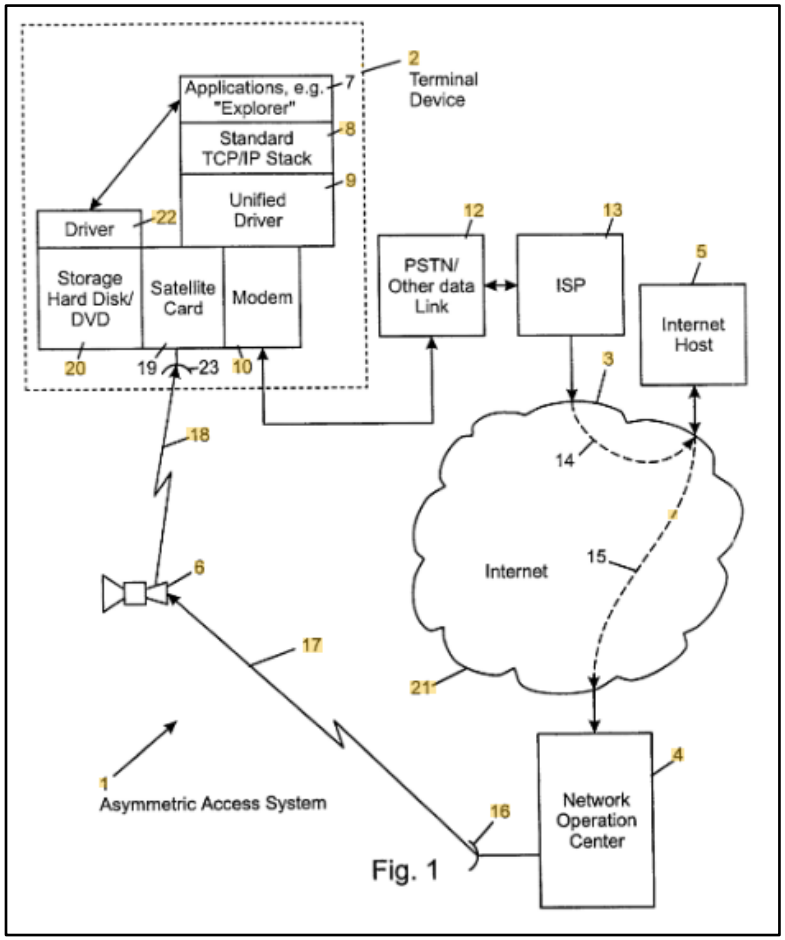
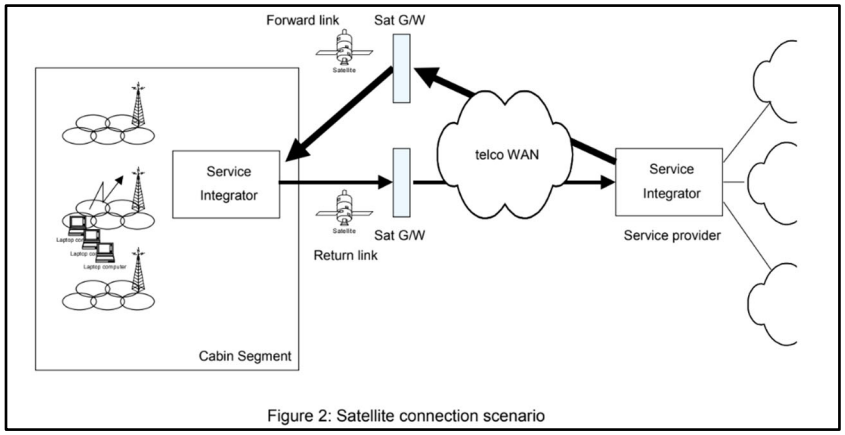
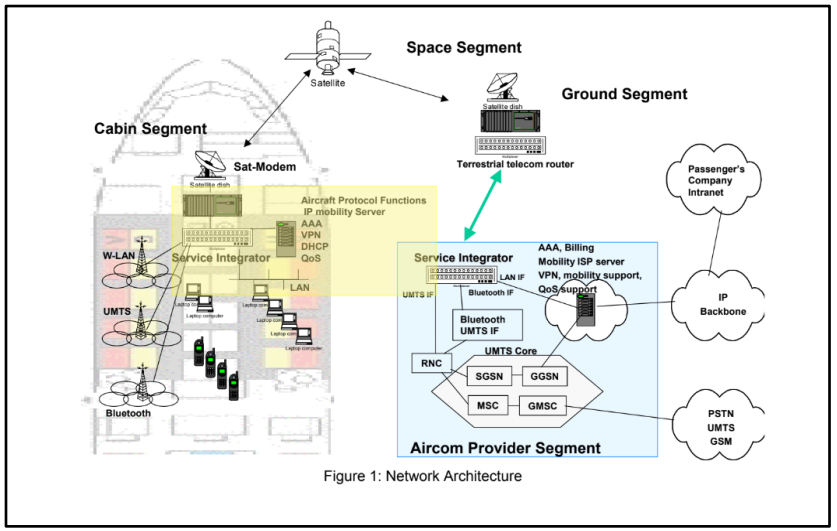
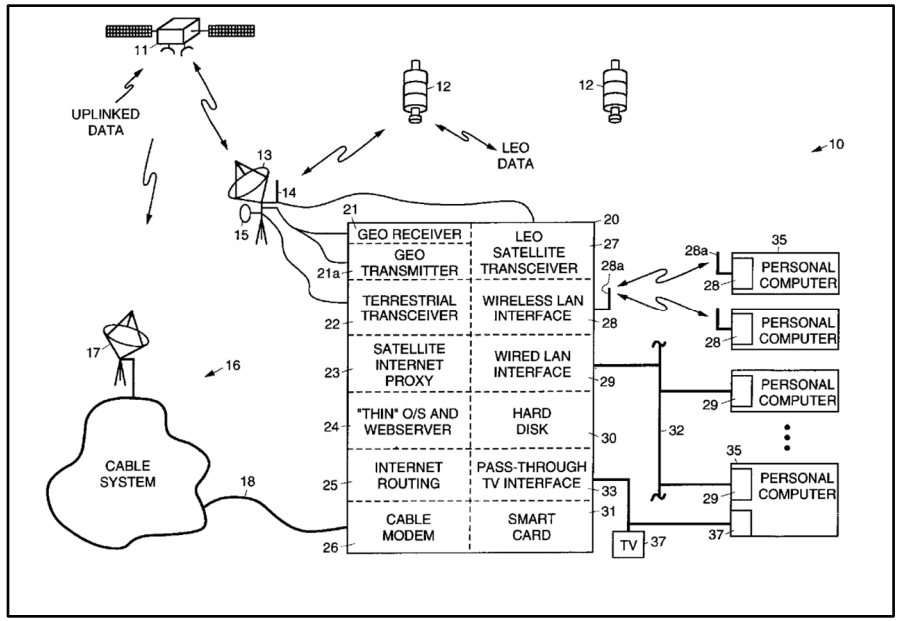
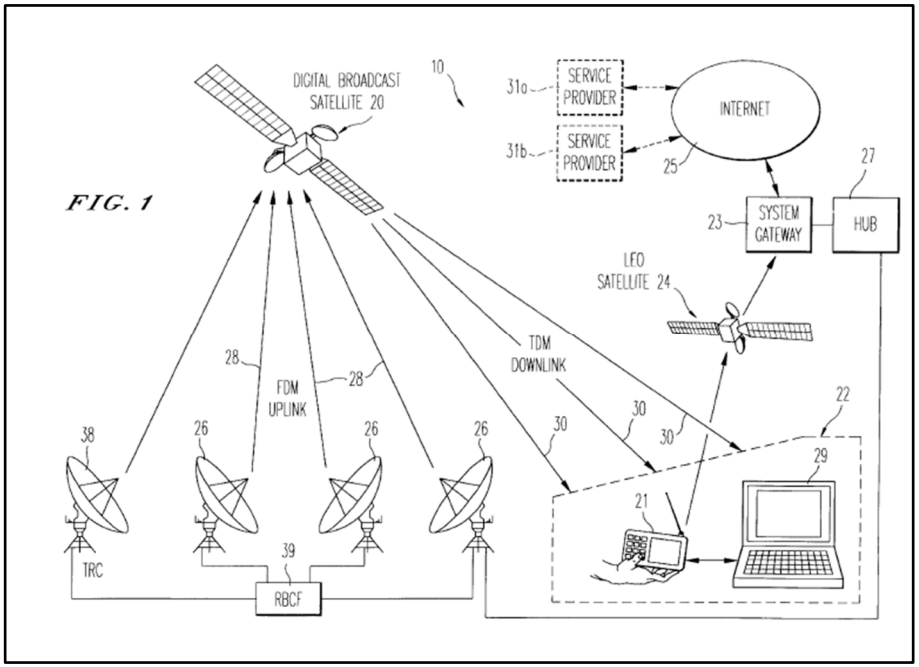
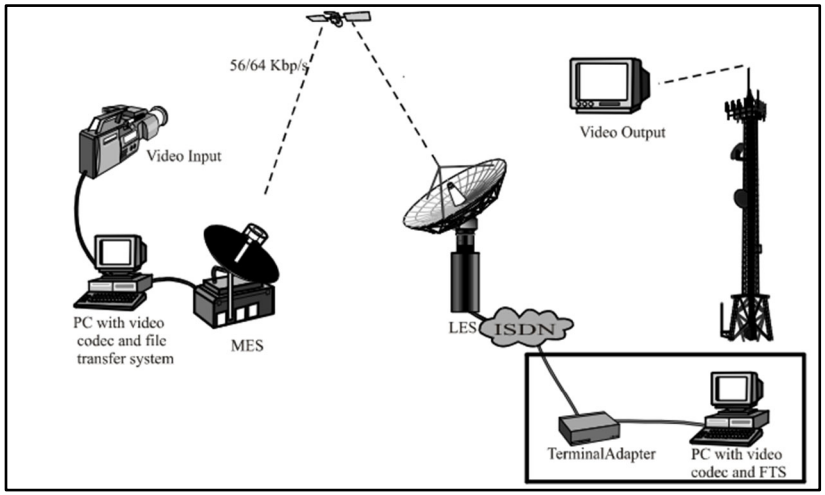
Claim	Connexion by Boeing
	l. Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, *e.g.*, 10 or 20, and can also be used to connect corporate sites. Agarwal at 3:38-41; *see also* Agarwal at FIG. 1, 3:18-20, 3:38-63. For airlines operating a mixed fleet of systems, the present invention integrates seamlessly on any platform. This allows for rapid deployment of services fleetwide and continuity of service as they adopt new hardware systems or equip the aircraft with wideband satellite technology for off-aircraft communications. Bruner at [0080], [0035] ("Most preferably, this relatively low bandwidth in-flight link is complemented by a high bandwidth (600 kbps) one way satellite up link to the aircraft."); *see also* Bruner at [0015], [0018], [0021], [0035], [0080].

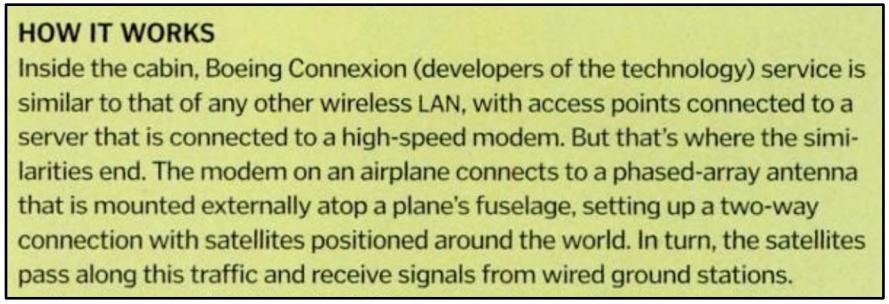
Claim	Connexion by Boeing
	 El-Rafie at FIG. 1; *see also* El-Rafie at 4:56-5:19.

