Exhibit 4

APPLE INC. and NeXT SOFTWARE INC. (f/k/a NeXT COMPUTER, INC.), Plaintiffs, v. MOTOROLA, INC. and MOTOROLA MOBILITY, INC. Defendants.	Case No. 10-CV-662 (BBC) **JURY TRIAL DEMANDED**

PLAINTIFFS' SUPPLEMENTAL OBJECTIONS AND RESPONSES TO DEFENDANTS' FIRST SET OF INTERROGATORIES (NO. 6)

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure, Plaintiffs

Apple Inc. ("Apple") and NeXT Software, Inc. ("NeXT") (collectively, "Plaintiffs")

hereby provide their first supplemental objections and responses to the first set of

interrogatories served by Defendants Motorola, Inc. and Motorola Mobility, Inc.

(collectively, "Defendants").

GENERAL OBJECTIONS

Plaintiffs reiterate and incorporate by reference their objections to Defendants'

First Set of Interrogatories, as if specifically stated herein.

FURTHER OBJECTIONS AND RESPONSES

INTERROGATORY NO. 6

For each claim of the Apple Asserted Patents that you allege Defendants have

infringed or are infringing, describe the complete basis for your contention that

Defendants are infringing or have infringed that claim by describing in a claim chart on an element-by-element basis where each element of each Asserted Claim can be found in each Accused Instrumentality of Defendants that you contend infringes that claim, whether such alleged infringement is literal or by equivalents, how 35 U.S.C. § 112(6) is satisfied, if applicable, and whether such alleged infringement is direct (*i.e.*, under 35 U.S.C. § 271(a)) or indirect (*i.e.*, under 35 U.S.C. §§ 271(b) or (c)).

RESPONSE TO INTERROGATORY NO. 6

In addition to their General Objections, Plaintiffs object to this interrogatory as vague and ambiguous, overly broad, and unduly burdensome. Plaintiffs further object to this interrogatory to the extent that it seeks information that is (a) protected by the attorney-client privilege or work product doctrine; (b) confidential, proprietary, or trade secret; (c) subject to Plaintiffs' legal or contractual obligation of nondisclosure or confidentiality to a third party; and/or (d) public or readily available to Defendants. Plaintiffs further object to the extent this interrogatory calls for a legal conclusion. Plaintiffs also object to this contention interrogatory as premature because, among other things, Defendants have not yet produced documents or information about its products used to infringe the Apple Asserted Patents. Plaintiffs expressly reserve the right to amend, supplement, and/or correct its response to this interrogatory as additional information becomes available to Plaintiffs during the course of their discovery and investigation, in response to any claim construction by the Court, or in response to Defendants' responses to Plaintiffs' interrogatories (or any supplement thereto).

Subject to their General and Specific Objections, Plaintiffs respond as follows: Plaintiffs will provide their infringement contentions by March 4, 2011 pursuant to the

Court's Preliminary Pretrial Order and will supplement those contentions as appropriate. Plaintiffs will provide their expert reports regarding infringement of the Apple Asserted Patents by September 2, 2011 pursuant to the Court's Preliminary Pretrial Order and will supplement those reports as appropriate and necessary and as permitted by the Court.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 6

Subject to their General and Specific Objections above, Plaintiffs hereby incorporate by reference Plaintiffs' Identification of Asserted Claims and Accused Products regarding U.S. Patent Nos. 7,479,949 ("the '949 patent"), 6,493,002 ("the '002 patent"), 5,838,315 ("the '315 patent"), RE 39,486 (the "RE '486 patent"), 6,424,354 ("the '354 patent"), 6,343,263 ("the '263 patent"), 6,275,983 ("the '983 patent"), 5,969,705 ("the '705 patent"), 5,946,647 ("the '647 patent"), 5,929,852 ("the '852 patent"), 5,915,131 ("the '131 patent"), 5,566,337 ("the '337 patent"), 5,519,867 ("the '867 patent"), 5,481,721 ("the '721 patent") and 5,455,599 ("the '599 patent"), served on March 4, 2011. In addition, based upon presently known information, Plaintiffs append claim charts for each of the Apple Patents-in-Suit as follows:

- Ex. A: '949 Patent, claims 1, 2, 4-6, and 9-20.
- Ex. B: '002 Patent, claims 1, 3-7, 11, 21, 22, 26, 28-32, 36, 37, 46, and 47.
- Ex. C: '315 Patent, claims 1, 7, 8, and 12-14.
- Ex. D: RE '486 Patent, claims 1-3, 6-12, 14-17, and 20.
- Ex. E: '354 Patent, claims 1, 3, 5-8, 41, and 42.
- Ex. F: '263 Patent, claims 1-6, 24, 25, 29, and 30.
- Ex. G: '983 Patent, claims 1-11, 16, 17, and 22.
- Ex. H: '705 Patent, claim 1.
- Ex. I: '647 Patent, claims 1, 3, 4, 8, 9, 13-15, 19, 20, and 22.
- Ex. J: '852 Patent, claims 1-3, 7-13, and 15-19.
- Ex. K: '131 Patent, claims 1, 3, 4, 7-12, and 15-17.
- Ex. L: '337 Patent, claims 1, 3, 6-10, 12, 14, 16-19, 21, 23, and 24.
- Ex. M: '867 Patent, claims 1-3, 7-10, 12, 13, and 32.

