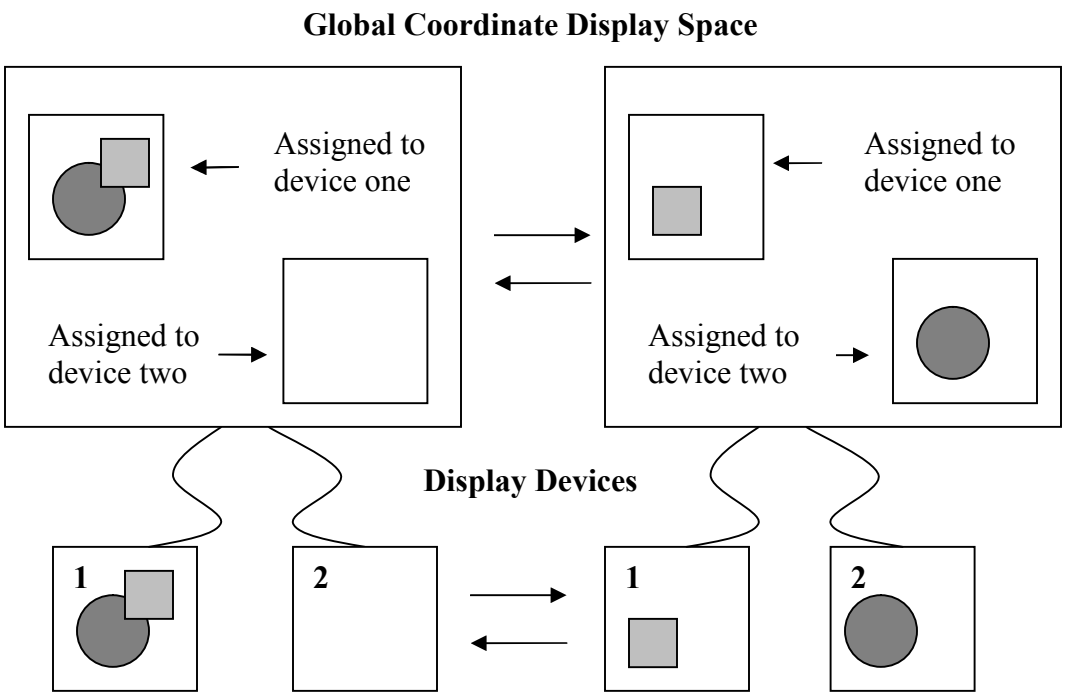


Furthermore, Nokia's construction also does not cover changing the *content* of what is displayed in a portion of the display space being displayed. Nokia's construction only refers to changing what portions of the display space display; it cannot refer to changing the contents of those display space portions because no such teaching exists in the 116 Patent. Such a change would not be a change to a portion of the two-dimensional global coordinate display space to be displayed. For example, if the objects being displayed within a portion of the display space are changed, but the portions of the display space that are reserved for display remained the same, the portion of display space to be displayed has remained unchanged.

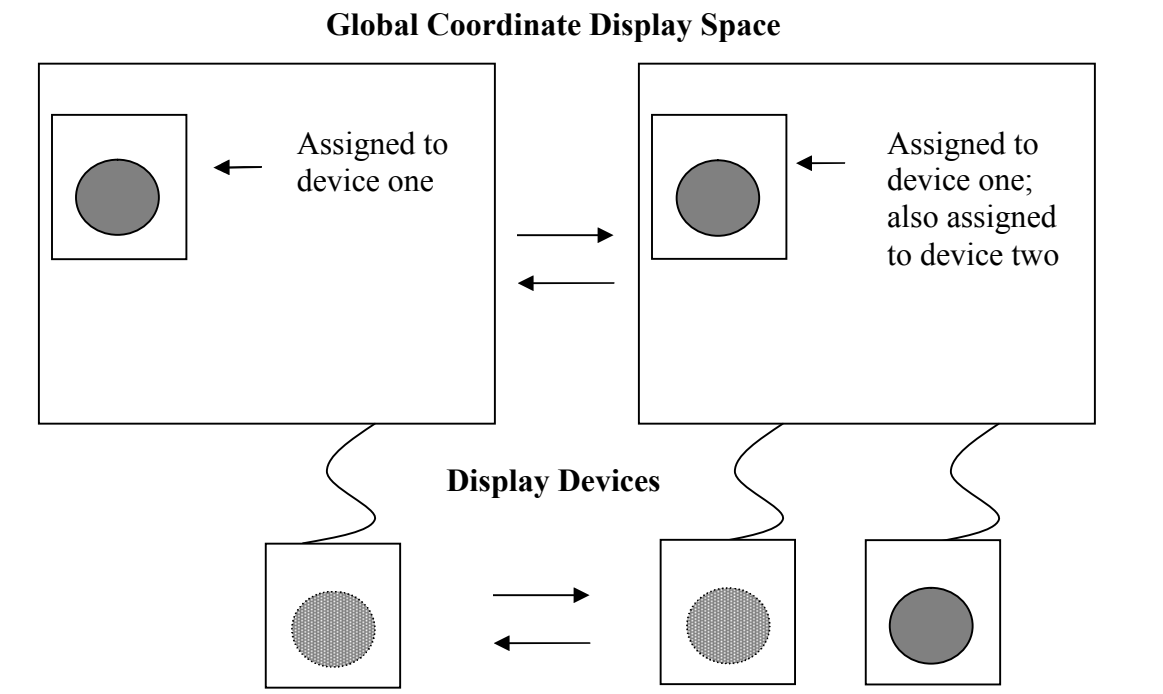
Several examples demonstrate changes that can be made to the display space itself that are not changes to portions of the display space. Opening or closing windows within a displayed screen, moving windows or icons around on a displayed screen, adding or

removing an overlay on top of the display space already being displayed, or changing the resolution of the portion of the display space already being displayed do not change what portions of the display space are to be displayed. In each of these examples, the portion of the display space that is being displayed remains unchanged. Before and after each of these changes, the same areas within the global coordinate display space remain unchanged. Thus, although the *content* of those areas may look different, the *portion* of the display space that is displayed remains the same.

For example, in the figure below an object has been moved from one portion of the display space assigned to be displayed to another portion of the display space assigned to be displayed. An open window has also been moved within the first portion of the display space assigned to be displayed. Moving objects or windows around in this manner does not result in a change in the portions of the display space assigned to be displayed.



Another example of a change that would not be covered by Nokia's construction is a change in resolution where the portion of the display space that is assigned to be displayed remains unchanged. The figure below demonstrates that the portion of the global display space that is assigned to be displayed remains unmodified when a second display device is added, and the output resolution to that newly added device is different from that of the first display device. Similar to the prior examples, the 116 Patent provides no disclosure or suggestion that changes in an output resolution would fall within the scope of the invention.



Nokia's proposed construction thus requires a change of the portion of the global coordinate display space to be displayed. No other reasonable construction can be gleaned from the 116 Patent's deficient disclosure. Accordingly, in the event that the term is not found to be indefinite, the Court should construe the term "modifying the allocation of display space" to mean "automatically making a change to a portion of the two-dimensional global coordinate display space to be displayed."

6. Apple's construction is counter to the intrinsic record and the knowledge of persons having ordinary skill in the art at the time of the invention.

Apple's proposed construction is improper and misguided. In fact, it introduces more ambiguity into a claim that is insolubly ambiguous in the first instance. The Court need not indulge Apple's invitation to introduce more uncertainty into a claim where plenty already exists.

First, plain and ordinary meaning cannot apply here where the term was not a term of art used by persons having ordinary skill in the art at the time of the alleged invention of the 116 Patent and there is no objective anchor on which such a person could reasonably ascertain the scope of the patent's claims. *See Datamize,* 417 F.3d at 1350-51; Ex. 27 ¶ 6 (explaining that "modifying the allocation of display space" is not a term of art). Apple's proposed construction that the plain meaning must apply is nothing more than a postponement of the inevitable construction of this term during summary judgment or trial. This claim term cannot be attributed a plain meaning because none exists in the context of the invention.

Apple's proposed "reconfiguring the display space" construction merely infuses enough additional uncertainty into claim 1 to ensure further dispute and disagreement as the case progresses. For example, Apple's construction introduces impermissible breadth into the claim contrary to the claim language itself. Specifically, modifying the content of the display space itself is a completely different step than modifying the *allocation* of that space. By way of analogy, modifying an allocation of something (for example, redrawing the metes and bounds of a parcel of land) is entirely different from modifying the thing itself (for example, digging a hole in the land itself). Apple's proposed construction would erase the claimed concept of modifying *an allocation* from the patent claims and would impermissibly alter the meaning and scope of the claim. This is counter to the very language of the claim, and as such, cannot be adopted. *See Phillips*, 415 F.3d at 1314 ("[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms.").

Second, Apple's construction does not resolve several issues with the claim term that must necessarily be resolved to confront the merits of Apple's claims. For example, it in no way answers any of the following questions: (i) what is the display space? (ii) what is the allocation? (iii) what is the prior allocation?[12] (iv) can "modifying" or "reconfiguring" encompass a prior allocation of nothing and a subsequent allocation of the entire display space? These are merely a few of the questions left open by Apple's proposed construction.

Lastly, Apple's proposed alternate construction simply does not make sense when inserted into the language of the patent to replace the term "modifying the allocation of display space." Under Apple's proposed construction, the first phrase of the last step of Claim 1 would read "reconfiguring the display space to display devices." The phrase "reconfiguring … *to* display devices" does not make sense because the concept of 'reconfiguring' one object *to* another is not understandable. This nonsensical reading is a result of the effective deletion of the "allocation" term, to which the phrase "to display devices" grammatically appends in the original claim. *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1255 (Fed. Cir. 2010) ("A claim construction that renders asserted claims facially nonsensical 'cannot be correct.'") (citation omitted).

To the extent that the Court holds the disputed claim term is not indefinite, it should be accorded Nokia's proposed construction because, as shown above, Apple's proposed constructions are incorrect and merely postpone the inevitable construction of this claim element. "Modifying the allocation of display space" should be found

[12] In order for the allocation to be modified, there must be a prior allocation.

indefinite or, in the alternative, construed as "automatically making a change to a portion of the two-dimensional global coordinate display space to be displayed."

E. Apple's U.S. Patent No. 7,054,981 ("the 981 Patent").

1. Background of the 981 Patent.

The 981 Patent relates to a system for providing direct memory access between a local memory and an external memory (Ex. 29 at 1:13-17, 2:24-30). Direct memory access is a method of allowing access to a system's memory without involving the processor and was well known in the art at the time of the alleged invention of the 981 Patent (*see*, *e.g.*, *id.* at 1:55-62). To accomplish this particular flavor of data transfer between a local memory and an external memory, the 981 Patent teaches the use of two buses—a main system bus and a DMA bus—as well as a DMA bus switch for controlling access to a local memory (*id.* at 2:6-56). Accordingly, during a DMA data transfer operation, the DMA bus can be isolated from the CPU so that the DMA transfer can occur uninterrupted, while the CPU, by virtue of being connected to the main bus, is still able to access devices connected to the main bus.

Upon initial examination, the Examiner of the 981 Patent Application rejected the claims as unpatentable over the prior art (Ex. 30). Specifically, the prior art reference cited by the Examiner taught providing a DMA transfer between external and local memories wherein the microprocessor was bypassed (Ex. 31 at 9). In response, Apple amended its claims to include a concept that it stated was not taught in the prior art of record: "disabling any microprocessor/system memory access during for the duration [sic] of the high speed data transfer operation." (Ex. 31 at 9-10). This added limitation was incorporated into all of the claims of the 981 Patent (*id.* at 10 ("All other independent claims (i.e., claims 7, 13, 20 and 23) recite similar limitations as does claim 1 with

regards to the discussion above and are, therefore, also submitted to be allowable over the cited art.")).