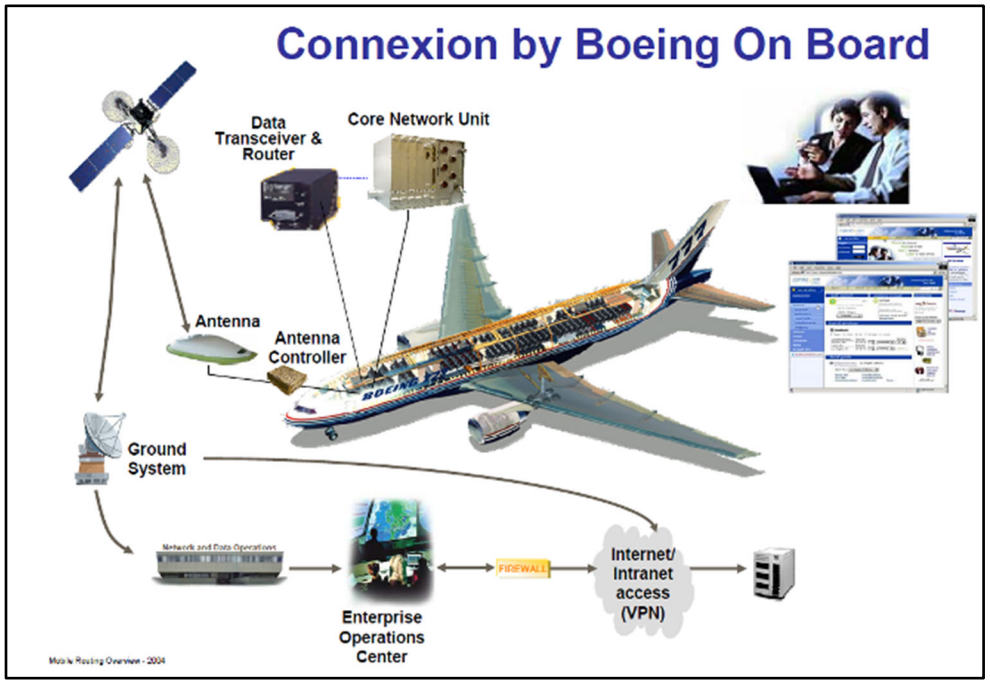
Claim	Connexion by Boeing
	 Figure 2: Satellite connection scenario Jahn I at FIG. 2; *see also* Jahn I at 1-3, FIG. 1.  Figure 1: Network Architecture Jahn II at FIG. 1; *see also* Jahn II at 2-4.

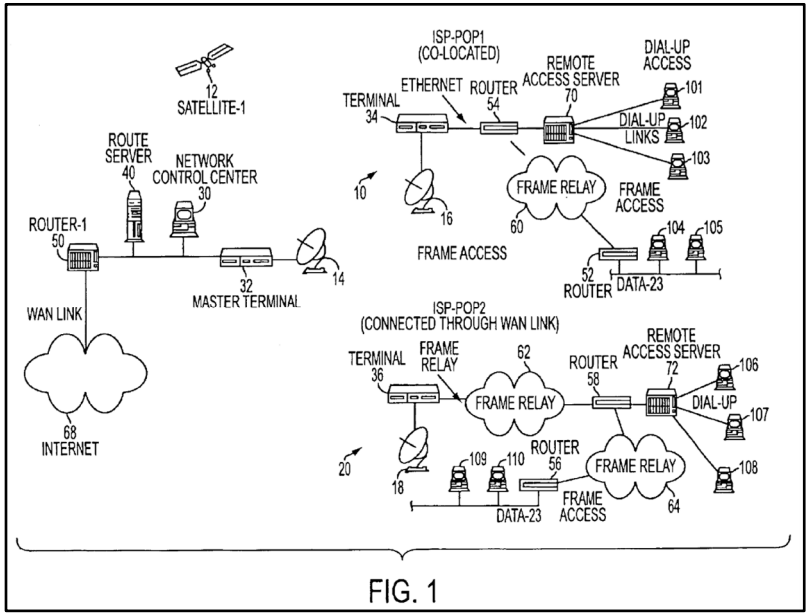
Claim	Connexion by Boeing
	The system architecture 600 further includes on the aircraft a DSS receiver/decoder and antenna (not shown) to help facilitate the broadband service. Nelson at [0056]; *see also* Nelson at [0015], [0053]-[0054], [0056], [0058]-[0059], [0061], FIG. 6.  Ollikainen at FIG. 1; *see also* Ollikainen at 2:58-3:45; 3:65-4:17.

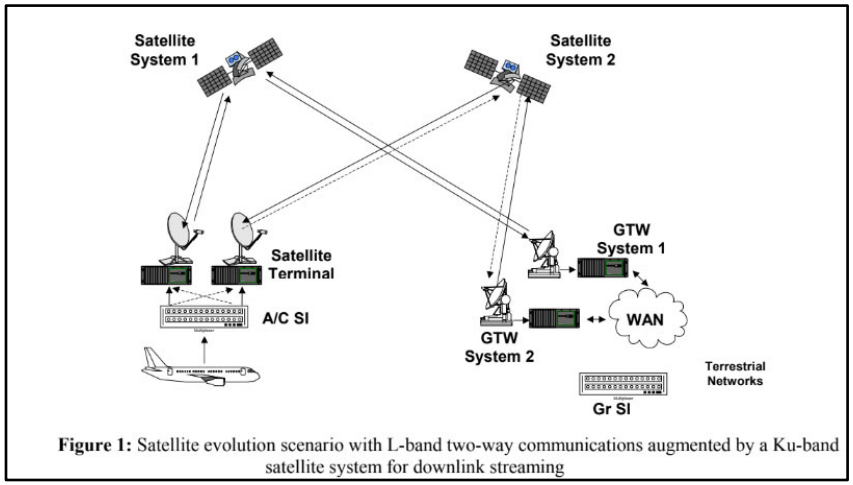
Claim	Connexion by Boeing
	 Rothblatt I & II at FIG. 1; *see also* Rothblatt I at FIGs. 3, 5, 1-2, 5, 8-9; Rothblatt II at FIGs. 3, 5, 2:16-21, 2:46-64, 3:12-15, 6:20-27.

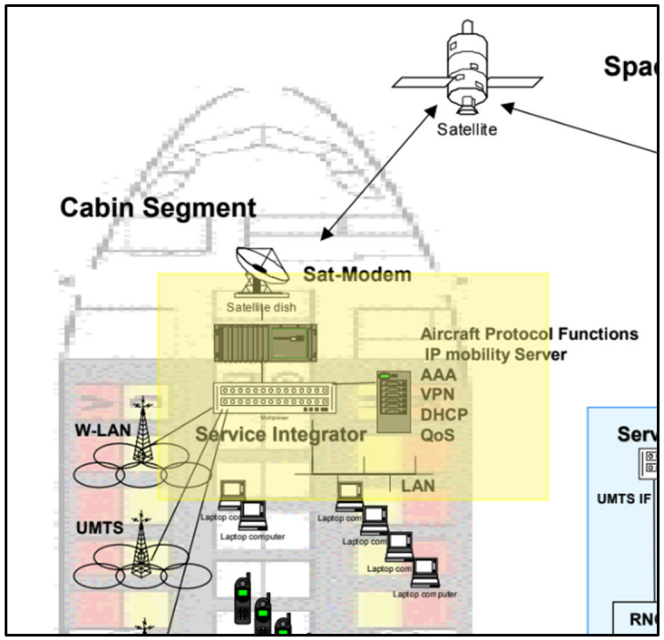
Claim	Connexion by Boeing
	 Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; .https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

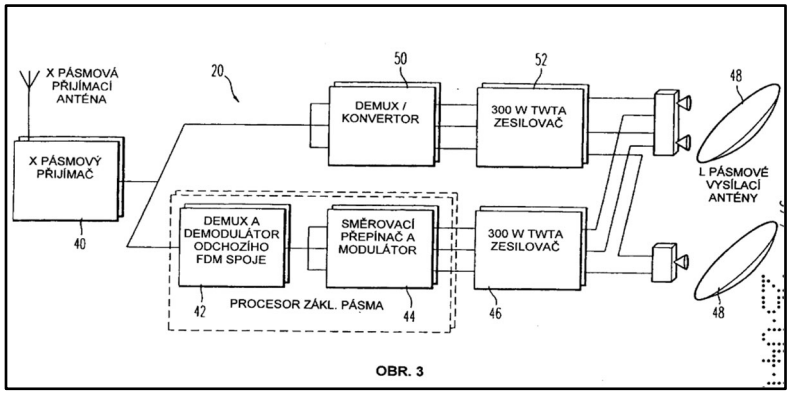
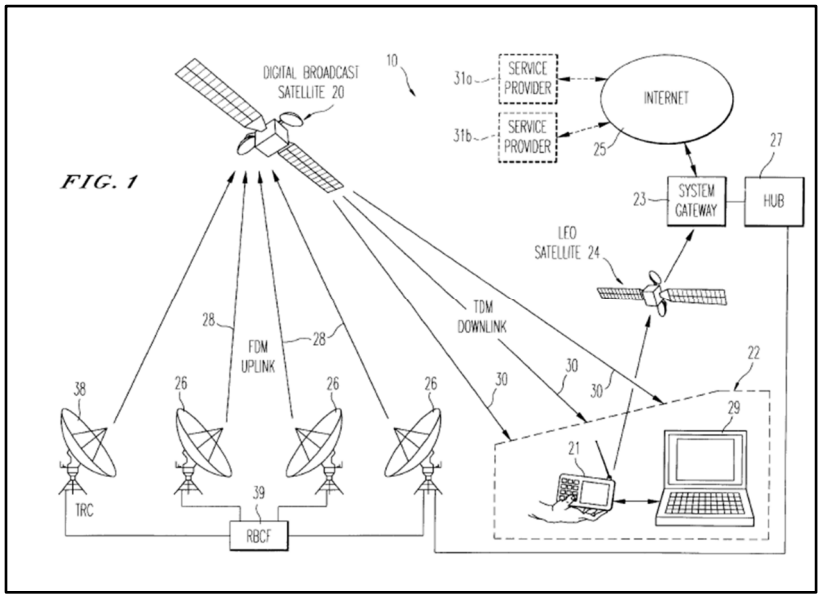
Claim	Connexion by Boeing
	It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover
[24.b] at least one router operatively coupled to the satellite dish;	Connexion by Boeing discloses "at least one router operatively coupled to the satellite dish." *See, e.g.*,  **HOW IT WORKS** Inside the cabin, Boeing Connexion (developers of the technology) service is similar to that of any other wireless LAN, with access points connected to a server that is connected to a high-speed modem. But that's where the similarities end. The modem on an airplane connects to a phased-array antenna that is mounted externally atop a plane's fuselage, setting up a two-way connection with satellites positioned around the world. In turn, the satellites pass along this traffic and receive signals from wired ground stations. Ellison at 97-104. The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Suwantateep at 9. In addition to the antenna, the system requires a server and router -- powerful machines used to operate computer networks. It will also wire the aircraft to carry the service, potentially building a data port into every seat on the plane. Suwantateep at 10. Each mobile platform will be capable of receiving four transponders (carriers) for a total data rate of between 20 and 40 Mbps (depending on transponder EIRP and ASI). Each forward link signal transmitted to the mobile platform carries an IP packet stream of video and data content. Packets are unicast, multicast or broadcast to mobile platforms in the transponder coverage