- Ex. N: '721 Patent, claims 1, 3-7, 11-14, 19-22, and 24.
- Ex. O: '599 Patent, claims 1-3, 15, 16, 18, 19, 22, and 24-26.

Defendants infringe or have infringed these claims (collectively, "the Asserted Claims") by making, using, selling, offering for sale or importing at least the following devices: Droid, Droid 2, Droid 2 Global, Droid X, Droid Pro, Cliq, Cliq XT, Cliq 2, Charm, BackFlip, Devour, i1, Citrus, Defy, Bravo, Flipout, Flipside, Atrix 4G, and Xoom (collectively "the Accused Products"). As described in further detail in the appended claim charts, *see* Exs. A-O, each element of each of the Asserted Claims is met by the Accused Products. Where the basis for infringement is not significantly distinct, Plaintiffs have selected representative Accused Products as appropriate.

Defendants directly and indirectly infringe all of the Asserted Claims. Defendants directly infringe these claims by making, using, offering for sale, or selling the Accused Products within the United States, or by importing the Accused Products into the United States. In addition, Defendants' customers directly infringe the Asserted Claims by using the Accused Products, and Defendants induce this direct infringement of the Asserted Claims by selling the Accused Products and by providing manuals and other user guides encouraging their customers to use the Accused Products in an infringing manner. Defendants further contribute to this direct infringement of the Asserted Claims by selling the Accused Products, which are specifically designed to practice the inventions of the Asserted Claims and have no substantial non-infringing uses. Based on presently known information, Plaintiffs contend that the Accused Products made, used, sold, offered for sale or imported by Defendants infringe each of the Asserted Claims literally or, in the alternative, under the doctrine of equivalents.

These contentions are preliminary and based only on publicly available information. Defendants have not yet provided discovery as to twelve of the fifteen Apple Patents-in-Suit and Plaintiffs' investigation of Defendants' infringement is ongoing. Based on discovery and Plaintiffs' continued investigations, Plaintiffs may identify additional claims that are infringed and additional accused products, including products that Defendants may introduce in the future. Plaintiffs expressly reserve the right to amend their response to this Interrogatory to include such products. Also, these contentions are made based on information ascertained to date, and Plaintiffs expressly reserve the right to modify or amend the contentions contained herein based on the Court's claim constructions or to reflect additional information that becomes available to Plaintiffs as discovery and their investigation proceeds.

Dated: March 18, 2011   WEIL, GOTSHAL & MANGES LLP

                                        By: _/s/ Jill J. Ho_____

                                               Jill J. Ho
                                               Attorneys for Apple Inc. and
                                               NeXT Software, Inc.

CERTIFICATE OF SERVICE

I declare that I am employed with the law firm of Weil, Gotshal & Manges LLP, whose address is 201 Redwood Shores Parkway, Redwood Shores, California 94065-1175. I am not a party to the within cause, and I am over the age of eighteen years. I further declare that on March 18, 2011, I served a corrected copy of:

PLAINTIFFS' SUPPLEMENTAL OBJECTIONS AND RESPONSES TO DEFENDANTS' FIRST SET OF INTERROGATORIES (NO. 6)

☐ **BY U.S. MAIL** by placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid, addressed as follows, for collection and mailing in accordance with the firm's ordinary business practices. I am readily familiar with the practice for collection and processing of mail, and know that in the ordinary course of business practice that the document(s) described above will be deposited with the U.S. Postal Service on the same date as sworn to below.

☒ **BY ELECTRONIC SERVICE** by electronically mailing a true and correct copy through the electronic mail system to the email address(es) set forth in the service list below.

☐ **BY OVERNIGHT DELIVERY** by placing a true copy thereof enclosed in a sealed envelope with overnight delivery fees provided for, addressed as follows, for collection by Federal Express in accordance with ordinary business practices. I am readily familiar with the practice for collection and processing of correspondence for overnight delivery and know that in the ordinary course of business practice the document(s) described above will be deposited by an employee or agent in a box or other facility regularly maintained by Federal Express for collection on the same day that the document(s) are deposited.

Lynn Stathas (# 1003695) lstathas@reinhartlaw.com REINHART BOERNER VAN DEUREN, S.C. 22 East Mifflin Street Madison, WI 53701-2018 Phone: (608) 229-2200 Fax: (608) 229-2100	Edward J. DeFranco eddefranco@quinnemanuel.com 51 Madison Avenue, 22nd Floor New York, NY 10010 Telephone: (212) 849-7000 Facsimile: (212) 849-7100 Moto-Apple-745@quinnemanuel.com *Attorneys for Defendants Motorola, Inc. and Motorola Mobility, Inc.*

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on March 18, 2011, at Redwood Shores, California.

