APPENDIX A

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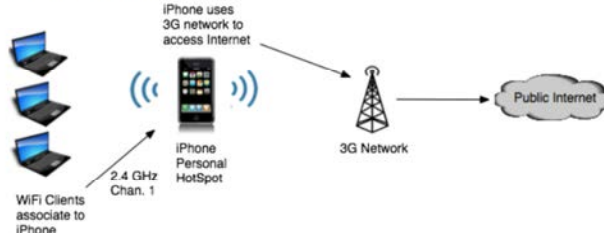| IXI's Claim Chart regarding Apple's Infringement of U.S. Patent No. 7,039,033[1]	
Claim 1	
A system for providing access to the Internet, comprising:	Although the preamble to Claim 1 does not limit the scope of the claim, Apple provides systems and/or components of systems for providing access to the Internet. Accused systems include Internet Devices,[2] Apple Relevant Devices,[3] and WLAN Devices.[4] Apple Relevant Devices provide WLAN Devices with access to the Internet (i.e., Internet Devices) via wireless short range radio signals (e.g., 802.11, Bluetooth) and cellular radio signals. WLAN Devices connect to Apple Relevant Devices via short distance radio waves using the 802.11 and/or Bluetooth protocol and use the Apple Relevant Device to access cellular networks and the Internet. For example, as shown below, the iPhone 5s[5] includes Wireless Hotspot Features, which allow WLAN Devices to

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[1] IXI provides these infringement contentions for Defendant Apple, Inc. ("Apple"). These contentions contain diagrams, screenshots, and other documentary evidence by way of example and not by way of limitation. These contentions are based on publically available information and in the absence of complete discovery do not represent any claim construction position. IXI reserves the right to amend these contentions as discovery progresses, in response to Apple's defenses, and in response to any claim construction rulings.

[2] "Internet Devices" are computers or other devices that function as internet or application servers (e.g., iTunes server, iCloud server), including those owned or operated by Apple or third parties.

[3] "Apple Relevant Devices" include the iPhone 3G, iPhone 3GS, iPhone 4, iPhone 4s, iPhone 5, iPhone5s, iPhone 5c, iPhone 6, iPhone 6 Plus, iPad 2 (2nd Generation) (Wi-Fi + Cellular), iPad (3rd Generation) (Wi-Fi + Cellular), iPad with Retina display (4th Generation) (Wi-Fi + Cellular), iPad Mini (1st Generation) (Wi-Fi + Cellular), iPad Mini 2 (2nd Generation) (Wi-Fi + Cellular), iPad Mini 3 (3rd Generation) (Wi-Fi + Cellular), iPad Air (Wi-Fi + Cellular), and iPad Air 2 (Wi-Fi + Cellular). For further information regarding the hardware, software, applications, and features of Apple Relevant Devices refer to Exhibit A.

[4] "WLAN Devices" include laptops (e.g., MacBooks, including MacBook Airs), tablets (e.g., iPads), stereos, speakers, smart watches (e.g., Apple Watch), smart TVs, Apple TV, iPods, printers and other devices (including Apple and third party devices) that connect to Apple Relevant Devices via short range radio signals (e.g., Wi-Fi, Bluetooth) for use of Wireless Hotspot Features and/or to provide or use Network Services. "Wireless Hotspot Features" include the "Personal Hotspot," "Internet tethering," and "Instant Hotspot." "Network Services" include services such as Wireless Hotspot Features, security, pairing management, DHCP server functions, DNS server functions, virtual private networks, firewalls, monitoring and statistics, health monitoring (e.g., Apple Health), gaming, messaging, printing, media-sharing (e.g., via AirPlay, Home Sharing, iTunes (Wi-Fi Syncing), Plex, Google+, Facebook), Continuity/Handoff application sharing (e.g., sharing applications, such as Calling, Mail, Safari, Maps, Messages, Reminders, Calendars, Contacts, Pages, Numbers, Keynote, and other device applications (including both Apple or third-party applications)), file sharing (e.g., sharing files via Samba, File Explorer, FTP servers, secure shell servers, Dropbox, iCloud), Apple Watch services, IANA services, or other services provided to Apple Relevant Devices from WLAN Devices or vice versa over short distance radio signals, such as those compliant with Zero Configuration networking protocols, connect-to-service API, Multipeer Connectivity Framework, Game Kit Framework, Real-time Streaming Protocol, Continuity/Handoff protocols (e.g., NSUserActivityDelegate Protocol), Digital Audio Access Protocol (DAAP), Digital Photo Access Protocol, Digital Media Access Protocol, AirPlay Protocol, Universal Plug and Play (UPnP), and/or Digital Living Network Alliance (DLNA).

