EXHIBIT A

le's Invalidity Contentions Under Patent Rule 3-3
ibit D-14

INVALIDITY OF U.S. PATENT NO. 9,467,838 (the "'838 patent")

by

FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW ("FBCB2")

As explained in the cover pleading to Apple's invalidity contentions, Plaintiff has not and cannot demonstrate that the '838 patent is entitled to a priority date earlier than October 31, 2014, the effective filing date of Appl. No. 14/027,410. On information and belief, the FBCB2 system (including at least FBCB2 software versions 3.2, 3.3, and 3.4 and hardware made by Litton and Paravant) was in public use and/or available to the public no later than March 21, 2003, and was made available by the U.S. Army. The FBCB2 system, as set forth in this chart, anticipates the asserted claims of the '838 patent at least under pre-AIA 35 U.S.C. §§ 102(a) and (g)(2) (and AIA 35 U.S.C. §§ 102(a)(1)), and/or renders the asserted claims obvious under 35 U.S.C. § 103 either alone, in combination with the general knowledge of one of ordinary skill in the art, and/or in combination with the references identified in Apple's invalidity contentions, including as set forth in this chart. On information and belief, the FBCB2 system is described at least in the following documents and other materials cited in this chart:

- *Force XXI Battle Command Brigade and Below-Blue Force Tracking (FBCB2-BFT). A Case Study in the Accelerated Acquisition of a Digital Command and Control System during Operations Enduring Freedom and Iraqi Freedom*, by James L. Conatser and Vincent E. Grizio, dated December 2005 and retrieved from http://www.dtic.mil/dtic/tr/fulltext/u2/a443273.pdf on November 21, 2017 ("FBCB2-1") (APL-AGIS_00012804 - APL-AGIS_00012876).
- *Blue Force Tracking The Afghanistan and Iraq Experience and Its Implications for the U.S. Army*, by Richard J. Dunn, III, stamped with a copyright dated 2003 and retrieved from http://www.northropgrumman.com/AboutUs/AnalysisCenter/Documents/pdfs/BFT-Afghanistan-and-Iraq-Exper.pdf on November 21, 2017 ("FBCB2-2") (APL-AGIS_00012877 - APL-AGIS_00012896).
- *FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)*, retrieved from https://web.archive.org/web/20170204113146/http://www.dote.osd.mil/pub/reports/FY1999/pdf/army/99fbcb2.pdf on November 21, 2017 ("FBCB2-3") (APL-AGIS_00012800 - APL-AGIS_00012803).
- *FBCB2-BFT Family of Products*, Northrop Grumman Space & Mission Systems Corp. (2003) ("FBCB2-4") (SIEGEL000001-SIEGEL000002)
- *FBCB2 Blue Force Tracking* (Promotional Video), Northrop Grumman (2004) ("FBCB2-5") (SIEGEL000003)
- Pamela Bowers, *The TRW Tactical Systems Division Builds the Next Generation of Tactical Army Operations Systems*, CrossTalk: The Journal of Defense Software Engineering (January 2002). ("FBCB2-6") (SIEGEL000004-SIEGEL000008)

Limitation	Prior Art Disclosure
	See, e.g., Haney 24:5-7 "Large groups with many phones, can ask for and receive access codes that allow operation across a large number of phones." *See, e.g.*, Haney 27:40-51 "A user who wishes to join a walkie talkie talk group launches the TalkControl application, scrolls down to Join Group menu option, selects an Enter Tokens options and fills in her name, phone number, project ID, and Token and presses send. One or more packets are sent to the Rubicon server which authenticates the token and the recipient and creates a database entry. The Rubicon server then determines a time to add the user to the talk group and contacts a server of the wireless carrier to add a user. The Rubicon server logs onto the Carrier Server and adds the user to the appropriate talk group and receives a confirmation." One of ordinary skill in the art would have been motivated to combine the teachings of FBCB2 and Haney. Like FBCB2, Haney is generally related to sharing location information among mobile units. *See, e.g.*, FBCB2-2 at 4; Haney at Abstract.
icipating in the group, rein participating in the ıp includes sending first tion information to a first er and receiving second tion information from the server, the first location rmation comprising a tion of the first device, the nd location information prising one or more tions of one or more ective second devices	FBCB2 discloses participating in the group, wherein participating in the group includes sending first location information to a first server and receiving second location information from the first server, the first location information comprising a location of the first device, the second location information comprising one or more locations of one or more respective second devices included in the group: *See, e.g.*, FBCB2-2 at 4 "FBCB2 normally uses GPS transponders located in ground vehicles (typically the vehicles assigned to unit commanders at various levels) to report the location of the host vehicle.5 The FBCB2 equipment then retransmits its location to all units in the network via the Combat Net Radios (EPLRS and the standard Single Channel Ground and Airborne Radio System (SINCGARS) radio nets). Each vehicle location is displayed as a blue icon on digital maps on computer screens mounted in the vehicles. Instead of a map covered with paper symbols, FBCB2-equipped commanders have computers that show their location as a screen icon on a digital map or overhead photograph, along with the icons of all FBCB2-equipped subordinate units and any other