2. Proposed constructions for the 981 Patent.

One term of the 981 Patent is submitted for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"disabling access between the CPU and the local memory" (Claims 16, 19)	"preventing the CPU from accessing the local memory for the duration of the high speed data transfer connection while permitting the CPU to access the main system bus and any device connected thereto"	Plain and ordinary meaning

The disputed claim term is shown below in the context of Claim 16, in which it appears:

> 16. In a system that includes a central processing unit (CPU) connected to a main system bus and a local memory connected to a DMA bus, a method for providing a direct high speed data transfer connection between a port receptor and the local memory, comprising:
>
> detecting a high speed cable connected at the port receptor connected to the DMA bus;
>
> generating a high speed data transfer request when the high speed cable is detected;
>
> providing the direct high speed data transfer connection between the local memory and the port receptor via the DMA bus based upon the high speed data transfer request; and
>
> *disabling access between the CPU and the local memory*.

3. Construction of "disabling access between the CPU and the local memory" will resolve disputed issues of infringement and invalidity.

Apple accuses Nokia's N900 device of infringing the 981 Patent through its use of a Texas Instruments OMAP34xx chip. The microprocessor on this chip is not prevented from accessing the local memory during a direct memory access transfer operation. Accordingly, the Court's conclusion that Nokia's construction is the appropriate one would resolve the issue of infringement since Nokia's product would not infringe. In addition, if "disabling access between the CPU and the local memory" is interpreted (as Apple apparently contends in its infringement contentions) to encompass merely accomplishing a direct memory access transfer without CPU assistance, then nearly all DMA transfers (including prior art DMA transfers) would fall within the scope of the asserted claims, thereby hastening a conclusion of invalidity.

4. The Court should adopt Nokia's proposed construction of "disabling access between the CPU and the local memory."

Nokia proposes that the Court adopt the following construction for this term: "preventing the CPU from accessing the local memory for the duration of the high speed data transfer connection while permitting the CPU to access the main system bus and any device connected thereto." This construction is well supported by the intrinsic evidence and incorporates the limitations added to this term by applicants during prosecution of the 981 Patent. Apple's proposal that the term be given its plain and ordinary meaning is not supported by the intrinsic record, which shows that applicants introduced several limitations into this term in arguments and amendments made during prosecution.

The terms "disabling access between the CPU and the local memory" and "the CPU is unable to access the HDD" were added during prosecution in order to overcome a

prior art reference (Ex. 31). The phrase "the CPU is unable to access the HDD" was added to existing claims via amendment, and "disabling access between the CPU and the local memory" was included in new claims that the applicant presented after the Examiner's initial rejection based on prior art (*id.*) It is clear in the prosecution history that applicants and the examiner considered these two terms to recite equivalent limitations (*id.* at 10).

The prior art reference that Apple attempted to distinguish with these claim terms taught providing a DMA transfer between external and local memories wherein the microprocessor was bypassed (Ex. 31 at 10). In arguing that these claim terms overcame the reference and placed the invention in condition for allowance, Apple stated:

> [T]he apparatus of claim 1, in contrast to the cited reference, *prevents the CPU from accessing the HDD when providing a direct connection* between the port receptor and the HDD.
>
> . . .
>
> *All other independent claims* (i.e., claims 7, 13, 20 and 23 [sic][13]) *recite similar limitations* as does claim 1 with regards to the discussion above and are, therefore, also submitted to be allowable over the cited art.

(*Id.* (emphasis added).) Independent claim 22 of the application issued as claim 16 in the 981 Patent. The "disabling access" element of claim 16 must therefore mean actively preventing the CPU from accessing the local memory because that is the only claim element in claim 16 that "recites similar limitations" as those argued as distinguishing the prior art in the file history (*see id.*). Merely neglecting to involve the CPU in the data transfer cannot fall within the scope of this claim because the applicant said it did not by

[13] Applicant incorrectly referred to independent claim 23 in the application, however, claim 23 was not an independent claim. Applicant clearly intended to reference independent claim 22 in the application, which issued as claim 16 of the 981 Patent.

their arguments and Amendments (*see id.* at 1-10 (amending the patent claims and arguing that the inclusion of the "disabling access between the CPU and the local memory" and "the CPU is unable to access the local memory" terms distinguished the patent claims from the prior art)).

Second, the term "disabling access between the CPU and the local memory" includes a temporal requirement. This was clearly intended by the applicant and understood by the Examiner. Indeed, claim 16 is the only independent claim of the '981 Patent that does not explicitly recite a temporal requirement for the "disabling access/unable to access" element. All other independent claims of the '981 patent indicate that the CPU is unable to access for the duration of the data transfer connection, and only for that period of time (*id.* at 9-10; Ex. 32 at 8). This, however, does not change whether that element is present in claim 16 or not—it clearly is. In the amendment that added this term, Apple argued:

> In contrast to Bruce et al., the claim 1 provides for selectively enabling a bi-directional high speed data transfer path between an external device and a system memory so as to avoid any potential conflicts during a high speed data transfer operation *by effectively disabling any microprocessor/system memory access during for* [sic] *the duration of the high speed data transfer operation*.
>
> . . .
>
> All other independent claims (i.e., claims 7, 13, 20 and 23 [sic]) recite similar limitation as does claim 1 with regards to the discussion above and are, therefore, also submitted to be allowable over the cited art.

(Ex. 31 at 9-10 (emphasis added).) Thus, Applicants clearly limited "disabling access" to mean "disabling access for the duration of the high speed data transfer connection."

Later during prosecution, the examiner rejected claims 19 and 22 of the application (which later issued as independent claims 13 and 16, respectively) as being

unpatentable over a prior art reference where the CPU was not only prevented from accessing the local memory during a DMA transfer, but was also unable to access the main system bus or any devices connected thereto during the direct high speed data transfer (Ex. 32 at 8). In their attempt to overcome this prior art reference, applicants directly addressed claim 19, and implied that their argument applied to claim 22 as well. Applicants argued:

> *Claims 19 and 22 were rejected* under 35 U.S.C. 102(b) as being unpatentable over U.S. Patent 4,975,832 issued to Saito that describes a microcomputer system with dual DMA mode transmissions. . . .
>
> In contrast to Saito, claim 19 provides that the CPU is **always** connected to the main system bus 116 and is therefore always in communication with any device connected thereto (such as SDRAM 110, Flash ROM 112, etc.) and *is only unable to access the hard disk drive HDD 102 during the period of time in which data is being transferred directly between the port 118 and the HDD 102. In this way, the CPU 106 remains operational, in contrast to Saito, and able to interact with any device connected to the main bus 116 concurrent with the direct data transfer.*
>
> Therefore, the Applicants believe that *neither claims 19 nor 22* are anticipated by Saito and respectfully request that the Examiner withdraw the 35 U.S.C. 102(b) rejections thereof.

(*Id.* at 8 (emphasis added in italics).)

From the above quote, it is clear that not only did Apple reiterate that the CPU was prevented from accessing the local memory for the duration of time in which data is being transferred, Apple further stated an additional requirement: that the CPU remain connected to the main system bus and able to interact with any device connected thereto. Indeed, this requirement is contained in the preamble to claim 16, which requires a "central processing unit (CPU) *connected to a main system bus*." This limitation in the preamble was added to the claim to distinguish it over the prior art (Ex. 33).

Given the arguments made during prosecution, it is appropriate to construe the term "disabling access between the CPU and the local memory" to include the limitations that the CPU is prevented from accessing the local memory for the duration of the high speed data transfer over the DMA bus, and is able to access the main system bus and any devices connected thereto for the period of time that its access to the local memory is disabled during the high speed data transfer connection.

5. Apple's proposed approach would allow subject matter disclaimed during prosecution to fall within the scope of the claims.

Apple's proposed construction is incorrect and does not contain any of the limitations added by applicants during prosecution to overcome the prior art. The plain and ordinary meaning of the term "disabling access to the CPU" includes material that was expressly disclaimed from the term's scope during prosecution. For example, the plain meaning of the term lacks a temporal requirement and would include disabling access only after the high speed data transfer connection had completed. Applicants clearly intended the disabling access step to occur for the duration of the high speed data transfer connection (Ex. 31 at 9-10). Further, disconnecting the CPU from all buses would certainly count as disabling access to the local memory under the plain meaning of the term, but applicants argued during prosecution that the construction of the term excludes this type of broad disabling (Ex. 32 at 8).

Nokia's proposed construction, "preventing the CPU from accessing the local memory for the duration of the high speed data transfer connection while permitting the CPU to access the main system bus and any device connected thereto," incorporates the arguments and amendments made during prosecution regarding the meaning of this claim term, which must inform the Court's construction of the claims. *See Southwall Techs.,* 54

F.3d at 1576 ("Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims.") (citation omitted). This construction is the most faithful to applicants' construction of the term during prosecution and should be adopted. Apple's proposal, on the other hand, would impermissibly allow Apple to reclaim coverage clearly discarded during prosecution.

II. CONSTRUCTION OF NOKIA'S PATENTS

A. Nokia's U.S. Patent No. 7,532,680 ("the 680 Patent").

1. Proposed constructions for the 680 Patent.

Two terms of the 680 Patent are submitted for construction. The parties' proposed constructions for these two terms are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"variable gain [power amplifier/amplifier/circuit]" (Claims 1-15, 20-22, and 24-29)	[power amplifier/amplifier/ circuit] whose gain can be varied	[power amplifier/amplifier/ circuit] that modifies an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values
"variable gain means" (Claims 16-19, 23, 30, and 31)	electronic circuit component whose gain can be varied Alternatively, to the extent this term is governed by 35 U.S.C. § 112 ¶ 6, Nokia submits that: The claimed function is providing the capability to vary the gain of a signal;	This term is governed by 35 U.S.C. § 112 ¶ 6. The claimed function is accomplishing a variable gain (i.e., modifying an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values). The corresponding structure

	and The corresponding structure disclosed in the specification is a variable gain RF attenuator or variable gain amplifier whose gain is controllable by a control signal	disclosed in the specification is an RF attenuator that receives an automatic level control signal.

The first disputed claim term is shown below in the context of Claims 1, 11 and 28, in which it appears in its various forms (*i.e.*, "variable gain [power amplifier]," "variable gain [amplifier]" and "variable gain [circuit]"):

1. A method, comprising:

prior to a first timeslot, setting a plurality of control signals for a multi-mode radio frequency transmitter in accordance with a first modulation format used during the first timeslot; and

during a guard period between the first timeslot and a next, temporally adjacent timeslot, setting the plurality of control signals for the multi-mode radio frequency transmitter in accordance with a second modulation format used during the next temporally adjacent timeslot,

where the first modulation format differs from the second modulation format,

where one of the plurality of control signals is configured to be sent to a variable gain element comprising an output that is configured to be connectable with an input of a power amplifier,

where one of the plurality of control signals is configured to set a power amplifier mode of operation, and

where the mode of operation is one of a *variable gain power amplifier* and a fixed gain power amplifier.

11. An apparatus, comprising a multi-mode multi-timeslot radio frequency transmitter comprising

a programmable power amplifier comprising an input configured to be connectable with an output of a *variable gain amplifier* and a control unit configured to output control signals,

said control unit configured, prior to a first timeslot, to set a plurality of control signals for the multi-mode, multi-timeslot radio frequency transmitter in accordance with a first modulation format used during the first timeslot and,

during a guard period between the first timeslot and a next, temporally adjacent timeslot, to set the plurality of control signals for the multi-mode, multi-timeslot radio frequency transmitter in accordance with a second modulation format used during the next temporally adjacent timeslot,

where the first modulation format differs from the second modulation format,

where the control unit is further configure to send one of the plurality of control signals to the *variable gain amplifier*,

where one of the plurality of control signals is configured to set a programmable power amplifier mode of operation, and

where the mode of operation is one of variable gain and fixed gain.

28. The apparatus as in claim 11, where the output of the *variable gain circuit* is configured to be connectable with a radio frequency input of the power amplifier, and where an input of the *variable gain circuit* is configured to be connectable with an output of a direct conversion mixer.