 /s/ Jill J. Ho
Jill J. Ho
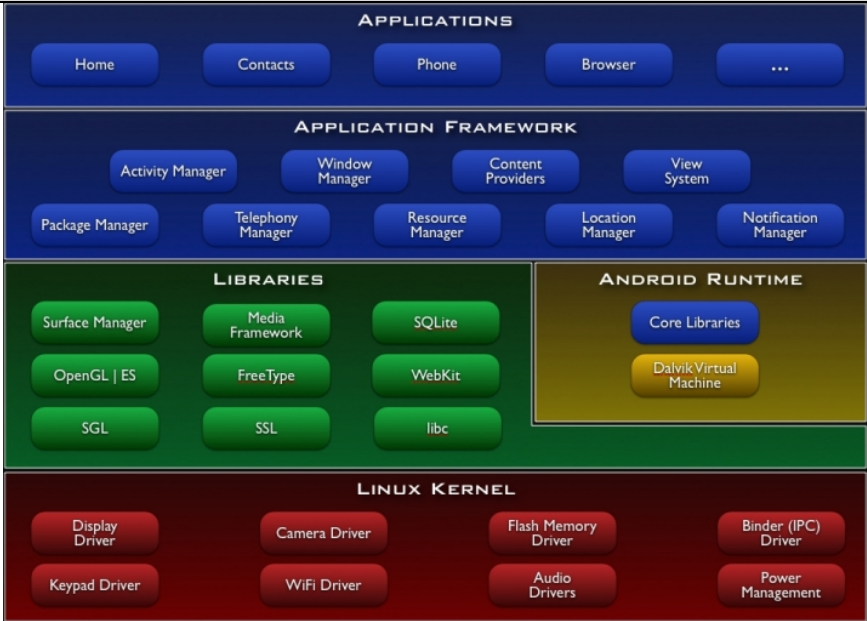
<u>**Exhibit D – U.S. Patent No. RE 39,486**</u>

Motorola directly and/or indirectly infringes at least claims 1-3, 6-12, 14-17, and 20 of the RE '486 patent, either literally or through the doctrine of equivalents. Motorola's infringing products include mobile devices such as smartphones and tablet computers, including but not limited to: Atrix, Bravo, Cliq, Cliq XT, Cliq 2, Charm, Defy, BackFlip, Devour, Droid, Droid 2, Droid 2 Global, Droid X, Droid Pro, Droid Bionic, Flipout, Flipside, i1, and Xoom (collectively, the "RE '486 Accused Products").

For the purposes of this analysis, Apple will examine a representative mobile device, Motorola's Droid X, which operates with the Android 2.1 Platform. All other RE '486 Accused Products meet the limitations of the asserted claims on the same bases as indicated for the Droid X, unless otherwise stated.

These infringement contentions are preliminary and based only on publicly available information as to the RE '486 Accused Products. Motorola has not yet provided discovery as to its accused products and in addition Apple's investigation of Motorola's infringement is ongoing. Based on discovery and Apple's continued investigations Apple reserves the right to amend these contentions to identify additional bases for infringement and additional accused products, including products that Motorola may introduce in the future. Accordingly, Apple reserves its right to amend these contentions as discovery and its investigation proceeds. Also, these disclosures are made based on information ascertained to date, and Apple expressly reserves the right to modify or amend the disclosures contained herein based on the Court's claim constructions or to reflect additional information that becomes available to Apple.

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1. An extensible and replaceable layered component computing arrangement residing on a computer coupled to a computer network, the layered arrangement comprising:	The RE '486 Accused Products include an extensible and replaceable layered component computing arrangement residing on a computer coupled to a computer network. The RE '486 Accused Products are computers. • For example, the Motorola Droid X includes a Texas Instruments OMAP3630-1000 1GHz processor. *See* **Exh. D-1** [Droid X by Motorola MotoDev Specs] and is capable of executing numerous computer programs such as email programs, web browsers, and instant messaging applications. *See* **Exh. D-2** [Droid X by Motorola Tech Specs]. Accordingly, the Droid X is a computer. Moreover, the RE '486 Accused Products are coupled to a computer network. Among other things, the RE '486 Accused Products are coupled to the Internet via cellular and wireless networks. *Id.*

