EXHIBIT 30

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of	
CERTAIN MOBILE COMMUNICATIONS AND COMPUTER DEVICES AND COMPONENTS THEREOF	Inv. No. 337-TA-704

ORDER NO. 18: CONSTRUING THE TERMS OF THE ASSERTED CLAIMS OF THE PATENTS AT ISSUE

(July 30, 2010)

I. INTRODUCTION

This Investigation was instituted by the Commission on February 18, 2010 to determine whether certain mobile communications and computer devices and components thereof infringe U.S. Patent Nos. 5,519,867 (the "'867 patent"); 5,915,131 (the "'131 patent"); 5,969,705 (the "'705 patent"); 6,343,263 (the "'263 patent"); RE39,486 (the "'486 patent"); 5,379,431 (the "'431 patent"); 5,455,599 (the "'599 patent"); 5,920,726 (the "'726 patent"); and 6,424,354 (the "'354 patent").[1] *See* Fed. Reg. 8399 (Feb. 14, 2010). The named Respondents are Nokia Corporation and Nokia Inc. (collectively, "Nokia"). On April 26, 2010, the undersigned granted the Commission Investigative Staff's ("Staff") motion for partial consolidation of Investigation Nos. 337-TA-704 and 337-TA-710 in Order No. 5, and subsequently transferred the '867, '131, '705, '263, and '486 patents to Judge Charneski. As a result, only the '431, '599, '726, and '354 patents remain in this Investigation.

Pursuant to Ground Rule 5A, a *Markman* hearing was held on June 14, 2010 regarding the interpretation of certain terms of the asserted claims of the patents at issue, namely:

- Claims 1, 2, 4, 5, 11 – 15, and 27 – 31 of the '431 patent;[2]
- Claims 1 – 3, 6 – 10, 12, and 14 of the '599 patent;
- Claim 1 of the '726 patent; and
- Claims 1 – 4, 7, 8, 41, and 42 of the '354 patent.

Prior to the hearing, Complainant Apple Inc. ("Apple"), Nokia, and Staff met and conferred in an effort to reduce the number of disputed claim terms to a minimum. The parties also filed initial and reply claim construction briefs, wherein each party offered its construction

[1] Complainant Apple Inc. is presently the owner, by assignment, of the patents-in-suit. (Compl. ¶ 5; *see also* Exs. 10, 11, 14, and 17 to Compl.)

[2] Apple has apparently agreed to drop claims 1, 2, 4, and 5 of the '431 patent. (*See* CMRB at 26; Apple Ex. 24.) Apple, however, has yet to file a motion terminating said claims from this Investigation.

for the claim terms in dispute, along with support for its proposed interpretation. During the *Markman* hearing, the parties further conferred and, in some instances, modified or came to agreement regarding the construction of certain disputed claim terms. After the hearing and pursuant to Order No. 3, the parties submitted an updated Joint Claim Construction Chart on June 21, 2010.[3]

II. IN GENERAL

The claim terms construed in this Order are done so for the purposes of this Section 337 Investigation. Those terms not in dispute need not be construed. *See Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n*, 366 F.3d 1311, 1323 (Fed. Cir. 2004) (noting that the administrative law judge need only construe disputed claim terms). Claim terms of patents that are related to one another by common parent or grandparent applications are analyzed together, because "we presume, unless otherwise compelled, that the same claim term in the same patent or related patent carries the same construed meaning." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003).

Hereafter, discovery and briefing in this Investigation shall be governed by this construction of the claim terms. **All** other claim terms shall be deemed undisputed and shall be interpreted by the undersigned in accordance with "their ordinary meaning as viewed by one of

[3] The claim terms discussed in detail in this Order were identified in the Updated Joint Proposed Claim Construction Chart as being agreed upon or remaining in dispute. For convenience, the briefs and chart submitted by the parties for the *Markman* hearing are referred to hereafter as follows:

CMIB	Apple's *Markman* Initial Brief
CMRB	Apple's *Markman* Reply Brief
RMIB	Nokia's *Markman* Initial Brief
RMRB	Nokia's *Markman* Reply Brief
SMIB	Staff's *Markman* Initial Brief
SMRB	Staff's *Markman* Reply Brief
JC	Updated Joint Proposed Claim Construction Chart

ordinary skill in the art." *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1371 (Fed. Cir. 2003), *cert denied*, 540 U.S. 1073 (2003).

III. RELEVANT LAW

"An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). Claim construction is a "matter of law exclusively for the court." *Id.* at 970-71. "The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000).

Claim construction focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*); *see also Markman*, 52 F.3d at 979. As the Federal Circuit in *Phillips* explained, courts must analyze each of these components to determine the "ordinary and customary meaning of a claim term" as understood by a person of ordinary skill in art at the time of the invention. *Phillips*, 415 F.3d at 1313. "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Bell Atlantic Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001).

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). "Quite apart from the written description and the prosecution history, the claims

themselves provide substantial guidance as to the meaning of particular claims terms." *Id.* at 1314; *see also Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) ("In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point [ ] out and distinctly claim [ ] the subject matter which the patentee regards as his invention.") The context in which a term is used in an asserted claim can be "highly instructive." *Id.* Additionally, other claims in the same patent, asserted or unasserted, may also provide guidance as to the meaning of a claim term. *Id.*

The specification "is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). "[T]he 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." *Id.* at 1316. "In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor." *Id.* As a general rule, however, the particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Markman*, 52 F.3d at 979. In the end, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be ... the correct construction." *Phillips*, 415 F.3d at 1316 (quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

In addition to the claims and the specification, the prosecution history should be examined, if in evidence. *Phillips*, 415 F.3d at 1323; *see also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 907 (Fed. Cir. 2004). The 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." *Phillips*, 415 F.3d at 1317; *see also Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.")

When the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence (*i.e.*, all evidence external to the patent and the prosecution history, including dictionaries, inventor testimony, expert testimony, and learned treatises) may be considered. *Phillips*, 415 F.3d at 1317. Extrinsic evidence is generally viewed as less reliable than the patent itself and its prosecution history in determining how to define claim terms. *Id.* at 1317. "The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence." *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 977 (Fed. Cir. 1999).

If, after a review of the intrinsic and extrinsic evidence, a claim term remains ambiguous, the claim should be construed so as to maintain its validity. *Phillips*, 415 F.3d at 1327. Claims, however, cannot be judicially rewritten in order to fulfill the axiom of preserving their validity. *See Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999). Thus, "if the only claim construction that is consistent with the claim's language and the written description renders the claim invalid, then the axiom does not apply and the claim is simply invalid." *Id.*

Finally, the "question whether a claim element triggers section 112(6) is ordinarily not a difficult one. Claim drafters conventionally use the preface "means for" (or "step for") when they intend to invoke section 112(6), and there is therefore seldom any confusion about whether

section 112(6) applies." *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996). Indeed, it is well settled that "[a] claim term that does not use 'means' will trigger the rebuttable presumption that [§ 112 ¶ 6] does not apply." *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006) (quoting *CSC Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002)); *see also Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319 (Fed. Cir. 2004); *Apex*, 325 F.3d at 1371.

IV. LEVEL OF ORDINARY SKILL IN THE ART[4]

Apple proposes the following levels of ordinary skill in the art:

- for the '599 patent: a bachelor's degree in computer science (or equivalent professional experience), academic or professional experience with object-oriented programming techniques, and significant academic or professional experience in graphics systems, especially object-oriented graphics systems;
- for the '354 patent: a bachelor's degree in computer science with some academic or work experience in the field, or at least a bachelor's degree in a closely related field with extensive work experience in computer science at the time of the invention of the 354 patent, or at least the equivalent by experience, education, or training; and
- for the '726 patent: four years of industry or academic experience in software, embedded systems or a similar discipline.[5]

(*See* Apple Ex. 13 at ¶ 13; Apple Ex. 16 at ¶ 16; Apple Ex. 15 at ¶ 2, fn. 1.) Apple does not appear to have proposed a level of ordinary skill in the art for the '431 patent. (*See* Apple Ex. 5; *see also* Apple Ex. 14.)

Nokia proposes the following levels of ordinary skill in the art:

- for the '599 patent: a bachelor's degree in computer science with extensive academic experience in object-oriented programming or at least a bachelor's degree in another field with extensive work experience in object-oriented computer programming;

[4] None of the parties proffered an opinion on the ordinary level of skill in their briefs. Apple's and Nokia's experts, however, did address this issue in their reports on claim construction.

[5] The undersigned notes that Apple's expert, Mr. Ganssle, appears to have mistakenly referred to the '431 patent, as opposed to the '726 patent, in his discussion regarding the ordinary level of skill.

- for the '431 patent: a bachelor's degree in computer science or a related discipline and at least 2 years industry experience in kernel-level programming or a similar discipline;

- for the '354 patent: a bachelor's degree in computer science with extensive academic experience in object-oriented programming or at least a bachelor's degree in another field with extensive work experience in object-oriented computer programming; and

- for the '726 patent: a bachelor's degree in computer science or a related discipline and at least 2 years of experience with I/O interfaces, embedded systems, and power management.

(*See* Nokia Ex. 599.C at ¶ 14; Nokia Ex. 726.I at ¶¶ 20, 179; Nokia Ex. 354.C at ¶ 24.)

Accordingly, as to "one of ordinary skill in the art," the undersigned finds that, with respect to the '599 patent, one of ordinary skill in the art would be an individual with at least a bachelor's degree in computer science, or an equivalent field, with significant academic or professional experience in object-oriented computer programming, especially object-oriented graphics systems. With respect to the '431 patent, one of ordinary level of skill in the art would be an individual with at least a bachelor's degree in computer science, or an equivalent field, and at least two years experience in kernel-level programming or a similar discipline. With respect to the '354 patent, one of ordinary skill in the art would be an individual with at least a bachelor's degree in computer science, or an equivalent field, with significant academic or professional experience in object-oriented computer programming. With respect to the '726 patent, one of ordinary skill in the art would be an individual with at least a bachelor's degree in computer science, or an equivalent field, with at least two years experience in software, embedded systems or a similar discipline. In addition, one of ordinary skill in the art shall be commensurate with the time of the respective inventions, *i.e.*, the effective filing date for each of the patents-in-suit.

V. THE '599 PATENT

A. Overview

The '599 patent is entitled "Object-Oriented Graphic System." The '599 patent issued on October 3, 1995 to named inventors Arthur Cabral; Rajiv Jain; Marie Howard; John Peterson; Richard Webb; and Robert Seidl, and was subsequently assigned to Taligent Inc. The '599 patent has 26 claims of which claims 1 – 3, 6 – 10, 12, and 14 are asserted against Nokia. Claim 1 and 12 are independent claims. Claims 2 – 3, 6 – 10, and 14 are dependent claims. These claims read as follows (with the first instance of the agreed-upon terms highlighted in *italics* and the disputed terms highlighted in **bold**):

1. An object-oriented graphic system, comprising: (a) a processor; (b) a storage under the control of and attached to the processor; (c) one or more graphic devices under the control of an attached to the processor; (d) a **grafport object** in the storage of the processor; (e) a *graphic device object* in the storage of the processor for managing one of the one or more graphic devices; (f) a **graphic object** in the storage of the processor for managing graphic processing; and (g) **means for connecting the graphic device object to the grafport object to output graphic information on the one of the one or more graphic devices under the control of the graphic object**.

2. A system as recited in claim 1, including a graphic accelerator graphic device object.

3. A system as recited in claim 1, including a frame buffer graphic device object.

6. A system as recited in claim 1, wherein the grafport object, the graphic device object and the graphic object are polymorphic.

7. A system as recited in claim 1, wherein the grafport object, the graphic device object and the graphic object are fully extensible.

8. A system as recited in claim 1, including a *modeling layer* in the graphic object.

9. A system as recited in claim 8, including a **geometric object** and a *graphic attribute object* in the modeling layer.

10. A system as recited in claim 1, wherein the geometric object includes geometry for the graphic information.

12. A method for graphic processing in an object-oriented operating system resident on a computer with a processor, a storage attached to and under the control of the processor and a graphic device attached to and under the control of the processor, comprising the steps of: (a) building a **modeling layer object** in the storage; (b) generating calls from the modeling layer object to grafport object using a *predefined* set of graphic primitives; (c) capturing **state information** and **rendering information** at the grafport object; and (d) passing the state information and the rendering information to a graphic device object for output on the graphic device.

14. The method as recited in claim 12, wherein the graphic device is a software or a hardware graphic processor.

B. Agreed-Upon and Disputed Claim Terms

1. Construction of Agreed-Upon Claim Terms

a) "graphic device object"

The parties do not dispute the claim construction of the term "graphic device object," which appears in claims 1, 6, 7, and 12. Apple, Nokia and Staff all construe the term to mean "an object that manages a graphic device in part by rendering graphic information (*e.g.*, state information and rendering information) received from a grafport object to the graphic device." (JC at App. A.)

Accordingly, the undersigned construes the term "graphic device object" to mean "***an object that manages a graphic device in part by rendering graphic information (e.g., state information and rendering information) received from a grafport object to the graphic device***."

b) "modeling layer"

The parties agree that the term "modeling layer," which appears in claims 8 and 9, should be construed as "an abstraction layer that includes modeling layer objects." (JC at App. A.)

Accordingly, the undersigned hereby adopts the parties' proposed construction and shall construe said claim term to mean "***an abstraction layer that includes modeling layer objects***."

c) "graphic attribute object"

The parties do not dispute the construction of the claim term "graphic attribute object," which appears in claim 9. All parties agree that said term should be construed as "an object that defines the appearance of a graphic defined by the graphic object." (JC at App A.)

Accordingly, the undersigned construes the term "graphic attribute object" to mean "***an object that defines the appearance of a graphic defined by the graphic object.***"

d) "predefined"

The term "predefined" appears in claim 12. The parties agree that said term should be construed to mean "non-extensible." (JC at App. A.)

Accordingly, the undersigned hereby adopts the parties' proposed construction and shall construe said term to mean "***non-extensible.***"

2. Construction of Disputed Claim Terms

a) "grafport object"

The term "grafport object" appears in claims 1, 6, 7, and 12 of the '599 patent. The parties disagree on the proper claim construction, and construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
An object that stores graphic state information and allows a graphic object to convey its contents to a graphic device object.	An object that contains a draw function method, which method takes at least a geometric primitive, an attribute bundle, and a transformation matrix as parameters and re-routes that information to an appropriate one of a number of graphic device objects by mirroring a render call of that graphic device object. NOTE: As explained during the Markman hearing, Nokia would also agree to: "An object that contains a draw function method, which method takes at least a basic set of geometries, an attribute	An object that stores graphic state information (*i.e.*, an attribute bundle, transformation matrix, etc.) and that translates draw functions to render calls of at least one graphic device object, thereby allowing a graphic object to dump its contents into the graphic device object. NOTE: Apple has indicated it would alternatively agree to the Staff's proposed construction.

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
	bundle, and a transformation matrix as parameters and re-routes that information to an appropriate one of a number of graphic device objects by mirroring a render call of that graphic device object."	

Apple, in support of its construction of this claim, argues that Nokia is trying to impose additional limitations from various parts of the specification into the claims. In the first instance, Apple states (as set forth above) that Nokia would require "grafport object" to take a "geometric primitive, an attribute bundle **and** a transformation matrix as parameters." (JC at App. A (emphasis added).) Apple contends that this is incorrect because the specification contains examples of grafport object draw functions that do not accept all three parameters. Apple also objects to Nokia's attempt to read in the limitation "by mirroring a render call of that graphic device object" because, again, it is an attempt to read in limitations to the claim from the specification. Apple also objects to Nokia's proposal to require the grafport object to interact with "geometric primitives" in every instance because this proposal is inconsistent with the claim language itself. Apple also objects to Nokia's attempt to rely on a European patent application as support for its claim construction because this is said to be inconsistent with case law.

Finally, Apple opposes Nokia's effort to use the prosecution history to support its claim construction. Apple argues that the prosecution history cited by Nokia relates to a concern by the Examiner that the description of Figure 17 in the patent, a preferred embodiment, did not adequately disclose how the grafport object 1740 can decompose the modeling layer object 1700 into geometric object 1730 and graphic attribute object 1720. Apple states that the matter was resolved when Apple substituted the words "communicates with" for the words "is decomposed by."

Apple states that it would support Staff's proposal to use "translate" in lieu of "mirroring" in discussing the interaction of the grafport device with the graphic device object.[6]

Nokia argues that Apple, in response to an objection by the Examiner, stated that a grafport object must have a draw function that takes as parameters a geometric primitive, an attribute bundle, **and** a transformation matrix and must pass these parameters to the rendering device which draws the transformed primitive using the passed attributes. Nokia also states that its claim construction is supported by the patent specification and a European patent. Nokia states that Apple's construction ignores the intrinsic as well as the extrinsic evidence in the case.

Nokia rejects Staff's argument that the example of the THouse in Figure 3 of the patent shows figures more complex than geometric primitives are contemplated by the patent. Nokia asserts that the THouse figure could have been drawn by using a series of geometric primitives. (RMRB at 9-11.)

With respect to the issue of "state information," Staff notes that a common aspect of the private parties' proposed constructions is their recognition of the fact that the "grafport object" must store "state information" for a graphic. Staff argues that state information generally refers to certain parameters of a graphic to be rendered on a device, such as the color of a line displayed on a monitor or printed on a printer. Staff believes that its proposed construction merges the proposals of the private parties by citing examples such as an attribute bundle and a transformation matrix, thereby reflecting the common aspects of both parties' proposals without unduly restricting the term.

[6] Interestingly, Nokia, while arguing that "mirroring" is a better term, infers that it does not have a strong objection to Staff's term, "translates." (Markman Tr. at 159:24-160:2.)

Staff asserts that the second concept to which all parties seem to agree is that the grafport object sits in between the graphic object and the graphic device object. Staff sees the role of the grafport object as that of an intermediary or translator.

Staff argues that the last concept that all parties seem to agree on is that the grafport object does not have everything, and that what is provided to the grafport object is rendering information. Staff agrees with Apple that the patent specification is not limited to requiring geometric primitives in every instance, but may include more complex graphics. One example of more complex graphics is said to be those set forth in Figure 3 of the patent. Staff rejects Nokia's argument that, for example, because the THouse in Figure 3 of the patent could have been drawn using geometric primitives, it must be drawn using geometric primitives. Staff argues that this assertion by Nokia does not demonstrate that the more complex graphics in the '599 patent must always be drawn that way.

Staff also does not agree with Nokia that the prosecution history supports Nokia's argument that geometric primitives are always required. Staff states that the Examiner's concern (and initial rejections) was actually based upon written description and enablement objections, and not on indefiniteness grounds. More specifically, Staff argues that the Examiner discussed his rejection in terms of a MGraphic object that was a preferred embodiment, and that Apple's responses were showing the Examiner an example of how to draw this MGraphic using primitives. Thus, Staff asserts that Apple was saying there was a written description to show how the patent claims were enabled for this particular preferred embodiment.

For the reasons set forth below, Staff's claim construction shall be adopted. The claims and the patent specification do not support Nokia's argument that each draw method must contain or take a geometric primitive, an attribute bundle, and a transformation matrix. Staff's

construction is adopted over Apple's construction because it contains exemplary language and more clearly comports with the claim language and the specification. For example, the specification states that "[A] simple graphic typically needs only a TGrafBundle; more complex graphic objects *may* need a matrix and *possibly* a clip area." ('599 patent at 9:25-27 (emphasis added); *see also id.* at col. 10 (where a code example for a particular grafport object called displayPort includes a Draw() method that accepts only 2 parameters, the object to be drawn and a color attribute, and does not include a transformation matrix).) Claim constructions that exclude certain preferred embodiments are rarely, if ever, correct. *See Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). Therefore, Staff's claim construction language, "... graphic state information (e.g. an attribute bundle, transformation matrix, *etc.* ...," is adopted.