The second disputed claim term, "variable gain means," is shown below in the context of Claim 16, in which it appears:

16. An radio frequency transmitter comprising programmable power amplifier means comprising input means configured to be connectable with output means of a *variable gain means* and control means for outputting control signals,

said control means, prior to a first timeslot, for setting a plurality of control signals for the radio frequency transmitter in accordance with a first modulation format used during the first timeslot and,

during a guard period between the first timeslot and a next, temporally adjacent timeslot, for setting the plurality of control signals for the radio frequency transmitter in accordance with a second modulation format used during the next temporally adjacent timeslot,

where the first modulation format differs from the second modulation format,

where the control means is further for sending one of the plurality of control signals to the *variable gain means*,

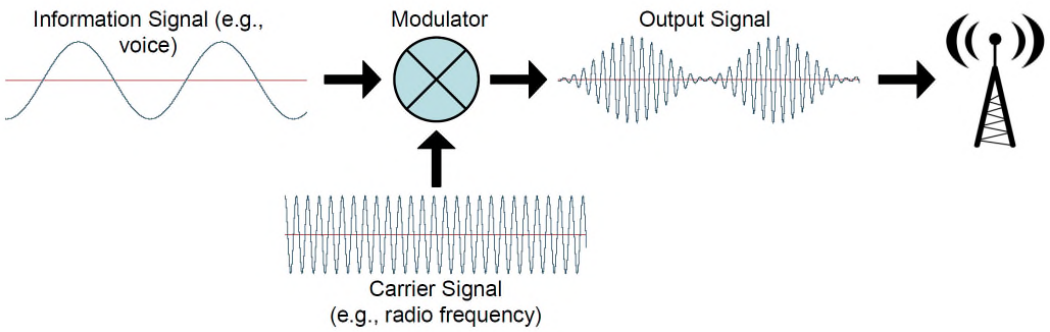
where one of the plurality of control signals is configured to set a mode of operation of the programmable power amplifier means, and

where the mode of operation is one of variable gain and fixed gain.

2. Background of the 680 Patent.

The 680 Patent generally relates to controlling the transmit power of certain multi-mode, multi-timeslot radio frequency transmitters, such as those found in cellular telephones and other wireless communication devices (Ex. 34 at 1:13-17). Wireless devices such as cellular telephones transmit and receive information (*e.g.*, voice or data) over the air using "carrier" signals. The information to be transmitted is placed on the carrier signal by a process known as modulation. In modulation, a carrier signal is modified in a certain way so that the information to be transmitted is carried, for example, in the individual changes of the phase and/or amplitude of the carrier signal:

Modulation



The information carried on the modulated output signal is typically transmitted over the air in short radio "bursts" that are sent during predefined time intervals known as timeslots. It is generally understood that a multi-timeslot transmitter is, for example, one that is capable of transmitting information in two or more consecutive or adjacent

timeslots within a radio transmission frame. A typical radio transmission frame is a repeating time period that consists of a number of individual timeslots (*e.g.*, 8) that can be shared equally or unequally among different users to transmit "bursts" of information over the air. The more timeslots a given user is allocated within a radio frame, the more "bursts" of information that user can transmit (or receive) during that time period. For example, in a given multi-timeslot cellular system, a user with a corresponding multi-timeslot transmitter (*e.g.*, a multi-timeslot cellular telephone) could be allocated one, two or even four timeslots within a singe radio frame, which, in turn, would allow that user to transmit either one, two or four radio "bursts" worth of information during that time period. Thus, multi-timeslot (or multi-slot) transmission is one way of increasing the effective data rate at which a given user can transmit (or receive) information over the air.

The 680 Patent explains that in at least one existing type of multi-timeslot cellular system, known as GPRS, that used only a single modulation technique for all transmissions, namely Gaussian Mean Shift Keying (GMSK) modulation, the transmitted power of a multi-timeslot transmitter could be changed directly from the power level of a first timeslot to the power level of a second timeslot. In other words, because the type of modulation (*e.g.*, GMSK) never changed from one timeslot to the next, the transmit power level required for a first transmission sent during the first timeslot could be changed directly to the power level required for a second transmission sent during the second timeslot, without the need to do any power ramping up/down and/or reconfiguring of the relevant RF control signals during the relatively short time period (*i.e.*, "guard period") that exists between adjacent timeslots (*id*. at 1:21-26).

In at least one follow-on type of multi-timeslot cellular system, however, known as Enhanced GPRS (EGPRS), or EDGE, both GMSK *and* 8-PSK modulation are used, and the modulation type is often changed from GMSK to 8-PSK, or vice versa, from one timeslot to the next during multi-slot operation (*id*. at 1:27-38). For reasons set forth in the patent, the inventors of the 680 Patent realized that using the above described approach to controlling transmit power in such a system would require that both timeslots be driven in the EDGE (or 8-PSK) mode of operation, if at least one of the transmitted timeslots of a multi-slot operation required 8-PSK modulation (*id*.). In contrast, if only GMSK modulation is used for both timeslots, the transmitter would operate in the GMSK mode (*id*.). The 680 Patent explains that there were numerous drawbacks and inefficiencies associated with using this prior art approach (*id*.).

The 680 Patent therefore discloses a multi-timeslot transmitter in which all or substantially all radio frequency (RF) controls are optimally ramped up/down and/or reconfigured during the guard period between adjacent timeslots according to the modulation type of the next timeslot (*id*. at 25-35). As a result, independently optimized controls for each timeslot can be used in the multi-timeslot operation, without compromising radio frequency performance, as would have occurred under the prior art approach (*id*.). For example, if in a given multi-slot situation a first timeslot uses GMSK modulation and the next, temporally adjacent timeslot uses 8-PSK modulation, the relevant RF control signals of the transmitter can be independently optimized and configured first for the GMSK timeslot and then for the subsequent 8-PSK timeslot.

Figure 1 of the 680 Patent shows a simplified block diagram of a multi-timeslot transmitter (element 10) in accordance with the invention. Specifically, FIG. 1A

(reproduced below) shows the multi-timeslot transmitter (10) operating in a first mode optimized for a GMSK type timeslot, and FIG. 1B (also reproduced below) shows the same multi-timeslot transmitter (10) operating in a second mode optimized instead for an 8-PSK type timeslot.

680 Patent Fig. 1A

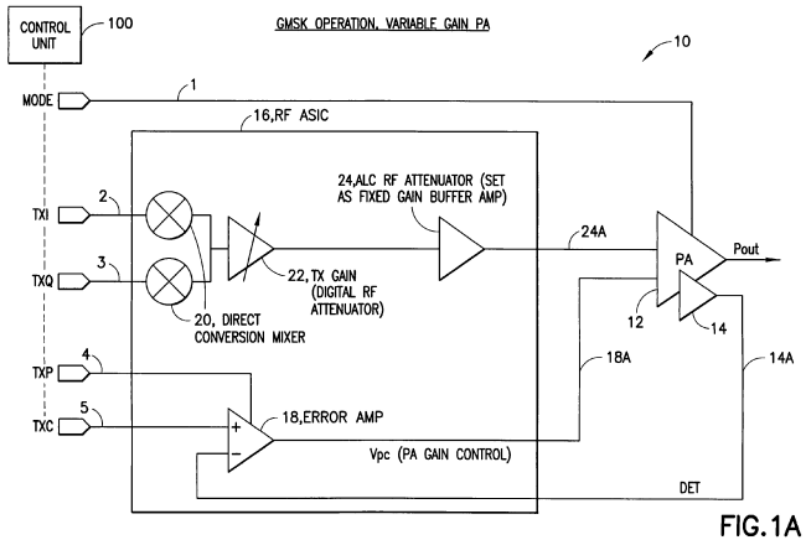


FIG. 1A

680 Patent Fig. 1B

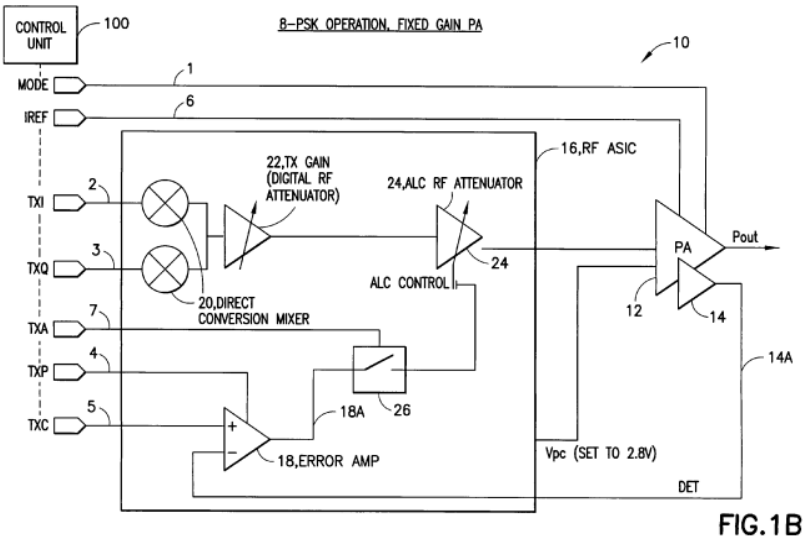


FIG. 1B

Notably, in this exemplary embodiment, FIG. 1A shows that, when the multi-timeslot transmitter (element 10) is operated in the GMSK timeslot case, it is preferable and/or more efficient to operate the power amplifier (element 12) in a variable gain mode, meaning simply that the overall transmit power level can be changed primarily by varying the gain of the power amplifier. Conversely, FIG. 1B shows that, when the same multi-timeslot transmitter (10) is operated in the 8-PSK timeslot case, it is instead preferable and/or more efficient to operate the power amplifier (element 12) in a fixed gain mode, meaning simply that the gain of the power amplifier is held constant at some presumably optimal level (*e.g.*, one that consumes a minimally required amount of battery power), while the overall transmit power level is more efficiently changed elsewhere within the transmitter. Specifically, in this latter case, shown in FIG. 1B, the overall transmit power level of the transmitter (10) can instead be changed primarily by varying the gain of the variable gain amplifier/circuit (element 24) that is depicted within the RF ASIC (element 16), since, in this mode, this approach provides a more efficient way of controlling or varying the overall transmit power.

As is well known in the art, the different variable gain devices and components disclosed and described in the 680 Patent (*i.e.*, the variable gain amplifier/circuit (element 22), the variable gain amplifier/circuit (element 24), the power amplifier (element 12), *etc.*) can be controlled using either an analog or a digital control signal. The only difference between the two being is that analog components are generally capable of having their gain value changed or varied over a so-called continuous range of values, as Apple proposes in its constructions, whereas digital components are generally capable of having their gain value changed or varied in discrete steps or increments, *e.g.* +/- 5 dB.

In other words, where the gain of an *analog* variable gain amplifier may be capable of having its gain changed or varied over a *continuous* range of values (*e.g.*, from -10 dB to +45 dB), a corresponding *digital* variable gain amplifier may be capable of having its gain changed or varied over the same range of values, *but only in +/- 5 dB increments or steps*. Contrary to what Apple appears to be asserting in its proposed constructions, the 680 Patent simply does not require or support the notion that analog and not digital components must be used. Instead, the patent simply makes clear that one of the salient features of the different variable gain devices and components disclosed and described in the 680 Patent is that they are capable of varying the gain of the overall transmit signal as needed in accordance with different optimal power control schemes.

3. Apple's insistence on construing the identified terms of the 680 Patent is a waste of judicial resources.

Both of the claim terms listed above for the 680 Patent were identified by Apple, not Nokia, as requiring construction. Nokia believes the plain meaning of these terms makes construction unnecessary. Nokia's proposed constructions therefore reflect this thinking and are consistent with the plain and ordinary meaning of these terms and the embodiments disclosed and described in the specification of the 680 Patent. In contrast, Apple's proposed constructions are clear attempts to manufacture a non-infringement position by adding terms and concepts that find no support in the intrinsic record and are, in fact, directly at odds with the preferred embodiments described in the specification of the 680 Patent. Apple's insistence on construing these terms is therefore improper and amounts to a needless waste of judicial resources.

4. A "variable gain [power amplifier/amplifier/circuit]" is simply a "[power amplifier/amplifier/circuit] whose gain can be varied."

Nokia's proposed construction of "variable gain [power amplifier/amplifier/ circuit]" is consistent with the specification and the claims, whereas Apple's proposed construction is a blatant attempt to narrow the language of the claims to manufacture a non-infringement position.

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"variable gain [power amplifier/amplifier/circuit]" (Claims 1-15, 20-22, and 24-29)	[power amplifier/amplifier/ circuit] whose gain can be varied	[power amplifier/amplifier/ circuit] that modifies an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values

(i) Nokia's definition is consistent with the specification.