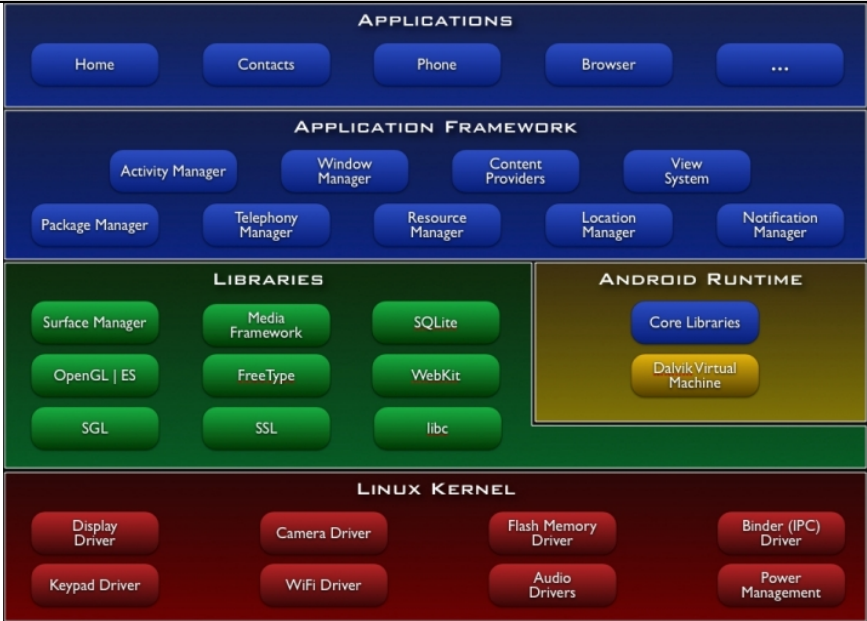| U. S. Patent No. RE 39,486	Infringement Contentions
	The RE '486 Accused Products include an extensible and replaceable layered component computing arrangement. • For example, Android's application framework enables "reuse and replacement of components." **Exh. D-3** [Android Developer Site-"What is Android?"]. A central feature of Android is that one application can make use of elements of other applications (provided those applications permit it). For this to work, the system must be able to start an application process when any part of it is needed, and instantiate the Java objects for that part. Therefore, unlike applications on most other systems, Android applications don't have a single entry point for everything in the application (no main () function, for example). Rather, they have essential components that the system can instantiate and run as needed. **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The extensible and replaceable software architecture provided by Android is a layered architecture. *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. • For example, Android is composed of multiple layers, such as layers that include applications, application frameworks, core libraries, and the underlying Linux kernel:

U. S. Patent No. RE 39,486	Infringement Contentions
	Exh. D-3 [Android Developer Site-"What is Android?"]
a software component architecture layer interfacing with an operating system to control the operations of the computer, the software component architecture layer defining a plurality of components; and	The RE '486 Accused Products include a software component architecture layer interfacing with an operating system to control the operations of the computer, and defining a plurality of components. • For example, Android includes low level code that implements the basic Java class structure. This layer, which is implemented by the Dalvik Virtual Machine, interfaces with the operating system to control the operations of the computer. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].
a network component layer for developing network navigation components that provide services directed to the computer network, the network component layer includes application programming	The RE '486 Accused Products include a network component layer for developing network navigation components that provide services directed at a computer network, which layer includes application programming interfaces. • For example, Android includes Java classes designed to access services directed to the computer network, such as the URLStreamHandler and URLConnection

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interfaces; and	classes, along with the HttpURLConnection and JarURLConnection classes, which are subclasses of the URLConnection class. *See*, e.g., **Exh. D-5** [Android Developer Site-"java.net.URLStreamHandler"], **Exh. D-6** [Android Developer Site-"java.net.URLConnection"], **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"], and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. The combination of these classes defines the network component layer. The methods for implementing those classes are in the form of application programming interfaces, *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The network component layer in Android is designed to be used in developing network navigation components, such as web browsers, email viewers, and similar applications, which provide services directed to the network. *See* **Exh. D-3** [Android Developer Site-"What is Android?"]
	The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"). *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"]. "[C2DM] is a service that helps developers send data from servers to their applications on Android devices. The service provides a simple, lightweight mechanism that servers can use to tell mobile applications to contact the server directly, to fetch updated application or user data. The C2DM service handles all aspects of queueing of messages and delivery to the target application running on the target device." **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
	The C2DM framework on the accused devices includes a network component layer enabling software developers to create network navigation components that receive C2DM messages.
	• For example, on information and belief, the C2DM framework includes the com.google.android.c2dm package. *Id.*
	Furthermore, the C2DM framework includes application programming interfaces. *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"].
	• For example, it includes a library of classes, such as C2DMessaging, that enable applications to interoperate with the C2DM service. *See* **Exh. D-10** [Google

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	Code at "Google Projects for Android: C2DM"].
a first class included in the application programming interface to construct a first network navigation object that represents different network resources available on the computer network, wherein the network component layer coupled to the software component architecture layer in integrating relation to facilitate communication among the computing and network navigation components.	The RE '486 Accused Products include a first class included in an application programming interface to construct a first network navigation object that represents different network resources available on the computer network. • For example, Android includes a URLConnection class that constructs a first network navigation object. Object instantiations of that class represent different network resources available on the computer network. *See* **Exh. D-6** [Android Developer Site-"java.net.URLConnection"] Moreover, the network component layer is coupled to the software component architecture layer in the RE '486 Accused Products in integrating relation to facilitate communication among the computing and network navigation components. • For example, components within the software component architecture take advantage of the network-directed services provided by network components, thus coupling the software component architecture layer and the network component layer in integrating relation. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"), which includes the application programming interface with a first class to construct a first network navigation object that represents different network resources available on the computer network. • For example, the C2DM application programming interface includes the C2DMessaging class, which provides methods to construct objects that represent different network resources available on the computer network. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. • For example, the C2DMessaging.register method allows an application such as Google Chrome to Phone to register for the C2DM service. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. Moreover, the network component layer and the software component architecture layer for the C2DM are coupled in integrating relation to facilitate communication between the