A related issue is Nokia's argument that a geometric primitive must always be included in the definition of state information. For the reasons set forth below, Nokia's position is rejected. The '599 patent discloses graphics that are more complex than geometric primitives. For example, Figure 3 of the '599 patent discloses graphics of greater complexity while Figure 4 displays geometric primitives. ('599 patent at Figs. 3, 4.) Nokia's argument that the complex figures in Figure 3 *could* have been drawn using geometric primitives does not demonstrate that those figures *must* be drawn using geometric primitives.

Also, the prosecution history does not demonstrate that Apple, in response to rejections of the claims by the Examiner, in effect limited state information to geometric primitives. The Examiner's § 112 rejection was based upon his finding that "[t]he description of Figure 17 ... do[es] not adequately disclose how the Grafport object 1740 can decompose the modeling layer

object 1700 into geometric object 1730 and graphic object 1720."[7] (Apple Ex. 17 at 2.) Thus, the Examiner's concern (and initial rejections) were actually based upon written description and enablement objections, and not based on indefiniteness grounds. Nokia's cite to a declaration[8] by Apple's consultant, Mr. Judd, merely demonstrates that a particular embodiment, *i.e.*, Figure 17, is drawn to a grafport object using geometric primitives. It does not require that all graphic objects, of which the MGraphic object at issue here is an example, use geometric primitives. Therefore, Nokia has not shown that Apple's statements to the Examiner were a clear disavowal of scope to exclude objects more complex in shape than geometric primitives. *See, e.g., Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325-26 (Fed. Cir. 2003) ("[F]or prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable."); *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1252 (Fed. Cir. 2000) ("In determining whether there has been a clear and unmistakable surrender of subject matter, the prosecution history must be examined as a whole.")

The final issue here is the use of "mirror" by Nokia versus the use of "translate" by Staff and an alternate construction by Apple. For the reasons set forth below, Staff's proposed construction shall be adopted.

Apple opposes Nokia's use of the term "by mirroring a render call of that graphic device object" as an improper attempt to read in limitations from two lines in the specification and the prosecution history into the claim. Apple states that other portions of the specification do not mention the "mirroring" concept advocated by Nokia. Apple also asserts that Nokia is

[7] Apple's statements and amendments during prosecution resulted in an allowance after three words in the '599 patent's original specification were changed as follows: to reflect that the modeling layer object of Figure 17 "is decomposed by" the grafport **to** one that the modeling layer object "communicates with" the grafport. (Apple Ex. 17 at 1.)

[8] *See* Nokia's Ex. 599.B at AP-599-000215-219.

improperly requiring a one-to-one correspondence between, for example, the draw functions used at the top and the render functions used at the bottom with the individual devices. Apple states that it can live with Staff's use of "translation." Nokia opposes Apple's construction as too broad. While it doesn't have a strong objection to Staff's proposed language, it believes that its language using "mirroring" is more precise than Staff's use of "translates" and cites the specification and prosecution history as support for its position. In response to Apple, Nokia asserts that it is not advocating a one-to-one correspondence between a draw function and a render call. As Mr. Flinn stated during the hearing: "[w]hat's mirrored is the graphic object here has to know how this device draws. It doesn't have multiple colors, for example, there's only in black and white, so it has to be able to mirror the calls, the functions that the graphic device has." (Markman Tr. at 146:24-147:4.)

Staff states that a common aspect of the private parties' proposed constructions is their recognition that the "grafport object" acts as an intermediary between a "graphic object" and a "graphic device object." Staff believes that its proposed construction, which defines the role of the grafport object as a translator, more accurately describes the function of the grafport object.

There does not seem to be strong disagreement among the parties concerning this issue. Apple seems comfortable with Staff's use of "translates." Nokia, while preferring its use of "mirroring," also does not seem to have a strong objection to the use of the term "translates." Further, Nokia makes clear that it does not advocate a one-on-one correspondence between the draw function, for example, on top, and the render function on bottom. Given that all parties agree that the purpose of the grafport object is that of an intermediary, Staff's proposed language captures this function most accurately and is therefore adopted.[9]

[9] Additionally, Nokia's citation to the European patent is rejected. *See Pfizer, Inc. v. Ranbaxy Labs., Inc.*, 457 F.3d 1284, 1290 (Fed. Cir. 2006).

Accordingly, the undersigned defines "grafport object" as "***an object that stores graphic state information (e.g., an attribute bundle, transformation matrix, etc.) and that translates draw functions to render calls of at least one graphic device object, thereby allowing a graphic object to dump its contents into the graphic device object.***"

b) "graphic object"

With respect to the term "graphic object," which appears in claim 1, the parties have construed the claim term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
An object that contains graphic data and operations.	An object that contains data that defines a geometric primitive and methods to generate draw calls to the grafport object to control graphic processing. NOTE: As explained during the Markman hearing, Nokia would also agree to: "An object that contains data that defines a basic set of geometries and methods to generate draw calls to the grafport object to control graphic processing."	An object that contains graphic data and at least one method to generate a draw call to the grafport object. NOTE: Apple has indicated it would alternatively agree to the Staff's proposed construction.

As clarified during the hearing, the main disagreement among the parties is whether or not geometric primitives are required. (Markman Tr. at 220:7-10.) The undersigned has already determined that geometric primitives are not required. (*See* Section V.B.2(a), *supra*.) The private parties, while preferring their respective proposed language as to the remaining issues, do not take strong issue with Staff's proposed claim construction. Reviewing the arguments, the claim language, and the specification, the Staff's proposed claim language is found to most accurately construe the claim and is therefore adopted.

Accordingly, the undersigned construes the term "graphic object" as "***an object that contains graphic data and at least one method to generate a draw call to the grafport object.***"

c) "means for connection the graphic device object to the grafport object to output graphic information on the one of the one or more graphic devices under the control of the graphic object"

The phrase "means for connecting the graphic device object to the grafport object to output graphic information on the one of the one or more graphic devices under the control of the graphic object" appears in claim 1 of the '599 patent. The parties disagree on the claim construction of said phrase, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
MEANS-PLUS-FUNCTION *Corresponding Function*: connecting the graphic device object to the grafport object. *Corresponding Structure*: A device access operation contained in the grafport class. *See, e.g.*, col. 9:12-14, Fig. 1B.	MEANS-PLUS-FUNCTION *Corresponding Function*: connecting the graphic device object to the grafport object to output graphic information on the one of the one or more graphic devices under the control of the graphic object. *Corresponding Structure*: grafport object draw function methods and mirroring graphic device object rendering methods. 9:30-49, Col. 16 (code). Nokia disputes whether this structure is sufficient under 35 U.S.C. § 112.	*See* Apple's proposed construction.

All parties agree that this claim is a means-plus-function claim. (JC at App. A.) Thus, the function must be defined, followed by the corresponding structure. *See JVW Enterprises, Inc. v. Interact Associates, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2005).

(1) Function

Apple argues that the appropriate function associated with this means-plus-function term is the one explicitly recited in the specification: "connecting the graphic device object to the grafport object." Apple asserts that Nokia's construction is wrong because it ignores the specific "connection" function cited in the claim, and mistakenly focuses on the outcome of the connection, which is the resulting communication between the grafport object and the graphic

device object. Apple states that Nokia's proposed function is inconsistent with the claims and the specification because it mistakes result for function. As a result, Nokia's construction, Apple asserts, portrays a misunderstanding of a critical aspect of claim 1 – the means for connecting a graphic object to the appropriate graphic device object. Apple argues that the '599 specification teaches that "[t]he graphic port re-routes any draw calls to an appropriate one of a number of possible devices." (CMRB at 15 (citing '599 patent at 8:38-41).) Apple asserts that the claims and specification make clear that there can be multiple graphic device objects. (*Id.* (citing '599 patent at 2:54-59, 19:40-41.) Thus, Apple states, an important aspect of the "means for connecting" functional element is to connect a grafport object and a graphic device object so that the grafport object, under the control of a graphic object, renders to the appropriate graphic device. The basic difference, it is argued, between the position of Nokia on the one hand, and that of Apple and Staff on the other, is whether or not to include the result or the use of the connection as part of the function.

Nokia argues that the construction of Apple and Staff with regard to function is incomplete because, while properly containing the term "connecting the graphic device object to the grafport object," does not contain the subsequent language "to output graphic information on the one of the one or more graphic devices under the control of the graphic object," which, Nokia argues is essential to give a complete and accurate definition to the function in this claim term. In other words, Nokia states, the claim is directed to a particular kind of connection between the graphic device object and the grafport object that enables the outputting of graphic information. Thus, the function is simply not a connection, but a connection for the specific purpose of outputting graphic information. Nokia asserts that the proposal of Apple and Staff is inconsistent

with a recent case involving similar disputed means-plus-function language. *See Sybase, Inc. v. Vertica Sys., Inc.*, Case No. 6:08 CV 24 (E.D. Tex. May 13, 2010).

On the function issue, Staff essentially agrees with Apple. Staff states that according to the plain language of the claim, the function that is being performed is "connecting" the graphic device object to the grafport object. Staff states that the result achieved by this connecting function is a pathway between the graphic device object and the grafport object that will allow the grafport object and the graphic device object to communicate graphic information between them for output to the graphic device. Staff argues that, contrary to the arguments of Nokia, the result of the function is not the same as the function itself. Staff asserts that Nokia is essentially rewriting the claim language that reads "to output" into language that reads "and for outputting." Thus, according to Staff, the means for connecting element of claim 1 enables or allows the subsequent function of outputting of graphic information to occur; it does not itself perform the outputting function. At oral argument, Staff clarified its position concerning its proposed exclusion of the phrase "to output graphic information on the one of the one or more graphic devices under the control of the graphic object" from Staff's definition of the function portion of the means-plus-function claim term, stating:

> [i]f the connection that you establish in the structure, be it in this case or in presumably the accused product down the road, does not allow for the subsequent outputting of graphic information, then its not going to meet this limitation, element G. It's not going to be a means for connecting that allows or enables the result which is a connection subsequently to output.

(Markman Tr. at 205:22-206:5.) At oral argument, Apple apparently agreed with this clarification statement. (Markman Tr. at 207:13-16 (stating, "Your Honor, all of the additional points that we were going to make were covered by Staff, so there's nothing further that we have to add to this term.").)

The means cannot simply be defined by the limited claim term "connecting the graphic device to the grafport object," as proposed by Staff and Apple. The claim language clearly states that the purpose of this connection is "to output graphic information on the one of the one or more graphic devices under the control of the graphic object." ('599 patent at 19:17-19.) Therefore, this latter clause is "part of the functional recitation of the function." *Sybase*, Case No. 6:08 CV 24, at 21. Therefore, the function portion of the claim is construed to be "***connecting the graphic device to the grafport object to output graphic information on the one or more graphic devices under the control of the graphic object.***"

(2) Structure

Apple, based upon its proposed function definition, identifies the structure as a device access operation contained in the grafport class. Apple asserts that the specification discloses that object-oriented programming objects are "software entities" that contain data and operations. Apple argues that the specification further discloses a device access operation in the grafport class that connects the graphic device object to the grafport object by allowing a graphic object to pass information to a graphic device. Apple states that its proposal is also supported by the prosecution history.

Specifically, Apple states that the methods described in column 19, lines 12-14 of the '599 patent are the disclosed structure: "A graphic port class also contains methods to access a device and a device cache." Apple asserts that the specification goes on to identify a specific example of such a method, The GetDevice method, which "returns a pointer to the device to which the rendering is done." Apple argues that, as one of ordinary skill in the art would understand, the essential function of a pointer is to indicate where in the memory a certain data structure or object lives. Apple states that other objects can then follow the pointer to access or

manipulate the structure being pointed at. Apple argues that this is precisely what is going on with the GetDevice method - this method returns a pointer to a graphic device object that connects the grafport and the grafport device object by telling the grafport to invoke methods on the object in question.

Apple rejects Nokia's assertion that Apple has identified methods that connect the grafport object to the graphic device itself rather than to the graphic device object. Apple states that Nokia's "confusion" apparently arises from the shorthand reference in column 9 to the "device" that is accessed by the GetDevice method. Apple argues that a close reading of that portion of the specification, however, indicates that the mention of a "device" at column 9, line 12-14 is actually a reference to a *graphic device object* rather than the graphic device itself. The fact that the specification describes GetDevice as "returning a pointer to the device confirms that the "device" in question is actually a *graphic device object*. Apple also argues that the purpose of a pointer is to identify a specific location in memory where some data is stored. Thus, Apple argues, while it makes sense to talk about a pointer to a (software) graphic device object, which must be stored in memory, it makes no sense to talk about a pointer to a (hardware) device like a screen or printer, which cannot be stored in memory and therefore cannot be addressed by a pointer. Apple further argues that the same passage in the '599 specification discusses caches used by the "device" to "cache device dependent objects." Once again, caching other objects is not a trait of graphic devices such as screens or printers, whereas graphic device objects do cache other objects. Thus, Apple asserts that one of ordinary skill in the art would understand the '599 specification at column 9, lines 12-14 to be referring to the connection between the grafport object and the graphic device object and therefore the corresponding structure is the device access operations (*i.e.*, the methods such as GetDevice) in the grafport object class.

Nokia asserts that the grafport object and the graphic device object communicate through a number of mirrored draw function methods. Those methods are said to connect the two objects to output information on the graphic device under the control of the graphic object because it is the graphic object that controls what draw functions are called. Nokia criticizes Apple's proposal because the device access operation simply tells the graphic port how to find the location of the graphic device and says nothing about how the information is used to output graphic information on the graphic device. Even more fatal, it is alleged, is the fact that even if the cited structure established a connection, that connection would be between the grafport object and the *graphic device itself,* rather than the graphic device **object** cited in the claims. Nokia asserts that without such disclosure, the portion of the specification relied upon by Apple does not identify the structure from the means for connecting. Therefore, since the specification does not clearly identify the structure, Nokia asserts that the claim is invalid for indefiniteness.

Staff asserts that, "[a]ssuming this [*i.e.*, Apple's] explanation to be correct, Apple's citation to column 9, lines 12-14 does in fact perform the claimed function of the "means for connecting" term in claim 1." (SMRB at 19 (footnote omitted).) In the footnote to that statement, Staff states that it takes no position as to whether the structure identified by Apple is sufficient for validity purposes under 35 U.S.C. § 112, ¶ 6. Staff states that it anticipates taking a position on this issue in the second phase of this proceeding.

For the reasons set forth below, corresponding structure is found not to be sufficiently disclosed in the specification. Apple's argument rises or falls on a finding as to the definition of key language in the specification. Apple cites to the following language in the specification as support for its definition of corresponding structure:

> A graphic port class also contains methods to access a device and a device cache. GetDevice returns a pointer to the device to which rendering is done.

('599 patent at 9:12-14.) As noted above, Apple argues that the use of the term "device" in the two sentences of the specification cited above, *must* refer to a *graphic device object* rather than the **graphic device** itself. Otherwise, Apple asserts, it would make no sense if "device" were to refer to the graphic device itself. The undersigned finds that it is clear when reading the claim language that applicant knew when to use graphic device and when to use graphic device object. Claim 1 (g) is a good example of this. Thus, it must be assumed that applicant intentionally used "device" in the cited language in the specification. As such, as all parties agree, if "device" means **graphic device**, the structure of this means-plus-function claim does not make sense because it means connecting the grafport object to a graphic device, rather than a graphic device object. "[I]n order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002) (citations omitted); *see also In re Donaldson*, 16 F.3d 1189, 1195 (Fed. Cir. 1994). Accordingly, the undersigned finds the structure of claim term 1 (g) to be indefinite, rendering claim 1 in its entirety indefinite and thus, invalid.

d) "geometric object"

The term "geometric object" appears in claims 9 and 10 of the '599 patent. The parties disagree on the claim construction of said term, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
An object that contains geometry data.	An object that belongs to a non-extensible class that defines a geometric primitive.	*See* Nokia's proposed construction.

As noted above, this term appears in claims 9 and 10. Claim 9 depends from claim 8 which, in turn, depends from claim 1, and claim 10 depends directly from claim 1. The undersigned has determined, *supra*, that claim 1 is invalid. Therefore, there is no need to construe this claim term.

e) "modeling layer object"

The term "modeling layer object" appears in independent claim 12 of the '599 patent. The parties disagree on the proper claim construction of the term, and have proposed following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
A graphic object in the modeling layer that encapsulates both geometry and appearance.	An object that contains geometric primitives, a set of transformation methods, and has associated attribute bundles defining the representation of the geometric primitives.	*See* Apple's proposed construction (to the extent that it incorporates the Staff's alternative construction for graphic object).

Apple states that its construction is supported by the claim language, the specification, and the prosecution history. Apple asserts that the parties' dispute centers on whether, as Nokia proposes, the limitations from a description of a single exemplary embodiment should be read into the claim. Apple argues that the specification of the '599 patent indicates that a modeling layer and its associated objects, include two things – geometry and appearance. As an example, Apple cites Figure 17 of the '599 patent which is said to indicate that modeling layer object 1700 includes both geometry and appearance. By contrast, Apple states that Nokia improperly attempts to import claim limitations from an exemplary, preferred embodiment (*i.e.*, the MGraphic objects) into its claim construction. More specifically, Apple states that Nokia improperly advocates for geometric primitives, transformation methods, and attribute bundles to be read into its claim construction when these limitations are found only in the specification's "default implementation," the MGraphic class.

Apple argues that Nokia improperly equates the "graphic primitives" discussed in claim 12 with the different, and narrower, term "geometric primitives." This is said to be incorrect because the term "graphic primitives" used in claim 12 is broader than "geometric primitives" in that the term "graphic primitives" includes "geometric primitives" as well as other graphical primitives such as non-geometric figures.

Nokia argues that the modeling layer object is a specific type of graphic object containing both geometric primitives, and the attribute bundles and transformation methods representing the appearance of that primitive. Nokia asserts that the parties' constructions for this element are similar, but differ with respect to what type of "geometry" and "appearance" the object must encapsulate. Nokia argues that Apple places no restrictions on either, despite clear descriptions in the claims, the specification, and the file history requiring otherwise. Nokia cites the specification at col. 19:48-51 as support for its assertion that the modeling layer object generates calls to a grafport object using primitives. Nokia cites another part of the specification, col. 10: 61-67, as support for its position that modeling layer objects are defined as those that contain both a geometry definition (*i.e.*, geometric primitive) and a description of the graphic state of that geometry (*i.e.*, the attribute bundle and transformation methods). Nokia states that its position is also supported by the prosecution history.

Nokia asserts that Apple's argument that Nokia is improperly relying on a preferred embodiment is incorrect because Apple itself relies on that same preferred embodiment, the exemplary MGraphic modeling layer. Nokia also disputes Staff's argument that the inclusion of "geometric primitives" in claim 12 would be redundant, arguing that the "... major issue is, once again, [whether it has] to have these primitives or a basic set of geometries." (Markman Tr. at 220:7-10.)

Staff supports Apple's claim construction subject to the condition that "graphic object" is defined as proposed by Staff. However, " ... Staff agrees with Nokia that additional language called for in Nokia's proposed construction is already recited in other portions of claim 12 and thus remains a limitation of the claim as a whole." (SMIB at 64.) Staff disagrees with Nokia that the claim language of claim 12 calls for geometric primitives. Staff notes that the claim language itself requires the use of *graphic* primitives, not *geometric* primitives. Staff asserts that if Nokia is correct that graphic primitives are the same as geometric primitives, then Staff believes that incorporating them into a proper construction of "modeling layer object" would render the term redundant with the express recitation of that requirement in other language of the claim." (*Id.*) Moreover, Staff alleges, because claims 8 and 9 call for a "modeling layer," but lack the additional "graphic primitives" language of claim 12, the plain language of the claims as a whole further suggests that the "graphics primitives" concept should not be included in a proper construction of the "modeling layer object" term.