Nokia's proposed construction is consistent with the plain and ordinary meaning of the terms "variable gain [power amplifier/amplifier/circuit]" as used in the context of the specification. Quite simply, a variable gain [power amplifier/amplifier/circuit] is a [power amplifier/amplifier/circuit] whose gain can be varied. As noted above, the 680 Patent makes clear that one of the salient features of the different variable gain devices and components disclosed and described in the 680 Patent (*i.e.*, the variable gain amplifier/circuit (element 22), the variable gain amplifier/circuit (element 24), the power amplifier (element 12), *etc.*) is simply that these devices be capable of varying the gain of the overall transmit signal as needed in accordance with different optimal power control schemes (*see, e.g.*, Ex. 34 at 3:32-4:12, FIG. 1A-1B).

At the time of the patent, it was well known that the gain of such devices could be varied by using either an analog (*i.e.*, continuous) or digital (*i.e.*, discrete, or non-continuous) type control signal. This is confirmed, for example, by reference to Figure 1 of the 680 Patent, which describes the variable gain elements 22 and 24 of FIG. 1A-1B as being of a type that can be *digitally* controlled (*see, e.g., id*. at 3:41-44 ("RF ASIC 16 also includes an I/Q modulator portion implemented as a direct conversion mixer 20 having an output that is fed to a *digital RF attenuator (TX_gain) 22*."); *id*. at 4:64-67 ("These commands are used for… setting the proper TX gain with the *digital attenuator 24*.") (emphasis added)). Thus, the specification and the figures of the 680 Patent make clear that a "variable gain [power amplifier/amplifier/circuit]" is simply a [power amplifier/amplifier/circuit] whose gain can be varied by, for example, using either an analog or digital control signal.

(ii) Apple's construction lacks support and is inconsistent with the specification.

Apple's proposed construction is a blatant attempt to manufacture a non-infringement position by narrowing the claims to require that a "variable gain [power amplifier/amplifier/circuit]" be one whose "gain value can be varied over a *continuous* range of values." Unfortunately for Apple, its proposed construction not only lacks support, but it also attempts to add a limitation that is directly at odds with the preferred embodiments described in the specification of the 680 Patent.

Apple is well aware that to have a variable gain [power amplifier/amplifier/ circuit] whose "gain value can be varied over a *continuous* range of values," that variable gain amplifier/circuit must be of a type that is controlled using an analog (*i.e.*, continuous) type control signal as opposed to a digital (*i.e.*, discrete, or non-continuous)

type control signal. It is well known that digitally controlled variable gain amplifiers are devices whose gain can be varied, but only in *discrete steps or increments* that generally correspond or map to a finite set of discrete digital control values (*see, e.g.*, Ex. 35 at 3:30-35 ("The variable-gain amplifier v has a gain that is *digitally adjustable*.… The control signal st comprises four bits, which four bits allow the gain of the amplifier v to be adjusted in *sixteen different steps*."); Ex. 36 at Abstract (discloses a "[d]ifferential amplifier having multiple stages, each stage having the gain thereof set by *digital control*…. The result is a 4 stage, 0-45 dB gain amplifier for RF or IF applications, *with the gain adjustable in 3 dB increments*."); Ex. 37 at 1 (noting that the "FX009A Low-Noise Digitally Controlled Amplifier Array" is a "single-chip LSI consisting [of] eight *digitally controlled* amplifier stages, each with *15 distinct gain/attenuation steps*"); Ex. 38 at 1 ("The AD8320 is a *digitally controlled variable gain amplifier*… An 8-bit serial word determines the desired output gain over a 36 dB range *(256 gain levels)*.") (emphasis added)).

In contrast, *analog* variable gain amplifiers can generally be controlled over a *continuous* range of values, as Apple proposes in its construction. Thus, Apple's proposed construction is, in effect, a not-so-subtle attempt to limit all of the variable gain devices disclosed and claimed in the 680 Patent to *analog* variable gain devices whose gain can be varied over a *continuous* range of values. There is no support for this construction within the intrinsic record. The specification of the 680 Patent simply *does not require* that the claimed "variable gain [power amplifier/amplifier/circuit]" devices be devices whose gain can be varied "over a *continuous* range of values." Apple simply

conjures this limitation out of thin air and then attempts to inject it into the language of the claims without any intrinsic support.

Moreover, while the 680 Patent certainly does not exclude the use of analog (*i.e.*, continuous) type variable gain devices, it makes clear that, in at least some embodiments, the relevant variable gain devices at issue are preferably *digitally* controlled variable gain devices (*see, e.g.,* Ex. 34 at 3:41-44 ("RF ASIC 16 also includes an I/Q modulator portion implemented as a direct conversion mixer 20 having an output that is fed to a *digital RF attenuator (TX_gain) 22*."); *id*. at 4:64-67 ("These commands are used for… setting the proper TX gain with the *digital attenuator 24*.") (emphasis added)). Thus, Apple's proposed construction not only lacks support, but it is also in direct conflict with the preferred embodiments disclosed and described in the specification of the 680 Patent. As the Federal Circuit has admonished, "a claim interpretation that excludes the preferred embodiment is rarely, if ever, correct." *Gentry Gallery, Inc.*, 134 F.3d at 1477 (internal quotation marks omitted); *see also Vitronics Corp. v. Conceptronic, Inc.,* 90 F.3d 1576, 1583 (Fed. Cir. 1996).

5. "Variable gain means" should be construed as an "electronic circuit component whose gain can be varied."

Once again, Nokia's proposed construction is consistent with the specification and claims, whereas Apple's proposed construction is a blatant attempt to narrow the language of the claims to manufacture a non-infringement position.

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"variable gain means" (Claims 16-19, 23, 30, and 31)	electronic circuit component whose gain can be varied	This term is governed by 35 U.S.C. § 112 ¶ 6. The claimed function is

	Alternatively, to the extent it is determined that this term is governed by 35 U.S.C. § 112 ¶ 6, Nokia submits that: The claimed function is providing the capability to vary the gain of a signal; and The corresponding structure disclosed in the specification is a variable gain RF attenuator or variable gain amplifier whose gain is controllable by a control signal	accomplishing a variable gain (i.e., modifying an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values). The corresponding structure disclosed in the specification is an RF attenuator that receives an automatic level control signal.

(i) Nokia's definition is consistent with the specification.

As a threshold issue, Apple contends that the term "variable gain means" should be construed as a means-plus-function term under 35 U.S.C. § 112 ¶ 6. Nokia disagrees. It is well established that the use of the word "means" in a claim raises a rebuttable presumption that means-plus-function treatment under § 112, ¶ 6, is invoked. *See, e.g., Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d. 1294, 1302 (Fed. Cir. 1999). The Federal Circuit has made clear, however, that two specific rules overcome this presumption:

> First, a claim element that uses the word "means" but recites no function corresponding to the means does not invoke § 112, ¶ 6. Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, ¶ 6 does not apply.

(*Id*. (internal citations omitted)). In this case, the Court need look no further than the first of these two rules to find that § 112, ¶ 6 does not apply, because the claims at issue recite no function corresponding to the term "variable gain means." *See York Prods., Inc. v.*

Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1574 (Fed. Cir. 1996) ("Without a 'means' sufficiently connected to a recited function, the presumption in use of the word 'means' does not operate.").

Tellingly, Apple's proposed function of "*accomplishing a variable gain*" appears nowhere in the language of the claims of the 680 Patent. In fact, apart from the disputed term itself, the claims at issue recite no function whatsoever corresponding to the term "variable gain means." *See Negotiated Data Solutions, LLC v. Dell, Inc.*, 596 F. Supp. 2d 949, 989 (E.D. Tex. 2009) (in determining whether to apply the statutory procedures of § 112, ¶ 6, to the terms "receive memory means/transmit memory means," the court found that "[t]he first step for the court is to identify the recited function. Here, the claim language does not link the term 'means' to a function; in fact the claim language omits 'for' and simply ends . . . . Without a 'means' sufficiently connected to a recited function, the presumption in use of the word 'means' does not operate, and the court will not construe the term as a means-plus-function term.") (internal citations omitted). As in *Negotiated Data Solutions*, the claim language at issue here omits the word "for" and simply ends after each instance in which "variable gain means" appears (*see, e.g.*, Ex. 34 at Claim 16 (reproduced above)).

Thus, the disputed term "variable gain means" as used in the 680 Patent simply does not invoke the statutory procedures of section 112, ¶ 6. Nokia therefore submits that this term should be construed substantially in accordance with the first disputed term discussed above. Specifically, Nokia submits that the term "variable gain means" should be construed simply as "an electronic circuit component [*e.g.*, amplifier] whose gain can be varied." For substantially the same reasons set forth above in connection with the first

disputed term, this construction is consistent with the plain and ordinary meaning of the claim term and the embodiments disclosed and described in the specification of the 680 Patent (*see, e.g.*, *id.* at 3:32-4:12, FIG. 1A-1B).

Should the Court determine, however, that the term "variable gain means" invokes the procedures for construing a term under section 112, ¶ 6, Nokia alternatively submits that the corresponding function should be "varying the gain of a signal," and the corresponding structure disclosed in the specification for performing this function would be a "variable gain RF attenuator or variable gain amplifier whose gain is controllable by a control signal," as shown in FIG. 1A-1B (element 24) of the 680 Patent and further described throughout the specification (*see, e.g.*, *id.* at 3:41-63, 4:6-20, and 4:62-67 ("There are three commands issued to the RF ASIC 16 . . . . These commands are used for controlling Vpc, changing the power control loop . . . and setting the proper TX gain with the digital attenuator 24.")).

(ii) Apple's construction improperly injects terms and concepts to narrow the plain meaning of the term "variable gain means."

Even assuming the term "variable gain means" should be construed as a means-plus-function term, Apple's proposed construction once again reveals a clear attempt to manufacture a non-infringement position by improperly narrowing the claims to require that the "variable gain means" be a device whose gain value can be varied "over a *continuous* range of values."

As explained above, there is no support for this construction within the intrinsic record. The specification of the 680 Patent simply does not require that any of the disclosed or claimed variable gain devices be devices whose gain can be varied "over a *continuous* range of values," as Apple proposes. Once again, Apple simply conjures this

limitation out of thin air and then attempts to inject it into the language of the claims without any support.

Moreover, as also explained above, while the 680 Patent does not exclude the use of analog (*i.e.*, continuous) variable gain devices, it makes clear that, in at least some embodiments, the relevant variable gain devices at issue are preferably *digitally* controlled variable gain devices, meaning that, by definition, they would not be capable of being controlled over a so-called "*continuous* range of values" (*see, e.g.,* Ex. at 4:64-67 ("These commands are used for . . . setting the proper TX gain with the *digital attenuator 24*."); *see also id.* at 3:41-44 ("RF ASIC 16 also includes an I/Q modulator portion implemented as a direct conversion mixer 20 having an output that is fed to a *digital RF attenuator (TX_gain) 22*.") (emphasis added)). Apple's proposed construction is therefore once again at odds with the preferred embodiments described in the specification of the 680 Patent. *See Gentry Gallery*, 134 F.3d at 1477 ("a claim interpretation that excludes the preferred embodiment is rarely, if ever, correct.") (internal quotation marks omitted); *see also Vitronics,* 90 F.3d at 1583.

Thus, even if the term "variable gain means" were to be construed under section 112, ¶ 6, Apple's attempt to narrow the claims to require that the term "variable gain means" be a device whose gain value can be varied "over a *continuous* range of values" would still be improper, and should be rejected.

B. Nokia's U.S. Patent No. 5,752,172 ("the 172 Patent").

1. Proposed constructions for the 172 Patent.

Only one term of the 172 Patent is submitted for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"variable gain driver amplifier" (Claims 1-2)	Amplifier whose gain can be varied, and whose output drives the input of a subsequent stage along a signal path	driver amplifier that modifies an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values

The disputed claim term is shown below in the context of Claim 1, in which it appears:

> 1. A transmitter circuit for use in a radio telephone, comprising:
>
> a power amplifier having an output coupled to an antenna for transmitting an amplified modulated RF signal;
>
> a *variable gain driver amplifier* having an output coupled to an input of said power amplifier and an input coupled to an output of a modulator, said *variable gain driver amplifier* being required to output the modulated RF signal within a predetermined dynamic power range having a maximum value; and
>
> at least one programmable gain amplifier coupled in series between said output of said modulator and said input of said *variable gain driver amplifier*, wherein said at least one programmable gain amplifier has a dynamic range selected for reducing the dynamic range requirement of said *variable gain driver amplifier* to be less than the maximum value of the predetermined dynamic power range.