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	computing and network navigation components.
	• For example, software components such as the C2DM Main activity make calls to the C2DMessaging class in order to accomplish such tasks as registering to receive C2DM messages. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
2. The computing arrangement of claim 1 wherein the network navigation components are objects.	The RE '486 Accused Products include the computing arrangement of claim 1 wherein the network navigation components are objects. • For example, the Android framework is object-oriented. In Android, applications are written using the Java programming language. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. Accordingly, the network navigation components in the RE '486 Accused Products are written in the object-oriented Java programming language. *Id.*
3. The computing arrangement of claim 1 wherein the application programming interfaces further comprise a second class for constructing a second network navigation object representing a data stream for transferring information among objects of the arrangement.	The RE '486 Accused Products include the computing arrangement of claim 1 wherein the application programming interfaces further comprise a second class for constructing a second network navigation object representing a data stream for transferring information among objects of the arrangement. • For example, the RE '486 Accused Products include classes such HttpURLConnection and JarURLConnection classes. *See*, e.g., **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"] and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. Object instantiations of those classes represent data streams for transferring information among objects of the arrangement. In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which is used to construct a C2DMReceiver object, which represents a data stream for transferring Cloud to Devices messages among the components. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
6. An extensible and replaceable layered component computing arrangement for	The RE '486 Accused Products include an extensible and replaceable layered component computing arrangement for providing services directed to information available on a

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providing services directed to information available on computer networks, the computing arrangement comprising:	computer network. The RE '486 Accused Products are coupled to a computer network. Among other things, the RE '486 Accused Products are coupled to the Internet via cellular and wireless networks. *See* **Exh. D-2** [Droid X by Motorola Tech Specs]. The RE '486 Accused Products provide services directed to the Internet, such as email programs, web browsers, and instant messaging applications. *Id.* The RE '486 Accused Products include an extensible and replaceable layered component computing arrangement. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. - For example, Android's application framework enables "reuse and replacement of components." *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. A central feature of Android is that one application can make use of elements of other applications (provided those applications permit it). For this to work, the system must be able to start an application process when any part of it is needed, and instantiate the Java objects for that part. Therefore, unlike applications on most other systems, Android applications don't have a single entry point for everything in the application (no main () function, for example). Rather, they have essential components that the system can instantiate and run as needed. **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The extensible and replaceable software architecture provided by Android is a layered architecture. *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. - For instance, Android is composed of multiple layers, such as layers that include applications, application frameworks, core libraries, and the underlying Linux kernel:

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	Exh. D-3 [Android Developer Site-"What is Android?"]
a processor;	The RE '486 Accused Products include a processor. • For example, the Motorola Droid x includes a Texas Instruments OMAP3630-1000 1GHz processor. *See* **Exh. D-1** [Droid X by Motorola MotoDev Specs].
an operating system;	The RE '486 Accused Products include an operating system. • For example, the Motorola Droid X is an Android-based phone and, thus, includes the Android software framework and an underlying Linux kernel. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].
a software component architecture layer coupled to the operating system to control the operations of the processor, the software component architecture layer	The RE '486 Accused Products include a software component architecture layer coupled to an operating system to control the operations of the processor, and defining a plurality of components.