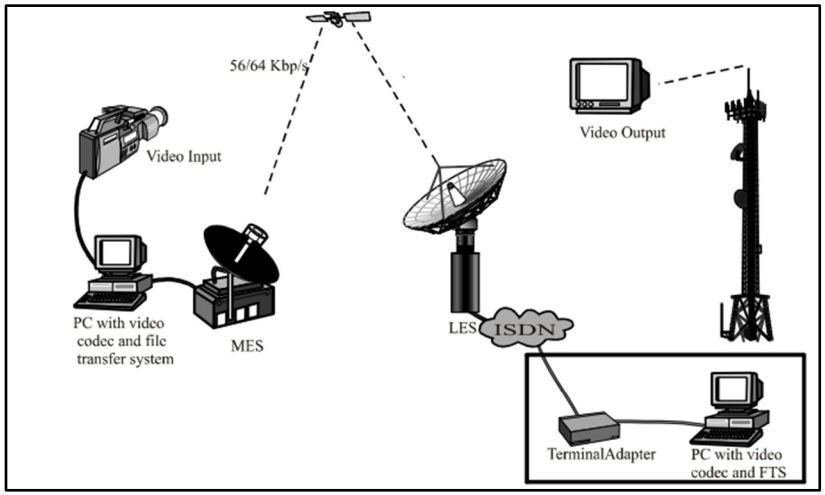
Claim	Connexion by Boeing
	region. An onboard router accepts only those packets addressed to that mobile platform and routes the packets to users via the onboard LAN. For commercial applications, live TV content (i.e. CNN and ESPN) and pushed web page content (most popular web pages) are multicast to customers. The web content is cached in an onboard server for rapid availability to customers. The satellite links will only be used to convey content that is not available from the onboard server. All e-mail will be received and transmitted in real-time over the satellite links. Jones at 756.  Abarbanel at 6. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as

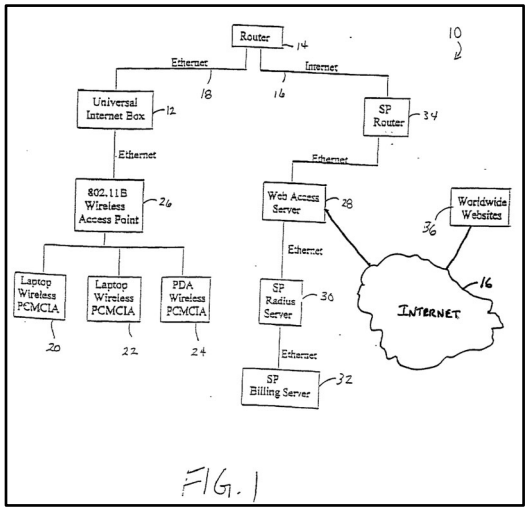
Claim	Connexion by Boeing
	Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and Wu. Connexion by Boeing, Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*,  FIG. 1 Agarwal at FIG. 1; *see also* Agarwal at 2:29-36, 3:18-20, 3:38-63, 4:56-65.

Claim	Connexion by Boeing
	 **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at 3-4, *see also* DeSanctis at FIG. 2.

Claim	Connexion by Boeing
	 Jahn I at 2, FIG. 1 (excerpt); *id*. ("The WirelessCabin architecture and its components are conceptually depicted in Figure 1."); *see also* Jahn I at 2-4, FIG. 2. In the simple case of native IP, a router can connect the wired LAN segment and the wireless IEEE 802.11b access points. Furthermore, other protocol entities needed for IP services in the cabin (such as DHCP, mobility and AAA server) are linked here. Jahn II at 4-5.

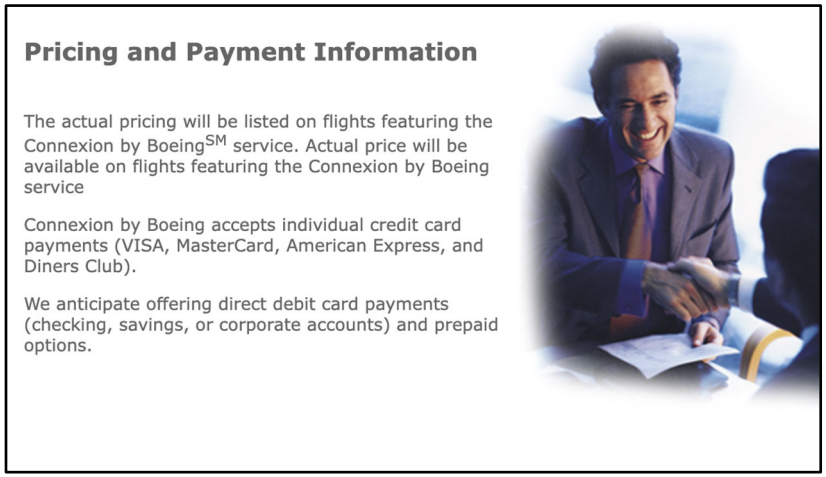
Claim	Connexion by Boeing
	 Rothblatt I at FIG. 3; *see also* Rothblatt I at FIG. 5, 2, 12.  Rothblatt II at FIG. 1, *see also* Rothblatt II at FIG. 5, 3:20-23, 11:55-65, 16:28-48; 17:9-16.

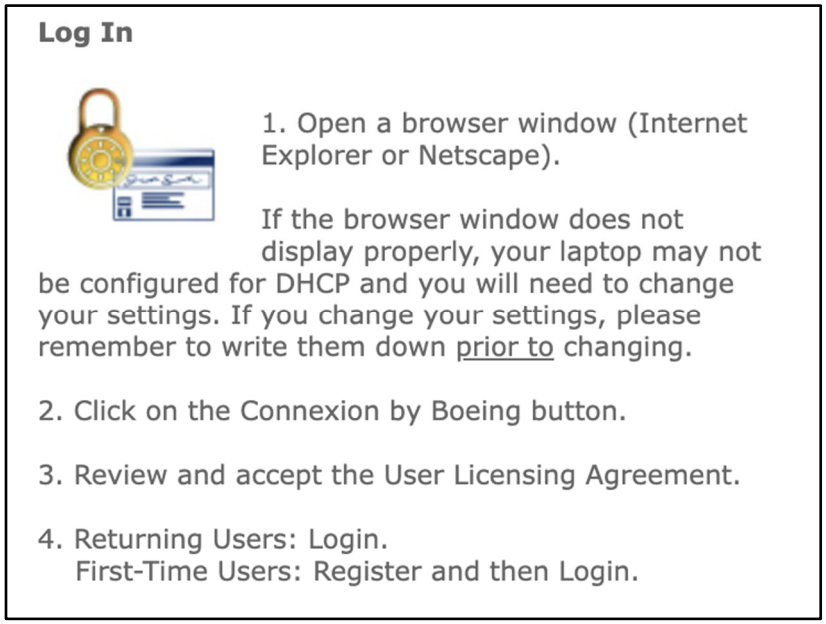
Claim	Connexion by Boeing
	The internet network node 610 comprises a router 206 connected to the backbone network 200, a plurality of switches 612 and 618, and routers 614 and 616 connected to subscribers. Seo at [0051]; *see also* Seo at [0033], [0026]-[0027], [0049]-[0051].  Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.

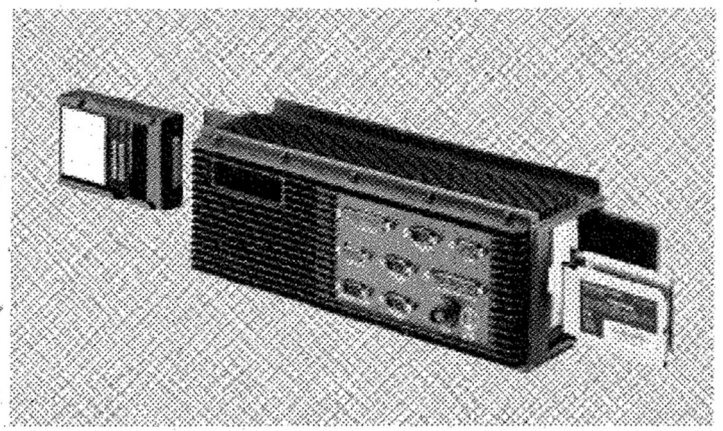
Claim	Connexion by Boeing
	 Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for providing a customer with a prepaid wireless remote access service for one embodiment of the present invention"); *see also* Wu at [0058]-[0059]. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.c] a subscriber access unit operatively coupled between the satellite dish and at least one router,	Connexion by Boeing discloses "a subscriber access unit operatively coupled between the satellite dish and at least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet." *See, e.g.*,

Claim	Connexion by Boeing
the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet; and	Business users will be billed through pre-established corporate accounts while leisure travelers will be billed through their credit cards. Primary services, such as television, in-flight travel information, shopping information and destination information, will be free. Internet and company Intranet services will cost a fee. Pricing has not been announced. Shim, Richard, "Boeing aims to connect the friendly skies," ZDNET NEWS, April 27, 2000, *available at* https://web.archive.org/web/20010625185126/http://www.zdnet.com/zdnn/stories/news/0,4586,2556871,00.html. **Find out about our In-Flight Portal**  Before you access the Internet through the Connexion by Boeing service, you will have the option to select a variety of free services and content through our In-Flight Portal. The In-Flight Portal's selection of top news and entertainment headlines will help keep you up to date, even at 39,000 feet. You can also use the In-Flight Portal to register for the service, view Frequently Asked Questions (FAQs), and contact customer care. https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1; ●○ https://web.archive.org/web/20021224153554/http://www.connexionbyboeing.com:80/index.cfm?Lnav=1