2. Background of the 172 Patent.

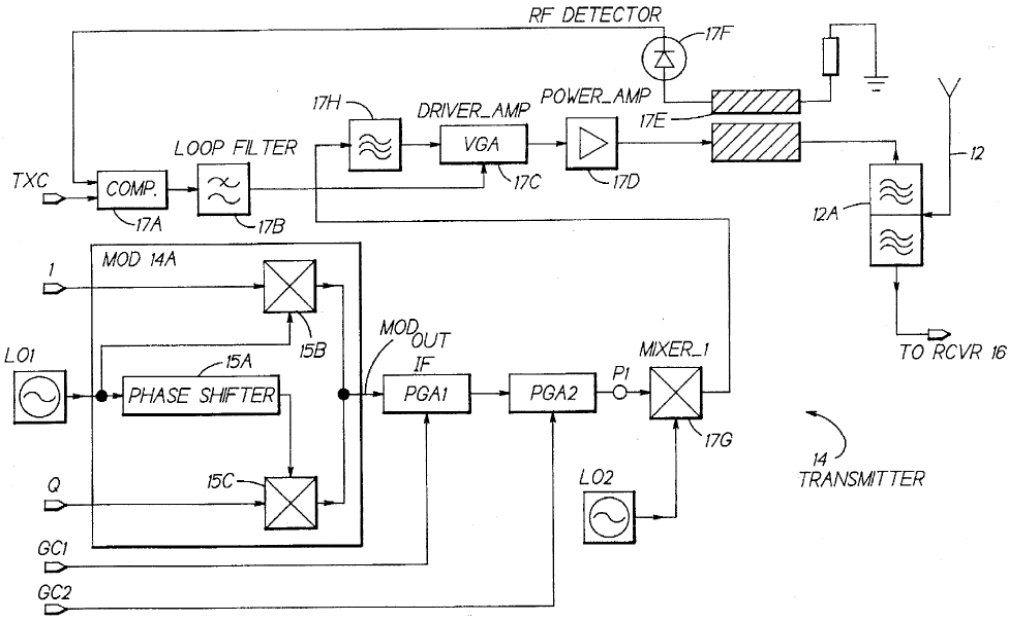
Like the 680 Patent, the 172 Patent generally relates to controlling the transmit power of wireless communication devices, such as cellular telephones and other mobile communication devices. A cellular telephone does not operate with a constant transmitter power level, but is instead transmit-power-controlled as a function of, for

example, the distance from a base station, propagation conditions over the air, and interference effects due to other cell phone users (Ex. 39 at 1:12-23).

The 172 Patent explains that conventional practice for controlling the transmit power of such wireless devices was to use a single variable gain amplifier driver stage between the output of a modulator and an input of a final power amplifier (*id.* at 1:24-34). This is not an optimum solution, however, since there are a number of variables that must be accommodated, such as component tolerance variations, amplifier stage full range power requirements, and amplifier stage power ramping requirements (*id*.). As a result, using this conventional approach to controlling transmitter power required that the variable gain driver amplifier have a wide dynamic range (*e.g.*, 60 dB), while still maintaining stringent linearity requirements (*id*.).

The 172 Patent therefore discloses a transmitter for achieving an optimum solution to the transmitter gain control problem. For example, as shown in Figure 3 of the 172 Patent (reproduced below), a transmitter is disclosed that employs at least one programmable gain amplifier stage (PGA1, PGA2) that is placed after a modulator (MOD 14A) and before a variable gain driver amplifier (element 17C) that precedes a final power amplifier (element 17D) (Ex. 39 at 1:36-2:12, FIG. 3).

172 Patent Fig. 3



By employing at least one programmable amplifier stage with an appropriately selected dynamic range, the exemplary configuration shown above optimally distributes the gain control function over the transmit chain, and relaxes the dynamic range requirements of the final variable gain driver amplifier (element 17C) that drives the power amplifier (element 17D) (*id.*).

3. Apple's insistence on construing the term "variable gain driver amplifier" is a waste of judicial resources.

The term "variable gain driver amplifier" was identified by Apple, not Nokia, as requiring construction. As with the terms identified in connection with the 680 Patent, Nokia believes the plain meaning of this term makes construction unnecessary. Nokia's proposed construction therefore once again reflects this thinking and is consistent with the plain and ordinary meaning of this term and the embodiments disclosed and described in the specification of the 172 Patent. In contrast, Apple's proposed construction is

premised on the same flawed argument Apple pursues in connection with the 680 Patent, namely that a "variable gain driver amplifier" must be an amplifier whose gain can be varied "over a *continuous* range of values." Apple's insistence on construing this term in this way is therefore once again improper and a needless waste of judicial resources.

4. "Variable gain driver amplifier" is an "amplifier whose gain can be varied, and whose output drives the input of a subsequent stage along a signal path."

As indicated above, the core of the dispute with respect to this term is that Apple seeks to once again pursue the same flawed and unsupported argument it makes in connection with the 680 Patent, which is that the "variable gain driver amplifier" must be an amplifier whose gain value can be varied "over a *continuous* range of values." In short, Apple once again improperly seeks to limit the scope of the claims to encompass only analog components. Nokia's proposed construction, on the other hand, encompasses digital components and is therefore consistent with the plain and ordinary meaning of the claim term and the embodiments disclosed in the 172 Patent.

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"variable gain driver amplifier" (Claims 1-2)	Amplifier whose gain can be varied, and whose output drives the input of a subsequent stage along a signal path	driver amplifier that modifies an input signal based on a gain value to produce an output signal, where the gain value can be varied over a continuous range of values

(i) Nokia's definition is consistent with the specification.

Nokia's proposed construction is consistent with the plain and ordinary meaning of the phrase "variable gain driver amplifier." As shown in Figure 3 of the 172 Patent

(reproduced above), a "variable gain driver amplifier" is simply a variable gain amplifier (element 17C) whose output drives the input of a subsequent stage along a signal path, namely the power amplifier (element 17D). Moreover, as discussed above in connection with the 680 Patent, a variable gain amplifier is simply an amplifier whose gain can be varied. This same plain and ordinary meaning is consistent with the specification of the 172 Patent, which repeatedly refers to the variable gain driver amplifier (element 17C) as having a dynamic range over which its gain can be varied (*see, e.g.*, Ex. 34 at 1:24-34, 1:40-51, 1:60-2:24, 4:25-45).

Thus, the specification and the figures of the 172 Patent make clear that a "variable gain driver amplifier" is simply an amplifier whose gain can be varied, and whose output drives the input of a subsequent stage along a signal path.

(ii) Apple's construction improperly injects terms and concepts to narrow the plain meaning of the term "variable gain driver amplifier."

As with the 680 Patent, Apple's proposed construction is a blatant attempt to manufacture a non-infringement position by requiring that the term "variable gain driver amplifier" be a device whose gain can be varied "over a *continuous* range of values." There is no support for this construction within the intrinsic record. Nowhere in the 172 Patent is it required that the variable gain driver amplifier be an amplifier whose gain can be varied "over a *continuous* range of values." Once again, Apple simply conjures this limitation out of thin air and then attempts to inject it into the language of the claims without any support.

As discussed above in connection with the 680 Patent, Apple is well aware that to have a variable gain amplifier (or other such device) whose "gain value can be varied over a *continuous* range of values," that variable gain amplifier must be controlled using

an *analog* (*i.e.*, continuous) control signal as opposed to a digital (*i.e.*, discrete, or non-continuous) control signal. It is well known that digitally controlled variable gain amplifiers are devices whose gain can be varied, but only in *discrete steps* that generally correspond or map to a finite set of discrete digital control values (*see, e.g.*, Ex. 35 at 3:30-35 ("The variable-gain amplifier v has a gain that is *digitally adjustable* . . . . The control signal st comprises four bits, which four bits allow the gain of the amplifier v to be adjusted in *sixteen different steps*."); Ex. 36 at Abstract (discloses a "[d]ifferential amplifier having multiple stages, each stage having the gain thereof set by *digital control* . . . . The result is a 4 stage, 0-45 dB gain amplifier for RF or IF applications, *with the gain adjustable in 3 dB increments*."); Ex. 37 at 1 (noting that the "FX009A Low-Noise Digitally Controlled Amplifier Array" is a "single-chip LSI consisting [of] eight *digitally controlled* amplifier stages, each with *15 distinct gain/attenuation steps*"); Ex. 38 at 1 ("The AD8320 is a *digitally controlled variable gain amplifier* . . . . An 8-bit serial word determines the desired output gain over a 36 dB range *(256 gain levels)*.") (emphasis added)).

In contrast, *analog* variable gain amplifiers can generally be controlled over a *continuous* range of values, as Apple proposes. Thus, Apple's proposed construction is once again a not-so-subtle attempt to limit the claims of the 172 Patent to reading only on an *analog* variable gain driver amplifier whose gain can be varied "over a *continuous* range of values." Nothing in the intrinsic record requires or supports such a construction. Thus, Apple's attempt to inject this limitation into the claims of the 172 Patent is as improper here as it is in connection with the 680 Patent, and should be rejected by the Court.

C. Nokia's U.S. Patent No. 6,603,431 ("the 431 Patent").

1. Proposed constructions for the 431 Patent.

Two related terms of 431 Patent were submitted by Apple for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"antenna assembly space/ space" (Claims 1 and 6)	term does not require construction	space that contains the antenna assembly (antenna, ground plane, and raising component)

The disputed claim terms are italicized below in the context of Claims 1 and 6, in which they appear:

> 1. A mobile station having an integrated antenna assembly including, an antenna ground plane an antenna, and antenna raising component arranged to keep the antenna at a determined height in respect of the ground plane, said mobile station comprising:
>
> a front cover and back cover which define an overall space there between,
>
> an *antenna assembly space* defined as part of said overall *space*, wherein said antenna assembly is mounted, said *space* extending from said front cover to said back cover;
>
> a main circuit board space defined as part of said overall *space* separate from said *antenna assembly space*, wherein a main printed circuit board is mounted at a predetermined height from said back cover; and
>
> wherein a speaker of the mobile station is also mounted in said *antenna assembly space*, and wherein said printed circuit board does not extend into said *antenna assembly space*.
>
> 6. An antenna arrangement for a mobile station, comprising
>
> an integrated antenna, an antenna ground plane, and an antenna elevation piece arranged to keep the antenna at a determined height from the ground plane,

> wherein the antenna arrangement is arranged in a *space* shared with a speaker of the mobile station, and a circuit board is mounted in the mobile station such that it does not extend into said *space*.

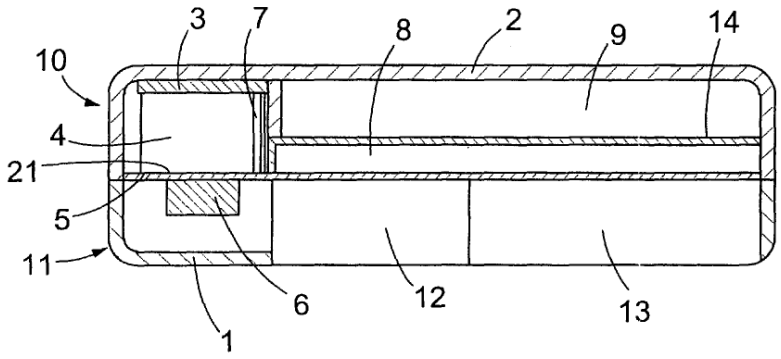
2. Background of the 431 Patent.

The 431 Patent is directed to a certain antenna arrangement for mobile devices, or "mobile stations" as they are called in the patent (Ex. 40 at 1:17-20). The 431 Patent allows for an internal antenna with greater performance by creating an antenna assembly space shared with the mobile station speaker (*id.* at 2:14-19).