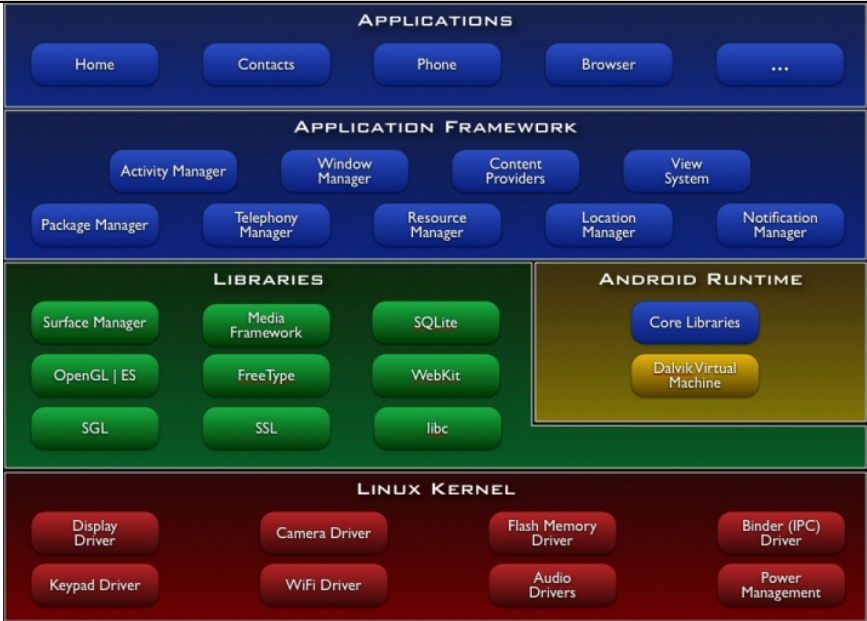| U. S. Patent No. RE 39,486	Infringement Contentions
defining a plurality of computing components; and	• For example, Android includes low level code that implements the basic Java class structure This layer, which is implemented by the Dalvik Virtual Machine, interfaces with the operating system to control the operations of the computer. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].
a network component layer for creating network navigation components configured to search and obtain information available on the computer networks, the network component layer includes application programming interfaces; and	The RE '486 Accused Products include a network component layer for developing network navigation components that provide services directed at a computer network, which layer includes, application programming interfaces. • For example, Android includes Java classes designed to access services directed to the computer network, such as the URLStreamHandler and URLConnection classes, along with the HttpURLConnection and JarURLConnection classes, which are subclasses of the URLConnection class. *See*, e.g., **Exh. D-5** [Android Developer Site-"java.net.URLStreamHandler"], **Exh. D-6** [Android Developer Site-"java.net.URLConnection"], **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"], and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. The combination of these classes defines the network component layer. The methods for implementing those classes are in the form of application programming interfaces, *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The network component layer in Android is designed to be used in developing network navigation components, such as web browsers, email viewers, and similar applications, which provide services directed to the network. *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"). *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"]. "[C2DM] is a service that helps developers send data from servers to their applications on Android devices. The service provides a simple, lightweight mechanism that servers can use to tell mobile applications to contact the server directly, to fetch updated application or user data. The C2DM service handles all aspects of queueing of messages and delivery to the target application running on the target device." **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].

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	The C2DM framework on the accused devices includes a network component layer enabling software developers to create network navigation components that receive C2DM messages. • For example, on information and belief, the C2DM framework includes the com.google.android.c2dm package. *Id.* Furthermore, the C2DM framework includes application programming interfaces. *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"]. • For example, it includes a library of classes, such as C2DMessaging, that enable applications to interoperate with the C2DM service. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
means for constructing a network navigation component that represents different resources available on the computer network, wherein the network component layer is integrally coupled to the software component architecture layer to ensure communication among the computing and network navigation components.	The RE '486 Accused Products include means for constructing network navigation components that represent different resources available on the computer network. • For example, Android includes a URLConnection class that constructs a first network navigation object. Object instantiations of that class represent different network resources available on the computer network. *See* **Exh. D-6** [Android Developer Site-"java.net.URLConnection"]. Moreover, the network component layer and the software component architecture layer in the RE '486 Accused Products are integrally coupled integrally coupled to ensure communication there between. • For example, components within the software component architecture take advantage of the network-directed services provided by network components, thus ensuring that the network component layer and the software component architecture layer are integrally coupled. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"), which includes the application programming interface with a first class to construct a first network navigation object that represents different network resources available on the computer network. • For example, the C2DM application programming interface includes the

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	C2DMessaging class, which provides methods to construct objects that represent different network resources available on the computer network. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. • For example, the C2DMessaging.register method allows an application such as Google Chrome to Phone to register for the C2DM service. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. Moreover, the network component layer and the software component architecture layer for the C2DM are coupled in integrating relation to facilitate communication between the computing and network navigation components. • For example, software components such as the C2DM Main activity make calls to the C2DMessaging class in order to accomplish such tasks as registering to receive C2DM messages. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
7. The computing arrangement of claim 6 wherein the network component layer and software component architecture layer comprise means for embedding components within one another to form a compound document having mixed data types and formats.	The RE '486 Accused Products include the computing arrangement of claim 6 wherein the network component layer and software component architecture layer comprise means for embedding components within one another to form a compound document having mixed data types and formats. • For example, the Java classes in the network component layer comprise means for embedding components within one another to form a compound document having mixed data types and formats. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. • For example, Android includes a URLConnection class that constructs a first network navigation object. Object instantiations of that class represent different network resources available on the computer network. *See* **Exh. D-6** [Android Developer Site-"java.net.URLConnection"].
8. The computing arrangement of claim 6 wherein the application programming interfaces comprise means for constructing a network navigation	The RE '486 Accused Products include the computing arrangement of claim 6 wherein the application programming interfaces comprise means for constructing a network navigation component that implements a protocol.