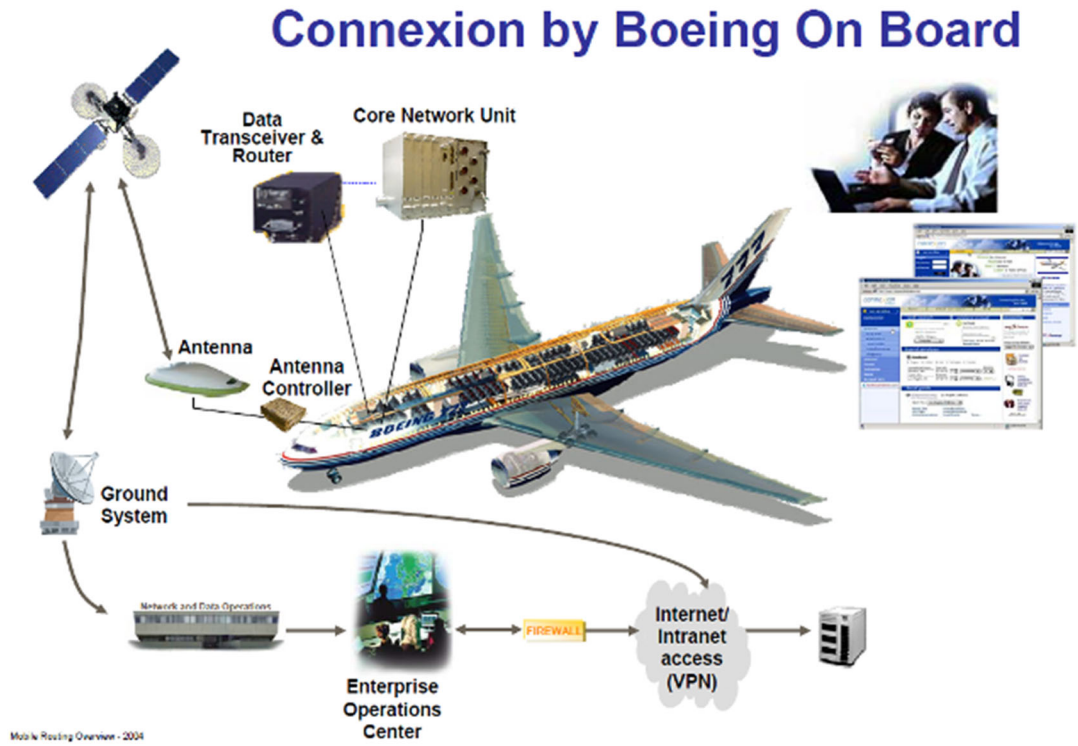
EXHIBIT E-5

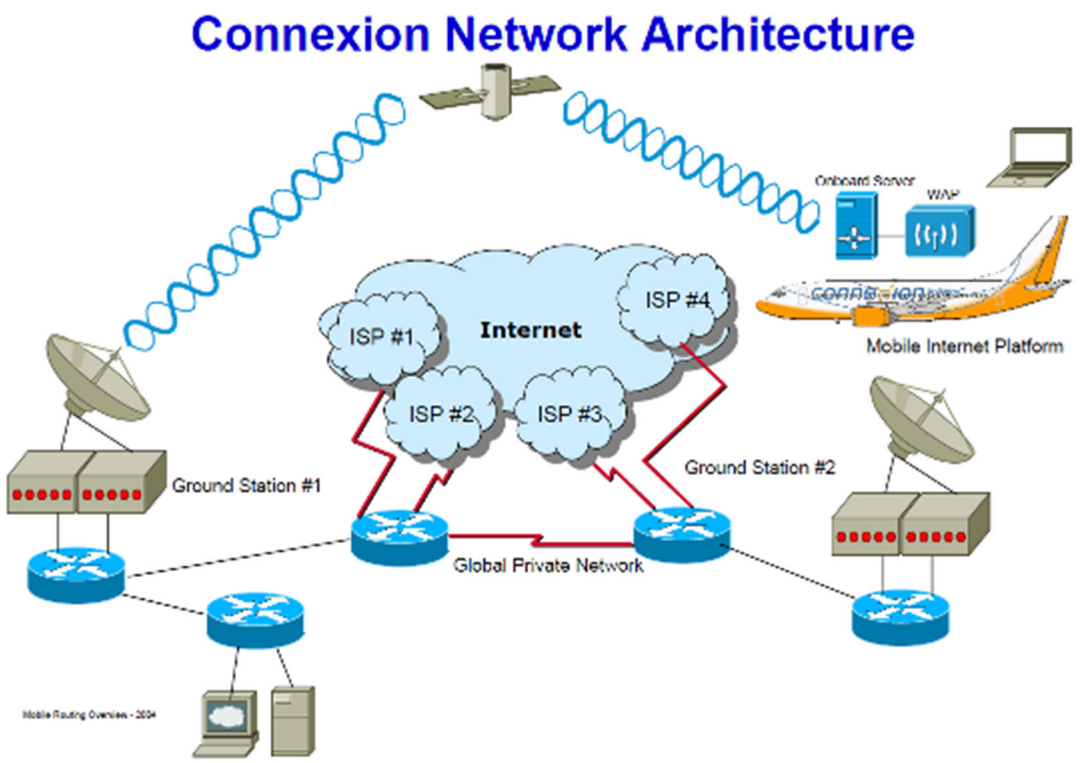
Claim	Connexion by Boeing
	 https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4

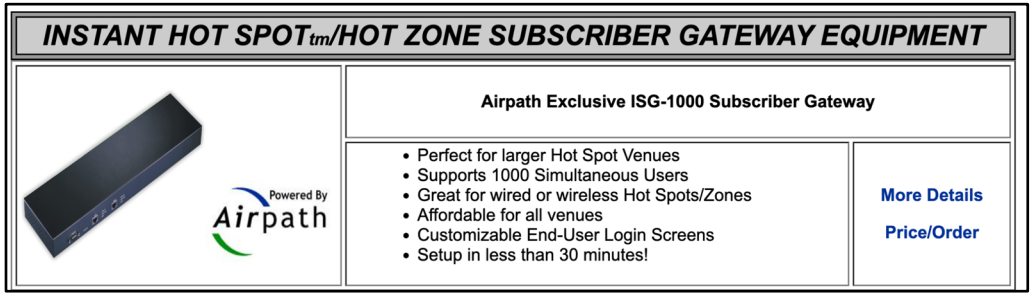
Claim	Connexion by Boeing
	 https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2 Internet Fee The price has fluctuated and remains open to change. For the onboard service fee, the service will cost passengers about $20 per hour (likely less than $8 a minute of inflight phone call). The passengers can watch paid television program, access their corporate Intranet and surf. Up to four live television channels will be offered at either free of charge or paid programs. Those charges are likely to be around $17.50 per hour but also may include flat-rate options for each leg of a trip. For the payment, passengers. will use. credit cards to pay charges. They will type the credit card information into the system when they sign on and it will remember the card number so passengers don't have to retype the number the next time they fly. Suwanateep at 12-13.

Claim	Connexion by Boeing
	 Figure 2.3. Airborne Network Server. Suwanateep at 10, FIG. 2.3. The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Suwanateep at 9. In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are differentiated by airlines that enable this technology. Suwanateep at 12. The service fees are based on bandwidth usage.

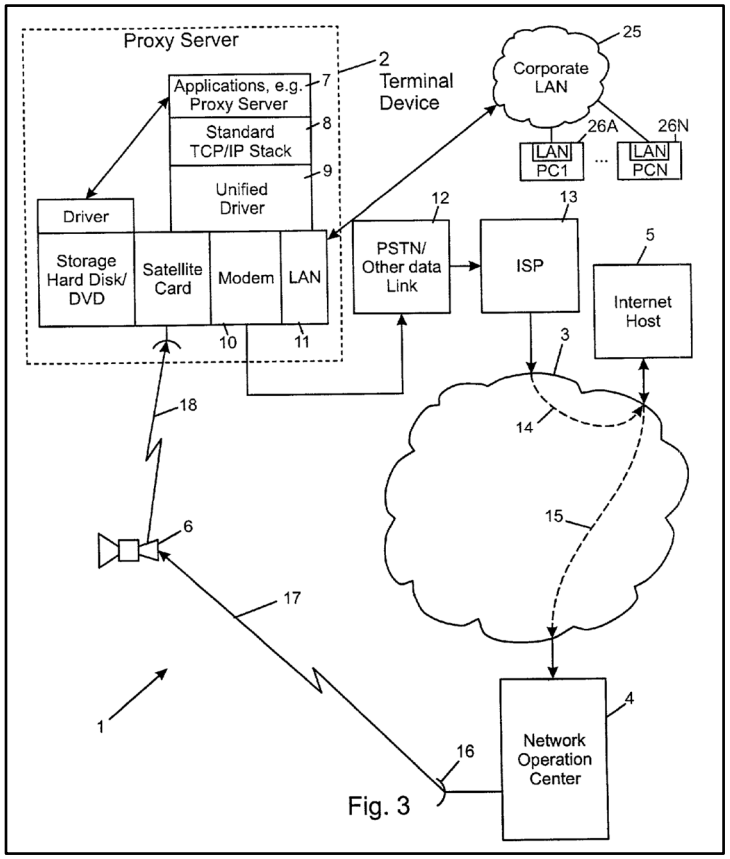
Claim	Connexion by Boeing
	The pricing is variable according to the airlines. It is hard to distinguish because the technology and its service are different, though based on the same technology. It is hard to say whether the price is reasonable or not. The service will cost $4.95 an hour over North America and $9.95 an hour on international flights; reading or sending email would cost an extra 50 cents a page. The flight from Hong Kong to Vancouver, the Cathay Pacific system charges US$ 5.99 a minute for Internet access from aircraft vendor terminal: It costs at US $10 to 20 to upload and download up to 500KB of mail during a day's travel including all connecting flights that offer the service for instance. Passengers, who want to send or receive long e-mails, like video clips or lengthy attachment, would be charged more. Most of the systems are being designed to scan their email headers before they receive them in order that passengers can decide which messages to accept now or later. Suwanateep at 17 (concerning Tenzing). Business users will be billed through pre-established corporate accounts while leisure travelers will be billed through their credit cards. Suwanateep at 17. Each mobile platform will be capable of receiving four transponders (carriers) for a total data rate of between 20 and 40 Mbps (depending on transponder EIRP and ASI). Each forward link signal transmitted to the mobile platform carries an IP packet stream of video and data content. Packets are unicast, multicast or broadcast to mobile platforms in the transponder coverage region. An onboard router accepts only those packets addressed to that mobile platform and routes the packets to users via the onboard LAN. For commercial applications, live TV content (i.e. CNN and ESPN) and pushed web page content (most popular web pages) are multicast to customers. The web content is cached in an onboard server for rapid availability to customers. The satellite links will only be used to convey content that is not available from the onboard server. All e-mail will be received and transmitted in real-time over the satellite links. Jones at 756.

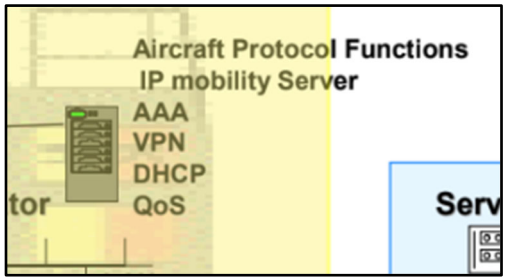
Claim	Connexion by Boeing
	 Abarbanel at 6.

Claim	Connexion by Boeing
	 Abarbanel at 7. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Lee, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and Wu. Connexion by Boeing, Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet

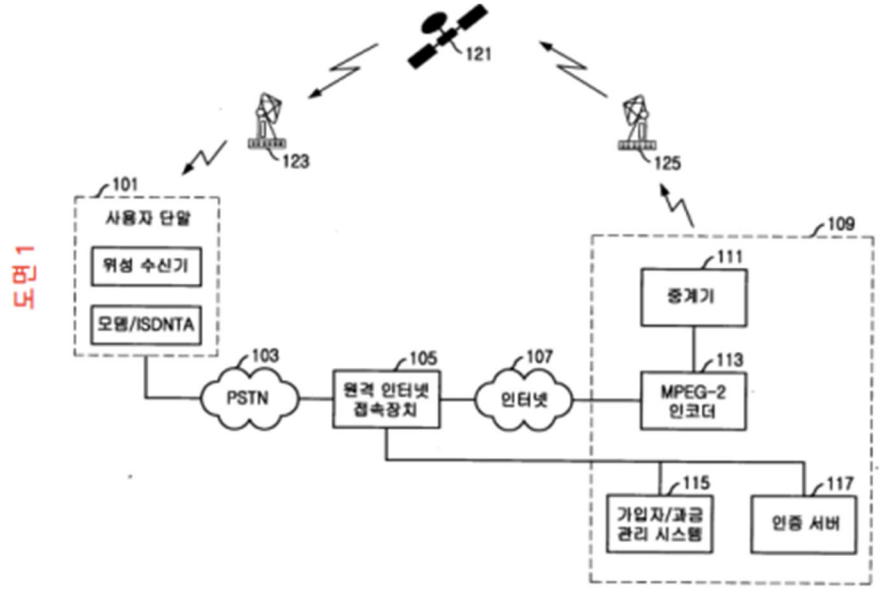
Claim	Connexion by Boeing
	Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, or Wu, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp. Airpath Wireless Hot Spot at https://web.archive.org/web/20030201104447/http://airpath.com/hsbs.asp; *see also* https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp;

Claim	Connexion by Boeing
	https://web.archive.org/web/20030720022617/http://airpath.com/Services/instanthsp_details.htm. The ADS is the inflight remote server 19 that preferably serves content to inflight users of the system and also acts as a gateway to the ground based servers (16, 34, 37, 40) for additional content. From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. Bruner at [0023]; *see also* Bruner at FIGs. 2-3, [0021]-[0032], [0080].