[5] The iPhone 5s contains similar components and features as other Apple Relevant Devices and is representative of the hardware components of these devices.

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	connect to the iPhone 5s via Wi-Fi and/or Bluetooth and "share [the iPhone 5s's] Internet connection." (See iPhone User Guide (iOS Version 8.1) at 38)
a first wireless device, in a short distance wireless network, having a software component to access information from the Internet by communicating with a cellular network in response to a first short-range radio signal, wherein the first wireless device communicates with the cellular network and receives the first short-range radio signal; and,	Each Apple Relevant Device is a first wireless device in a short distance network. The Apple Relevant Devices each have a software component (e.g., Wireless Hotspot Feature software, iOS software, and/or other application software) used to access information from the Internet by communicating with a cellular network in response to a first short-range Wi-Fi and/or Bluetooth radio frequency signal received from a WLAN Device. For example, the Wireless Hotspot Features of each Apple Relevant Device provide WLAN Devices with access to Internet Devices. The Apple Relevant Devices receive wireless short range radio signals (e.g., 802.11, Bluetooth) from WLAN Devices and in response to these signals retrieve information from the Internet (e.g., website data) via cellular radio signals (e.g., GSM, CDMA, LTE) for relay to the WLAN Devices. In addition, other Network Services provided by WLAN Devices to Apple Relevant Devices utilize the software components of Apple Relevant Devices to access information from the Internet Devices, such as account authentication, user preferences, cloud-based data (e.g., synchronization, email, calendar, messages, media, etc.), information requested by the Apple Watch (e.g., via Mail, Messages, Siri, health and fitness monitoring applications and other Apple Watch applications), and other information when they are connected to Apple Relevant Devices via Wireless Hotspot Features, AirPlay, Home Sharing, Wi-Fi Direct (P2P), Bluetooth, or reasonably similar protocols.
a second wireless device, in the short distance wireless network, to provide the first short-range radio signal,	Each WLAN Device is the claimed second wireless device in a short distance wireless network (e.g., Wi-Fi 802.11 and/or Bluetooth network) that provides the first short-range radio signal to an Apple Relevant Device. WLAN Devices connect to Apple Relevant Devices via short distance radio waves using the 802.11 and/or Bluetooth protocol and use the Apple Relevant Device to access cellular networks and the Internet when using Wireless Hotspot Features or other Network Services via AirPlay, Wi-Fi Direct (P2P), Bluetooth, or reasonably similar protocols.