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component that implements a protocol.	• For example, the HttpURLConnection class is a means for constructing network navigation components that implement a protocol. *See* **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"].
	In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which is used to construct a C2DMReceiver component, which implements the Cloud to Device messaging protocol. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
9. The computing arrangement of claim 6 wherein the application programming interfaces comprise means for constructing a network navigation component that provides additional functionality to existing computing components to enable communication among the components.	The RE '486 Accused Products include the computing arrangement of claim 6 wherein the application programming interfaces comprise means for constructing a network navigation component that provides additional functionality to existing computing components to enable communication among the components.
	• For example, the URLConnection class is a means for constructing a network navigation component that provides additional functionality to existing computing components to enable communication among the components. in the network component layer constructs a first network navigation object that represents different network resources available on the network. *See* **Exh. D-6** [Android Developer Site-"java.net.URLConnection"].
	In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which is used to construct a C2DMReceiver component, and, on information and belief, can provide additional functionality to existing computing components to enable communication among the components
10. The computing arrangement of claim 9 wherein the computing component comprises a computing part having a viewing editor and data content.	The RE '486 Accused Products include the computing arrangement of claim 9 wherein the computing component comprises a computing part having a viewing editor and data content.
	• For example, the Android operating system itself has a viewing editor and data content that work in conjunction with the network components. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].
	In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which is used to construct a C2DMReceiver component, which, on

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	information and belief, comprises a computing part having a viewing editor and data content. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
11. The computing arrangement of claim 10 wherein the computing component functions to one of transfer files over the networks, remotely log onto another computer coupled to the networks and view images on a screen of the computing arrangement.	The RE '486 Accused Products include the computing arrangement of claim 10 wherein the computing component functions to one of transfer files over the networks, remotely log onto another computer coupled to the networks and view images on a screen of the computing arrangement. • For example, the HttpURLConnection class transfers data over the network. *See*, e.g., **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"].
12. The computing arrangement of claim 10 wherein the network navigation component comprises a browsing component.	The RE '486 Accused Products include the computing arrangement of claim 10 wherein the network navigation component comprises a browsing component. • For example, the network navigation component can be a web browser. *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which is a browsing component.
14. An extensible and replaceable layered component computing arrangement residing on a computer adapted to be coupled on a computer network, the layered arrangement comprising:	The RE '486 Accused Products include an extensible and replaceable layered component computing arrangement residing on a computer that is adapted to be coupled to a computer network. The RE '486 Accused Products are computers. • For example, the Motorola Droid X includes a Texas Instruments OMAP3630-1000 1GHz processor *See* **Exh. D-1** [Droid X by Motorola MotoDev Specs] and is capable of executing numerous computer programs such as email programs, web browsers, and instant messaging applications. *See* **Exh. D-2** [Droid X by Motorola Tech Specs]. Accordingly, the Droid X is a computer. Moreover, the RE '486 Accused Products are adapted to be coupled to a computer network. *Id.* The RE '486 Accused Products include an extensible and replaceable layered component

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	computing arrangement. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"].

computing arrangement. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"].

- For example, Android's application framework enables "reuse and replacement of components." *See* **Exh. D-3** [Android Developer Site-"What is Android?"]. A central feature of Android is that one application can make use of elements of other applications (provided those applications permit it). For this to work, the system must be able to start an application process when any part of it is needed, and instantiate the Java objects for that part. Therefore, unlike applications on most other systems, Android applications don't have a single entry point for everything in the application (no main () function, for example). Rather, they have essential components that the system can instantiate and run as needed. **Exh. D-4** [Android Developer Site-"Application Fundamentals"].

The extensible and replaceable software architecture provided by Android is a layered architecture. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].

- For instance, The Android is composed of multiple layers, such as layers that include applications, application frameworks, core libraries, and the underlying Linux kernel:

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	Exh. D-3 [Android Developer Site at "What is Android?"]
a software component architecture layer interfacing with an operating system to control the operations of the computer, the software component architecture layer defining a plurality of computing components;	The RE '486 Accused Products include a software component architecture layer interfacing with an operating system to control the operations of the computer, and defining a plurality of components. • For example, Android includes low level code that implements the basic Java class structure This layer, which is implemented by the Dalvik Virtual Machine, interfaces with the operating system to control the operations of the computer. *See* **Exh. D-3** [Android Developer Site at "What is Android?"].
a network component layer adapted to be coupled to at least one network navigation component that provides a service directed at the computer network, the network component layer including an	The RE '486 Accused Products include a network component layer for developing network navigation components that provide services directed at a computer network, which layer includes application programming interfaces. • For example, Android includes Java classes designed to access services directed

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application programming interface; and	to the computer network, such as the URLStreamHandler and URLConnection classes, along with the HttpURLConnection and JarURLConnection classes, which are subclasses of the URLConnection class. *See*, e.g., **Exh. D-5** [Android Developer Site-"java.net.URLStreamHandler"], **Exh. D-6** [Android Developer Site-"java.net.URLConnection"], **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"], and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. The combination of these classes defines the network component layer. The methods for implementing those classes are in the form of application programming interfaces, *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"].
	The network component layer in Android is designed to be used in developing network navigation components, such as web browsers, email viewers, and similar applications, which provide services directed to the network. *See* **Exh. D-3** [Android Developer Site-"What is Android?"].
	The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"). *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"]. "[C2DM] is a service that helps developers send data from servers to their applications on Android devices. The service provides a simple, lightweight mechanism that servers can use to tell mobile applications to contact the server directly, to fetch updated application or user data. The C2DM service handles all aspects of queueing of messages and delivery to the target application running on the target device." **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
	The C2DM framework on the accused devices includes a network component layer enabling software developers to create network navigation components that receive C2DM messages.
	• For example, on information and belief, the C2DM framework includes the com.google.android.c2dm package. *Id.*
	Furthermore, the C2DM framework includes application programming interfaces. *See* **Exh. D-9** [Android Developer Site-"Android Cloud to Device Messaging"].
	• For example, it includes a library of classes, such as C2DMessaging, that enable