Limitation	Prior Art Disclosure
uded in the group;	friendly units equipped with FBCB2 in the vicinity. This same information (along with enemy information input by intelligence staffs, operational control measures – such as unit operational boundaries – and danger areas) is displayed in command posts and vehicles at all levels of command. FBCB2 also allows users to send formatted or free-text e-mail messages – including orders and requests for support – to any other FBCB2-equipped unit simply by clicking on the unit's icon. This freed tactical voice radio nets for higher priority messages." *See, e.g.*, FBCB2-2 at 5 "FBCB2's capabilities were evident in the flat terrain of the National Training Center, where dense numbers of FBCB2-equipped vehicles were able to maintain the tactical internet through line-of-sight FM communications. When the Army deployed to the Balkans, however, it discovered that the mountainous terrain and relatively thinly deployed patrol vehicles in Bosnia and Kosovo imposed significant limitations on a tactical internet using ground-based line-of-sight radios. To overcome this, FBCB2 was adapted to communicate over commercial satellites using transceivers bolted to the tops of vehicles. In this "hub and spoke" configuration, each vehicle communicates with a satellite ground station that aggregates the blue force picture and transmits it to each FBCB2- equipped vehicle by satellite." *See, e.g.*, FBCB2-1 Figs. 8, 9, 11 *See, e.g.*, FBCB2-1 at 28-29 "Within each battalion task force headquarters, one each located in Bosnia and Kosovo respectively, a Command Center Server (CCS) and an Enhanced Information Server (EIS) were installed.64 The CCS utilized QUALCOMM provided OmniTRACS QTRACS software and the EIS utilized the current version of FBCB2 software.65 The CCS facilitates communications between the command centers, the satellite hub, and the individual vehicle platforms. The EIS aggregates the position location reports of individual vehicle platforms and passes this information to the CCS, which broadcasts it to all operational systems. Data brokers are connected to secure networks through the use of trusted guards and provide worldwide dissemination of the information through web browsers. EIS software provides the capability to maintain a vehicle's own position location, maintain the vehicle locations of other EIS equipped vehicles,

Limitation	Prior Art Disclosure
	compose, send and receive text messages, and maintain battlefield geometry information through the use of graphic control measures displayed on digital overlays.66" *See, e.g.*, FBCB2-1 at 29 "Lastly, QUALCOMM installed a Command Center Server at the USAREUR Headquarters, located in Heidelberg, Germany.67 This system provides position location information to GCCS-A for inclusion in the COP.68 This information represents the various patrol locations in both Bosnia and Kosovo. On 11 January 2001, BDI successfully transmitted ground force position information to the GCCS Common Relevant Operational Picture.69 Figure 9 depicts the satellite architecture of the Balkan Digitization Initiative. Figure 10 provides a view of a BDI equipped vehicle. Although the implementation of BDI was successful in its own right, the true impact of the BDI technical solution would not be realized until the start of Operations Enduring and Iraqi Freedom." *See, e.g.*, FBCB2-1 at 35 "1. In 2000, the Balkan Digitization Initiative effort in both Bosnia and Kosovo was the genesis for BFT. About 600 systems had been used with the commercial Fieldworks/Kontron and Ku Band using a reduced functionality FBCB2 software Version 3.1.74" *See, e.g.*, FBCB2-1 at 39-40 "In FBCB2-EPLRS-equipped units, radio-based communications rely on a denser fielding of systems and good dispersion of platforms throughout the area of operations to maintain network integrity. Wide dispersion and line-of-sight limitations between vehicles affect the terrestrial-based radio network and the effectiveness of Situational Awareness and C2. FBCB2-BFT literally breaks the line-of-sight barrier with its satellite link. Distance, dispersion, and line-of-sight between vehicles are much less of a problem. FBCB2-EPLRS is accredited to process both unclassified and secret information. It can be operated in either an "unclassified" or a "secret" mode using individual or unit password access. This capability is required to connect to the secret-high ABCS. Thus, FBCB2-EPLRS is interoperable with the tactical operations center (TOC) ABCS systems. Currently, FBCB2-BFT is not encrypted or accredited to process secret information, because of the commercial satellite link and therefore, it is not currently interoperable with the TOC ABCS systems. However, it does provide a one way feed of Blue locations to the Army-level Global

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