Claim	Connexion by Boeing
	 El-Rafie at FIG. 3; *see also* El-Rafie at 4:50-67. Thus, as described in detail herein, the NAS performs registration, authentication, and other functions necessary to provide visiting mobile terminals with access to the public network 16, while simultaneously controlling access by such visitors to the local private network 10, whose public network connection resources are being used to provide such access. Hagen [0043]; *see also* Hagen at [0011] - [0013], [0048], [0050], [0059], [0066], [0093].

Claim	Connexion by Boeing
	 Jahn I at 2, FIG. 1 (excerpt); *see also* Jahn I at 2-3. It is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 8; *id*. at 2-3, 7. One or more embodiments of the invention are directed to a Converged Billing/Authorization Gateway (CBG) that enables a wireless WAN operator to provide LAN access service to its existing WAN subscribers with a single bill and account. The CBG can integrate the authentication and billing systems of wireless operators with authentication and billing mechanisms used in LAN networks. The WAN operator's backend systems typically interface with a home location register (HLR) database, while the LAN mechanisms typically use protocols like RADIUS. The CBG integrates these two systems such that a WAN subscriber can access LAN services using the subscriber's WAN identity, thus avoiding the need for a separate bill for LAN usage. Further, the WAN operator can offer value-added services while leveraging its existing billing and authentication infrastructure. The CBG can be a server component that is preferably deployed close to the carrier's network and links into the carrier's network. Kalavade at [0056]; *id.* at [0207] ("The access server at the hotspot, such as, *e.g.*, a Cisco Router or a Nokia Access controller intercepts the session and sends a pre-defined web page to the user. This typically queries the user for a login and a password . . . Once authenticated, the RADIUS server

Claim	Connexion by Boeing
	responds with an Access Response to the RADIUS client.”), [0012], [0016], [0021], [0022], [0023], [0063], [0071], FIGs. 1-3.

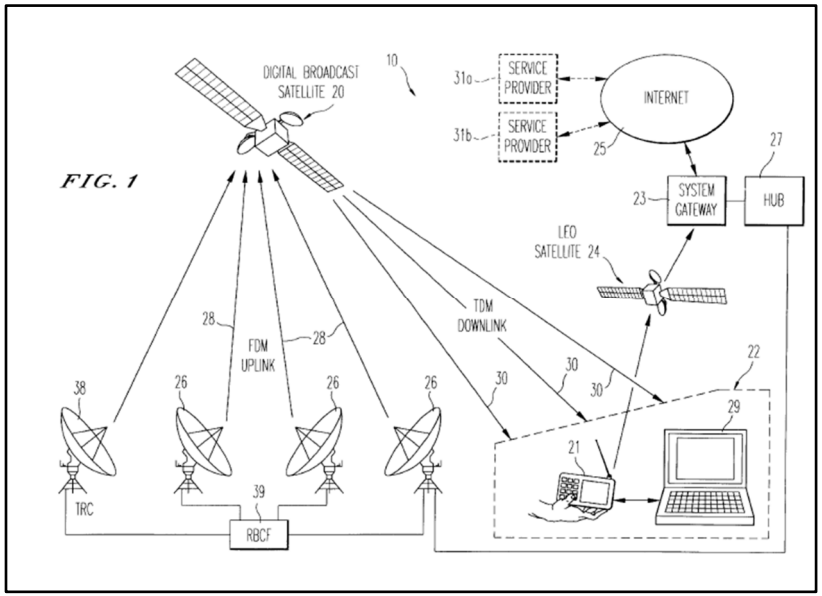


Lee at FIG. 1; *see also* Lee at [0001], [0003], [0015] - [0016], [0018] - [0019], [0025] - [0035], [0037], FIG. 1, FIG. 3.

> When activated, the access control software 14 receives an access request from a user of one of a plurality of mobile communications devices (18_1, 18_2, . . . 18_n) wherein the particular wireless client or mobile communications device 18_1 is attempting to contact the access point 12 to establish access to the communications network 16, such as a WLAN. The AP 12 forwards the request to a corresponding authentication server 20 configured to authenticate the user based on credit information, such as account balance, pre-paid credit charges, and the like. It should be noted that there may be additional networks between wireless network 16 and the

Claim	Connexion by Boeing
	authentication server 20 including, for example, wired, wireless and satellite networks. A data base 24 associated with the authentication server stores and maintains the user-based credit balance information. In one configuration, the authentication server 20 may access the account information directly. Optionally, server 20 may operate as a proxy for another accounting/ authentication server 28, 29 over a network 26 (such as a private data network or PDN) wherein servers 28, 29 operate as a final authentication server having access to the user credit records (*e.g.*, a server controlled by the credit card based Issuing agency or pre-paid data card issuer). When an access accept response message is received by AP 12 from the authentication server 20 authenticating the user, AP 12 enables access of the associated client device 18 to the WLAN Mody at [0019]; *see also* Mody at [0002], [0004], [0010], [0011], [0018]-[0024], FIG. 1. The PCTEL RADIUS-compatible Segue(TM) Network Gateway performs several critical functions for both the mobile subscriber and the service provider. At the most basic level it serves as a router. In its routing capacity, the Segue(TM) Network Gateway aggregates all of the traffic from a Wireless Local Area Network (WLAN). Among other important functions, the Gateway and the Controller (1) attempt to verify that users are authorized to be on the network; (2) ensures that authorized users have valid IP addresses; and (3) connects to a system that maintains subscriber information and that can perform billing operations. Such systems are generically referred to as AAA Brokers because they perform Authorization, Authentication, and Accounting. The PCTEL Segue(TM) Network Controller serves as a centralized location, responsible for serving customized subscriber and location sensitive contents to users of the network. MTN Cruise Ship Internet Services at

Claim	Connexion by Boeing
	https://web.archive.org/web/20021219113817/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=94443. *See also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030810191006/http://www.mtnsat.com:80/enhanced_internet.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030424090006/http://www.mtnsat.com/internet.htm. > The cyberstation 20 provides continuous connectivity to satellite-based data delivery services with a full-time low-bandwidth LEO return path to support information requests, feedback delivery, data billing and status/diagnostic reporting. Ollikainen at 3:6-23; *see also* Ollikainen at 4:24-31. > The identification code is preferably assigned to the user by the ISP when the user subscribes to the Internet via the user terminal 22. The ISP may assign the user an identification code, password, or both, and require that the user be for example, it sends to the user terminal 22 an Internet browser screen, one or both of these identifiers entered via a keyboard 122 or a card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem, which may be recognized by the ISP upon initiation of the login sequence from the user terminal 22. Rothblatt I at 10; *see also* Rothblatt I at 2, 11-12, FIGs. 1, 5.

Claim	Connexion by Boeing
	 Rothblatt II at FIG. 1; *see also* Rothblatt II at FIG. 5, 3:20-23, 3:62-4:3, 11:55-65, 14:59-68, 15:32-65. A subscriber authenticated as a predetermined multicast group connects with the management server 102 of the CP 100 a via the wide area network 610 and the backbone network 200 through path B of FIG. 5b in order to request IGMP (Internet Group Management Protocol). When the subscriber is proved to be legitimate, the management server 102 of the CP 100 a performs authentication, and authorizes the multicast group. Seo at [0078]; *see also* Seo at [0027], [0033], [0039], [0078], FIGs. 3, 5b, 5d. Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at

Claim	Connexion by Boeing
	https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html; https://web.archive.org/web/20060320175337/http://www.stratosglobal.com/documents/factSheets/sdx1100_userGuide_overview.pdf; https://web.archive.org/web/20120413092410/http://www.stratosglobal.com:80/About%20Stratos/~/media/Documents/Corp/Public/corp/corp_financial/corp_financial_annualReport2002FinancialsOnly.ashx. In the next step, the client software determines if billing information has been pre-stored in memory. Preferably the user has pre-stored such billing information, such as during the set-up process and this information is read from memory. The software 90 checks for stored billing information. If there is pre-stored billing information, "yes" is returned in step 648. If there is no pre-stored billing information, processing proceeds to a series of billing information requests (steps 649-653) in which billing information is requested from the user. In an alternative embodiment, billing is not required and processing proceeds to step 665. Van Horne at 8:66-9:9; *see also* Van Horne at 11:3-17, 12:29-43, 16:49-17:30. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features.

Claim	Connexion by Boeing
	Wu at [0043]; *see also* Wu at [0010]-[0019] ("querying the customer for authentication information . . . authenticating the authentication information provided by the customer . . . checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check."), [0009], [0014], [0021], [0029], [0031], [0037], [0041], [0043], [0048], [0058]-[0063]. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that subscription authentication was a routine and commercially available component of any paid wireless Internet architecture. *See* "Going WiFi" Glossary ("AAA (Authentication, Authorization, and Accounting). A term for a framework that enables intelligent access control to computer resources by enforcing policies, auditing usage, and providing the information necessary to bill for services.").
[24.d] a web-ready device operatively coupled to the at least one router, the web-ready device having a browser application operating thereon for accessing the Internet;	Connexion by Boeing discloses "a web-ready device operatively coupled to the at least one router, the web-read device having a browser application operating thereon for accessing the Internet." *See, e.g.*,

Claim	Connexion by Boeing
	Minimum System Requirements  The minimum hardware and software required for laptops or notebook computers to use the service are as follows: ▪ Enabled RJ-45 Terminated Ethernet interface or configured and operational 802.11b protocol ▪ Windows 95 or higher ▪ Mac 8.6 or higher ▪ Internet Explorer 5.0 or higher* ▪ Netscape 4.7 or higher* ▪ DHCP capable settings https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2