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	applications to interoperate with the C2DM service. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
a number of interconnected abstract classes included in the application programming interface, at least on abstract class for defining a network navigation object that represents a resource available on the computer network, the component layer coupled to the software component architecture layer to facilitate communication among the network navigation component and at least one computing component.	The RE '486 Accused Products include a number of interconnected abstract classes included in its application programming interface for defining a network navigation object that represents different network resources available on the computer network. • For example, Android includes classes such as the URLStreamHandler and URLConnection classes, along with the HttpURLConnection and JarURLConnection classes, which are subclasses of the URLConnection class. *See*, e.g., **Exh. D-5** [Android Developer Site-"java.net.URLStreamHandler"], **Exh. D-6** [Android Developer Site-"java.net.URLConnection"], **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"], and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. Instantiations of these classes define network navigation objects that represent different network resources. Furthermore, classes such as those listed above comprise a number of interconnected abstract base classes. Each of the classes listed above is declared as an abstract class within Android. *Id.* Moreover, on the RE '486 Accused Products, the network component layer and the software component architecture layer are coupled facilitate communication among the network navigation components and at least one computing component. • For example, components within the software component architecture take advantage of the network-directed services provided by network components, thus coupling the software component architecture layer and the network component layer. *See* **Exh. D-4** [Android Developer Site-"Application Fundamentals"]. The RE '486 Accused Products with the Android 2.2 Platform installed include Android Cloud to Device Messaging ("C2DM"), which includes the application programming interface with a first class to construct a first network navigation object that represents different network resources available on the computer network. • For example, the C2DM application programming interface includes the C2DMessaging class, which provides methods to construct objects that

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	represent different network resources available on the computer network. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. • For example, the C2DMessaging.register method allows an application such as Google Chrome to Phone to register for the C2DM service. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]. Moreover, the network component layer and the software component architecture layer for the C2DM are coupled in integrating relation to facilitate communication between the computing and network navigation components. • For example, software components such as the C2DM Main activity make calls to the C2DMessaging class in order to accomplish such tasks as registering to receive C2DM messages. **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
15. The layered arrangement of claim 14, wherein the abstract class defines a network navigation object that represents a method of downloading information from a remote location on the computer network.	The RE '486 Accused Products include the layered arrangement of claim 14, wherein the abstract class defines a network navigation object that represents a method of downloading information from a remote location on the computer network. • For example, Android includes classes such as the HttpURLConnection and JarURLConnection classes. *See*, e.g., **Exh. D-7** [Android Developer Site- "java.net.HttpURLConnection"] and **Exh. D-8** [Android Developer Site- "java.net.JarURLConnection"]. Instantiations of these classes define network navigation objects that download information from a remote location on the computer network. In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which downloads information from a remote location on the computer network. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
16. The layered arrangement of claim 14, wherein the abstract class defines a network navigation object that represents additional behaviors provided to the	The RE '486 Accused Products include the layered arrangement of claim 14, wherein the abstract class defines a network navigation object that represents additional behaviors provided to the computing components of the software component architecture layer for integrating with the network component layer.

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computing components of the software component architecture layer for integrating with the network component layer.	• For example, Android includes the HttpURLConnection and JarURLConnection classes, *See*, e.g., **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"] and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. Instantiations of these classes define network navigation objects that can be used to provide additional functionality to existing computing components to enable communication among the components.
	In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which, on information and belief, can be used to provide additional functionality to existing computing components to enable communication among the components. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"].
17. The layered arrangement of claim 14, wherein the network navigation object is adapted to browse the computer network.	The RE '486 Accused Products include the layered arrangement of claim 14, wherein the network navigation object is adapted to browse the computer network.
	• For example, the RE '486 Accused Products include the HttpURLConnection and JarURLConnection classes. *See*, e.g., **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"] and **Exh. D-8** [Android Developer Site-"java.net.JarURLConnection"]. Instantiations of these classes define network navigation objects that include browsing components adapted to browse the computer network.
	In addition, the com.google.android.c2dm package includes the class C2DMBaseReceiver, which, on information and belief, is adapted to browse the computer network. *See* **Exh. D-10** [Google Code at "Google Projects for Android: C2DM"]
20. The layered arrangement of claim 14, wherein the network navigation object includes software commands for creating a datastream for transferring information between objects in the layered component computing arrangement.	The RE '486 Accused Products include the layered arrangement of claim 14, wherein the network navigation object includes software commands for creating a datastream for transferring information between objects in the layered component computing arrangement.
	• For example, instantiations of the HttpURLConnection class define network navigation objects that includes information about the protocol for creating a

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	datastream for transferring information to components. *See* **Exh. D-7** [Android Developer Site-"java.net.HttpURLConnection"].