With respect to the additional requirements of Nokia's proposed construction, *i.e.*, the set of transformation methods and associated attribute bundles, Staff argues that Nokia appears to agree that the '599 patent broadly describes an MGraphic object as encapsulating "appearance" as called for in Apple's proposed construction. Staff states that this broad concept is carried over into Figure 17 of the '599 patent, which depicts "Geometric Objects" and "Graphic Attributes" under the "Modeling Layer." Staff states that, given the above, the specification as a whole does not appear to have "defined" the appearance aspect of the "modeling layer object" term to just transformation methods and associated attribute bundles as Nokia suggests. Staff asserts that the prosecution history also supports its position. Staff disputes Nokia's assertion that Staff agrees with Nokia that the term "graphic primitives" has the same meaning as "geometric primitives."

Staff states that it merely made that assumption for making an argument and does not agree with Nokia's position on that issue.

For the reasons set forth below, the claim construction proposed by Apple and Staff shall be adopted. First, the term "graphic object" has already been defined as "an object that contains graphic data and at least one method to generate a draw call to the grafport object." (*See* Section V.B.2(b), *supra*.) Second, the specification states:

> Above the graphic port and geometry layers there is an optional modeling layer. A preferred embodiment provides a modeling layer, but a preferred application can override the default. The default modeling layer is called a "MGraphic" layer. An MGraphic object encapsulates both geometry and appearance... If the structure provided by the MGraphic objects does not satisfy the client's requirements, the architecture still permits a different structure to be used as long as it can be expressed in terms of primitive geometries, bundles, and transforms.

('599 patent at 10:1-19.) However, the specification also provides that:

> While the invention has been described in terms of a single preferred embodiment, those skilled in the art will recognize that the invention can be practiced with modification within the spirit and scope of the appended claims.

(*Id.* at 18:65-19:1.)

As the above excerpts demonstrate (and as the parties themselves agree), there is a geometry and appearance aspect to the modeling layer object. Also, Nokia has not persuasively demonstrated that the claim term modeling object should be limited in the manner it suggests.

Accordingly, the undersigned construes "modeling layer object" to mean "***a graphic object in the modeling layer that encapsulates both geometry and appearance.***"

f) "state information"

With respect to the term "state information," which appears in claim 12, the parties disagree on the proper claim construction. The parties construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Information including at least the current transform, appearance, or clipping.	The current transform, appearance, and clipping.	*See* Apple's proposed construction.

Apple, supported by Staff, argues that its claim construction is consistent with the plain language of the claim, the specification, and the principle of claim differentiation. They object to Nokia's interpretation of its proposed claim language, arguing that it is a modification of Nokia's position that occurred after the briefs were submitted, and therefore should be rejected.

Nokia supports a claim construction that equates "state information" with "the current transform, appearance, and clipping." In its initial brief, Nokia states that "... state information, includes at a minimum, transform, appearance, and clipping information." (RMIB at 66.) In its reply brief and at oral argument, Nokia clarified that it did not mean that all three must be present in every instance, but that it must include whatever a particular graphic includes. Thus, if a particular graphic includes only transform and appearance information, then capturing state information under Nokia's construction would capture whatever state information was available for that graphic. (RMRB at 65-66; Markman Tr. at 233:17-19.)

Nokia's proposed claim language – "the current transform, appearance, *and* clipping[10] – is not consistent with its clarification of this claim construction language in its reply brief or its statements at oral argument. As such, it is not clear exactly what differences remain among the parties on this issue. In any event, the claim construction language proposed by Apple and Staff is supported by the specification.[11] (*See* '599 patent at 8:52-53; 8:40-42; 9:25-27.)

Accordingly, the undersigned construes the term "state information" to mean "***information including at least the current transform, appearance, or clipping***."

[10] *See* JC at App. A (emphasis added).

[11] The argument by Apple and Staff concerning claim differentiation need not be addressed because Nokia's revised position is no longer requiring that all three types of information be included in the definition of "state information."

g) "rendering information"

The parties disagree on the construction of the term "rendering information," which appears in claim 12, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
The drawing sequence of a graphic object.	The geometric primitives included in a graphic object.	*See* Apple's proposed construction.

All parties agree that "rendering information" is that information, other than the state information (defined above), that is captured at the grafport object and passed to a graphic device object for output on the graphic device. Apple, supported by Staff, states that "rendering information" should be defined as simply "the drawing sequence of a graphic object." They argue that Nokia is again trying to introduce its concept of geometric primitives into the operation of this patent, which improperly conflates the meaning of graphic primitives with geometric primitives.

Nokia contends that its argument to include geometric primitives is different than its other arguments on the subject.

Reviewing the arguments of the parties, it is clear that the position of Apple and Staff is reasonable. Despite Nokia's protestations to the contrary, its argument regarding geometric primitives is remarkably similar to it previous "geometric primitives" arguments which have already been rejected. For example, one of the cites relied upon by Nokia (*i.e.*, '599 patent at 8:17-23) was used in its previous arguments on other claim terms. (*See, e.g.*, RMRB at 6, 8, 21, 32.) There is no other language in the claims or the specification that supports Nokia's narrow reading of this claim term. The language proposed by Apple and Staff comports with the plain meaning of the claims and is therefore adopted.

Accordingly, the undersigned construes "rendering formation" as "***the drawing sequence of a graphic object.***"

VI. THE '431 PATENT

A. Overview

The '431 patent is entitled "Boot Framework Architecture For Dynamic Staged Initial Program Load." The '431 patent issued on January 3, 1995 to named inventors Steven Lemon and Patrick Ross and was subsequently assigned to Taligent, Inc. The '431 patent has 31 claims, of which claims 1, 2, 4, 5, 11 – 15, and 27 – 31 have been asserted against Nokia.[12] Claims 1, 11 and 27 are independent claims and claims 2, 4, 5, 12-15 and 28 – 31 are dependent claims. The claims read as follows (with the first instance of the agreed-upon terms highlighted in *italics* and the disputed term highlighted in **bold**):

11. A method for initializing a computer system in response to a *boot command*, said computer system having a processor, a main volatile storage attached to said processor and under said processor's control, and a *non-volatile external storage* attached to and under control of said processor, said external storage containing a copy of an operating system and a copy of a *booting program*, said method comprising the steps of: (a) loading said booting program from said external storage into said main volatile storage in response to said boot command; (b) starting said booting program in said main volatile storage, said booting program thereupon controlling said processor; and (c) utilizing said booting program **to configure** said computer system and to *load portions of said operating* system based on said configured computer system into said main volatile storage.

12. A method as recited in claim 11, wherein said computer system comprises a plurality of peripheral devices and wherein said method further comprises the step of storing information for initializing each of said plurality of peripheral devices in a first data structure located in said external storage.

13. A method as recited in claim 11, wherein said method further comprises the steps of storing information for initializing said operating, system and accessing said information for initializing said operating system during a booting process.

14. A method as recited in claim 11, wherein a plurality of shared libraries are stored in said external storage and said method further comprises the steps of loading said plurality of shared libraries into said main volatile storage and enabling said plurality of shared libraries in said main volatile storage.

[12] As previously noted, Apple has apparently agreed to drop claims 1, 2, 4, and 5. (*See* Section I, fn. 2.) As a result, only one disputed claim term – "to configure" – remains in dispute. (*See* CMRB 26-31; RMRB at 77-78; SMRB at 22-24.)

15. A method as recited in claim 11, wherein a plurality of *boot files* are stored in said external storage and wherein said method further comprises the steps of loading each of said plurality of boot files from said external storage into said main volatile storage in response to said boot command and using said plurality of boot files to initialize said computer system.

27. A method for booting a computer system in response to a boot command, said computer system having a processor, a main volatile storage for storing programs that control said processor, a non-volatile external storage attached to and under control of said processor, said external storage containing a copy of an object-oriented operating system and a copy of a *boot image object*, said method comprising the steps of: (a) loading said boot image object from said external storage into said main volatile storage in response to said boot command, said boot image object comprising a booting program and a plurality of boot files; (b) starting said booting program after said booting program has been loaded into said main volatile storage, said booting program thereupon controlling said processor; (c) using said booting program to configure said computer system; and (d) using said booting program to load said object-oriented operating system based on said configured computer system into said main volatile storage.

28. A method for booting a computer system as recited in claim 27, wherein step (c) comprises the step of utilizing said boot files to configure said main volatile storage.

29. A method for booting a computer system as recited in claim 27, wherein step (d) comprises the step of loading said object-oriented operating system into a configured main volatile storage.

30. A method for booting a computer system as recited in claim 29, wherein step (d) further comprises the step of utilizing said boot files to configure said computer system and said object-oriented operating system in said main volatile storage.

31. A method for booting a computer system as recited in claim 27, wherein step (a) comprises the step of utilizing a startup program stored in a non-volatile startup storage to load said boot image object.

B. Agreed-Upon and Disputed Claim Terms

1. Construction of Agreed-Upon Claim Terms

a) "boot command"

The parties do not dispute the claim construction of the term "boot command," which appears in claims 11, 15, and 27 of the '431 patent. All parties agree that "boot command" means "a command to initiate a boot process." (JC at App. B.)

Accordingly, the undersigned construes the term "boot command" to mean "***a command used to initiate a boot process.***"

b) "non-volatile external storage"

The parties agree on the construction of the term "non-volatile external storage," which appears in independent claims 11, 12, 14, 15, and 27. All parties construe the term as "a non-volatile storage device that is external from the CPU." (JC at App. B.)

Accordingly, the term "non-volatile external storage" is construed to mean "***a non-volatile storage device that is external form the CPU.***"

c) "booting program"

The parties do not dispute the claim construction of the term "booting program," which appears in claims 11, 13, and 27 – 31. All parties agree that the term should be construed to mean "a computer program, distinct from the operating system, that is involved in booting the computer." (JC at App. B.)

Accordingly, the term "booting program" is construed to mean "***a computer program, distinct from the operating system, that is involved in booting the computer.***"

d) "load portions of said operating system"

The parties are in agreement that the term "load portions of said operating system," which appears in independent claim 11, should be construed as "loading less than the entire operating system." (JC at App. B.)

Accordingly, the term "load portions of said operating system" is construed to mean "***loading less than the entire operating system.***"

e) "boot files"

The parties do not dispute the construction of the term "boot files," which appears in independent claims 15, 27, 28, and 30, and have agreed that said term should be construed as "files installed for booting." (JC at App. B.)

Accordingly, the undersigned construes the term "boot files" as "***files installed for booting***."

f) "boot image object"

The parties agree that the "boot image object" term, which appears in independent claim 27, as well as dependent claim 31, should be construed as "an object with at least a booting program and a plurality of boot files." (JC at App. B.)

Accordingly, the term "boot image object" is construed to mean "***an object with at least a booting program and a plurality of boot files***."

2. Construction of Disputed Claim Term – "to configure"

The parties disagree on the construction of the term "to configure," which appears in independent claims 11 and 27, as well as in dependent claims 28, 29, and 30, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "to tailor or customize."	To find, identify, and instantiate the storage, input/output, and other peripheral devices of the computer system.	To find, identify, and tailor or customize devices of. NOTE: Nokia has indicated in its Markman briefing that it would accept the Staff's construction as explained in the Staff's Markman briefing.

Apple contends that "to configure" is a straightforward term that is readily understood in the industry, and as a result, does not require special construction. (CMIB at 34.) If construction is deemed necessary, Apple asserts that the term should be accorded its plain meaning, which

Apple suggests is "tailoring or customizing." (*Id.*) Apple claims that the specification uses "configure" in accord with its plain and ordinary meaning, *i.e.*, "tailoring or customizing." (*Id.* at 35.) Specifically, Apple argues that the specification uses "configure" to describe configuring hardware devices and the operating system, as well as with respect to configuration of a database, all of which, Apple claims, are consistent with its proposed construction. (*Id.* at 35.) Apple also contends that its construction is "confirmed by the general understanding of this term in the art." (*Id.* (citing various technical dictionaries and an expert report).)

Apple asserts that Nokia's construction improperly attempts to read in "instantiation" into the "configure" term. (CMIB at 36.) Apple contends that the specification only states that instantiation may happen; it does not require instantiation of peripheral devices. (*Id.*) Apple further argues that "instantiation" is only used in relation to software, not hardware. Because Nokia's proposed construction would "instantiate" hardware, Nokia's construction is, Apple asserts, incorrect. (*Id.*)

Nokia argues that "finding and identifying" is an absolute necessity to a proper construction of the term "to configure." (RMIB at 204.) Nokia asserts that "to configure" requires [1] the finding and identifying of system devices; and [2] a dynamic loading of the operating system based on the hardware detected during said finding and identifying step. (*Id.* at 202-204.) Nokia states that the capacity to alter what parts of the operating system are loaded is the heart of '431 patent, and that it is this "dynamic" aspect that distinguished the patent over the prior art. (RMIB at 200.)

Nokia contends that "[o]nly one type of configuration disclosed in the specification meets both of the limitations cited in the claim – the dynamic configuration of the computer system hardware using TMachine and the Configuration Access Managers." (*Id.* at 202.) Nokia then

asserts that "the phrase "to configure" only appears in the specification in reference to the Configuration Access Managers." (*Id.*) Nokia argues that because configuring is the novel "heart" of the '431 patent and because the Configuration Access Managers must perform the claimed configuration, the definition of Configuration Access Managers inherently constitutes an explicit definition of "to configure" on behalf of the applicant. (*See* RMIB at 203-206.) Nokia then quotes from the specification to a passage discussing the Configuration Access Managers wherein Apple states:

> When **any** Configuration Access Manager is started, it is required to find all the devices for which it is responsible. After all its devices have been found and identified, the Configuration Access manager would then make a policy decision: either instantiate the appropriate Device Access Manager or simply record that the device was found but not linked with a Device Access Manager.

(RMIB at 204 (citing Nokia Ex. 431.A at 14:60-68) (emphasis added).) Nokia argues that the above excerpt demonstrates that "configuring" requires finding, identifying, and instantiating the system hardware. (RMIB at 204.) Nokia further argues that Apple's construction would allow Apple to recapture claim scope Apple was specifically forced to abandon to overcome the prior art. (*Id.* at 207.)

Staff argues that Apple's and Nokia's constructions are both flawed, and proposes that "to configure" should be construed as "finding, identifying, and tailoring or customizing devices of" the computer system. (SMIB at 13.) Staff objects to Nokia's use of the term "instantiation" in relation to hardware because the specification clearly refers to the instantiation of software, not hardware. (*Id.* at 15.) Staff is of the view that Apple's proposed construction fails to adequately capture the "dynamic" nature of the configuration process, which was, Staff asserts, necessary to overcome the prior art. (*Id.* at 15.) Staff explains that the act of configuring the computer system is performed by a Configuration Access Manager. (*Id.*) Staff argues that

because the Configuration Access Manager must find and identify all devices for which it is responsible, it is proper to read in the limitations "finding" and "identifying" into the term "to configure." (*Id.*) Staff argues that its construction is consistent with the term as it appears in the patent, the specification, and the file history. (*Id.* at 16.) Staff further argues that its construction not only avoids the deficiencies present in the parties' constructions, but also adequately captures the dynamic nature of the claims. (*Id.*)

In its rebuttal brief, Apple objects to Nokia's and Staff's constructions. Apple argues that a construction limiting "to configure" to only "devices" is unduly narrow because "devices" generally refers to hardware and does not include software. (CMRB at 28.) Similarly, Apple disputes Nokia's and the Staff's argument that "to configure" must be limited to configuration performed solely by the Configuration Access Managers. (*Id.* at 29.) Apple argues that this would improperly restrict the term since Configuration Access Managers deal only with the configuration of hardware, and as the express claim language makes clear, what is being configured is the computer system, which contains both hardware and software. (*Id.*) With respect to Staff's and Nokia's "dynamic" requirement, Apple claims that "the amendments during prosecution already include this dynamic loading aspect in the claims, and [thus] it need not be imported into the term 'configure.'"[13] (*Id.* at 29; *see also* Markman Tr. at 246:18.)

In rebuttal, Nokia asserts that the specification states that all Configuration Access Managers are responsible for "finding" the devices for which they are responsible and that when said hardware is "identified," each manager must determine whether the computer has the proper software to operate the hardware, thereby confirming that "finding" and "identifying" are necessary limitations. (RMRB at 80.) Nokia also argues that both Apple and Staff misinterpret

[13] Apple insists that the Examiner required amendments in order to overcome the prior art and that the amendments fully capture the dynamic aspect of the invention without importation of "find" and "identify" into the specific term "to configure." (CMRB at 29.)

their use of the term "instantiation," which Nokia claims simply refers to the instantiation of hardware devices through the instantiation of their software controllers, the Device Access Managers.[14] (RMRB at 82-83.) Lastly, Nokia responds to Apple's assertion that they are trying to limit "to configure" to the configuration of hardware to the exclusion of software by conceding that there must be configuration of at least some software, and therefore Nokia cannot be arguing for such a limitation. (Tr. at 273:9-13.)

In its rebuttal brief, Staff clarifies that its construction of the term "devices" was never intended to exclude software configuration. (SMRB at 23.) Staff acknowledges that "the claimed configuration process must at *least* configure hardware devices and *may also* configure associated software." (*Id.*)

The undersigned rejects Apple's suggested plain meaning construction because it fails to adequately capture the dynamic requirement of the invention. The undersigned agrees with Nokia's and Staff's arguments regarding the "find and identify" limitation, finding that the intrinsic record supports said portions of Nokia's and Staff's constructions of the term "to configure." The record shows that Configuration Access Managers are a required part of the configuration and *must* "find and identify" all devices for which they are responsible. (*See, e.g.*, '431 patent at 14:46-68.) Even Apple concedes that "at least TMachine and Configuration Access Managers 'configure the computer system.'" (CMIB at 34.)

The undersigned, however, agrees with Apple that, in the context of the '431 patent, both software and hardware are being configured. The "computer system" recited in the claims clearly comprises hardware *and* software.. ('431 patent at 28:10-31.) Moreover, all parties

[14] While Nokia continues to argue that their construction of "to configure" is correct, Nokia has expressed a willingness to accept Staff's proposed construction as a middle ground because Nokia believes that Staff's construction adequately captures the dynamic requirements of the patent to distinguish over the prior art. (RMRB at 84-85.)

concede that at least some software configuration is necessary or at least contemplated. (Tr. at 273:9-13; SMRB at 23.) While the undersigned agrees with the majority of the Staff's construction, the undersigned objects to the Staff's choice to use the term "devices." The term "devices" does not adequately capture the concept of an entire computer system as it pertains to both hardware and software. The undersigned believes that replacing the word "devices" with "components" would obviate this deficiency, and allow for the finding and identifying of system devices without excluding the configuration of software. The specification supports such a construction for it consistently uses the term "components" to describe hardware and software. ('431 patent at 2:32-34 (describing Fig. 11 as a block diagram of components of the booting framework) (emphasis added)); 18:51-53 (reciting the components of the booting framework of Fig. 11 as BootPreparation, BootDelivery, BootSetup and Boot Execution); 26:33-36 (stating "TMachine is responsible for the device dependent knowledge required to map the various root hardware components.") (emphasis added).)