To improve the properties of an antenna assembly, separation is desirable between an antenna and its ground plane, which is an antenna assembly component that provides a base reference for operation of the antenna. In prior art arrangements, like those shown in Figure 1 of the patent, the ground plane was often arranged between the back cover (shown as element 2 in the figure below) and the circuit board of the mobile station, shown as element 5 (*id.* at 1:64-2:9). In particular, Figure 1 shows the circuit board 5 and ground plane 21 separated from the antenna 3 by an antenna raising component 4, which keeps the antenna at the right distance with respect to the ground plane (*id.* at 1:50-53). Figure 1 also shows the speaker 6, utilizing the space between circuit board 5 and front cover 1 (*id.* at 3:13-15). These types of prior art configurations limited the space available for the antenna (*id.* at 1:64-2:12).

The 431 Patent illustrates the prior art in Figure 1:

431 Patent Fig. 1



Prior Art

Fig. 1

The 431 Patent discloses combining the spaces used by both the mobile station's speaker 6 and the mobile station's antenna 3, thereby allowing the antenna 3 to be at a distance from the ground plane 21 greater than the distance between the circuit board 5 and back cover 2 of the mobile station (*id.* at 2:20-31). Figure 2 of the 431 Patent illustrates one embodiment:

431 Patent Fig. 2

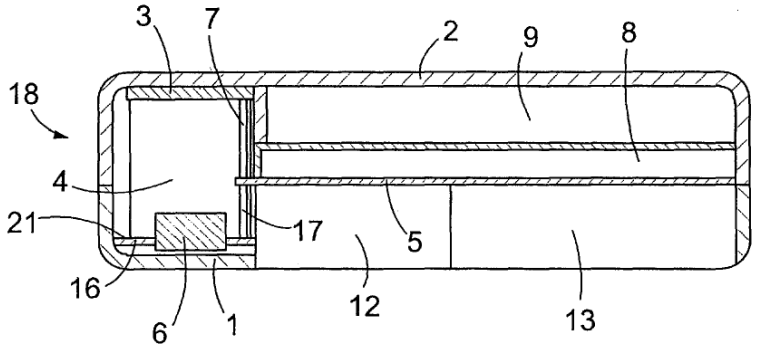


Fig. 2

Notably, Figure 2 discloses the speaker 6 and antenna assembly (comprising elements 3, 4 and 21) sharing a space (*id.* at 3:58-4:9). This arrangement increases the

use of space in the device, resulting in increased performance for the antenna and a larger echoing volume for the speaker, which can provide better sound quality (*id.* at 2:44-57). The increased space allows for design of slimmer devices and improves antenna characteristics such as efficiency, over a wider range of frequencies (*id.* at 1:50-2:63).

3. The Court should adopt Nokia's position that the terms "antenna assembly space" and "space" need not be construed.

Apple has proposed construction of these terms, but construction is not necessary to resolve any dispute between the parties. The Court should adopt Nokia's position that no construction of "antenna assembly space/ space" is required because the language of claims 1 and 6 clearly defines the various "spaces" to which they refer.

The specification itself does not contain any disclaimers regarding the term "antenna assembly space" or "space" in general. Instead, "space" is used in a number of ways consistent with its plain an ordinary meaning. For example, "space" is used to refer to various regions associated with certain components (e.g. "antenna space," "speaker space," "component space," "battery space," etc.) (Ex. 40 at 3:36-45). A space may also be shared for different functions (*id.* at 4:4-8), and may or may not be empty (*compare, e.g., id.* at 3:44-45 *with* 4:22-26).

The language of Claim 1 provides guidance on the nature of the "antenna assembly space," obviating the need for further clarification. For example, "antenna assembly space" is a part of the "overall space" between the front and back covers of the mobile station (*id.* at 5:11-13). The main circuit board does not extend into the "antenna assembly space" (*id.* at 5:19-20), which includes elements such as the speaker (*id.* at 5:23-24). This arrangement of the speaker and antenna within the mobile phone allows for both improved antenna and speaker performance due to the greater space available to

both. Where clarification of the nature of a particular space is needed, the claims of the 431 Patent provide it on their face. Therefore Nokia's position that no construction is needed aligns with the intrinsic and extrinsic evidence present regarding the 431 Patent.

Apple's proposed construction is deficient for at least two reasons. First, Apple proposes a definition of space even though it appears in multiple dissimilar phrases, for example "antenna assembly space," and "main circuit board space."[14] Second, Apple attempts to limit the definition of "antenna assembly space" in claim 1 and "space" in claim 6 in a manner that may be inconsistent with the language of these claims. For example, claim 1 requires that the "antenna assembly space" "extend[] from the front cover to said back cover" and that "a speaker of the mobile station is also mounted in said antenna assembly space." Similarly, claim 6 requires that the "antenna arrangement is arranged in a space shared with a speaker of the mobile station . . . ." Other characteristics of this "antenna arrangement" are described in claim 6, which is an independent claim without reference to claim 1.

The claim language itself provides specific guidance about the confines of the "spaces" being claimed. It is not helpful to provide the jury with a pared down definition of the "space" limitations that may be inconsistent with the language of individual asserted claims where these limitations appear. Providing a single definition conflates the "space" in which the antenna arrangement is arranged of claim 6 and the "antenna assembly space" of claim 1, even though they do not use identical language. This conflation of claim terms is improper. Where claim terms are not identical, the terms are presumed to carry different meanings. *See Forest Labs., Inc. v. Abbot Labs.*, 239 F.3d

1305, 1310 (Fed. Cir. 2001) ("Where claims use different terms, those differences are presumed to reflect a difference in the scope of the claims.") Accordingly, the Court should decline to construe these proposed terms.

D. Nokia's U.S. Patent No. 6,348,894 ("the 894 Patent").

1. Proposed constructions for the 894 Patent.

One term of the 894 Patent was submitted for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"radio frequency antenna is integrated into the system connector / resonating region is integrated into the system connector" (Claims 1 and 19)	no construction necessary; alternatively construe "integrated into" as "formed as a part of"	the radio frequency antenna, as distinct from the telephone antenna, is part of the system connector in that it is mounted on the same insulating block that the system connection pins are mount on / the resonating region of a radio frequency antennas, as distinct from the telephone antenna, is part of the system connector in that it is mounted on the same insulating block that the system connection pins are mounted on

The disputed claim term is shown below in the context of Claim 1, in which it appears:

> 1. An antenna operating in the radio frequency range to be used in a hand-held communications device having a system connector, said radio frequency antenna comprising:

---

[14] While the antecedent of "said space" in claim 1 is "antenna assembly space," Apple's proposed limitations are inappropriate and unsupported by the record.

a resonating region to radiate or receive electromagnetic waves carrying the communication signals; and

a feeding region coupled to the resonating region for impedance matching, wherein

the *radio frequency antenna is integrated into the system connector* so as to allow the hand-held communication device to communicate with a communication network via a radio link.

2. Background of the 894 Patent.

The 894 Patent is directed to a radio frequency antenna design integrated into a system connector, which is something that can be used to connect peripherals to an electronic device (Ex. 41 at 2:32-35). By allowing the antenna to share space used for other connections, the 894 Patent allows tighter integration of components and smaller, more compact mobile devices (*id.* at 1:51:60).

Figure 2 of the 894 Patent illustrates one integration of an antenna 30 into a system connector 18 (*id.* at 3:9-12). In this particular embodiment, the antenna 30 and system connector 18 are mounted on a printed circuit board 16, such that they are located near the bottom of the phone (which would be in the upper right portion of Figure 2).

894 Patent Fig. 1

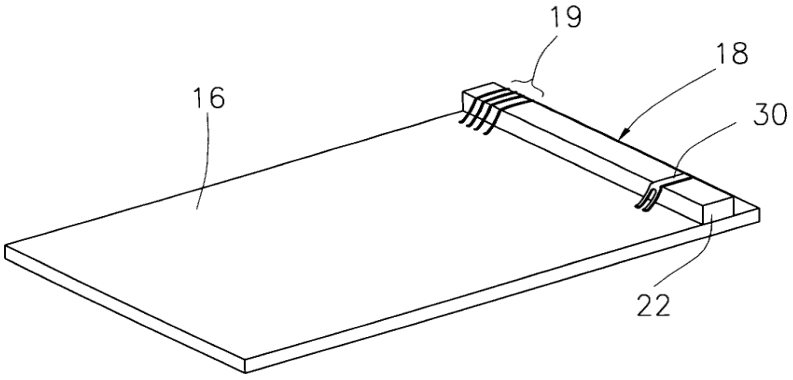


FIG. 2

Furthermore, according to the invention of the 894 Patent, the resonating region of the antenna can be folded in different planes (*id.* at 5:25-30). The resonating region is a part of the antenna that converts electric current to and from radiated electromagnetic waves, thus allowing transmission and reception. The folding of the resonating region is advantageous because it further reduces the space needed for the antenna (*id.* at 1:67-2:3). One such embodiment is illustrated in Figure 3B of the 894 Patent, where resonating regions 32b and 32a of antenna 30 are on different planes with relation to each other (*id.* at 3:47-49).

894 Patent Fig. 3B

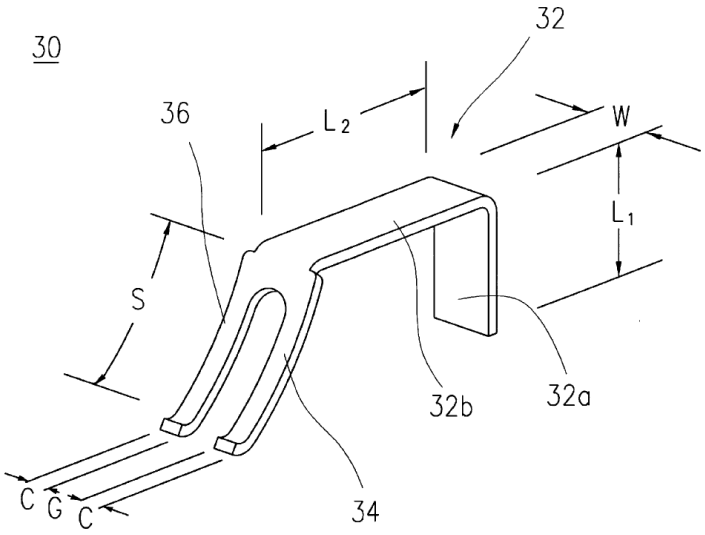


FIG. 3B

3. The Court should adopt Nokia's proposed construction of "radio frequency antenna is integrated into the system connector / resonating region is integrated into the system connector."

The Court should adopt Nokia's position that no construction is required for "radio frequency antenna is integrated into the system connector / resonating region is integrated into the system connector." Alternatively, the Court should simply construe

"integrated into," which seems to be the real term in dispute. If the Court agrees with this course, it should adopt "formed as a part of" as the appropriate construction because it is consistent with the intrinsic record, extrinsic record, and accounts for the inventions described therein. Apple, in contrast, is making a blatant attempt with its proposed construction to limit the claim language to one disclosed embodiment. Apple's insistence on construing these terms is therefore improper and amounts to a needless waste of judicial resources.

"Integrate" is not used in the 894 patent as a specialized term of art. It is used according to its plain and ordinary meaning, and the Court should maintain the proper scope of the claims by declining to construe this term. The 894 specification uses "integrated into" both to describe the general process of incorporating an internal antenna into a phone or other device (Ex. 41 at 1:51-61, 2:5-9), and in the claims to describe the integration of the antenna and system connector. In both contexts, the specification does not ascribe or require any specialized meaning for "integrated into."

Apple tries to improperly limit the claims to a preferred embodiment that places the antenna "on" the system connector (*id.* at 4:65-5:2, Figure 2). This embodiment is illustrated in Figure 2 of the 894 Patent, in which the antenna is wrapped over part of the system connector (*id.* at Figure 2).

However, it is improper to use the disclosed embodiment to limit the claims. *See Phillips*, 415 F.3d at 1323 ("In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."); *see also, Liebel-Flarsheim Co. v. Medrad, Inc.,* 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even when the specification describes only a single

embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope. . . ."). Therefore, even if the disclosed embodiments only disclose an antenna wrapped around the system connector, the claim term "integrated into" should not be restricted to only that embodiment and should be read to encompass other forms of antenna integration. The patent, however, expressly contemplates variation of the antenna with different geometries, configurations, and sizes scaled for different frequencies (*e.g,* Ex. 41 at 5:23-44).