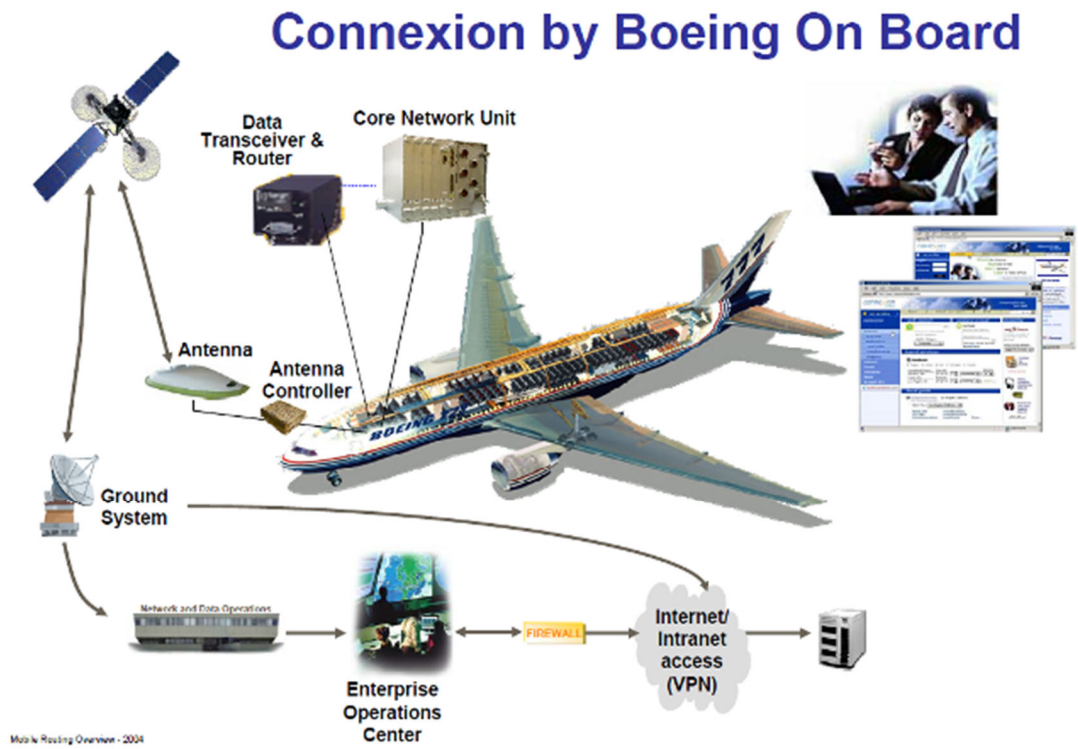
Claim	Connexion by Boeing
	Log In  1. Open a browser window (Internet Explorer or Netscape). If the browser window does not display properly, your laptop may not be configured for DHCP and you will need to change your settings. If you change your settings, please remember to write them down prior to changing. 2. Click on the Connexion by Boeing button. 3. Review and accept the User Licensing Agreement. 4. Returning Users: Login. First-Time Users: Register and then Login. https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2

Claim	Connexion by Boeing
	Find out about our In-Flight Portal  Before you access the Internet through the Connexion by Boeing service, you will have the option to select a variety of free services and content through our In-Flight Portal. The In-Flight Portal's selection of top news and entertainment headlines will help keep you up to date, even at 39,000 feet. You can also use the In-Flight Portal to register for the service, view Frequently Asked Questions (FAQs), and contact customer care. https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1; https://web.archive.org/web/20021224153554/http://www.connexionbyboeing.com:80/index.cfm?Lnav=1

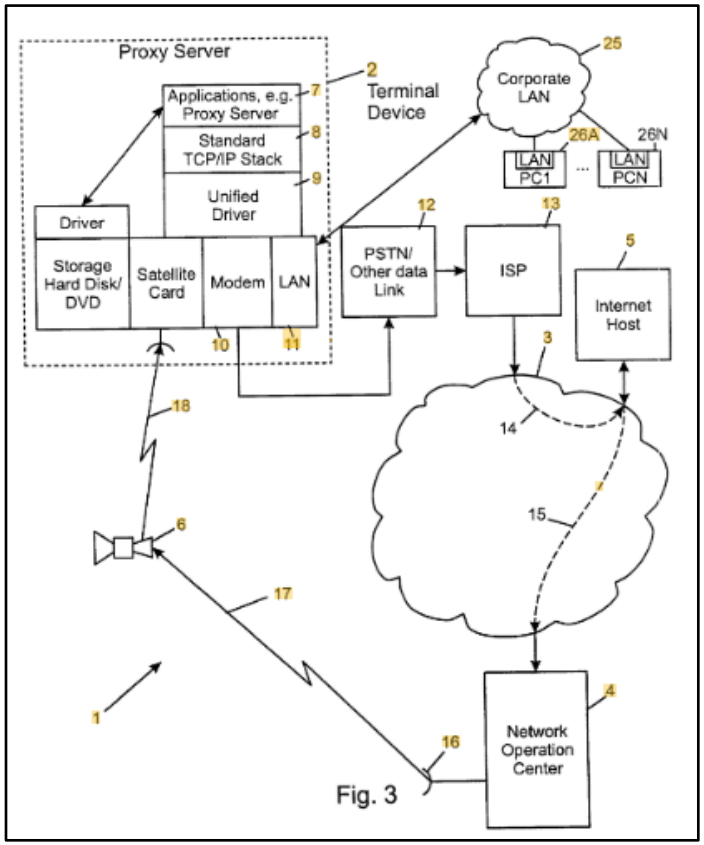
Claim	Connexion by Boeing
	Pricing and Payment Information The actual pricing will be listed on flights featuring the Connexion by Boeing[SM] service. Actual price will be available on flights featuring the Connexion by Boeing service Connexion by Boeing accepts individual credit card payments (VISA, MasterCard, American Express, and Diners Club). We anticipate offering direct debit card payments (checking, savings, or corporate accounts) and prepaid options. https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4 When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Suwanateep at 9. In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are

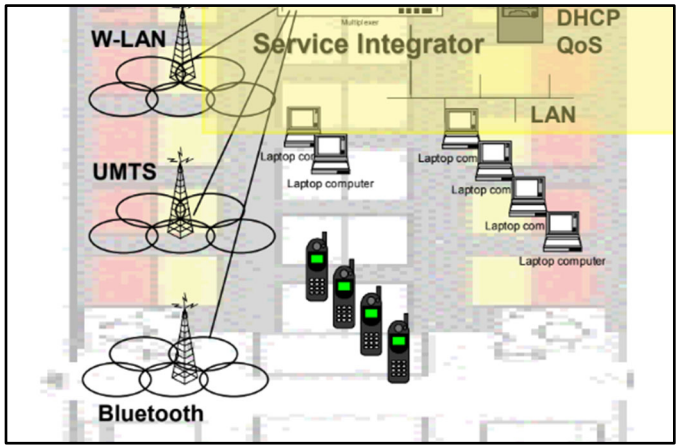
Claim	Connexion by Boeing
	differentiated by airlines that enable this technology. (See Appendix B) Suwanateep at 12. The access gains by running an application downloaded ahead of time from software kit on the airplane or alternatively by a standard dial-up networking connection with standard POP3 email program. Suwanateep at 16. The pricing is variable according to the airlines. It is hard to distinguish because the technology and its service are different, though based on the same technology. It is hard to say whether the price is reasonable or not. The service will cost $4.95 an hour over North America and $9.95 an hour on international flights; reading or sending email would cost an extra 50 cents a page. The flight from Hong Kong to Vancouver, the Cathay Pacific system charges US$ 5.99 a minute for Internet access from aircraft vendor terminal: It costs at US $10 to 20 to upload and download up to 500KB of mail during a day's travel including all connecting flights that offer the service for instance. Passengers, who want to send or receive long e-mails, like video clips or lengthy attachment, would be charged more. Most of the systems are being designed to scan their email headers before they receive them in order that passengers can decide which messages to accept now or later. Suwanateep at 17 (concerning Tenzing). Business users will be billed through pre-established corporate accounts while leisure travelers will be billed through their credit cards. Suwanateep at 17. InFlightOnLine claims a hardware platform independent implementation, meaning that the company can deliver ·Internet services with existing natTowband infrastructure as.well as future broadband capabilities like Connexion. IFOL provides software and on-board servers to implement its services, with lots of content.

Claim	Connexion by Boeing
	Suwanateep at 32. IFOL has an agreement with AT&T seatback telephone system to store their 20" pound airborne data servers on board. The airborne servers will be linked to the seatback-telephone handsets that are offered on virtually every domestic U.S. carrier Now. Suwanateep at 32. This software develops a customized inflight portal with the airline's brand. The inflight portal can also serve as an airline's customer service access point, extending the many information and assistance services such as the airline information. The high-performance software is a building-block technology that powers e-mail and accelerates content delivery on any on-board server — managing and adjusting to the available communications bandwidth. Suwantateep at 33. Other announced ventures have proposed relatively narrow-band return links from the mobile platform using either L-band satellite links (i.e. Inmarsat or GlobalStar) or terrestrial cellular telephone systems for platforms (i.e. GTE Airfone or AT&T Claircom) while operating in terrestrial coverage areas. In contrast, the Connexion by BoeingSM system will offer return link data rates of up to 1.5 Mbps per platform. Users will access the Connexion by BoeingSM system using a conventional laptop computer, PDA or other computing device and the mobile platform's onboard LAN. Jones at 755-56.

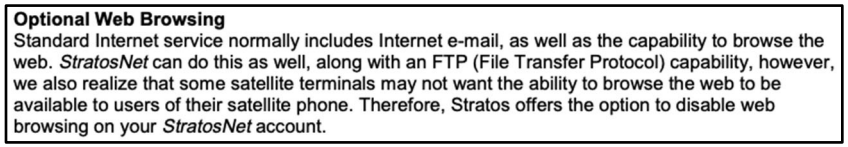
Claim	Connexion by Boeing
	 Abarbanel at 6. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Bruner, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, Suwanateep, and Wu. Connexion by Boeing, Bruner, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, Suwanateep, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users “in transit” or “while traveling” (‘469 patent Background) away

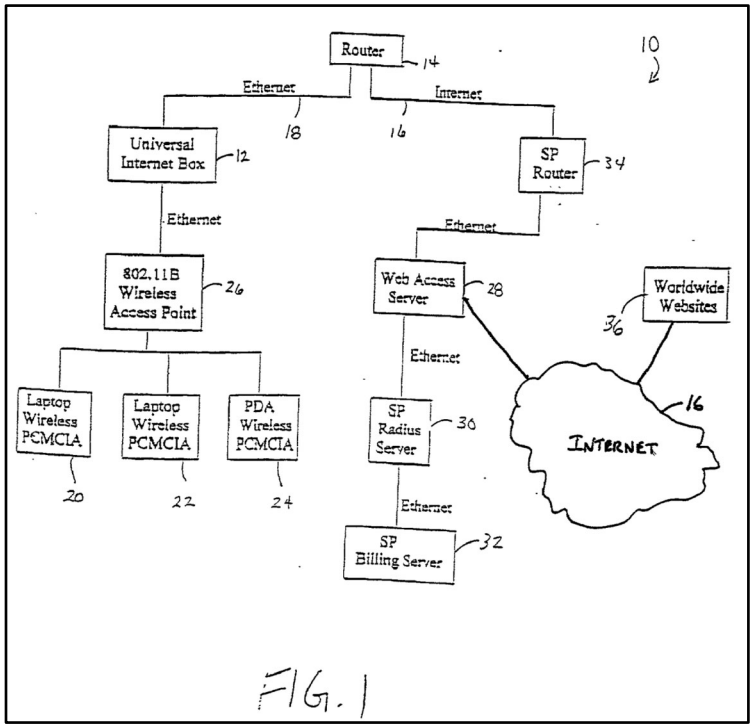
Claim	Connexion by Boeing
	from their homes or offices. Modifying Connexion by Boeing with Bruner, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, Suwanateep, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Bruner, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, Suwanateep, or Wu, for example, to incorporate this limitation. *See, e.g.*, > The airborne users 13 are connected to the system via the aircraft based user terminals which are connected to an airline-based remote server computer 19. Bruner at [0021] *see also* Bruner at FIGs. 1-2, [0018], [0019], [0021]-[0024], [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password. The username and password can be provided when the user first accesses the system and provides necessary registration information to be able to use all the functions of the airborne based internet service of the present invention. Such a registration system is well known to those skilled in the art in providing internet based commerce systems."), [0029]-[0030] [0070], [0076], [0078], [0079].

Claim	Connexion by Boeing
	 El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.