Accordingly, the undersigned construes "to configure" to mean "***to find, identify, and tailor or customize components of***" the computer system.

VII. THE '354 PATENT

A. Overview

The '354 patent is entitled "Object-Oriented Event Notification System With Listener Registration Of Both Interests And Methods." The '354 patent issued on July 23, 2002 to named inventors John R. Matheny; Christopher White; David Anderson; and Arn Schaeffer, and was subsequently assigned to Object Technology Licensing Corporation. The '354 patent has 59 claims of which claims 1 – 4, 7, 8, 41, and 42 are asserted against Nokia. Claims 1, 41, and 42 are independent claims. Claims 2 – 4, 7, and 8 are dependent claims. These claims read as

follows (with the first instance of the agreed-upon terms highlighted in *italics* and the disputed terms highlighted in **bold**):

1. A method for operating a computer-implemented event notification system for propagating, among a plurality of objects, events representing changes in the objects, the operating method comprising the steps of: (a) creating, on behalf of a *first object*, **connection information representing the first object's interest in, and an associated object method for, receiving notification of a change to a *second object***; (b) **registering the connection information with a connection object**; (c) **creating an event representing a change in the second object**, responsive to the change in the second object; and (d) **notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object** *only if the event information corresponds to an interest registered on behalf of the first object.*

2. The operating method of claim 1, wherein the connection object is associated with status information to represent whether the notifying step (d) is activated or inactivated.

3. The operating method of claim 1, wherein the connection information is associated with a notification type corresponding to a connection object method, the operating method further comprising the step of: (c. 1) *invoking the connection object method corresponding to the notification type specified by the connection information in the connection object.*

4. The operating method of claim 3 wherein: **each of a notification type plurality corresponds to a unique connection object method different from the connection object method** corresponding to another of the notification type plurality.

7. The operating method of claim 3 further comprising the step of: (c. 1.1) invoking a connection object method responsible for using the connection information in the connection object to create or modify data associated with the first object.

8. The operating method of claim 3 further comprising the step of: (C. 1.1) invoking a connection object method responsible for using the connection information in the connection object to read data associated with the first object.

41. A method for operating a computer-implemented event notification system for propagating, among a plurality of objects, events representing changes in the objects, the operating method comprising the steps of: (a) creating, on behalf of a receiver object, **connection information representing the receiver object's interest in, and an associated object method for, receiving notification of a change to source object**; (b) **registering the connection information using a connection object**; (c) **creating an event representing a change in the source object**, responsive to the change in the source object; (d) **notifying the receiver object of the event by invoking the associated object method for receiving notification registered using the connection object** *only*

if the event information corresponds to an interest registered on behalf of the receiver object; and (e) using the connection information in the connection object to configure status information to enable the notifying step (d).

42. A method for operating a computer-implemented event notification system for propagating, among a plurality of objects, events representing changes in the objects, the operating method comprising the steps of: (a) creating, on behalf of a receiver object, connection information representing the receiver object's interest in, and an associated object method for, receiving notification of a change to a source object; (b) registering the connection information using a connection object; (c) creating an event representing a change in the source object, responsive to the change in the source object; (d) notifying the receiver object of the event by invoking the associated object method for receiving notification registered using the connection object only if the event information corresponds to an interest registered on behalf of the receiver object; and (e) using the connection information in the connection object to configure status information to disable the notifying step (d).

B. Agreed-Upon and Disputed Claim Terms

1. Construction of Agreed-Upon Claim Terms

a) "first object"

The parties agree that the term "first object," which appears in independent claim 1, as well as dependent claims 7 and 8, should be construed as "receiver object." (JC at App. D.)

Accordingly, the undersigned hereby adopts the parties' proposed construction and shall construe "first object" to mean "***receiver object***."

b) "second object"

The parties do not dispute the construction of the claim term "second object," which appears in claim 1. All parties agree that said term should be construed as "source object." (JC at App D.)

Accordingly, the undersigned construes "second object" to mean "***source object***."

c) "only if the event information corresponds to an interest registered on behalf of the first/receiver object"

The phrase "only if the event information corresponds to an interest registered on behalf of the first object" appears in claim 1, and the phrase "only if the event information corresponds to an interest registered on behalf of the receiver object" appears in claims 41 and 42. The parties agree that the phrase in claim 1 should be construed to mean "only if the first object has registered an interest in the change in the second object." (JC at App. D.) The parties similarly agree that the phrase in claims 41 and 42 should be construed to mean "only if the receiver object has registered an interest in the change in the source object." (JC at App. D.)

Accordingly, the undersigned hereby adopts the parties' proposed constructions and shall construe "only if the event information corresponds to an interest registered on behalf of the first object" as "***only if the first object has registered an interest in the change in the second object***," and "only if the event information corresponds to an interest registered on behalf of the receiver object" as "***only if the receiver object has registered an interest in the change in the source object***."

d) "invoking the connection object method corresponding to the notification type specified by the connection information in the connection object"

The parties do not dispute the claim construction of the phrase "invoking the connection object method corresponding to the notification type specified by the connection information in the connection object," which appears in claim 3. Apple, Nokia and Staff all construe the phrase to mean "calling the connection object method corresponding to the type of change specified by the connection information in the connection object." (JC at App. D.)

Accordingly, the undersigned construes the phrase "invoking the connection object method corresponding to the notification type specified by the connection information in the

connection object" to mean "***calling the connection object method corresponding to the type of change specified by the connection information in the connection object.***"

2. Construction of Disputed Claim Terms

As an initial matter, the undersigned notes that the parties themselves have acknowledged that the construction of most, if not all of, the disputed '354 claim terms turns on the prosecution history, particularly the statements made in an August 15, 2001 Response to an Office Action. (RMIB at 81; SMIB at 73.) The undersigned agrees with the parties, finding the prosecution history (and the parties' differing interpretations) to be central to the claim construction issue.

The Examiner initially rejected all of the claims under 35 U.S.C. § 112. (04/14/01 Office Action at 2-3.) Claims 27-47 were rejected as not being enabled. In rejecting what is now claim 1 and was previously claim 27, the Examiner stated:

> 3. Claims 27-47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
>
> Regarding claim 27, step (a) where exactly in the specification and drawings that show the claimed limitation "creating, on behalf of a first object, connection information representing the first object's interest in, and an associated object method for receiving notification of a change to a second object"? What exactly is the "first object, an associated object, a second object and a connection object?
>
> In step (d), where in the specification and the drawings that show the claimed limitation "notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object"?
>
> Regarding claim 30, where exactly in the specification and the drawings that show the claimed limitation as recited in claim 30, i.e. "Each of a notification type plurality . . . another of the notification type plurality"?

> Regarding claim 37, where exactly in the specification and the drawings that show the claimed "an event listener object, an event source object, a connection object" and the claimed limitation of step (d), i.e. "Notifying the event listener object . . . on behalf of the event listener object"?

(*Id.* at 3-4.) The remaining application claims (*i.e.*, claims 48-56) were rejected as not being sufficiently described in the specification:

> 2. Claims 48-56 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
>
> Claim 48, step (a) the claimed "a consumer object" and "a supplier object" were not originally disclosed in the specification of the parent Application Serial No. 07/996,775. What exactly is the "consumer object" and where in the drawings that show the "consumer object" and "a supplier object"?
>
> In step (b) what exactly is "a channel object"? And in step (d), where in the drawings that show the claimed limitation "notifying the consumer object of the event by invoking the associated object method for receiving notification registered with the channel object only if the event information corresponds to an interest registered on behalf of the consumer object"?

(*Id.* at 2.)

In response to the Office Action and in particular, the Examiner's rejection of claim 27 (now claim 1), the applicants stated:

Regarding Claim 27

> Regarding claim 27, the Examiner specifically asks:
> [1] What is "a first object"?
> [2] What is "an associated object"?
> [3] What is "a second object"?
> [4] What is "a connection object"?
> [5] Where in the specification and drawings does it show "creating, on behalf of a first object, connection information representing the first object's interest in, and an associated object method for, receiving notification of a change to a second object"?

[6] Where in the specification and drawings does it show "notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object"

* * *

The Applicant will point out where these elements may be found in the Applicant's specification.

[1] "**a first object**" is "the receiver object" disclosed at page 28, lines 28-29 and 31.

[2] "**an associated object method**" is "the appropriate method of the notification receiver . . . at the function block 1880, the notification receiver takes the appropriate action" disclosed at page 30, line 32 to page 31, line 1.

[3] "**a second object**" is the "source object' disclosed at page 28, line 24-25

[4] "**a connection object**" is the "connection object" disclosed at page 28, line 29.

[5] "**creating, on behalf of a first object, connection information representing the first object's interest in, and an associated object method for, receiving notification of a change to a second object**" is disclosed at Page 2, line 1 to page 3, line 26; page 23, lines 11 24; and page 28, line 15 to page 31, line 8, and in Figure 18. The "connection information" is contained within 'connection objects' disclosed at page 28, line 29. The specification at page 30, line 1 to page 31, line 8 and Figure 18 disclose that the connection object is registered with a notifier object signifying that the connection object has responsibility for one or more receiver objects which have a general interest in events generated by the source object. The connection objects, in turn, have more specialized information about which of the events generated by a source object are of particular interest to each of the receiver objects for which it is responsible. This is disclosed in association with Figure 18.

[6] "**notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object**" is disclosed at Page 2, line 1 to page 3, line 26; page 23,

> lines 11 - 24; and page 28, line 15 to page 31, line 8, and in Figure 18. The specification at page 30, line 1 to page 31, line 8 discloses that the invention is based on the concept of a notification framework that provides a mechanism for propagating change information between objects. The framework allows receiver objects to express interest in, and receive notification about changes to source objects in which they have an interest. A standard interface is provided for classes that provide notification to receiver objects. Notifier classes enable receiver objects to register their connection objects for receiving notification of events from a particular source object. The notifier objects (instantiated from the notifier classes) register a list of connection objects, each connection object corresponding to one or more receiver objects. The connection object dispatches the notification from the notifier objects to the specific receiver objects that have identified to the connection object an interest in specific events. These connection objects allow specialization of how notifications are delivered to different classes of receivers. This is disclosed in association with Figure 18.

(08/15/01 Resp. to Office Action at 7-8 (emphasis original).)

As the above excerpts demonstrate, the Examiner posed two distinct sets of questions to the applicants, namely "what is" a given claim element and "where in" the specification and drawings can certain claim elements be found. The applicants' response can similarly be broken down into two "types" of answers – the "what is" answer set and the "where is/in" answer set. The undersigned is therefore of the view that where the applicants provided "what is" answers, they were, in essence, defining certain claim terms in response to the Examiner's request for such a definition. *See Sinorgchem Co. v. Int'l Trade Comm'n*, 511 F.3d 1132, 1136 (Fed. Cir. 2007) (use of the word "is" may signify that a patentee is serving as its own lexicographer and as such, must be bound by the express definition); *Abbott Labs. v. Andrx Pharms., Inc.*, 473 F.3d 1196, 1210 (Fed. Cir. 2007). The undersigned does not, however, believe the "where is/in" answers are express definitions, but rather finds that the applicants were merely identifying where in the specification and/or drawings the claim term may be found.

a) "associated object method"[15]

The term "associated object method" appears in claims 1, 41 and 42 of the '354 patent. The parties disagree on the proper claim construction, and construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "a method associated with the first object."	A method of the receiver object.	*See* Nokia's proposed construction.

Apple asserts that its proposed construction is consistent with the express claim language, as well as the term's use in the context of the claims and specification. (CMIB at 67; CMRB at 52.) Apple opposes Nokia's proposed construction, arguing that such a construction narrows the claimed "associated object method" to a "method of the receiver object." Apple contends that neither the prosecution history nor the specification supports replacing "associated" with "of" in the claims.

Apple first asserts that Nokia's proposed construction is premised – wrongly so – on the patentees' alleged express definition of this term during prosecution. (CMRB at 52.) Apple claims that the patentees did not define the term during prosecution, but rather were merely identifying specification support for the claimed "associated object method" in response to a § 112 rejection. (CMRB at 50-52.) Apple further asserts that Nokia can point to one, and only one, instance in the entire specification that refers to a method "of the notification receiver," which is not enough to justify deviating from the plain meaning of the term. (CMIB at 67-68.) Apple argues that it is, therefore, "improper as a fundamental matter of claim construction law to read out the broader term 'associated' and replace it with the narrower term 'of'." (CMIB at 52.)

[15] The parties agree that the terms "first object" and "second object" can be construed as "receiver object" and "source object," respectively. (JC at App. D.)

Nokia contends that the applicants expressly defined the meaning of the claimed associated object method during prosecution in response to a § 112 rejection. In particular, Nokia argues that the applicants defined the "associated object method" as "the method of the receiver object," wherein applicants stated: "an '**associated object method**' is 'the appropriate method of the notification receiver ... at the function block 1880, the notification receiver takes the appropriate action' disclosed at page 30, line 32 to page 31, line 1." (RMRB at 91 (citing Nokia Ex. 354.B at AP-354-000167) (emphasis original).) Nokia contends that Apple's proposed construction ignores this express definition and must therefore be rejected. Nokia additionally asserts that the specification similarly supports its proposed construction, claiming that "the specification repeatedly refers to methods as being *of* a particular object or other aspect of the system described in the invention." (RMRB at 36; *see also* RMIB at 92.)

Staff agrees with Nokia that the "associated object method" is a method of the receiver object. (SMIB at 79.) Staff asserts that this term was one of the terms specifically defined by the applicant during prosecution "in response to a set of 'what is' questions posed by the Examiner in an initial Office Action." (*Id.* (citing '354 patent prosecution history at AP-354-000167); *see also* 72-77.) The patentees' definition, Staff argues, makes clear that the method is "of" the receiver object, not "associated with." Staff further asserts that Apple's reliance on an introductory sentence from the file history to show that the applicants were not expressly defining, but rather identifying support for the "associated object method" term is misplaced. (SMRB at 26.) Staff argues that "[a]t most this sentence confirms that the express definition provided by the applicants is consistent with the specification and described therein. It does *not* somehow refute the fact that the 'associated object method' was expressly defined by the applicants to be 'of' the receiver as Nokia contends." (*Id.* at 26-27.)

It appears that the dispute for this terms centers on whether the method must be "of" the receiver object, as Nokia and Staff contends, or "associated with" the receiver object, as Apple proposes. As discussed in Section VII.B.2, *supra*, the applicants defined certain claim terms in response to the Examiner's § 112 rejection. The claimed "associated object method" was one of those terms. Specifically, the applicants stated:

> [2] "**an associated object method**" is "*the appropriate method of the notification receiver* . . . at the function block 1880, the notification receiver takes the appropriate action" disclosed at page 30, line 32 to page 31, line 1.

(08/15/01 Resp. to Office Action at 8 (bold original; italics emphasis added).) The undersigned therefore agrees with Nokia and Staff that the express definition in the file history requires the "associated" method to be a method of the receiver object.

Accordingly, the undersigned construes the term "associated object method" to mean "***a method of the receiver object***."

b) "connection information representing the first/receiver object's interest in, and an associated object method for, receiving notification of a change to a second/source object"[16, 17]

The phrase "connection information representing the first/receiver object's interest in, and an associated object method for, receiving notification of a change to a second/source object" appears in claims 1, 41 and 42. The parties disagree on the proper claim construction, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "information representing: (1) the first object's interest in receiving notification	Information, stored in a connection object, indicating specific source object events in which a receiver object is interested and the receiver object method that should receive	*See* Nokia's proposed construction.

[16] The parties agree that the terms "first object" and "second object" can be construed as "receiver object" and "source object," respectively. (JC at App. D.)

[17] The terms "first object" and "second object" appear in claim 1. The terms "receiver object" and "source object" appear in claims 41 and 42.

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
of a change to a second object and (2) an associated object method for receiving notification of a change to a second object."	notification.	

Apple asserts that this term is self-descriptive and thus should be construed according to its plain and ordinary meaning. (CMIB at 68.) Apple claims that its proposed construction "recites the claim language in a more understandable form while remaining consistent with the plain meaning and specification," whereas Nokia's construction attempts to improperly import limitations into the plain language of the term. (*Id.*) Apple takes particular issue with Nokia's requirement that the connection information be "stored in a connection object." (*Id.* at 69.) Such a limitation, Apple argues, is not only absent from, but also contrary to the claim language. (CMIB at 69 (arguing, *inter alia*, that claims 1, 41, and 42 contradict Nokia's argument that connection information must always be stored in a connection object); CMRB at 53.) Apple also asserts that the specification does not require any specific location (*i.e.*, in the connection object) for the storage of connection information, that the prosecution history statements relating to this term are not definitions, and that Nokia cannot be allowed to rely upon conclusory expert testimony to support its construction. (RMRB at 53-54.)

Nokia asserts that, during prosecution of the '354 patent, the applicants expressly stated that the "connection information" is stored in a connection object. Specifically, Nokia argues that in overcoming a § 112 rejection, the applicant stated:

> 'Connection information' is contained within 'connection objects' ... [which], in turn, have more specialized information about which of the events generated by a source object are of particular interest to each of the receiver objects for which it is responsible.

(RMIB at 100 (citing Nokia Ex. 354.B at AP-354-000167).) This statement, Nokia contends, makes clear that "the applicants understood this term to refer to the data encapsulated inside a

connection object representing the links between specific source object events and receiver objects, along with the receiver object method it needs to invoke the dispatch change event." (*Id.*) Nokia further asserts that both the specification and the dependent claims confirm that the connection information resides in the connection object. (RMIB at 100-101; RMRB at 40 ("This is consistent with the specification, which describes that the connection object dispatches notifications to the appropriate method of the notification receiver. That the connection information is stored in the connection object is further confirmed by the language used in the dependent claims, which refer to 'the connection information *in the* connection object.'" (emphasis original)).)

Nokia objects to Apple's construction, arguing that it "merely rearranges the words within the phrase in dispute," and as a result, fails to provide any guidance as to the meaning of "connection information representing a first object's interest in, and an associated object method for, receiving notification of a change to a second object." (RMIB at 101.) Nokia disputes Apple's contention that because "the 'registration' step requires that the connection information be registered 'using' (claims 41 and 42) or 'with' (claim 1) a connection object," the "connection information need not be present with the object." (RMRB at 41.) In rebuttal, Nokia argues that "[t]he fact that the connection object must be used to perform the registration step suggests that the connection information is part of that object, a fact that the dependent claims assume and that the prosecution history explicitly requires." (RMRB at 41.)

Staff supports Nokia's construction. Staff states that the registration step recited in the asserted independent claims requires that the connection information must be registered "with" or "using" the connection object. (SMIB at 83.) This, Staff claims, indicates that "the connection information is indeed contained within the connection object." (*Id.*) Staff also

asserts that the dependent claims confirm that the connection information is stored in the connection object. (SMIB at 83; SMRB at 33 (stating, "the dependent claims confirm that the connection information of the corresponding independent claims must indeed be stored 'in the' connection object regardless of whether that connection information is registered 'with' or 'using' the connection object.").)

The main difference between the parties' proposed constructions is whether the connection information must be stored *in* a connection object. The undersigned agrees with Nokia and Staff that the connection information must indeed be stored in a connection object, finding this to be consistent with the prosecution history, the specification, and the claims. Apple's arguments to the contrary are unavailing.