The term "integrated into" is not a term of art with a special meaning to those having ordinary skill in the art within the context of antennas. Although Nokia therefore believes that no construction is necessary, should the Court believe that some construction is needed, Nokia's alternate construction is supported by extrinsic evidence regarding the meaning of "integrate." For example, general purpose dictionaries define "integrate" as "to put or bring together (parts or elements) so as to form one whole; to combine into a whole" or similar concepts (Ex. 42 at 1455). Nokia's alternative proposal merely clarifies that "integrate" involves the combining of parts, such that they are "formed as a part of" a whole. Accordingly the Court should decline to construe these phrases or adopt Nokia's alternative construction.

Apple also attempts to improperly limit the radio frequency antenna to exclude any telephone antenna. The claim language of the 894 Patent has no limitation requiring that the "radio frequency antenna" be distinct from the "telephone" antenna. A telephone antenna is a "radio frequency antenna" that operates in frequency ranges allocated to telephones.

Dependent claim 2 contemplates that an additional telephone antenna *may* be added to the hand-held communication device of claim 1 that is separate from the radio frequency antenna. The addition of a telephone antenna in claim 2 does not require the radio frequency antenna of claim 1 to be something other than a telephone antenna.

Furthermore, Apple is also trying to import a limitation from claim 2 into claim 1, in violation of the doctrine of claim differentiation. *See Versa Corp. v. Ag-Bag Int'l Ltd.*, 392 F.3d 1325, 1330 (Fed. Cir. 2004) ("The doctrine of claim differentiation 'create[s] a presumption that each claim in a patent has a different scope.'") (quoting *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998)). The difference in meaning and scope between claims is presumed to be significant '[t]o the extent that the absence of such difference in meaning and scope would make the claims superfluous.' *Tandon Corp. v. U.S. Int'l Trade Comm'n*, 831 F. 2d 1017, 1023 (Fed. Cir. 1987).") Claim 1 defines the antenna as a "radio frequency antenna," with no specification of the radio frequency in which the antenna is operating (Ex. 41 at 5:46-56). Subsequent dependent Claims 3, 4, and 5, specify frequencies for the "radio frequency antenna," further emphasizing that the "radio frequency antenna" is not limited to any particular type of radio frequency. Accordingly, the Court should decline to construe Apple's proposed term.

E. Nokia's U.S. Patent No. 6,317,083 ("the 083 Patent").

1. Proposed Constructions for the 083 Patent.

One phrase of 083 Patent was submitted for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction

"feed section extending from the reference plane to the lamina and coupled to the reference plane and the lamina" (Claims 1, 2, and 6)	feed section extending from the reference plane to the lamina with an electromagnetic interaction to the reference plane and the lamina	Two conductors that each extend from the reference plane to the lamina

The disputed claim phrase is shown below in the context of Claim 1, in which it appears:

> 1. An antenna comprising:
>
> a reference plane;
>
> a conductive polygonal lamina disposed opposing the reference plane; and
>
> a *feed section extending from the reference plane to the lamina and coupled to the reference plane and the lamina*;
>
> wherein the feed section comprises:
>
> a first conductor for providing a feed signal to the conductive lamina, and
>
> a second conductor connected to the reference plane,
>
> wherein first and second conductors together interact to form a transmission line to contain and guide said feed signal between said first and second conductors.

2. Background of the 083 Patent.

Antennas commonly have multiple sections, such as a reference or ground plane, a feed section, and one or more resonating regions.[15] The 083 Patent relates to an antenna design in which the components that comprise the "feed section" include first and second conductors that interact to form a transmission line that guides energy (Ex. 43 at 2:13-25, 2:39-42). One of the design goals of electronic and communication devices is

[15] The resonating region itself is sometimes referred to as the antenna as is the case in the 431 Patent.

to increase performance and decrease the size of the devices (*id.* at 1:12-14)). One area in which size and weight design goals may be counter to performance design goals is in the design of antennas (*id.* at 1:19-21). The inventors of the 083 patent recognized that, by combining conductors in the feed region to form a transmission line, they could improve antenna characteristics such as efficiency (*id.* at 2:59-61).

One such exemplary embodiment disclosed in Figure 1 of the 083 Patent, reproduced below:

083 Patent Fig. 1

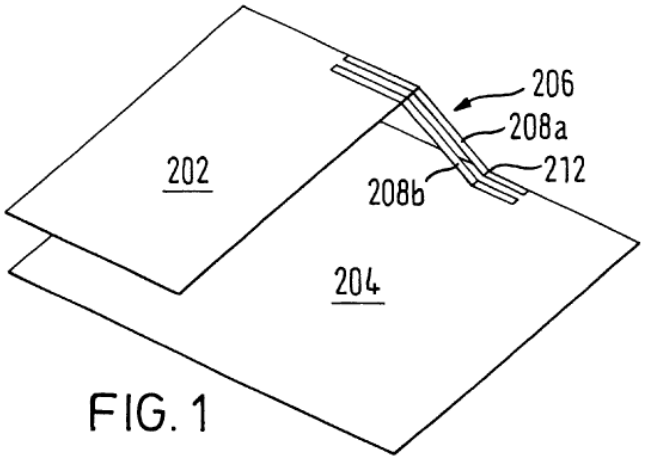


FIG. 1

In this exemplary embodiment, the antenna comprises a flat conductive sheet 202 supported above a reference plane, such as a ground plane 204, and a feed section 206 (*id.* at 3:18-22). This feed section is arranged into a transmission line A, otherwise known as a waveguide as also illustrated by Figure 3 of the 083 Patent:

083 Patent Fig. 3

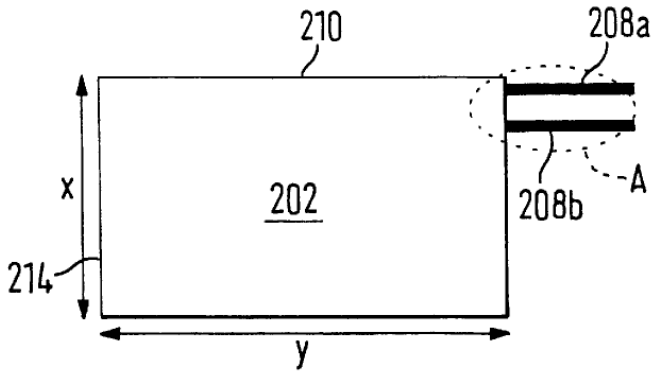
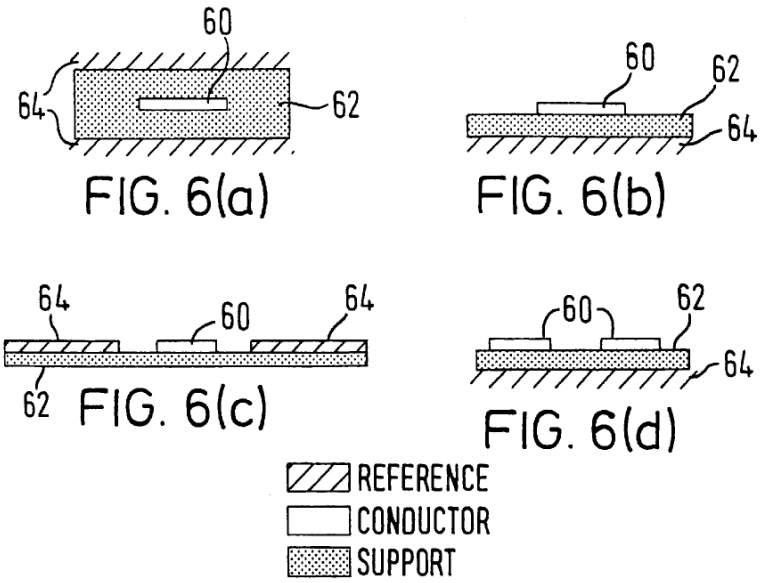


FIG. 3

By containing and guiding the energy between the two conductors, 208a and 208b, of the transmission line, a higher bandwidth impedance is achieved compared to planar antennas utilizing conventional feeds (*id.* at 2:13-25). Thus, the conductors of the feed are electromagnetically coupled together, resulting in the energy being guided along the two conductors (*id.* at 2:44-47). This results in the antenna having an increased impedance bandwidth, while being highly efficient (*id.* at 2:59-63). Figure 6 shows cross section view of several other feed section embodiments in which elements 60 comprise conductors:

083 Patent Figs. 6a-6d



For example, Figure 6(b) discloses an embodiment using a microstrip, which is a configuration that contains and guides an electric field between a conductor 60, separated from the ground reference 64 by a dielectric 62 (*id.* at 4:33-39).

3. The Court should adopt Nokia's proposed construction of "feed section extending from the reference plane to the lamina and coupled to the reference plane and the lamina."

Nokia does not move the Court to construe this term. Should the Court decide to construe it, however, the Court should adopt Nokia's proposal "feed section extending from the reference plane to the lamina and coupled to the reference plane and the lamina" means "feed section extending from the reference plane to the lamina with an electromagnetic interaction to the reference plane and the lamina" because this meaning is consistent with the intrinsic record and accounts for the inventions described therein.

Apple's construction seeks to import a limitation into to claim 1 that is not required by the clear language of the claim. Specifically, claim 1 explicitly states that the feed section must comprise:

> a first conductor for providing a feed signal to the conductive lamina, and
>
> a second conductor connected to the reference plane,
>
> wherein first and second conductors together interact to form a transmission line to contain and guide said feed signal between said first and second conductors.

Apple's insistence on construing this term is therefore improper and amounts to a needless waste of judicial resources.

The claim language of the 083 Patent does not state, as Apple apparently argues, that *each* of the two conductors of the feed section must extend the entire distance from the reference plane to the lamina (Ex. 43 at 5:15-26). Apple is improperly attempting to use a qualifier applied to the feeding region, as a whole, and apply it to all of its individual components (i.e., the first and second conductors). The claim language plainly applied the phrase "extending from . . ." to the "feed region," not to *each* conductor within the feed region. On its face, the claim states that the feed region, as a whole, extends from the reference plane to the lamina and it requires that the conductors forming the feed section "interact to form a transmission line" and nothing more. Apple would rewrite the claim so that this limitation appears separately for each conductor within the feed region, which the applicants clearly chose not to do. Accordingly, the court should not adopt Apple's interpretation reading a limitation into the asserted claims.

In contrast, Nokia's construction appropriately clarifies that, in the context of the 083 patent, "coupled to" indicates an electromagnetic interaction. The specification of the 083 Patent does not limit the type of electromagnetic interaction implicated by the

term "couple." The specification uses the term "coupled" to refer both to a direct, galvanic connection link (*id.* at 1:40-47), and electromagnetic interactions across small distances like those encountered with a transmission line (*id.* at 2:43-44). One of ordinary skill in the art would have understood the specification's use of the term "coupled to" to indicate both a galvanic connection, or a more general form of electromagnetic link (such as a capacitive or inductive coupling). Therefore, Nokia's construction encompasses the full scope of the claim term as defined by both the claim language and specification.

In conclusion, the court should adopt Nokia's construction which clarifies that "coupled to" is an electromagnetic interaction, and which lets the claim language itself define the structures that form the feed section.

F. Nokia's U.S. Patent No. 7,558,696 ("the 696 Patent").

1. Proposed Constructions for the 696 Patent.

One phrase of the 696 Patent was submitted for construction. The parties' proposed constructions for this term are set forth in the following table:

Claim Term	Nokia's Proposed Construction	Apple's Proposed Construction
"position method selection device" (Claims 1, 3, 5, 9, 13, 16, 21, 22, and 23)	an interface between applications and one or more positioning methods which centrally manages the use of said one or more positioning methods	This term is governed by 35 U.S.C. § 112 ¶ 6. The claimed function is to centrally manage a use of one or more positioning methods for more than one application. The corresponding structure disclosed in the specification is a device that includes an interface to two or more applications; an interface toin [sic] two or

		more positioning methods; a register that stores parameters provided by the applications or the user describing the quality of the positioning data requested, and that stores parameters provided by the positioning methods describing the quality of the positioning data provided; and a controller that implements a decision-making algorithm. The decision-making algorithm selects, for each application, a positioning method whose parameter(s) correspond best with the parameter(s) requested by the application or the user.