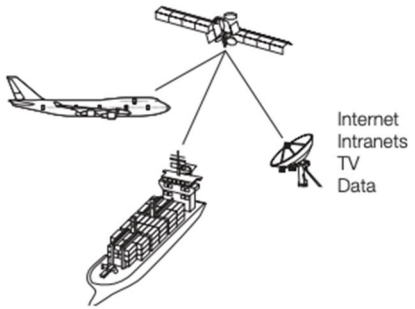
Claim	Connexion by Boeing
	 Jahn I at 2, FIG. 1; *see also* Jahn I at 1-2. Moreover, people are becoming more and more used to personalised equipment, such as mobile phones, laptops or PDAs, all accommodated with their own personal environment. Thus, thinking of future mobile communication from a user acceptance point of view, there is a clear demand for a **wireless access** solution for multimedia and personal communication services through users own equipment. Besides, a wireless network might also support the airline personnel (cabin crew, maintenance crew) during their daily work (e.g. for mobile data access). Jahn II at 1; *see also* Jahn II at FIGs. 1-2, 5, Abstract, 1-2. In accordance with various embodiments of the invention, users can access the LAN/WAN from a variety of terminals with different features. By way of example, terminals can include laptops and PDAs (personal digital assistants) and other mobile computing devices. These terminals can have a PCMCIA slot that can be used to attach an 802.11 NIC. Also, many devices sold now have an integrated 802.11 network interface. Kalavade at [0071], [0072] (“A user comes to a hotspot and starts accessing the Internet through his laptop.”).

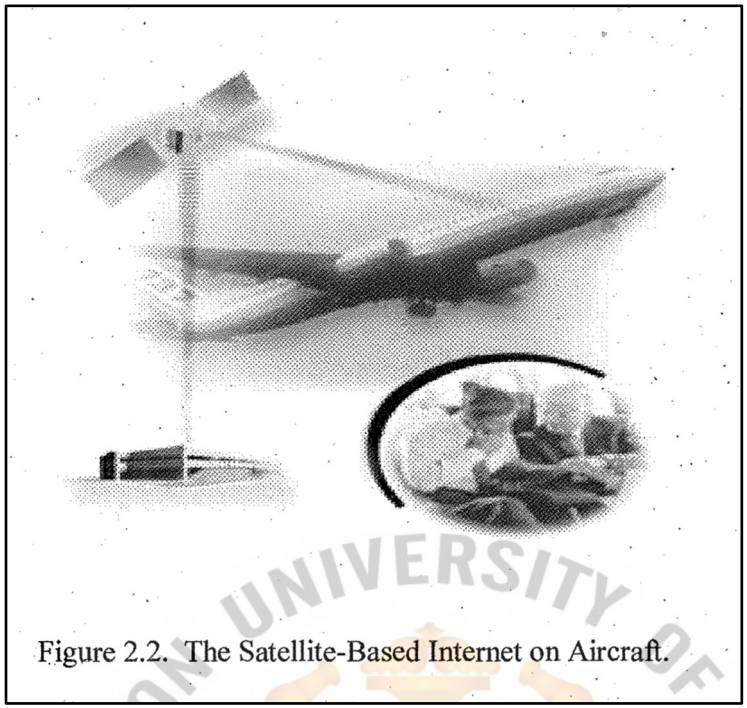
Claim	Connexion by Boeing
	When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Internet routing software 25 provides the services of a router to route incoming broadcast and interactive data to the appropriate personal computer 35. Ollikainen at 3:31-44; *see also* Ollikainen at FIG. 1. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user devices. The method comprises the steps of generating an Internet access request in a portable -user terminal and sending a request to an Internet service provider via a first communication link. The ISP then determines whether the user terminal has access to the Internet and then provides the screens and multimedia data required by the user terminal to the broadcast station. The transmitting station transmits the screens and data to the user terminal via a satellite-based radio system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communications link and receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 10; *see also* Rothblatt I at 1-2, 10-12, FIG. 1. If the user is authorized to have Internet access, the system gateway 23 sends an Internet homepage or Web browser information to the user terminal via an FDM uplink 28 of the direct radio broadcast system. Rothblatt II at 16:57-61; *see also* Rothblatt II at 3:62-4:3, 15:57-61, 16:49-56, FIG. 1.

Claim	Connexion by Boeing
	 Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; *see also* Stratos at https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://web.archive.org/web/20040612173303/http://www.stratosglobal.com:80/documents/factSheets/stratosNet_tc.pdf; https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html; https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.

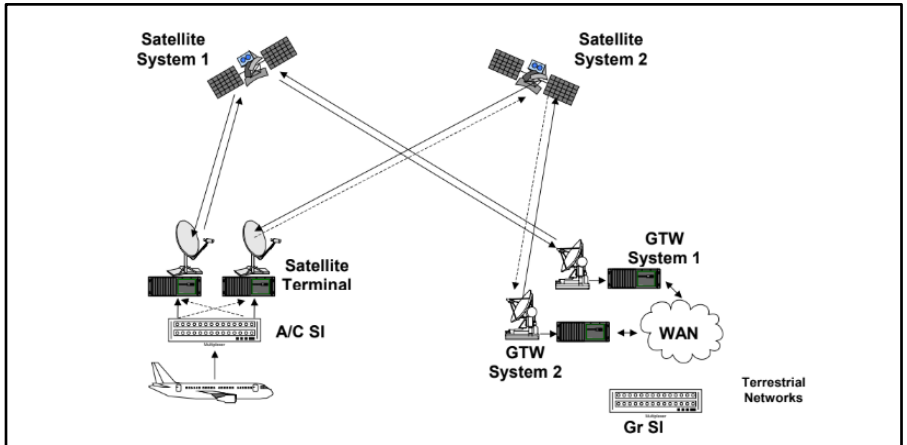
Claim	Connexion by Boeing
	 Wu at FIG. 1. Wu at [0038] ("The wireless stations 20,22, and 24 may include any wireless-enabled electronic device that can be used to connect to the base station 12 to remotely access the global communications network such as the Internet including the World Wide Web (WWW) for web browsing and the like."); *see also* Wu at [0008], [0023]-[0024], [0037]-[0038], [0040], [0043], [0048], [0058], [0063]. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

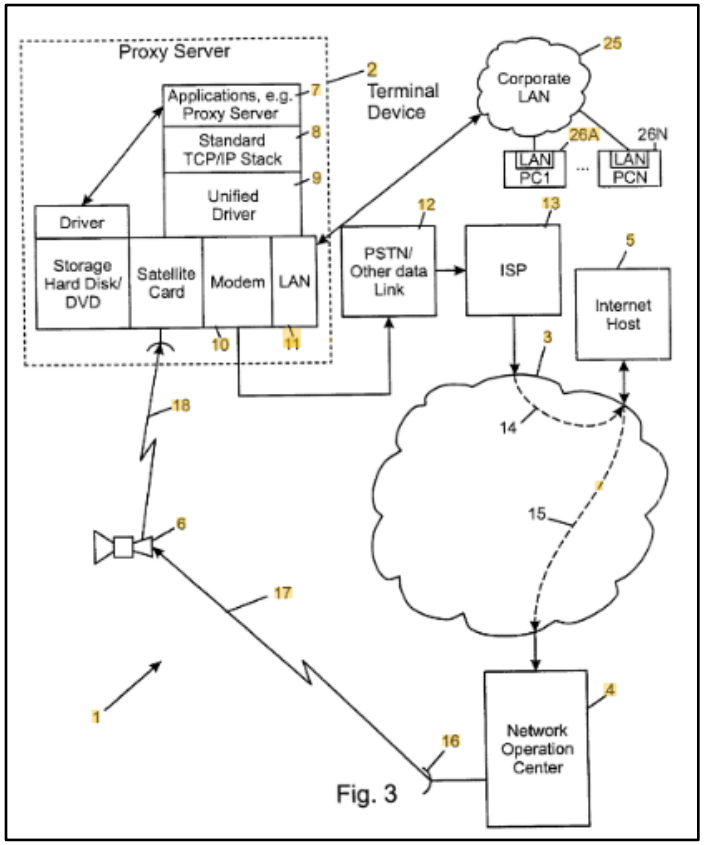
Claim	Connexion by Boeing
[24.e] wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic;	Connexion by Boeing discloses "wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic." *See, e.g.*, **HOW IT WORKS** Inside the cabin, Boeing Connexion (developers of the technology) service is similar to that of any other wireless LAN, with access points connected to a server that is connected to a high-speed modem. But that's where the similarities end. The modem on an airplane connects to a phased-array antenna that is mounted externally atop a plane's fuselage, setting up a two-way connection with satellites positioned around the world. In turn, the satellites pass along this traffic and receive signals from wired ground stations. Ellison at 97-104. **Review System Description**  Connexion by Boeing is a mobile information services provider providing real-time, high speed performance to all onboard users. Each plane equipped with Connexion by Boeing houses a server with an Ethernet Local Area Network (LAN) connecting passengers' laptops to the Internet via a satellite link. The network's broadband speeds are comparable to a modern home or office environment. The Connexion by Boeing system also is designed to be compatible with wireless 802.11b networks, as well as Internet-enabled Personal Digital assistant (PDA)s in the future. Return to Top Ellison at 97-104.

Claim	Connexion by Boeing
	 Connexion by Boeing provides high-speed broadband communication services to mobile platforms, including aircraft and maritime vessels. Through the service, connectivity is delivered directly to laptops and personal digital assistants (PDAs) in flight, providing airline passengers and operators of executive aircraft for government and the private sector with personalized and secure real-time access to the Internet, company intranets and television and news content. The Connexion by Boeing broadband approach also permits applications to link aircraft data systems with airline operations, enhancing aircraft operational efficiency on the ground and in the air. The Boeing Company 2003 Annual Report, *available at*

Claim	Connexion by Boeing
	https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf Some 11 corporate customers, who have outfitted their private aircraft with Boeing equipment, are using the Connexion service.·The three airlines, American Airlines, United Airlines and Delta Airlines will equip a total of 1,500 aircrafts with the venture's innovative, high-speed broadband Internet connectivity service. Suwanateep at 14.  Figure 2.2. The Satellite-Based Internet on Aircraft. Suwanateep at 6, FIG. 2.2. The cabin is equipped with onboard server, router and service-analysis equipment and is

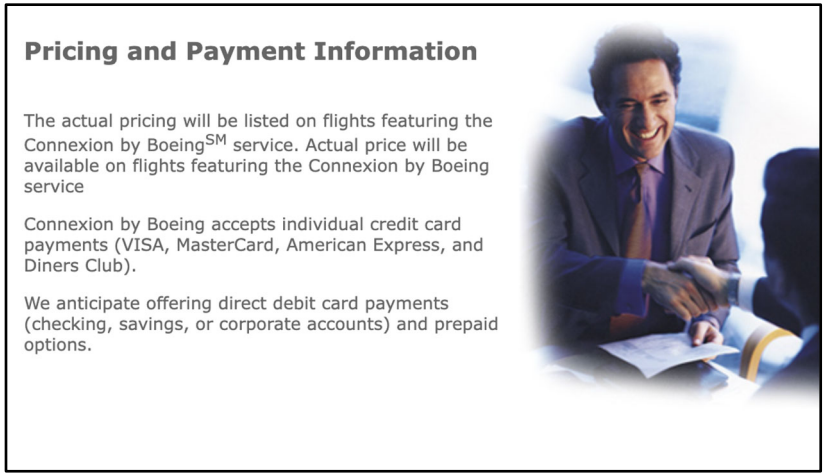
Claim	Connexion by Boeing
	outfitted for the security enhancement capabilities pursuing for commercial airline customers. Seats are configured for connectivity. Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line simultaneously. Suwanateep at 9. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Agarwal, Bruner, Clark, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu. Connexion by Boeing, Agarwal, Bruner, Clark, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Agarwal, Bruner, Clark, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Agarwal, Bruner, Clark, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*, Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, e.g., 10 or 20, and can also be used to connect corporate sites. Routers 52, 54, 56 and 58 connect the terminals 34 and 36, possibly via frame relays 60, 62, 64 (or via an ethernet connection), to remote access servers 70, 72, and/or to various dial-up access units 101-110. Agarwal at 3:38-44; *see also* Agarwal at 3:18-20, 3:45-63, FIG. 1. Referring now to the drawings in detail, there is shown in FIG. 1 a schematic diagram of the