During prosecution, the applicant explicitly stated that the "'connection information' is contained within 'connection objects.'" (08/15/01 Resp. to Office Action at 8 (stating, "'Connection information' is contained within 'connection objects' .... The connection objects, in turn, have more specialized information about which of the events generated by a source object are of particular interest to each of the receiver objects for which it is responsible.").) The specification provides additional support for Nokia's and Staff's construction for it establishes that the "connection information" resides in the connection object and that the receiver object method is part of the connection information. (*See, e.g.,* '354 patent at 11:14-18 ("For each connection registered with the notifier as interested in the notification, at function block 1860, the connection is asked to dispatch the notification. In turn, at function block 1870, the connection dispatches the notification to the appropriate method of the notification receiver.").) The dependent claims further confirm that the "connection information" is stored in the connection object because dependent claims 2, 3, 5-10, 44-47, and 50 all refer to the "connection

information *in the* connection object," regardless of whether that connection information is registered "with" or "using" the connection object. (*Id.* at claims 2, 3, 5-10, 44-47, and 50.)[18]

Accordingly, the undersigned construes the term "connection information representing the first/receiver object's interest in, and an associated object method for, receiving notification of a change to a second/source object" to mean "***information, stored in a connection object, indicating specific source object events in which a receiver object is interested and the receiver object method that should receive notification***."

c) "connection object"[19]

The term "connection object" appears in independent claims 1, 41, and 42, as well as dependent claims 2-4, 7, and 8, of the '354 patent. The parties disagree on the proper claim construction, and construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "object containing a method for providing notifications from the second object to the first object."	Object containing methods for dispatching notifications from the notifier object to the specific receiver objects that have identified to the connection object an interest in specific source object events.	*See* Nokia's proposed construction. NOTE: The Staff has indicated it would not be opposed to replacing the "notifier object" in Nokia's proposed construction with simply "notifier."

Apple asserts that its proposed construction is supported by both the claims and the specification. (CMIB at 70.) Apple contends that Nokia's construction, on the other hand, seeks to read in a "notifier object," which Apple claims, is improper for three reasons. First, Apple argues that Nokia's proposed construction would exclude the preferred three-method embodiment by injecting a fourth object, *i.e.*, a "notifier object," to handle notifications. (CMIB

[18] The undersigned agrees with Staff that the "dependent claims do more than simply refer to the use of connection information in the connection object. Instead, they clarify that connection information is actually taken from the connection object itself, and thus must be stored within the connection object." (*See* SMRB at 33, fn. 35.)

[19] The parties agree that the terms "first object" and "second object" can be construed as "receiver object" and "source object," respectively. (JC at App. D.)

at 70; CMRB at 56.) Second, Apple asserts that even if the preferred embodiment was interpreted to have a "notifier object," it would still be improper, as well as contrary to established law, to read this limitation into the claims. (CMIB at 71.) Third, Apple claims that Nokia "cannot selectively read an unclaimed limitation into the asserted claims, especially when that object is expressly present in [claims 51-58]." (*Id.*) The fact that other claims recite a "notifier object," Apple argues, makes clear that "when the applicants intended to claim a 'notifier object,' the applicant did so." (CMRB at 55.) In addition, Apple asserts that Nokia improperly attempts to limit the claims to connection objects containing multiple methods. This is, Apple argues, in direct contradiction with the specification and claims, which both refer to a single associated object method. (Markman Tr. at 7:13-19.)

Nokia contends that the applicants specifically defined this term during prosecution when the applicants, in response to a § 112 rejection, stated: "'a connection object' is the 'connection object' disclosed at page 28, line 29." (RMIB at 107 (citing Nokia Ex. 354.B at AP-354-00167).) Nokia claims that the portion of the specification that corresponds to "page 28, line 29" makes clear that the claimed connection object dispatches notifications from a notifier object to the specific receiver objects that have indicated an interest in specific source object events. (*Id.* (citing Nokia Ex. 354.B at AP-354-000167).) Nokia asserts that the specification further establishes that the connection object dispatches notifications from the notifier object to the receiver objects. (*Id.* at 108.) Because Apple's construction fails to take into account the applicants' express definition of the "connection object" term, it must, Nokia argues, be rejected.

Staff agrees with Nokia that the term "connection object" was expressly defined during prosecution and should therefore be interpreted to mean "object containing methods for dispatching notifications from the notifier object to the specific receiver objects that have

identified to the connection object an interest in specific source object events." (SMIB at 88.) Staff asserts that none of the arguments raised by Apple in support of its construction are persuasive. (SMIB at 88 (arguing that "to the extent such an embodiment once fell within the scope of the claims, the applicants disclaimed it by narrowly defining the scope of the connection object term during prosecution in response to rejections posed by the Examiner. Nokia cannot be faulted for ascribing to the claims the same meaning used by applicants to overcome those rejections.").)

In rebuttal, Apple objects to Nokia's attempt to limit the "connection object" term based upon the prosecution history. Apple asserts that the prosecution history does not provide an express definition for the disputed connection object term, and even assuming *arguendo* that it did, there is no mention whatsoever of a "notifier object" in the specification cite provided by the applicant in its alleged "express definition" for this term. (CMRB at 55.)

In its rebuttal brief, Nokia objects to Apple's assertion that Nokia's proposed construction would exclude the embodiment disclosed in Figure 18. Nokia argues that "this cannot be the case because the applicants explicitly stated to the USPTO that Figure 18 did, in fact, disclose a 'notifier object.'" (RMRB at 47-48 (citing Nokia Ex. 354.B at AP-354-000165).) Nokia also disputes Apple's suggestion that Nokia's construction improperly seeks to import limitations from a preferred embodiment. Nokia contends that it was the applicants, not Nokia, who introduced the notifier object as a "necessary component of the invention" when the applicants defined the "connection object" as dispatching notifications from the notifier object to specification notification objects during prosecution. (CMRB at 48.)

While Staff remains of the view that Apple's construction is unduly broad, Staff, in its rebuttal brief, acknowledges that Apple appears to be correct that the intrinsic evidence does not

require the notifier to be in "object" form. (SMRB at 29-32.) For this reason, Staff submits that it would not be opposed to replacing the word "notifier object" in the construction proposed by Nokia with simply "notifier." (*Id.*)

As discussed in Section VII.B.2, the applicants specifically defined certain terms during prosecution. Nokia and Staff are correct that the "connection object" term was among those terms defined. In particular, the applicants stated: "'connection object' is the 'connection object' disclosed at page 28, line 29." (08/15/01 Resp. to Office Action at 8.) It is therefore clear from the file history that "connection object" is defined by reference to the specification, which reads:

> Connection objects provide the dispatch of notifications from the notifier to specific notification receiver objects.

('354 patent at 11:54-56.)

While Nokia's proposed construction is largely consistent with this express definition of "connection object," the undersigned agrees with Apple that nothing in the intrinsic evidence requires that the notifier be in object form. Claim 1, for example, does not refer to a "notifier object." Other claims, however, do recite a "notifier object," thereby evidencing that when the applicants wanted to claim a "notifier object," they did so. (*Compare id.* at claim 1, *with* claims 51-58.) Similarly, the specification uses the term "notifier object" when the object form of notifier is intended. (*Compare id.* at 2:1-6 ("In this exemplary embodiment, the menu item just created for the command connects for active notification. It does this by passing a connection object to the event notification system. The command is then responsible for connecting the connection object to notifiers affecting whether the command is active."), *and* 11:54-58 ("Connection objects provide the dispatch of notifications from the notifier to specific notification receiver objects. These connection objects allow specialization of how notifications are delivered to different classes of receivers."), *with* 11:58-60 ("Finally, Notification objects

transport descriptive information about a change, and interests describe a specific notification from a notification source object.").)[20]

The undersigned also agrees with Apple that both the claims and specification refer to a single associated object method. (*See, e.g.*, '354 patent at 34:45-49 ("(d) notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object."; 12:14-18 ("For each connection registered with the notifier as interested in the notification, at function block 1860, the connection is asked to dispatch the notification. In turn, at function block 1870, the connection dispatches the notification to the appropriate method of the notification receiver.").) The undersigned therefore finds that connection objects need not have multiple methods, as Nokia proposes.[21]

Accordingly, the undersigned construes the term "connection object" as "***object containing a method for dispatching notifications from the notifier to the specific receiver objects that have identified to the connection object an interest in specific source object events.***"

d) "registering the connection information with/using a connection object"[22]

With respect to the phrase "registering the connection information with/using a connection object," which appears in independent claims 1, 41, and 42 of the '354 patent, the parties disagree on the proper claim construction. The parties construe the phrase as follows:

[20] The undersigned notes that Apple is correct that the term "notifier objects" is discussed in the prosecution history. Nonetheless, the undersigned does not view said discussion as limiting the discussion in the manner Nokia suggests. (08/15/01 Resp. to Office Action at 8.)

[21] This does not, however, preclude the connection object from having multiple methods.

[22] The term "with" appears in claim 1. The term "using" appears in claims 41 and 42.

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning.	Using a method in the connection object to signify to a notifier object that the connection object has responsibility for one or more receiver objects having a general interest in events generated by the source object.	*See* Apple's proposed construction.

Apple contends that this term is self-descriptive and should, therefore, be given its plain and ordinary meaning. (CMIB at 73.) Nokia's construction, Apple argues, seeks to narrow this term by reading in a "notifier object." Apple asserts that nothing in the intrinsic evidence "requires a method 'in the connection object' to do the registering." (*Id.*; CMRB at 57-59 (arguing that Nokia's attempts to rely on excerpts from the specification and prosecution history in support of its construction are without merit).) Apple also takes issue with Nokia's disregard for the different language used in claim 1 (*i.e.*, "with") versus claims 41 and 42 (*i.e.*, "using"). (CMRB at 57). Apple argues that "[t]he applicant's use of different terms reflects an intentional and presumed difference in claim scope." (*Id.* at 57-58.)

Nokia asserts that the claims show that "registering with a connection object" means using a method in the connection object. (RMIB at 102-103 (stating, "Indeed, claims 41 and 42 contain nearly the identical context to claim 1, but replace "with a connection object" with "using a connection object." This would lead one skilled in the art to the conclusion that these terms are interchangeable.").)[23] Specifically, Nokia argues:

> By registration occurring "with" or "using" a connection object, registration must necessarily occur through a method in the connection object. Moreover, because registration in event notification systems is generally understood to refer to the act of registering to receive source event notifications, one skilled in the art would conclude that the "registering" being referred to involves using the connection object to register for source events.

[23] In its rebuttal brief, Nokia notes that it mischaracterized the precise wording of claims 41 and 42 ("using" as opposed to "with") in its initial brief. Nokia does not believe, however, that "this is a distinction with a difference." (RMRB at 42.)

(*Id.* at 103 (internal citations omitted).) Nokia claims that the only "registration" referred to in the intrinsic record is the "act of registering an interest reflected in the connection information of a connection object with the notifier object, thereby confirming that "registering with a connection object" means using a method in the connection object to signify to a notifier object that the connection object has responsibility for one or more receiver objects having a general interest in events generated by the source objects. (*Id.* at 104 (citing Nokia Ex. 354.A. at 12:6-9).) Nokia asserts that the patentees expressly stated as such during prosecution when they explained the significance of registering connection information in response to the Examiner's § 112 rejection. (*Id.* 103-104 (citing (Nokia Ex. 354.B at AP-354-000167 ("The connection object is registered with a notifier object signifying that the connection object has responsibility for one or more receiver objects which have a general interest in events generated by the source object.")).) Nokia contends that the applicants, in fact, went so far as to "explicitly characterize 'the invention' as requiring the elements of Nokia's construction." (RMRB at 44-46.)

In addition, Nokia argues that Apple's "plain meaning" construction must be rejected for two reasons. First, Nokia contends that this term does not have a well-defined meaning in the art. (*Id.* at 105.) Second, Nokia asserts that because the Examiner found that this term required additional explanation, it would be improper to ignore the definitions provided by the applicants to obtain allowance of the claims. (*Id.*) Nokia also asserts that, contrary to Apple's arguments, "the act of 'registering' requires the use of the 'notifier object," and thus, any construction of the registering term that does not include the use of a notifier object is unsupported by the patent. (RMRB at 43.)

Staff agrees with Apple that the plain and ordinary meaning for the registering terms should govern. Staff believes that Nokia's proposed construction for this term to be

"unsupportable." (SMIB at 85.) First, Staff disagrees with Nokia that the applicant expressly defined this term in a manner that allegedly supports Nokia's proposed construction. (*Id.*) Staff asserts that:

> the examiner did *not* ask for and the applicants did *not* provide an express definition of the registering the connection information terms. Rather, the examiner asked the applicants to point out where in the specification the related "notifying" step was disclosed, and the applicants responded accordingly.

(SMRB at 34-35; *see also* SMIB at 85.) Staff similarly disputes Nokia's assertion that the "applicants' explicitly characterized 'the invention' as requiring the elements of Nokia's construction." (SMRB at 35.) While Staff acknowledges that the applicants did refer to "the invention" in their response to the Examiner's § 112 rejection, Staff argues that nothing in the applicants' statement requires the "method in the connection object" called for in Nokia's proposed construction. (SMRB at 36.) Second, Staff argues that nothing in the specification reveals an intention by the patentees to limit the invention to the registration scheme depicted in Figure 18, thereby precluding Nokia from limiting this term in the manner it proposes. (SMRB at 36-38 (arguing that none of Nokia's specification cites references the particular method in the connection object that Nokia's construction requires); *see also* SMIB at 86-87.)

The undersigned has already construed the term "connection object" as an "object containing a method for dispatching notifications from the notifier to the specific receiver objects that have identified to the connection object an interest in specific source object events." (*See* Section VII.B.2(c), *supra*.) The undersigned has also already construed the term "connection information" as part of the "connection information representing the first/receiver object's interest in, and an associated object method for, receiving notification of a change to a second/source object." (*See* Section VII.B.2(b), *supra*.) Therefore, the only term remaining to

be construed is "registering." The undersigned agrees with Apple and Staff that "registering" should be given its plain meaning, finding that the specification uses the term consistent with its ordinary meaning. (*See, e.g.,* '354 patent at Abstract; 11:23-28; 12:4-23; 16:54-62.) Nokia's construction, on the other hand, is unduly narrow, inconsistent with the registration step of the claims and unsupported by the intrinsic evidence. (*See, e.g., id.* at claim 1 (connection information is registered with a connection object, not a notifier object).) Accordingly, the phrase "registering the connection information with/using a connection object" is construed according to its plain meaning.

e) "creating an event representing a change in the second/source object"[24, 25]

The parties disagree on the construction of "creating an event representing a change in the second/source object," which appears in claims 1, 41, and 42. The parties construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "generating notification information representing a change in the second object."	Creating a notification object that encapsulates data describing the change in the source object.	*See* Apple's proposed construction.

Apple argues that its construction is consistent with the express claim language and the use of the term in the specification, while Nokia's construction seeks to inject an additional, unclaimed object into the claim, *i.e.*, a "notification object." (CMIB at 74; CMRB at 60.) Apple claims that neither the specification nor the prosecution history discuss "creating a notification object." (*Id.* (arguing, *inter alia*, that the preferred embodiment does not include a notification object); *see also* CMRB at 59-60.) Apple asserts that the specification makes clear that the

[24] The parties agree that the terms "first object" and "second object" can be construed as "receiver object" and "source object," respectively. (JC at App. D.)

[25] The term "second object" is recited in clam 1. The term "source object" is recited in claims 41 and 42.

notification information need not be in object form, thereby refuting Nokia's proposed construction. (CMIB at 74-75 ("The patent thus makes clear that notifications can be sent in the form of objects, but they do not have to be."); CMRB at 59-60.) Apple further argues that "[t]he section Nokia cites does not, [in fact], use the term 'notification object,'" and thus, Nokia's attempt to import this limitation into the claim is improper and should be rejected. (CMRB at 60.)

Nokia opposes Apple's construction as being overbroad. (RMIB at 111-112.) Nokia also asserts that Apple's construction is not in accord with the specification or the term's usage in the asserted claims. (*Id.* (arguing that creating an event representing a change requires more than the mere generation of notification information, as Apple's construction proposes; it also requires the notification object to transport the information from the source to the receiver).)

Nokia asserts that in the event notification system of the '354 patent, "events are encapsulated into notification objects that are passed from (1) the source object to (2) the notifier object to (3) the connection object, and ultimately to (4) the receiver objects that expressed an interest in that type of event." (RMIB at 110 (citing Nokia Ex. 354.A at 11:48-60; Ex. 354.C at ¶ 108.) Nokia contends that the applicants described this "flow of information" in their response to the Examiner's § 112 rejection, wherein they stated:

> Notifier classes enable receiver objects to register their connection objects for receiving notification of events from a particular source object. ... The connection object dispatches the notification from the notifier objects to the specific receiver objects that have identified to the connection object an interest in specific events. ... This is disclosed in association with Figure 18.

(*Id.* at 110. (citing Nokia Ex. 354.B at AP-354-000167).) Nokia claims that the above excerpt makes clear that events are communicated through notifications, and because the "nature of the invention" is object-oriented, the notifications must be in object form. (RMIB at 110; RMRB at

49.) Nokia argues that the specification further supports its construction for the patent "expressly describes events encapsulated as notification objects as they are propagated through the system." (RMIB at 111; RMRB at 49-50.) One of ordinary skill in the art would therefore, Nokia asserts, have understood that "calling a method of the notifier object 'with a notification describing the change' refers to the act of passing the notification message, encapsulated as a notification object, to the notifier, which then dispatches it to those connection objects that have registered an interest." (RMIB at 111; *see also* RMRB at 49-50.)

Staff agrees with Apple that this term should be construed as "generating notification information representing a change in the second object." (SMIB at 90; SMRB at 38.) Staff finds Nokia's view of the specification and the prosecution history to be unduly narrow. (SMRB at 39.) Staff contends that contrary to Nokia's assertion, the applicant did not expressly define this term during prosecution; rather, the applicant merely informed the Examiner where in the specification an event creation process is disclosed. (SMIB at 90-91 (citing '354 Patent Prosecution History at AP-354-000167).) Staff claims that the portion of the specification relied upon by Nokia "at most defines the term 'notification objects;'" it does not require the use of notification objects in each and every embodiment or in each and every claim. (*Id.* at 91.)

As discussed above, Nokia asserts that the very nature of the '354 invention (*i.e.*, object-oriented notification system) requires that the "events from a particular source object" be communicated through notification objects. (*See* RMIB at 109-110.) The undersigned disagrees, finding Nokia's construction to lack support in the intrinsic record.

Nokia appears to premise its construction on the applicants' alleged express definition of this term during prosecution:

> Notifier classes enable receiver objects to register their connection objects for receiving notification of events from a particular source

> object. ... The connection object dispatches the notification from the notifier objects to the specific receiver objects that have identified to the connection object an interest in specific events. ... This is disclosed in association with Figure 18.

(*Id.* at 110.) This is, quite simply, incorrect. As Nokia itself concedes, this term "was not specifically addressed by the Examiner in rejecting the claims pursuant to 35 U.S.C. § 112." (*Id.*) Moreover, the discussion in the file history evidences that the applicants were merely identifying for the Examiner where in the specification the event creation step is disclosed:

> [6] "**notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object**" is disclosed at Page 2, line 1 to page 3, line 26; page 23, lines 11 - 24; and page 28, line 15 to page 31, line 8, and in Figure 18. The specification at page 30, line 1 to page 31, line 8 discloses that the invention is based on the concept of a notification framework that provides a mechanism for propagating change information between objects. The framework allows receiver objects to express interest in, and receive notification about changes to source objects in which they have an interest. A standard interface is provided for classes that provide notification to receiver objects. *Notifier classes enable receiver objects to register their connection objects for receiving notification of events from a particular source object. The notifier objects (instantiated from the notifier classes) register a list of connection objects, each connection object corresponding to one or more receiver objects. The connection object dispatches the notification from the notifier objects to the specific receiver objects that have identified to the connection object an interest in specific events. These connection objects allow specialization of how notifications are delivered to different classes of receivers. This is disclosed in association with Figure 18.*

(08/15/01 Resp. to Office Action at 8 (bold original; italics emphasis added).) As the above excerpt demonstrates, the applicants did not require that notification be in the form of an object.