The disputed claim phrase is shown below in the context of Claim 1, in which it appears:

> 1. A processor usable medium having processor readable program code embodied therein for causing a processor to determine the position of a mobile terminal device, the processor readable program code comprising:
>
> processor readable program code for causing a processor to make a *position method selection device* located inside the mobile terminal device available for more than one application executable by the mobile terminal device and to arrange for the *position method selection device* to centrally manage a use of one or more positions methods,
>
> processor readable program code for causing a processor in said *position method selection device*, to receive at last one condition for selecting a positioning method,
>
> processor readable program code for causing a processor in said position method selection device, to receive a request for positioning data that indicates the position of the mobile terminal device,

processor readable program code for causing a processor in said *position method selection device*, to use a positioning method that fulfils said at least one condition for selection of a position method for producing said position data, and

processor readable program code for causing a processor to deliver said position data from said *position method selection device* to an application.

2. Background of the 696 Patent.

The 696 Patent generally relates to providing a centralized interface between the applications running on a mobile device and various positioning methods available on the device (Ex. 44 at 2:33-39). For example, portable devices, such as cellular telephones, can determine the position of the device utilizing the satellite-based Global Positioning System (GPS) (*id.* at 1:9-13), or other positioning methods, such as Enhanced Observation Timing Difference (E-OTD), which uses information on cellular tower locations (*id.* at 1:16-19). The reliability and accuracy of the positioning methods available may depend on factors including weather, geographical location, and whether the mobile device is inside or outside (*id.* at 1:28-41). Incorporating multiple positioning systems in one device can help to overcome the limitations of any one single method (*id.* at 1:42-47).

Once position is determined, applications on the mobile device may use this position information in a number of ways. For example, a map-based navigation application may use positioning information to provide the mobile device user with his speed and route guidance, while a weather application may provide the mobile device user with an up-to-the-minute weather forecast (*id.* at 1:59-67).

The 696 Patent aids applications in efficiently managing the use of positioning methods (*id.* at 2:4-6). The 696 Patent describes a position method selection device (PMSD) that functions as an interface between applications that use positioning

information and the device's one or more positioning methods (*id.* at 2:33-39). Specifically, the PMSD determines which positioning method a device's application will use at any given time (*id.* at 2:22-28). This simplifies the number of tasks that have to be performed by the individual applications (*id.* at 2:28-33).

One embodiment of the invention is illustrated in Fig. 1, reproduced below, which depicts a block diagram of the PMSD inside dotted box 100. Fig. 1 shows how the application interface (element 109) of the PMSD interfaces with multiple applications (elements 101 and 102), while the positioning method interface (element 110) of the PMSD interfaces with multiple positioning methods (elements 103 to 105) (*id.* at 5:39-64). Specifically, the applications (elements 101 and 102) request positioning information data from the PMSD, which in turn receives information from the positioning methods (elements 103 to 105) (*id.* at 5:45-50). The controller of the PMSD uses a decision-making algorithm to select the best positioning method based on parameters selected by the application or user (*id.* at 5:67-6:3; 8:61-9:3).

696 Patent Fig. 1

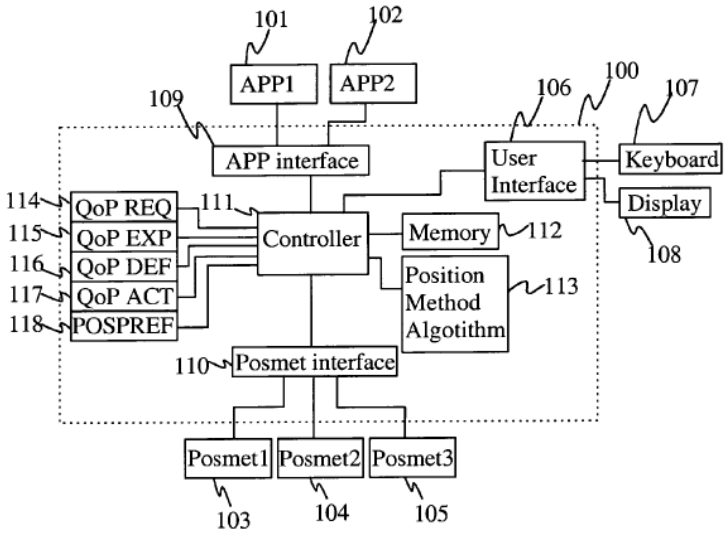
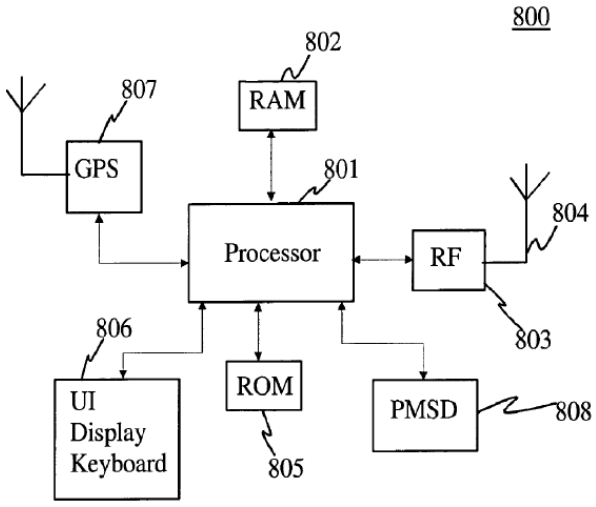


Fig. 1

Other details of the PMSD are shown according to this particular embodiment, beyond its overall function as an interface between applications and the one or more positioning methods. For example, the user of the mobile device can select the parameters controlling the PMSD via the input/output of the user interface (element 106), which is depicted as a keyboard and display (*id.* at Figure 1). Parameters describing the quality of the positioning data requested by an application or provided by a positioning method are stored in registers (element 114-115) (*id.* at 6:7-20).

Figure 1 is merely one embodiment of the PMSD, however. Another possible configuration is shown in Figure 8 below, where PMSD 808 operates according to program code on processor 801 (*id.* at 13:40-47).

696 Patent Fig. 8



Here, the PMSD can simply be a software module running on the processor (*id.* at Figure 8, 13:23-39). "In addition to the implementation shown in Figure 1, the positioning method selection device can also be implemented as a computer program, in which case the functional blocks of the device are implemented as a program code" (*id.* at 5:40-44).

3. The Court should adopt Nokia's proposed construction of "position method selection device."

Nokia does not move the Court to construe this term. Should the Court decide to construe it, however, the Court should adopt Nokia's proposal that "position method selection device" means "an interface between applications and one or more positioning methods which centrally manages the use of said one or more positioning methods" because it is consistent with the intrinsic record and accounts for the inventions described therein. Apples own definition of corresponding structure concedes that it includes at least "an interface," so there is at least agreement on this limited point. The parties differ, however, on the role of the interface, whether the disputed phrase requires "one or more" or "two or more" positioning methods, and whether Apple overcomes the presumption against using 35 U.S.C. § 112 ¶ 6 in this context.

Apple's construction of "an interface between applications and one or more positioning methods which centrally manages the use of said one or more positioning methods" as a means plus function claim invoking 35 U.S.C. § 112 ¶ 6 fails to overcome the presumption that attaches to claim language without the word "means." If claim language does not use the word "means," a presumption arises that the claim phrase is not subject to 35 U.S.C. § 112 ¶ 6. *See Phillips*, 415 F.3d at 1311 ("[W]e have held that the absence of that term creates a rebuttable presumption that section 112, paragraph 6, does not apply. *See Personalized Media Commcn's, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 703-04 (Fed. Cir. 1998)."). Furthermore this is a strong presumption, not easily overcome. *See Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d. 1354, 1358 (Fed. Cir. 2004) ("the presumption . . . 'is a strong one that is not readily overcome.'"). The court in *Lighting World Inc. v. Birchwood Lighting, Inc.*, 382 F.3d. 1354, 1359-60

(Fed. Cir. 2004) set forth the requirements to overcome the strong presumption against being considered a means plus function claim term:

> In considering whether a claim term recites sufficient structure to avoid application of section 112 ¶ 6, we have not required the claim term to denote a specific structure. Instead we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structure, end even if the term identifies the structures by their function.

The term "position method selection device" fails to overcome the strong presumption against being treated as a means plus function term under the above analysis because it recites sufficient structure and is also used by persons having ordinary skill in the art to designate structure. Apple's insistence on construing these terms is therefore improper and amounts to a needless waste of judicial resources.

Apple's construction is also contrary to the structure of the claims and would render claim language superfluous. Several asserted claims, such as claim 1, expressly require that a processor be part of the position method selection device (Ex. 44 at 14:23-25). By including a "controller" in its proposed corresponding structure, Apple effectively renders this processor element superfluous. As the 696 Patent explains, the controller of Figure 1 may be implemented, for example, as a microprocessor or equivalent means (*id.* at 5:65-6:3). The claims would not describe the PMSD and processor separately, if the PMSD necessarily encompassed a processor, or its equivalent.

There are multiple disclosures of how to implement a position method selection device within the specification of the 696 Patent. The first appears in Figure 1, and Apple tries to limit the claims just to elements shown in this figure. Figure 8, however, shows an alternate configuration, in which the PMSD operates in accordance with

software running on a processor (*id.* at 13:40-47). In this embodiment, the only structure needed for the PMSD is the software running on the processor (*id.* at 5:40-44).

Apple also tries to rewrite the claim language to require "two or more" positioning methods, but the claim language could not be more clear on this point. As stated in claim 1, for example, the PMSD works in connection with "more than one application," but "one or more" positioning methods.

Although Nokia disagrees that construction under 35 U.S.C. § 112 ¶ 6 is appropriate here, should the Court elect to do so, Nokia agrees that the function should be "centrally manage a use of one or more positioning methods for more than one application." Since the specification discloses multiple embodiments, the corresponding structure necessary to perform this function can take multiple forms. One embodiment is shown in Figure 1, but not all structures disclosed there are necessary to perform the function. The following corresponding structures actually perform the stated function: "an interface to two or more applications; an interface to one or more positioning methods; and a controller that implements a decision-making algorithm that selects a positioning method whose parameter(s) correspond best with the parameter(s) requested by an application or the user." In contrast to Apple's version, this does not add a claim limitation for "two or more" positioning methods, and does not impose limitations related to storing various parameters. Storing data is a separate function from centrally managing the positioning methods. Alternatively, according to Figure 8 and associated text, the corresponding structure may be "a processor programmed with software that implements a decision-making algorithm that selects a positioning method whose

parameter(s) correspond best with the parameter(s) requested by an application or the user."

In summary, because the term "position method selection device" fails to overcome the strong presumption against 35 U.S.C. § 112 ¶ 6 treatment, and Nokia's position is consistent with the intrinsic record, to the extent the Court concludes construction is needed, it should adopt Nokia's construction of "position method selection device" as "an interface between applications and one or more positioning methods which centrally manages the use of said one or more positioning methods."

CONCLUSION

For the reasons set forth above and on the authority cited, the Court should construe the disputed terms in accordance with Nokia's proposed constructions.

Dated: December 17, 2010

Respectfully submitted,

/s/ Michael J. Newton

Charles A. Laff, IBN 1558153
John C. Scheller, WBN 1031247 / IBN 6230199
Christopher C. Davis, WBN 1064764
MICHAEL BEST & FRIEDRICH LLP
P.O. Box 1806
Madison, WI 53701-1806
Phone: 608-283-2276
Fax: 608-283-2275
calaff@michaelbest.com
jcscheller@michaelbest.com
ccdavis@michaelbest.com

Patrick J. Flinn (pro hac vice)

John D. Haynes (pro hac vice)
ALSTON & BIRD, LLP
One Atlantic Center
1201 W. Peachtree Street
Atlanta, GA 30309-3424
Phone: 404-881-7000
Fax: 404-881-7777
patrick.flinn@alston.com
john.haynes@alston.com

Michael J. Newton (pro hac vice)
Chase Tower, Suite 3601
2200 Ross Avenue
Dallas, TX 75201
Phone: (214) 922-3400
Fax: (214) 922-3899
mike.newton@alston.com

Attorneys for Plaintiff/Counterclaim-Defendant Nokia Corporation and Counterclaim-Defendant Nokia Inc.