wherein the software component includes a network address translator software component to translate between a first Internet Protocol ("IP") address provided to the first wireless device from the cellular network and a second address for the second wireless device provided by the first wireless device,	Apple Relevant Devices include network address translator software components in iOS or other software for translating between a first IP addresses provided from the Internet Device over the cellular network and a second IP address for the WLAN Device provided over a Wi-Fi and/or Bluetooth network. For example, when the iPhone 5s is connected to the Internet, it receives an IP address from the cellular network connected to the Internet. When the iPhone 5s using a Wireless Hotspot Feature, the iPhone 5s creates a Wi-Fi network. A local area Wi-Fi network includes a plurality of private addresses; each is provided to a device connected to the Wi-Fi network. One method to implement a mobile hotspot is via Network Address Translation (or NAT), for example for an IP network. Software components in the Apple Relevant Devices include a network address translator software component to implement the NAT functionality. NAT, or more specifically Network Address and Port Translation (NAPT), involves translating a private IP address to a public IP address and vice versa. More specifically, NAPT involves translating between a public IP address and a plurality of private IP addresses connected to the wireless local area network. As shown below, Apple Relevant Devices include, for example, Bonjour, which provides built-in support for the NAT port mapping protocol (NAT-PMP). NAT-PMP translates between a public IP address and a plurality of private IP addresses connected to the wireless local area network. In OS X and iOS, Bonjour provides built-in support for creating port mappings through firewalls that support NAT-PMP or UPnP. Services advertised using wide-area Bonjour are automatically mapped. For services advertised in other ways, you can call DNSServiceNATPortMappingCreate to create the mapping, and DNSServiceRefDeallocate to destroy the mapping. These mappings are also torn down automatically when the process that created the mappings exits. (See Apple's Developer Webpage, "Firewalls and Network Address Translation")[i]
wherein the software component includes a service repository software component to identify a service provided by the second wireless device.	Apple Relevant Devices include service repository software components for identifying one or more Network Services provided by the WLAN Device(s). For example, Wireless Hotspot Features include a service repository software component that identifies connected WLAN Devices by SSID, IP address, and MAC address. In addition or alternatively, Apple Relevant Devices include iOS and Bonjour, which are or include a service repository software component. For example, iOS includes Bonjour, which provides a mechanism to identify and connect with WLAN Devices and Network Services. **Service Discovery** The final element of Bonjour is service discovery. Service discovery allows applications to find all available instances of a particular type of service and to maintain a list of named services and port numbers. The application can then resolve the service hostname to a list of IPv4 and IPv6 addresses, as described in Naming. The list of named services provides a layer of indirection between a service and its current DNS name and port number. Indirection allows applications keep a persistent list of available services and resolve an actual network address just prior to using a service. The list allows services to be relocated dynamically without generating a lot of network traffic announcing the change.

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(See Apple's Developer Webpage, "Bonjour Concepts")[ii]

As shown below, iOS and/or Bonjour provide a mechanism for identifying Network Services, for example, via various APIs and Frameworks including NSNETService API, CFNetServices API, DNS Service Discovery API, Game Kit Framework, Multipeer Connectivity Framework, Multicast DNS Service Discovery API, DNS Service Discovery C API, and/or reasonably similar APIs and frameworks.

OS X and iOS provide four APIs for discovering and advertising network services:

- NSNetService—A high-level Objective-C API suitable for most app developers.
- CFNetService—A high-level C API suitable for use in Core Foundation code.
- DNS Service Discovery—A low-level C API suitable for cross-platform code. This API also offers more flexibility than the higher-level APIs.
- Game Kit framework—A high-level Objective-C API that provides peer-to-peer communication support for games, both locally (using infrastructure Wi-Fi and Bluetooth) and globally over the Internet.

In addition to these APIs, iOS offers the Multipeer Connectivity Framework, which provides support for discovering and communicating with instances of your app and related apps on nearby devices using infrastructure Wi-Fi, peer-to-peer Wi-Fi, and Bluetooth.

(See Apple's Developer Webpage, "Networking Overview")[iii]
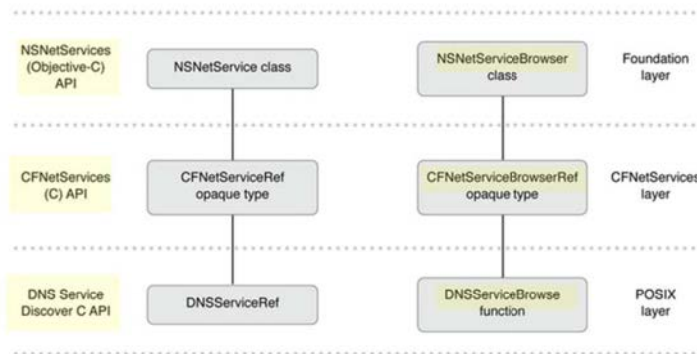
(See Apple's Developer Webpage, "About NSNetServices and CFNetServices")[iv]

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