A review of the specification further undermines Nokia's argument that creating an event requires notification objects. First, the preferred embodiment does not include a notification object. ('354 patent at 11:62-12:26; Fig. 18.) Second, the specification repeatedly refers to

general notification, not notification objects. (*See, e.g., id.* at 9:45-54 ("When the data contained in an encapsulator class is changed, it is necessary to provide clients (e.g. a view on the data) with notification of the change. Encapsulators rely on a built-in class for standard notification support to allow the encapsulator to notify clients of changes to the data representation. A client can connect to an encapsulator for notification on specific changes or for all changes. When a change occurs the encapsulator asks the model to propagate notification about the change to all interested clients.").) Third, when the object form is intended, the specification specifically states as such. (*Id.* at 11:58-60 ("Finally, Notification objects transport descriptive information about a change, and interests describe a specific notification from a notification source object.").) Thus, as Staff rightly notes, while the specification does describe a "notification object," it does not require the use of such objects in each and every embodiment or in each and every claim.

Accordingly, the undersigned construes the term "creating an event representing a change in the second/source object" to mean "***generating notification information representing a change in the second object.***"

f) "notifying the first/receiver object of the event by invoking the associated object method for receiving notification registered with/using the connection object"[26, 27]

The term "notifying the first/receiver object of the event by invoking the associated object method for receiving notification registered with/using the connection object" appears in independent claims 1, 41, and 42 of the '354 patent. The parties disagree on the proper claim construction, and construe the term as follows:

[26] The parties agree that the terms "first object" and "second object" can be construed as "receiver object" and "source object," respectively. (JC at App. D.)

[27] The terms "first object" and "with" are recited in claim 1. The terms "receiver object" and "using" are recited in claims 41 and 42.

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Sending notification information to the first object by calling the associated object method for receiving that notification.	Dispatching the notification object using a method in the connection object to call the receiver object method corresponding to the specific interest the receiver object has identified to the connection object.	*See* Apple's proposed construction.

Apple asserts that its construction comports with the plain meaning of the claim term. Its construction is also, Apple alleges, supported by the specification, which describes that the appropriate method is called and the receiver is notified. (*Id.* (citing Apple Ex. 4 at 12:15-19 and Fig. 18).) Apple opposes Nokia's construction. Apple argues that Nokia improperly attempts to read in a "notification object" irrespective of the fact that none of the claims require that notification be done using a notification object. (CMIB at 75; CMRB at 61.) Apple contends that Nokia's alleged support for its construction is based on a mischaracterization of the prosecution history. Nokia treats the applicants' description of where certain elements are disclosed in the specification and drawings as an express definition, which it was not. (CMRB at 61.) In fact, the prosecution history, Apple argues, makes no mention of a "notification object." (*Id.*)

Nokia argues that the applicants characterized "the invention" as requiring the specific notification sequence recited in its proposed construction. (RMIB at 113-114; RMRB at 50-51.) Nokia contends that the applicants' description of the invention in the prosecution history is consistent with the description of the invention in the specification. (RMIB at 114-115; RMRB at 51-52.) A person skilled in the art, Nokia argues, would therefore have understood that for event notification to occur, the connection object must contain methods for dispatching notification. (RMIB at 113.) Nokia additionally asserts that because "the specification and claims only enable information to be transported via notification objects," the inclusion of the

term "notification object" in its proposed construction is not improper. (RMRB at 50.) Apple's construction, Nokia claims, is nothing more than "an exercise in parsing the disputed phrase into pieces and recursively rewriting it." (RMIB at 114.)

Staff supports Apple's construction. Staff asserts that Nokia's construction lacks support in either the prosecution history or the specification. First, Staff disputes Nokia's assertion that the applicants expressly defined this term during prosecution. (SMIB at 92-94.) Staff contends that the discussion of the "notifying step" in the prosecution history falls into the "where is" category, and thus does not limit the term in the manner Nokia suggests. (*Id.*; *see also* CMRB at 39-40.) Second, Staff argues that Nokia's specification support is "equally problematic." (*Id.* at 94.) Specifically, Staff argues:

> Nokia cites a portion of the specification that allegedly "describes specifically how a connection object that is registered with the notifier dispatches notifications to the specific receiver objects." The cited portion of the specification, however, at most provides an example of how notification may be done. It does not require the notification process described therein in each and every embodiment.

(*Id.* (internal citations omitted).)

The undersigned is persuaded by Apple's and Staff's arguments, finding Apple's construction to be the only one that conforms to what the patent discloses, as well as the only one that comports with the plain meaning of the claim.[28]

Nokia has, yet again, misconstrued the prosecution history. As the excerpt below evidences, the applicants were merely informing the Examiner where the notifying process is disclosed at in the specification; they were not expressly defining the notifying step, as Nokia alleges:

[28] The undersigned has already determined that neither the claims nor the intrinsic record require that notification be in object form. (*See* Section VII.B.2(e).)

[6] "**notifying the first object of the event by invoking the associated object method for receiving notification registered with the connection object only if the event information corresponds to an interest registered on behalf of the first object**" is disclosed at Page 2, line 1 to page 3, line 26; page 23, lines 11 - 24; and page 28, line 15 to page 31, line 8, and in Figure 18. The specification at page 30, line 1 to page 31, line 8 discloses that the invention is based on the concept of a notification framework that provides a mechanism for propagating change information between objects. The framework allows receiver objects to express interest in, and receive notification about changes to source objects in which they have an interest. A standard interface is provided for classes that provide notification to receiver objects. Notifier classes enable receiver objects to register their connection objects for receiving notification of events from a particular source object. The notifier objects (instantiated from the notifier classes) register a list of connection objects, each connection object corresponding to one or more receiver objects. *The connection object dispatches the notification from the notifier objects to the specific receiver objects that have identified to the connection object an interest in specific events.* These connection objects allow specialization of how notifications are delivered to different classes of receivers. This is disclosed in association with Figure 18.

* * *

Still further, page 59, lines 20 to 34 discloses that the *connection dispatches the notification to the appropriate method of the notification receiver. This disclosed method performs the work, i.e., the connection object method associated with a particular function calls the corresponding method in the receiver object to do the work.*

(08/15/01 Resp. to Office Action at 8-9 (bold original; italics emphasis added).)

Accordingly, the undersigned construes "notifying the first/receiver object of the event by invoking the associated object method for receiving notification registered with/using the connection object" to mean "***sending the notification information to the first object by calling the associated object method for receiving that notification***."

g) "each of a notification type plurality corresponds to a unique connection object method"

The phrase "each of a notification type plurality corresponds to a unique connection object method" appears in dependent claim 4. The parties disagree on the proper claim construction of the term, and have proposed following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning, *i.e.*, each of the notification types corresponds to a unique connection object method.	Each connection object has different methods to dispatch notification objects depending on the type of change in the source object.	*See* Apple's proposed construction.

Apple asserts that this term should be given its plain and ordinary meaning, which Apple submits is "each of the notification types corresponds to a unique connection object method." (CMIB at 76.) This construction, Apple argues, is supported by the specification. (*Id.*) Apple contends that Nokia's proposed construction yet again attempts to improperly inject a "notification object" limitation into the claim, even though nothing in the intrinsic evidence requires that notifications be in the form of "notification objects." (CMIB at 76: CMRB at 64.) Nokia's proposed construction also requires that each connection object have more than one method, which is, Apple claims, contrary to the express claim language and the prosecution history. (CMIB at 76-77; CMRB at 64 ("In fact, the prosecution history states that 'the connection dispatches the notification to the appropriate *method* of the notification receiver.").)

Nokia asserts that based on the context of the claims, one of ordinary skill in the art would have understood that each connection object has different methods to dispatch notification objects depending on the type of change in the source object. (RMIB at 119.) Nokia claims that the patentees' prosecution statements confirm that a connection object contains a unique method for receiving from a notifier, and dispatching to a receiver, each type of notification. (*Id.* (citing Nokia Ex. 354.A at 12:14-18; Ex. 354.C at ¶ 131.) Nokia also asserts that the specification

"corroborates" its proposed construction. (RMIB at 120 (arguing that the specification describes different types of notifications and thus, one of ordinary skill would understand that the specification refers to a system capable of multiple types of changes to source objects); *see also* RMRB at 54-55.)

Staff agrees with Apple's proposed plain and ordinary meaning for this term. (SMIB at 97; SMRB at 42.) Staff objects to Nokia's construction, arguing that neither the specification nor the prosecution history support limiting claim 4 to specific methods of the preferred embodiments. (SMIB at 97-98; SMRB at 42-43.) Staff, however, notes that Nokia does appear to be correct that each connection object must have "more than one method." (SMRB at 43 (explaining that the plain language of claim 4 requires that there be more than one connection object method because it specifies a "plurality" of notification types with a corresponding plurality of "unique" connection object methods).) Nevertheless, Staff continues to support Apple's proposed construction "because the 'more than one method' feature of Nokia's proposed construction is already required by the plain language / plain meaning of the claim as a whole and thus is not necessarily inconsistent with the position of Apple and the Staff." (SMRB at 43.)

The issue here appears to depend on whether the patent requires notification objects. The undersigned has already determined that neither the claims nor the intrinsic record require that notification be in object form. (*See* Section VII.B.2(e), *supra*.) The undersigned therefore finds that the plain meaning of this term governs. Accordingly, the undersigned construe the term "each of a notification type plurality corresponds to a unique connection object method" as "***each of the notification types corresponds to a unique connection object method***."

VIII. THE '726 PATENT

A. Overview

The '726 patent is entitled "System And Method For Managing Power Conditions Within A Digital Camera Device." The '726 patent issued on July 6, 1999 to named inventor Eric C. Anderson and was subsequently assigned to Apple Computer, Inc. The '726 patent has 18 claims. Only claim 1 is asserted against Nokia. Claim 1 reads as follows (with the first instance of the disputed terms highlighted in **bold**):

1. A system for managing power conditions in a **digital camera device**, comprising: a processor coupled to said digital camera device for controlling said digital camera device; and a **power manager** coupled to said processor, said power manager including registers for containing **status information**, **interrupt information**, and **control information**; said power manager providing said status information, said interrupt information, and said control information to said processor **for controlling said digital camera device**.

B. Construction of Disputed Claim Terms

1. "digital camera device"

The parties are in general agreement that the "digital camera device" of claim 1 is, at the very least, a device specifically adapted to capture images for digital processing and storage. (CMIB at 49; RMIB at 137-138; SMIB at 99.) The parties, however, disagree as to whether the applicant disclaimed certain features during prosecution, thereby limiting the scope of the digital camera term. (CMIB at 49; RMIB at 137.) The parties' proposed constructions reflect the dispute as to the scope of this term, and are as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
A device specifically adapted to capture images for digital processing and storage.	A device specifically adapted to capture images for digital processing and storage that does not have a general purpose computer system architecture or a uniform power management system geared to a computer system including software layer and add-in components.	*See* Apple's construction.

Apple asserts that under Nokia's construction, a digital camera device "may never be attached to a 'general purpose computer system architecture or a uniform power management system geared to a computer system including software layer and add-in components.'" (CMIB at 50.) This unduly narrow construction, Apple contends, is based on a misreading of the prosecution history. Apple argues that, contrary to Nokia's assertions, the file history does not evidence a clear disavowal of claim scope; rather, the prosecution history shows the applicant distinguishing the prior art on the basis of managing power conditions for a digital camera, not based on the scope of the "digital camera device." (CMIB at 50-51 (citing Apple Ex. 8 at 8); CMRB at 33-34 ("The prosecution record reveals a simple amendment and distinction of prior art, not any clear and unmistakable disavowal of claim scope necessary to change the plain meaning of a 'digital camera device.'").) Apple claims that Nokia is attempting to use this run-of-the-mill distinction of prior art to justify importing excerpts from the prosecution history, but "[n]othing said during prosecution precludes a digital camera device from including a general purpose computer system architecture in addition to the digital camera." (CMIB at 51.) Apple states that, in fact, the specification confirms that the claims allow for the digital camera to be attached to the computer. (*Id.* (citing Apple Ex. 3 at Figs. 1, 3, and 3:16-18).) Apple additionally asserts that Nokia's proposed construction is contrary to the plain language of claim 1. (*Id.* at 49 (arguing that "the use of the non-limiting term 'comprising' indicates that the claims should be interpreted as setting forth minimum requirements for the system, not as excluding any particular elements.").)

As discussed *supra*, Respondents agree with Apple and Staff that the construction of a "digital camera device" must at least include a device specifically adapted to capture images for digital processing and storage. (RMIB at 137-138.) Nokia, however, asserts that Apple's

proposed construction ignores the applicant's disclaimer of a "general purpose computer system architecture" and a "uniform power management system geared to a computer system including software layers and add-in components." (*Id.*) Specifically, Nokia argues that Apple amended the claims during prosecution to limit them to a "digital camera device," and that Apple then distinguished those amended claims from the prior art by excluding certain features (*i.e.*, a uniform power management system and a general purpose computer system architecture) otherwise found in the Dunstan prior art reference. (*Id.* at 139-141.) Apple cannot, Nokia asserts, be allowed to recapture what it expressly disclaimed during prosecution. (*Id.*)

Staff supports Apple's proposed construction, finding it to be consistent with the intrinsic evidence. Staff agrees with Apple that the claimed digital camera device can be coupled to, or a subcomponent of, a general purpose computer architecture. (SMIB at 101 (stating, "the specification contemplates the digital camera 110 being associated with, *e.g.*, coupled to or a subcomponent of, a larger downstream product.").) Staff asserts that neither the specification nor the prosecution history supports Nokia's unduly narrow construction. (*Id.* at 100-104.) In particular, while Staff finds certain aspects of Nokia's prosecution history analysis to be consistent with the remarks made by the applicant in distinguishing Dunstan, Staff believes "Nokia goes too far in attempting to read in a disclaimer of the digital camera device being coupled to or a subcomponent of a larger downstream product." (*Id.* at 104.) Staff contends that nothing in the prosecution history supports such a disclaimer for "applicants distinguished the prior art of record based on the constituent parts of the claimed digital camera device (particularly the power manager thereof) that manage power within that device, *not* based on whether the claimed digital camera device is (or is not) externally coupled to or a subcomponent of a larger downstream product." (*Id.*)

In rebuttal, Apple reiterates that the dispute for this term centers on whether there was a "clear disavowal" of the plain meaning scope that would otherwise be due the term "digital camera device." (CMRB at 33.) Apple maintains that "there was no such clear disavowal." (*Id.*) Specifically, Apple argues that:

> [t]he prosecution record reveals a simple amendment and distinction of prior art, not any clear and unmistakable disavowal of claim scope necessary to change the plain meaning of a "digital camera device." As an initial matter, there was no discussion during prosecution, including during the discussion of the Dunstan reference that Nokia relies on, regarding the interpretation or scope of "digital camera device." This was not a situation where the Dunstan reference taught a type of camera device and an attempt was made to propose a narrower interpretation of the claimed "digital camera device." The Applicants merely pointed out that the Dunstan reference contained no disclosure of a camera device, and thus did not disclose the limitations of the claims as amended. In other words, the claimed invention of a system to manage power in a digital camera device (that might include a computer) was contrasted with a computer lacking a camera as in Dunstan.

(CMRB at 34 (internal citations omitted).) Apple asserts that, despite Nokia's arguments to the contrary, there is nothing in the prosecution history – neither an amendment nor any argument by the applicant – to justify departing from the plain and ordinary meaning of the term "digital camera device." (*Id.*)

Nokia counters Apple's disclaimer arguments. In particular, Nokia asserts that if "Apple had not made any further arguments during prosecution – other than to say that its claims were directed to a digital camera device – then Apple's proposed construction for 'digital camera device' might be correct. But, Apple went further." What Apple did, Nokia claims, is to distinguish the Dunstan prior art reference based on the architectural differences between a digital camera and a general purpose computer system. (RMRB at 59 (citing prosecution history wherein applicant states that the amended claims are directed to the management of power

conditions in a digital camera device in contrast to the prior art of record, which is described in the context of a general purpose computer system architecture including software layers and add-in components).) Nokia argues that by doing so, Apple left little doubt that it was disclaiming devices "having a general purpose computer system architecture or a uniform power management system geared to a computer system including software layer and add-in components." (RMRB at 58-60 (arguing that the scope of Apple's disclaimer should be measured not by the prior art, but by the statements and arguments made during prosecution).)

Nokia also objects to Apple's characterization of its construction, stating:

> Nokia does not suggest that a digital camera cannot be attached to a general purpose computer system architecture; rather, Nokia's proposed construction only excludes *specific features* that Apple *expressly disclaimed* during prosecution from being part of the claimed "digital camera device."

(RMRB at 57.) In other words, under Nokia's construction, the digital camera device does not need to be a stand-alone camera; it just cannot have the disclaimed architecture. (*Id.*) Nokia argues that while Staff's construction mistakenly accepts Apple's incorrect characterization of Nokia's proposed construction, Staff, just like Nokia, recognizes that Apple excluded specific functionality from the components of a "digital camera device." Nokia states:

> Similar to the Staff's description of the digital camera devices as including "a power manager devoted to" the digital camera, Nokia's proposed construction makes clear that whatever components constitute an alleged digital camera cannot be components of "a general purpose computer system architecture or a uniform power management system geared to a computer system including software layer and add-in components." Thus, a digital camera device can be connected to or part of another device, but, for example, the power manager cannot be the power manager of a general purpose computer system as opposed to one devoted to the digital camera device.

(*Id.* at 60.)

In light of Nokia's clarification that the claimed "digital camera device" need not be a stand-alone camera, Staff now interprets Nokia's position to be that the "digital camera device" must have "a dedicated power manager, *i.e.*, the claimed digital camera device cannot share a power manager with the larger product it is a constituent part of. (SMRB at 44-45.) While Staff agrees with Nokia that the digital camera device must have a dedicated power manager therein, Staff does not agree with the additional language proposed by Nokia because, in Staff's view, the language does not address the concept of a dedicated power manager. (*Id.* at 45-46.) Under Nokia's construction, the digital camera device would be prohibited from having a computer system architecture, but it would not, Staff argues, prohibit the digital camera device from using the power manager of a larger product that the digital camera device is incorporated into.[29] (*Id.* at 46.)

As discussed *supra*, the only dispute that remains with respect to the construction of this term is whether or not the applicant narrowed the claim scope during prosecution.[30] All parties appear to be in agreement that the applicant amended the claims during prosecution to limit them to a system for managing power conditions within a digital camera device in order to overcome a §103(a) rejection. (CMIB at 48; RMIB at 139-141; SMIB at 102; *see also* 12/07/98 Resp. to Office Action at 1-5.) Where the parties diverge is whether the applicant narrowed the claim scope even further during prosecution when he distinguished the amended claims from the prior art.

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[29] Staff notes that "[t]o the extent the Staff is mistaken and Nokia truly intends to prohibit the 'digital camera device' of claim 1 from having a computer system architecture, the Staff disagrees." (SMRB at 46 (arguing that the specification discloses an embodiment with a digital camera device comprising a computer system architecture, which would be excluded if the additional language proposed by Nokia is adopted, and that Nokia cannot justify such an exclusion based on prosecution history disclaimer).)

[30] The undersigned agrees with the parties that the common portion of their proposed constructions, *i.e.*, a device specifically adapted to capture images for digital processing and storage, is supported by the intrinsic evidence. (*See, e.g.*, '726 patent at Fig. 1 (depicting a digital camera device comprising an imaging device 114, a computer 118, and a system bus 116 electrically coupling imaging device 114 to computer 118) and 3:15-30 (describing the digital camera components as collectively being used to capture, process, and store digital image data of an object).)

In the remarks accompanying the amended claims, the applicant explained the reasons for the amendment, stating in relevant part:

> The invention disclosed and claimed by the Applicant is directed to a system and method for managing power conditions in a digital camera. The system includes a power low condition wherein a backup power supply provides power to critical systems thus preserving the integrity of data including captured image data within the system and effectively assisting the digital camera to recover from an intervening power failure during a subsequent powerup.
>
> Rejection Under 35 U.S.C. §103(a)
>
> Applicant submits that amended claims 1, 9, 19 and 20 are directed to the management of power conditions in a digital camera device and accordingly recite elements specific thereto which are neither taught nor suggested by any of the prior art references of record. The Dunstan power management system is described in the context of a general purpose computer system architecture (see col. 4, line 57 to col. 6, line 21). It does not teach or suggest a power management system specifically adapted for a digital camera. In fact, Dunstan expressly states that its uniform power management system is geared to a computer system including software layers and add-in components.
>
> The Examiner argues (in connection with claim 3) that Dunstan teaches the computer device could have been a digital camera that includes captured image data. Applicant respectfully disagrees.
>
> Because neither reference alone nor in combination suggest power management of a digital camera device, it is not obvious to one skilled in the art to combine Davis and Dunstan to generate the present invention. The Applicant respectfully requests that the Examiner withdraw the rejection as to claims 1,9,19 and 20.

(12/07/98 Resp. to Office Action at 6-8.) Based on these arguments, the Examiner allowed the claims. (12/21/98 Notice of Allowance at ¶7 (stating, "It is agreed that the prior art of record does not teach or make obvious combination of system and method for managing power conditions specifically directed to a digital camera device.").)

In view of the above statements, the undersigned is not convinced that the file history evidences a "clear disavowal" of claim scope, as Nokia alleges. *See, e.g., Omega Eng'g,* 334 F.3d at 1325-26 ("[F]or prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable."); *Bayer AG,* 212 F.3d at 1252 ("In determining whether there has been a clear and unmistakable surrender of subject matter, the prosecution history must be examined as a whole.") The applicant distinguished the prior art as not teaching power management of a digital camera device, not based on the definition or scope of the claimed digital camera device. Nothing in the applicant's remarks, therefore, precludes the digital camera device from having a general purpose computer system architecture or a uniform power management system geared to a computer system including software layer and add-in components.

Accordingly, the undersigned construes the term "digital camera device" as "***a device specifically adapted to capture images for digital processing and storage***."

2. "power manager"

The parties disagree on the proper claim construction of the term "power manager," and have proposed following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the Court disagrees, the construction should be "device specifically adapted to detect and handle power conditions."	A device specifically adapted to detect and handle power failures and to manage the supply of backup power in a digital camera.	*See* Nokia's proposed construction.

Apple asserts that this term is "self-descriptive" and should be accorded its plain meaning, which Apple suggests is "a device that manages power conditions." (CMIB at 51.) Apple states that it would, however, agree to part of Nokia's proposed construction in order to eliminate a dispute, and therefore has included "device specifically adapted to detect and handle

power" in its alternative construction. (*Id.*) Apple claims that the remaining dispute "centers around Nokia's attempt to improperly narrow the scope of the plain meaning by limiting 'power manager' to only a subset of power management capabilities." (*Id.*) Apple asserts that only its construction is consistent with the claims and the title of the patent. (*Id.* at 52-53.) Apple further asserts that both the prosecution history and the specification confirm that the claimed "power manager" was interpreted to be "broader than simply a device that detects and handles power failures," and thus, may manage power conditions other than power failures. (*Id.*)

Nokia agrees with Apple that the purpose of a generic power manager is to detect and handle different power conditions. (RMIB at 141.) Nokia, however, believes that the prosecution history and specification require the claimed "power manager" to detect and handle power failures and manage the supply of backup power. (*Id.* at 141-142.) In particular, Nokia argues that the applicant expressly defined the scope of the invention to require that the power manager handle and detect power low conditions and manage the supply of backup power, when the applicant stated:

> The invention disclosed and claimed by the Applicant is directed to a system and method for managing power conditions in a digital camera. The system includes a power low condition wherein a backup power supply provides power to critical systems thus preserving the integrity of data including captured image data within the system and effectively assisting the digital camera to recover from an intervening power failure during a subsequent powerup.

(*Id.* at 142 (citing Nokia Ex. 726.E at 6).) Nokia also argues that the specification not only makes clear that the power manager detects power failures, but also that the power manager must handle power failures, including by managing the supply of backup power. (*Id.* at 143-146.) Apple's proposed construction, Nokia asserts, ignores the specific definition of the invention

Apple gave the Examiner in order to overcome the Dunstan prior art reference during prosecution and thus, should be rejected.

Staff is also of the view that Apple, during prosecution, limited the claimed power manager to a power manager that must, at least, detect power failures in a digital camera device and use backup power supply to handle detected power failures.[31] (SMIB at 105.) Staff argues that Apple's proposed construction fails to adequately account for this disclaimer of claim scope. (*Id.*; *see also* SMRB at 48.) In particular, Staff states:

> Apple's attempts to gloss over this disclaimer of claim scope should be rejected. In particular, Apple argues that the power manager of claim 1 must be "interpreted to be broader than simply a device that detects and handles power failures" because the prior art used to reject claim 1 during prosecution "manages a variety of power conditions" such as "toggling between 'performance' and 'economy' power states for various add-in components." To the contrary, the applicants specifically limited the system of claim 1 during prosecution to one that accounts for "a low power condition" using a "backup power supply to provide power to critical systems" of a digital camera device. Thus, even if the power manager of claim 1 originally encompassed the broader functionality of the prior art as Apple appears to contend, that scope was surrendered and is no longer covered by the claim.

(SMIB at 108-109 (internal citations omitted).) Staff also argues that the specification does not, as Apple alleges, support a broader interpretation of the power manager term. (*Id.* at 105-107.) To the contrary, the specification consistently uses the "power manager" term to describe a device that detects and handles power failures within the digital camera and that manages the supply of backup power to various digital camera components, which is in line with Nokia's proposed construction. (*Id.*)

In rebuttal, Apple contends that its construction is presumptively correct because, as even Nokia concedes, the plain meaning of the "power manager" term is consistent with Apple's

[31] Staff notes that this does not preclude the power manager from having additional power management capabilities. (SMIB at 105, fn. 26.)

construction. (CMRB at 35.) Apple argues that nothing in the intrinsic evidence justifies deviating from the plain and ordinary meaning, as Nokia attempts to do by importing limitations from the preferred embodiment related to power failures into its proposed construction. (*Id.* at 35-36 (arguing that other embodiments discussed in the specification are not limited to managing the power failure condition, that claim 1 is further limited to a "low power condition" in claim 2, and that the specification does not "clearly" redefine the term to mean managing power failures).) Apple also objects to Nokia's reliance on a sentence from the prosecution history in which the applicant noted that the system includes a low power condition wherein a backup power supply provides power to preserve the integrity of captured image data to support its prosecution disclaimer argument. (*Id.* at 37.) Apple argues that:

> this is not a statement limiting the definition of 'power manager' in claim 1 Indeed, the preceding sentence in the Applicant's statement notes the broad scope of the invention relating to "managing power conditions in a digital camera." Tellingly, the Examiner's Reasons for Allowance focus on this broader statement and do not in any way suggest that Nokia's narrower construction was necessary for allowance.

(*Id.* (internal citations omitted).)

In response to Apple's arguments, Nokia asserts that "[Apple's] analysis turns the purpose of reviewing the prosecution history on its head by focusing exclusively on what the Examiner originally cited as potentially invalidating prior art as determinative of the scope of claim terms – regardless of what actions or arguments the patentee takes in response to the cited art." (RMRB at 62.) Nokia argues that in response to the Examiner's rejection, "Apple did not accept that its power manager and invention were broad enough to encompass Dunstan and the other prior art cited;" rather, Apple argued that its power manager was narrower. (*Id.* at 63.) In doing so, Apple limited the claimed power manager to managing power failures and thus, Apple

cannot, Nokia contends, be allowed to recapture the claim scope it expressly surrendered during prosecution.

While Staff concedes that Apple is arguably correct that the applicant's statement that the invention relates to "managing power conditions" is arguably broad, the statement cannot be viewed in isolation and must, Staff contends, be viewed in the context that it was made, *i.e.*, to overcome a prior art rejection under 35 U.S.C. § 103(a). (SMRB at 48-49.) Given this context, Staff asserts that the subsequent sentences in the prosecution history make clear that "the applicant's position that the patentable features of 'the system' called for in claim 1 are more specifically directed at detecting and handling power failures and managing the supply of backup power." (*Id.* (citing '726 Patent Prosecution history at AP-726-000100).) Applicant's remarks are thus, Staff argues, more limiting than Apple suggests.

The undersigned agrees with Nokia and Staff that the claimed power manager must (i) detect and handle power failures in a digital camera device, and (ii) manage the supply of backup power in a digital camera.[32] During prosecution, the Examiner rejected the applicant's original claims as unpatentable over Dunstan. (09/09/98 Office Action at 2-3 (stating, "As per claims 1, 9 and 1920, Dunstan teaches the invention as claimed including a system for managing conditions in a computer system comprising: ... a power manager coupled to said processor ... .").) In response to the Office Action, Apple argued that:

> The invention disclosed and claimed by the Applicant is directed to a system and method for managing power conditions in a digital camera. *The system includes a power low condition wherein a backup power supply provides power to critical systems thus preserving the integrity of the data including captured image data within the system and effectively assisting the digital camera to*

[32] The undersigned notes that the claimed power manager must [1] detect and handle power failures; and [2] manage the supply of backup power in a digital camera. The power manager may, however, possess power management capabilities in addition to detecting and handling power failures and managing the supply of backup power.

recover from an intervening power failure during a subsequent power up.

(12/07/98 Resp. to Office Action at 6 (emphasis added).) In so doing, Apple distinguished the prior art based on the patent's unique power management system, and as a result, limited the claimed power manager to one that must, at a minimum, be capable of detecting and handling power failures through the use of a backup power supply. (*Id.*) Thus, contrary to Apple's assertion, any broader scope was surrendered during prosecution and is no longer covered by the claim.

The specification's use of the term also comports with Nokia's and Staff's construction. For example, the Abstract describes the invention as "[a] system for recovering from a power failure in a digital camera comprises a *power manager for detecting and handling power failures* ...." ('726 patent at Abstract (emphasis added).) This same "definition" is repeated in the Summary of Invention portion of the patent, as well as in the description of the preferred embodiment. (*Id.* at 1:66-2:1 ("In accordance with the present invention, a system and are disclosed for recovering from a power failure within a digital camera device."), 3:7-10 ("The present invention discloses a system and method for managing power conditions within a digital camera device and comprises a power manager for detecting and handling power failures ... ."); *see also* 2:13-17 ("The power manager monitors the voltage sensor to detect a power failure within the digital camera. After detecting a power failure in which the camera operating power is less than a specified threshold value, the power manager generates a powerfail interrupt."); Fig. 3 (depicting power manager 342 that uses a sensor 359 to detect power failures within the digital camera device 110, as well as uses a power supply 356 and backup batteries 360 to handle detected power failures).) The undersigned therefore finds that the term "power manager," in the context of the '726 patent, refers to a device that detects and handles power failures.

Accordingly, the undersigned construes the term "power manager" to mean "***a device specifically adapted to detect and handle power failures and to manage the supply of backup power in a digital camera***."

3. "status information"

The parties disagree on the proper claim construction for the term "status information," and construe the term as follows:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "information indicating the state of device conditions."	Bits in a register set by the power manager that indicate whether power supplied to a digital camera satisfies power thresholds specifically adapted for operation of a digital camera.	Information indicating the state of conditions affecting the operation of the digital camera device. NOTE: Apple has indicated it would alternatively agree to the Staff's proposed construction.

Apple asserts that the term "status information" should be accorded its plain meaning, which Apple submits is "information relating to the status of the device." (CMIB at 53.) Apple claims that its proposal is supported by the totality of the intrinsic evidence. (*Id.* at 53-54 (arguing that the claims themselves, as well as the specification, confirm that "status information" relates to conditions in the device dependent claims 4 and 12 describe the specific register for storing ***status*** information as a "***condition*** register.") (emphasis original).) Nokia's construction, Apple argues, "seeks to read in a number of limitations from the preferred embodiment through a narrow construction that deviates from the plain language." (*Id.* at 53.) Specifically, Apple argues that Nokia's proposed construction "improperly attempts to limit 'status information' to information in a particular form ('bits'), in a particular location ('in a register'), that is set in a particular way ('set by the power manager'), and is specific to a particular device condition ('that indicate whether power supplied to a digital camera satisfies

power thresholds specifically adapted for operation of a digital camera')." (*Id.* at 54; *see also* 55-56 (arguing that the claims illustrate that "bits in a register" is an additional limitation not required by the plain meaning of the term, that Nokia's construction would render "registers for containing bits in a register" superfluous, and that the "status information" need not be stored in a register).) Apple further contends that Nokia's construction is wrong because it improperly limits how the bits must be set, thereby reading out possible embodiments of the claims disclosed in the specification. (*Id.* at 55.)

Nokia asserts that while there is no dispute between the private parties that the "status information" required in claim 1 is related to the conditions in a device, Apple's proposed construction impermissibly broadens the meaning of "status information" beyond that which is supported in the specification in an attempt to reclaim what Apple disavowed during prosecution. (RMIB at 146-147.) Nokia claims that during prosecution, Apple tied the claims of its patent to features in the digital camera necessary to manage low power conditions. (*Id.* at 147.) Specifically, Nokia argues that:

> based on Apple's statements during prosecution, the status information referred to in claim 1 cannot broadly contain information about "any conditions" in a device as Apple's proposed construction now attempts to do – its invention must be specifically limited to "power conditions in a digital camera" as Apple told the Examiner it was when Apple distinguished the prior art.

(*Id.* (citing Nokia Ex. 726.E at 7).) Nokia also contends that the specification and the unasserted dependent claims make clear that "status information" refers to the status of power supplied to the digital camera, *i.e.*, whether the power supplied to the digital camera meets specific power thresholds. (RMRB at 70 ("For each of the information types recited in claim 1 to have meaning, those types must be defined in a manner that allows one skilled in the art to determine

what constitutes each type of information, as well as distinguish each type from the other. Such distinctions are possible only if those terms are construed, as Nokia suggests, in the specific context of the Camera Power Failure Patent.").)

Staff submits that its construction is more consistent with the specification, the plain language of the claims, and the prosecution history than either of the constructions proposed by Apple or Nokia. (SMIB at 111.) Nokia's construction, Staff argues, improperly reads in functionality associated with the Power System Condition Register ("PSCR") 734. (*Id.* at 113-114, 116.) Apple's construction, on the other hand, is unduly broad because it ignores the applicant's arguments during prosecution that specifically limited the claims to digital cameras and elements specific thereto. (*Id.* at 115.)

In its rebuttal brief, Apple objects to Nokia's construction of the "information terms"[33] – *i.e.,* status information/interrupt information/control information – on three grounds. First, Apple objects to Nokia's argument that the applicant "specifically tied" the "information terms" to digital cameras in distinguishing the Dunstan prior art reference. (CMRB at 40-41.) Apple argues that:

> [d]uring prosecution, the Applicant never mentioned "status information," "interrupt information" or "control information" in response to the Examiner's prior art rejection. The Applicant in fact said nothing about "bits," "specifically adapted" information or any of the other limitations that Nokia proposes the Court read into the claim. Most importantly, the Applicant did not even argue that Dunstan lacked "status information," "interrupt information" or "control information."

(*Id.* at 41.) Second, Apple disputes that there is only one type of status, interrupt or control information disclosed in the specification. (*Id.* at 41-43 ("[T]he flaw in Nokia's logic is that it presupposes that the patentee had to describe many types of status, interrupt and control

[33] Apple's rebuttal did not set forth separate rebuttal arguments for each of the "information" terms, but rather addressed Nokia's arguments with respect to the terms as a group. (*See* CMRB at 38-44.)

information in order for plain meaning constructions to attach to those terms.").) Apple argues that even if there was only one type of status, interrupt or control information disclosed, there is no clear indication in the intrinsic evidence that the applicant intended to limit the "information terms" to the preferred embodiment. (*Id.* at 42.) Finally, Apple disagrees that the unasserted dependent claims limit the asserted independent claims. (*Id.* at 43-44.) If this were the case, Apple claims, certain language would be rendered superfluous. (*Id.*)

Nokia opposes both Staff's and Apple's constructions, arguing that they not only fail to properly apply post-*Phillips* precedent on how to construe claims in light of the specification, but also ignore the context of the claimed invention. (RMRB at 64.) Nokia claims that even the sole inventor of the '726 patent admits that the information terms cannot be interpreted without specifically referencing the specification, including the power and clock control register ("PCCR"), the PMCR, the power system condition register ("PSCR"), and the power manager interrupt register ("PMIR") disclosed therein. (*Id.* at 64-66.) In other words, according to Nokia, the proper construction of the "information terms" requires "tying their constructions to the features or attributes of the information stored in the respective registers that is necessary or essential to achieving the purpose of invention" of the '726 patent. (*Id.* at 68.)

Staff disputes Nokia's assertion that both the prosecution history and specification support reading in the power system condition register of the preferred embodiment. (SMRB at 52.) First, while it is true that the applicant overcame the prior art by describing the invention as being directed to a power low condition and recovering from power failure, the ability to "detect and handle" power failures does not, Staff asserts, necessarily mean that the system of claim 1 must specifically use the power system condition register of the preferred embodiment. (*Id.*) Staff counters Nokia's argument that all of the disclosed embodiments use a power system

condition register to store "status information" related to the detection and handling of power failures, stating that, even if true, it is erroneous to limit claim 1 to the particular structures and methods of the preferred embodiments absent clear disclaimer by the applicant. (*Id.* at 52-53.) Staff also takes issue with Nokia's argument that the dependent claims confirm that "status information" cannot encompass all information about conditions in a digital camera, arguing that the dependent claims "say nothing about the permitted scope of the status information term, let alone require the use of the power system condition register for storing status information as Nokia's proposed construction essentially requires." (*Id.* at 53.)

The undersigned agrees with Staff, finding its construction to comport with the intrinsic evidence, as well as the plain and ordinary meaning of the term. While Apple's construction is more or less in accord with Staff's proposed construction, Apple's construction fails to take into account certain statements from the prosecution history, wherein the patentee specifically limited the claims to digital cameras and elements specific thereto.[34] (*See* 12/07/98 Resp. to Office Action at 6-7 (stating, "The claims are now specifically directed to power management in a digital camera device."); *see also* Section VIII.B.3, *supra*.) Nokia's construction, on the other hand, is unduly narrow for it reads into the term certain functionality of the PSCR 734.

Nothing in the intrinsic evidence supports limiting the claimed status information to the preferred embodiment. First, a review of the prosecution history reveals that the applicant did not limit the claimed "status information" to power thresholds supplied to a digital camera device. In fact, the applicant never even mentioned the "status information" term in response to the Examiner's § 103(a) rejection. Moreover, none of the portions of the prosecution history relied upon by Nokia require the information be stored as bits in the PSCR 734, let alone even

[34] Although Apple prefers its broader construction to that of Staff's, Apple does not object to the adoption of Staff's proposed construction since "it should have no material impact on the infringement and invalidity issues in this case." (CMRB at 44.)

mentions the PSCR 734. Second, both the specification and claims use the term consistent with its ordinary meaning, *i.e.*, information relating to the status of the device. For example, Claim 4 recites "a condition register for storing said status information." ('726 patent at claim 4; *see also* 8:33-37.) Similarly, the specification, in discussing Figure 7, describes the PSCR 734 as containing information relating to the status of various power operating conditions within the digital camera 110. (*Id.* at 9:41-10:05; *see also* 10:4-5 ("PSCR 734 thus indicates the state of eight power system conditions.").) Finally, even if Nokia is correct and the PSCR 734 is the only register disclosed that contains "pure status information," this alone does not justify limiting the term to a particular register from the preferred embodiment. As the Federal Circuit has mandated, "it is improper to read limitations from a preferred embodiment described in the specification – even if it is the only embodiment – into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited." *Liebel-Flarsheim*, 358 F.3d at 913; *see also Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) ("Even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." (internal citations and quotation marks omitted)); *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1365 (Fed. Cir. 2003) ("[I]t is a familiar principle of patent law that a claim need not be limited to a preferred embodiment."); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("[C]laim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.")

Here, the patentee has used no "words or expressions" that manifest an intent to exclude all information other than information relating to power thresholds, and thus, it would be improper to limit the scope of the claims in the manner Nokia suggests.

Accordingly, the undersigned construes the term "status information" to mean "***information indicating the state of conditions affecting the operation of the digital camera device***."

4. "interrupt information"[35]

With respect to the term "interrupt information," the parties disagree on the proper claim construction of the term, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "information relating to an interrupt signal."	Bits in a register set by the power manager that indicate a given interrupt type specifically adapted for operation of a digital camera and that must be cleared by a processor.	Information relating to an interrupt signal affecting the operation of the digital camera device. NOTE: Apple has indicated it would alternatively agree to the Staff's proposed construction.

According to Apple, an "interrupt" indicates that some sort of interruption has occurred to normal processing of the device." (CMIB at 56.) There is, therefore, "no need to construe the self-descriptive term of 'interrupt information'; it is information relating to an interrupt signal." (*Id.* at 57.) Apple asserts that the intrinsic evidence supports its construction. (*Id.* at 57-58 (arguing that the specification confirms "interrupt information" is information relating to an interrupt signal.).) Apple argues that Nokia's construction "runs afoul of numerous claim construction rules" by attempting to read in the limitation "bits in a register." (*Id.* at 58.) Apple asserts that there is nothing in the claim or the plain meaning of the term "interrupt information"

[35] Because the parties raised essentially the same arguments in their rebuttal briefs for this term as they did for the "status information" term, the parties' rebuttal positions as set forth in Section VIII.B.3 are incorporated herein.

that requires that "bits" be set by the power manager or cleared by the processor. (*Id.*) Apple further asserts that even if there was such a requirement, the specification discloses that bits can be set or cleared in a variety of ways (*e.g.*, PMIR can be cleared when the power manager is reset). (*Id.*)

Nokia concedes that there is no dispute between the private parties that "interrupt information" relates to an interrupt signal. (RMIB at 151.) Nokia states that Apple's proposed construction, however, "ignores Apple's arguments in the file history that specifically limit the claims to digital cameras and 'elements specific thereto'." (*Id.*) In particular, Nokia argues that "Apple unequivocally limited its invention to information in a register used to preserve the integrity of captured image data or assists a digital camera to recover from an intervening power failure during a subsequent powerup when [it] distinguished the prior art." (*Id.* at 153.) The claimed interrupt information must therefore identify the interrupt status by indicating a given interrupt type. (*Id.* at 153.) Nokia also argues that the specification makes clear that the invention will not work without providing the type of interrupt to the processor and later clearing it, which Nokia submits is consistent with its proposed construction. (*Id.* at 153-154.) Nokia further asserts that the unasserted claims confirm that its construction, wherein the claimed interrupt information refers to bits that indicate a given interrupt type that must be cleared by a processor, is proper. (*Id.* at 154-156.) Moreover, such a definition is, Nokia asserts, consistent with the understanding of one of ordinary skill in the art at the time of the '726 invention. (*Id.* at 156.)

Staff asserts that its construction is more consistent with the specification, the plain language of the claims, and the prosecution history than the constructions proposed by the private parties. (SMIB at 116.) Staff contends that Nokia's construction is too narrow for it

reads into claim 1 certain functionality of the PMIR 736. Apple's construction, Staff argues, is too broad because "Apple unequivocally limited its invention to interrupt signals specifically adapted for a digital camera when Apple distinguished the prior art." (*Id.* at 117-120.)

The parties' arguments are, more or less, the same as those proffered with respect to the term "status information," except that here, Nokia seeks to read in certain functionality from the PMIR 736. (*See* Section VIII.B.3, *supra.*) The undersigned again finds both Nokia's and, to a much lesser extent, Apple's arguments unconvincing.

Under Nokia's construction, the claimed interrupt information must indicate a given interrupt type and be cleared by a processor. The intrinsic evidence, however, does not support such a narrow construction, and as discussed above, it is improper to read in features from a particular embodiment (*e.g.,* the PMIR 736), even if it is the only the embodiment disclosed. *See, e.g., Innova/Pure* Water, 381 F.3d at 1117; *Liebel-Flarsheim*, 358 F.3d at 906; *Cordis*, 339 F.3d at 1365; *Teleflex*, 299 F.3d at 1325.

Apple's construction, on the other hand, is too broad. The undersigned agrees that Apple's construction is consistent with the claims and specification, but finds that it ignores the arguments made during prosecution that limited the claims to digital cameras and elements specific thereto. (*See* 12/07/98 Resp. to Office Action at 6-7 (stating, "The claims are now specifically directed to power management in a digital camera device.").) Thus, as Staff rightly notes, its construction is the only one consistent with the specification, the plain language of the claims, and the prosecution history. (*See e.g.*, '726 patent at claim 4 ("The system of claim 1 wherein said power manager further comprises a control register for storing said control information, *an interrupt register for storing said interrupt information*, and a condition register for storing said status information." (emphasis added)); 7:15-16 ("Registers 646 generate a series

of interrupts onto line 664 in response to various conditions and states in camera 110."); 10:06-35; *see also* 12/07/98 Resp. to Office Action at 6-10.)

Accordingly, the undersigned construes the term "interrupt information" to mean "***information relating to an interrupt signal affecting the operation of the digital camera device.***"

5. "control information"[36]

The parties differ as to the proper claim construction of the term "control information," and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "information relating to device settings."	Bits in a register set by a processor specifically adapted to indicate the shutdown or startup state of the digital camera.	Information relating to settings of the digital camera device. NOTE: Apple has indicated it would alternatively agree to the Staff's proposed construction.

Apple asserts that the term "control information" should be construed according to its plain meaning, which Apple suggests is "information relating to a setting of the device." (CMIB at 58.) Apple argues that the intrinsic evidence confirms that the term "control settings" relates to device settings. (*Id.* at 58-60.) Apple claims that Nokia's construction "attempts to read in a limitation strictly limiting the type of control setting information that can be conveyed," *i.e.*, shutdown or startup states. (*Id.* at 58-59.) The specification, however, makes clear that the control register includes information in addition to shutdown and startup states, and thus Nokia's attempt to limit the term to only shutdown or startup states is, Apple argues, improper. (*Id.* at 59-60.) Apple also asserts that Nokia errs "in arguing that 'information' requires 'bits in a

[36] The parties' rebuttal arguments for "control information" are a rehash of the arguments made with respect to the "status information" term. (*See* CMRB at 38-44; RMRB at 71-73; SMRB at 54-55.) Consequently, the parties' rebuttal positions as set forth in Section VIII.B.3 are incorporated herein.

register' and that these bits be set by the processor" for "[a]s discussed in regard to 'status information' and 'interrupt information' ..., the specification discusses numerous ways in which bits in the various registers can be reset and the claims make no mention of bits in registers or any requirement that any such bits be set by a particular part of the digital camera device." (*Id.* at 60.)

Nokia asserts that the inventor of the '726 patent acted as his own lexicographer by defining "control information" in a "unique way" both in the specification and during prosecution. (RMIB at 156.) That definition, Nokia claims, is inconsistent with the plain and ordinary meaning one of ordinary skill in the art would give the term outside the context of the '726 patent. (*Id.*) Apple's construction, Nokia argues, places undue emphasis on the plain and ordinary meaning of "control" and "information." (*Id.* at 157.) "[T]he term 'control information' should [instead] be defined consistent with the specialized use of the term in the specification and Apple's disclaimer during prosecution of digital camera control that is not limited to preserving the integrity of data or assisting the camera to recover from a power failure." (*Id.*)

Nokia contends that the only information disclosed in the patent "capable of satisfying Apple's requirements for control information, both the requirements expressly incorporated into claim 1 and those added in light of its prosecution disclaimer, 'is information that indicates the shutdown or startup states of the digital camera,' such as that contained in the PMCR register." (*Id.* at 161.) Nokia also asserts that the construction of "control information" cannot be "information relating to device settings," as Apple suggests, "because such a definition would capture information about simply whether parts of the camera are turned on or off – which Apple specifically disclaimed during prosecution when it defined the type of 'control' it was talking

about in claim 1 to distinguish over the prior art." (*Id.* at 163 (stating, "'control information' should be defined as the information that is actually used for the type of control Apple defined during prosecution to distinguish the prior art, the information in the PMCR register, which are 'bits in a register set by a processor specifically adapted to indicate the shutdown or startup state of the digital camera.'").) Nokia further argues that its construction is the only one consistent with the unasserted claims of the patent, thereby confirming that the claimed control information refers to shutdown or startup states. (*Id.* at 163-165 (arguing that Apple's construction is inconsistent with dependent claims 5 and 6 because it would exclude the type of "control information" expressly defined to be within the scope of those claims).)

Staff proposes that the term "control information" be interpreted to mean information relating to settings of the digital camera device, which Staff asserts is more consistent with the specification, the plain language of the claims, and the prosecution history than Nokia's and Apple's proposed constructions. (SMIB at 121.) Staff asserts that Nokia's construction "reads into claim 1 certain functionality of the PMCR 732 as it similarly does with respect to the "status information" and "interrupt information" terms and the associated registers PSCR 734 and PMIR 736 respectively." (*Id.* at 121-125.) Staff also disputes Nokia's assertion that the applicant acted as its own lexicographer in defining what constitutes "control information," arguing that Nokia cites no support for its position that an inventor's deposition testimony years after a patent issues can retroactively define a claim term or establish something other than plain meaning applies and thus deem him to have acted as his own lexicographer." (SMRB at 55 (citing *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379 (Fed. Cir. 2000).) Staff, however, agrees with Nokia that Apple's proposed construction of this term is unduly broad for it ignores the fact that "Apple specifically limited the claims to systems for managing power in digital camera devices"

during prosecution of the '726 patent. (SMIB at 125-126.)

The undersigned finds Staff's arguments persuasive, and agrees that both Nokia's and Apple's constructions are flawed. Apple's construction fails for the same reasons its constructions for the other information terms failed. (*See* Sections VIII.B.3 and 4, *supra*.) Quite simply, Apple did not take into account the patentee's arguments from the prosecution history, where, in distinguishing the prior art, he limited the claims to a digital camera and elements thereto. (*See* 12/07/98 Resp. to Office Action at 6-7 (stating, "The claims are now specifically directed to power management in a digital camera device.").)

Nokia's construction also fails for many of the same reasons its constructions for the other information terms failed, namely because it is unduly narrow. (*See* Sections VIII.B. 3 and 4, *supra*.) In attempting to read into claim 1 functionality from the preferred embodiment, Nokia argues that the claimed control information is "'information that indicates the shutdown or startup states of the digital camera,' such as that contained in the PMCR register." (RMIB at 161.) The undersigned finds said argument unavailing and contrary to the intrinsic evidence for as the specification reveals, "control information" relates to device settings, not just shutdown or startup states. (*See, e.g.*, '726 patent at 8:37-57, 8:64-9:40.)

The undersigned also rejects Nokia's argument that the patentee acted as its own lexicographer in defining what constitutes "control information," finding Nokia's arguments to be premised upon a mischaracterization of the prosecution history. In the portion of the file history relied upon by Nokia, the applicant, in fact, never mentioned the "control information" term or state that said term should be limited to the disclosed embodiment. (*See* 12/07/98 Resp. to Office Action at 6-7.) The patentee, therefore, did not narrow the scope of the term, as Nokia alleges. *See, e.g., Purdue Pharma, L.P. v. Endo Pharms. Holdings Inc.*, 438 F.3d 1123, 1136

(Fed. Cir. 2006) ("Under the doctrine of prosecution history disclaimer, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution."); *Seachange Int'l, Inc. v. C-COR Inc.*, 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) ("A disclaimer must be clear and unambiguous.")

Accordingly, the undersigned construes the term "control information" to mean "***information relating to settings of the digital camera device.***"

6. "for managing said digital camera device"

While the parties disagree on the proper claim construction of the phrase "for managing said digital camera device," the parties appear to be in agreement that the dispute as to this term is essentially the same as their dispute regarding the "power manager" term, and have proposed the following constructions:

Apple's Proposed Construction	Nokia's Proposed Construction	Staff's Construction
Plain meaning. In the event the court disagrees, the construction should be "for managing power conditions in said digital camera device."	For preserving the integrity of captured image data and for assisting the camera to recover from an intervening power failure.	*See* Nokia's proposed construction.

Apple asserts that its proposed construction for the phrase "for controlling said digital camera device" is consistent with the claims, and is supported by the specification. (CMIB at 61-62; CMRB at 45-47.) The limitation "for controlling said digital camera device," Apple argues, "simply clarifies the use of the status information, interrupt information, and control information provided to the processor: It is for managing the power conditions in the digital camera." (CMIB at 61.) Apple asserts that Nokia is – yet again – attempting to read in limitations that are not supported by the plain meaning of the words in the claim. Specifically, Apple argues:

> Nokia's proposed construction is apparently based on the following statement in the specification: "The present invention

> thus preserves the integrity of captured image data and effectively assists the digital camera to recover from an intervening power failure." Notably, this sentence makes no mention of the phrase "for controlling the digital camera device."

(CMIB at 61; CMRB at 45.) Although the applicant noted that the invention offered advantages such as preserving captured image data and recovering from power failures, the applicant, Apple asserts, never stated that these were the only advantages of the claimed invention nor disavowed any scope. (CMRB at 45-46.) Apple also argues that:

> And while one potential embodiment of controlling the digital camera device is preserving the integrity of captured image data and assisting the digital camera in recovering from an intervening power failure, nothing in the specification supports limiting the claims to this and only this embodiment.

(CMIB at 61-62 (internal citations omitted); *see also* CMRB 45-47.)

Nokia asserts that Apple's proposed construction is contradicted by the intrinsic evidence, and thus must be rejected. Nokia first contends that the patentee expressly disclaimed any control that does not preserve data integrity and assist in recovery from power failures in an effort to distinguish the prior art. (RMIB at 166-167 ("Apple's express statements in prosecution disclaim what might otherwise be the potential scope of the claim term 'for controlling said digital camera device' under clear Federal Circuit precedent."); *see also* RMRB at 76.) Nokia states that Apple's proposed construction suggests that there is no such disclaimer, despite clear prosecution statements to the contrary. (RMIB at 165; RMRB at 76.) Second, Nokia argues that the specification repeatedly describes "the invention" as a system that preserves data integrity despite a power failure and then assists the digital camera to recover from said power failure, which, Nokia asserts, is consistent with Apple's prosecution disclaimer regarding this claim term. (RMIB at 168-169; RMRB at 76-77.)

Staff agrees with Nokia that "the system of claim 1 must preserve the integrity of captured image data and assist the camera to recover from an intervening power failure due to a narrowing amendment and accompanying remarks made during prosecution to overcome prior art." (SMIB at 127; *see also* SMRB at 57 ("In particular, the Staff and Nokia believe that the applicant distinguished claim 1 during prosecution for the prior art based on the invention's allegedly novel power management system that is specifically adapted to handle the unique power failure issues of a digital camera.").) Staff asserts that Apple's disclaimer in the prosecution history is consistent with the specification, which emphasizes that the "'present invention' as a whole" is directed at preserving the integrity of captured image data and assisting the camera to recover from an intervening power failure. (*Id.* at 127-129.)

As the parties themselves acknowledge, the dispute here is essentially the same as the parties' dispute regarding the "power manager" term, and thus turns on whether or not the patentee disclaimed certain forms of "control" during prosecution. (CMRB at 44-47; SMIB at 57.) The undersigned finds Nokia's and Staff's arguments persuasive.

In attempting to transverse the Examiner § 103(a)'s rejection, the applicant stated:

> The invention disclosed and claimed by the Applicant is directed to a system and method for managing power conditions in a digital camera. *The system includes a power low condition wherein a backup power supply provides power to critical systems thus preserving the integrity of the data including captured image data within the system and effectively assisting the digital camera to recover from an intervening power failure during a subsequent power up.*

(12/07/98 Resp. to Office Action at 6 (emphasis added).) As the above excerpt from the prosecution history evidences, the patentee did indeed disclaim forms of control that are not for either preserving the integrity of captured image data or for assisting the camera to recover from an intervening power failure. Apple, therefore, cannot recapture the claim scope it surrendered

during prosecution. *See, e.g., Elbex Video, Ltd. v. Sensormatic Elecs. Corp.*, 508 F.3d 1366, 1372 (Fed. Cir. 2007) ("[W]hen a patent applicant surrenders claim scope during prosecution before the United States Patent and Trademark Office, the ordinary and customary meaning of a claim term may not apply."); *Seachange Int'l,* 413 F.3d at 1373 ("Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language.")

In addition, the specification repeatedly describes the claimed invention as being directed at preserving the integrity of captured image data and assisting the camera to recover from an intervening power failure. (*See, e.g.,* '726 patent at Abstract ("A system and method for recovering from a power failure in a digital camera comprises a power manager for detecting and handling power failures ... which may then assist the digital camera to recover from the power failure."); 1:65-2:1 ("In accordance with the present invention, a system and method are disclosed for recovering from a power failure within a digital camera device."); 2:17-20 ("The central processing unit responsively performs a powerfail powerdown sequence to preserve image data contained within the digital camera at the time of the intervening power failure."); 2:40-42 ("The present invention thus preserves the integrity of captured image data and effectively assists the digital camera to recover from an intervening power failure."); 3:5-14 ("The present invention ... comprises a power manger for detecting and handling power failures, ... and a processor for responsively controlling the digital camera during recovery from the power failure.").) This is consistent with the patentee's narrowing statements from the prosecution history and thus, confirms that these features are critical to the "present invention." *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007);

Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006); *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337 (Fed. Cir. 2001).

Accordingly, the undersigned construes the phrase "for managing said digital camera device" to mean "***for preserving the integrity of captured image data and for assisting the camera to recover from an intervening power failure***."

SO ORDERED.

Charles E. Bullock
Administrative Law Judge

IN THE MATTER OF CERTAIN MOBILE COMMUNICATIONS AND COMPUTER DEVICES AND COMPONENTS THEREOF **337-TA-704**

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **ORDER NO. 18** has been served upon, **Daniel L. Girdwood, Esq.**, Commission Investigative Attorney, and the following parties via first class mail and air mail where necessary on July 30, **2010**.

Marilyn R. Abbott 7/16

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IN THE MATTER OF CERTAIN MOBILE COMMUNICATIONS AND COMPUTER DEVICES AND COMPONENTS THEREOF **337-TA-704**

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