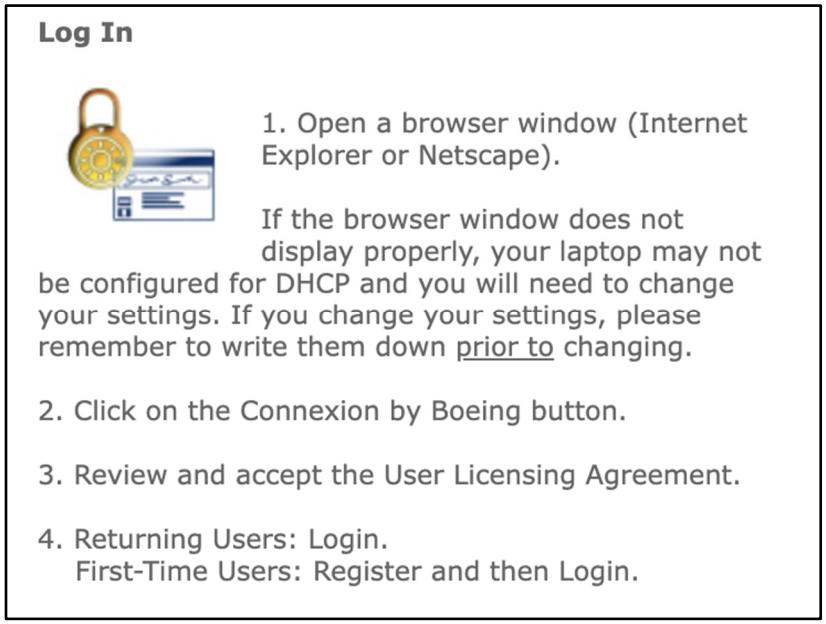
Claim	Connexion by Boeing
	hardware for operating the remote internet system 10 of the present invention to allow remote users 13, such as airline passengers, to conduct electronic commerce ("e-commerce") from a remote location 14, such as during the course of an airline flight. . . The remote system preferably includes remote communication equipment 28 operably connected with the communication network 22. Bruner at [0021]; *see also* Bruner at FIG. 1, [0002], [0011], [0013]-[0014], [0021]. FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system 100 of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit 103, and one or more wireless local area network (LAN) 104. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station. Clark at 3:66-4:7; *see also* Clark at 3:49-59, 4:8-17, 4:18-30, 6:45-49, 8:29-37.  **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at FIG. 2, 2-3.

Claim	Connexion by Boeing
	 El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25. ABSTRACT—This paper addresses the traffic dimensioning for aeronautical services. Specifically, it focuses on wireless services such as UMTS and W-LAN in aircraft cabins that connect the passenger via satellite to terrestrial infrastructure.

Claim	Connexion by Boeing
	Jahn I at 1; *see also* Jahn I at 1-2. The service scenario considers travelers in aircraft on the move. Future airliners will provide a variety of entertainment and communications equipment to the passenger to make the journey more pleasant through in-flight entertainment, more productive through business communication facilities, and more secure through tele-medicine and surveillance facilities on board. A variety of services is needed, each having a different bandwidth demand and different types of communication protocols. Many of the services will be available to the passenger by means of cabin-installed equipment, such as TV screens, a rescue compartment with tele-medicine equipment, or fixed installed satellite phones. Jahn II at 2; *see also* Jahn II at 3, 7, 6, 8, FIGs. 1, 5. **Wireless** Check E-Mail, surf the web or play games ….from anywhere on the ship! Maritime Telecommunications Network, the source for innovative offshore communications solutions for nearly a decade, is introducing their newest offering, Wireless Internet Access. A first for the maritime industry, a true Wireless network can be installed onboard just about any vessel. Access Points are installed throughout the vessel and terminated at our server onboard. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm;

Claim	Connexion by Boeing
	https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030105020053/http://www.mtnsat.com/press/2002/pressrelease_031202.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html. The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]; *see also* Wu at Abstract, [0001], [0006]-[0019], [0022], [0023], [0030], [0037], [0040], [0041]. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of

Claim	Connexion by Boeing
	Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.f] wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router.	Connexion by Boeing discloses "wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router." *See, e.g.*,  https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4

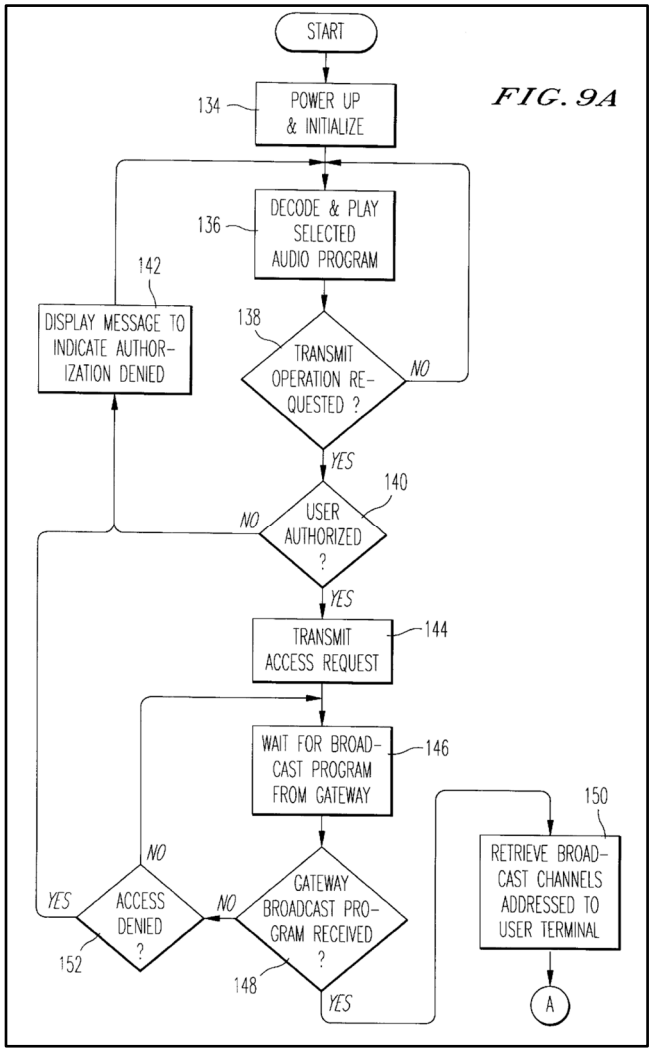
Claim	Connexion by Boeing
	 https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2 The system has contracted with the third party content provider to provide customized, destination-based, licensed content, including worldwide, national and local news, sports and features - from more than 3,000 publications in its global digital content network, then filter, deliver and instantaneously integrate it into the system. As a result, airline passengers will be able to choose from a multitude of personalized real-time services including Internet and corporate Intranet access, E-Commerce, live entertainment and information. The system offers multilingual programming. Selections will be based on the specific needs of the customers in different regional markets. This content complements full Internet/company Intranet access and infuses the service with the time-sensitive data but will not initially supply voice service. Suwanateep at 11.

Claim	Connexion by Boeing
	Internet Fee The price has fluctuated and remains open to change. For the onboard service fee, the service will cost passengers about $20 per hour (likely less than $8 a minute· of inflight phone call). The passengers can watch paid television program, access their corporate Intranet and surf. Up to four live television channels will be offered at either free of charge or paid programs. Those charges are likely to be around $17.50 per hour but also may include flat-rate options for each leg of a trip. For the payment, passengers. will use. credit cards to pay charges. They will type the credit card information into the system when they sign on and it will remember the card number so passengers don't have to retype the number the next time they fly. Suwanateep at 12-13. The system above exemplifies the technology of Connexion by Boeing (See Company Profile). In 2000, Connexion (See Company Profile) is the separate business unit to focus this effort, especially developing the broadband inflight Internet technology. Connexion by Boeing is the market-leading initiative to bring commercial broadband data sertices to commercial and executive aircraft during flight, allowing passengers to have access to Internet, firewall-protected Intranet access, E-Commerce, television, news and entertainment content, and transmit and receipt of data. Aircraft operators also benefit from inflight Internet access to aircraft and crew data. Boeing studies the potential applicability of the Connexion broadband in-flight data services for enhancing aviation security. Suwanateep at 13. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Bruner, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and Wu. Connexion by Boeing, Bruner, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and Wu concern the similar subject matter as Connexion by Boeing, namely

Claim	Connexion by Boeing
	the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Bruner, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Bruner, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, or Wu, for example, to incorporate this limitation. *See, e.g.*, > From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. The ADS server 19 operates a host of software components including an HTTP server, DHP server, DNS server, database server, mail server and preferably chat and streaming servers. After the PPP connection is established, the ADS server 19 will provide an IP address, DNS server address and any default gateway information to the user 13. From this point, the user utilizes his or her internet browser software running on the laptop to access a variety of content. In an alternative embodiment, a screen and keyboard can be provided at the passengers seat for the user 13 connection, eliminating the need for the user to have his or her laptop computer. Bruner at [0023]; *see also* Bruner at [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password."), [0021], [0029], [0078], [0079]. > For these users, the only point of access to the private network 10 is through the network's own router 14, which is easily secured by the network administrator. At the same time, private network users/clients may be permitted to access the private network 10 via wireline network connections or via wireless mobile terminals 23 through private WAPs 21. Private WAPs are preferably maintained at locations that are not publicly accessible or are otherwise configured to

Claim	Connexion by Boeing
	limit access to authorized clients of the private network 10. These users can then gain access to the public network through the private network's router 14. Hagen at [0060]; *see also* Hagen at [0059], [0185], FIG. 14. The provision of such a heterogeneous access network with collectively mobile users requires the development authentication, admission and accounting (AAA) in the mobile network, especially taking into account the necessity to support different pricing concepts for each passenger in the mobile network and the interaction of airline, satellite provider, aircom service provider and terrestrial service providers. Jahn I at 3; *see also* Jahn I at 1-3, FIG. 1. Since IP traffic at IP connection level can be monitored only before the IS stream multiplexing, it is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 7-8; *see also* Jahn II at 3, FIGs. 1, 5. On Norwegian Sun, NCL guests can now surf the Internet by the pool, in the meeting rooms, in and around the Internet Cafe and the reception (atrium) area. The installation of the Wi Fi software is simple, requiring no reconfiguration of the guest's computer and will take up no hard drive space once the guest leaves the ship. Laptops are also available for rent at the Internet Café onboard. The Wi Fi network card costs $10 per day and passengers are charged either by the minute or can purchase 33-, 100- or 250-minute packages for as low as 40 cents per minute. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030701164753/http://ncl.com/news/pr102302.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm;

Claim	Connexion by Boeing
	https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805. > For basic network access services (such as Internet access), the data communication server can perform dial-up authentication when the user connects to the server. PPP can be advantageously used to provide a plurality of in-protocol authentication methods. Preferably, a remote access dial-up user service (RADIUS) may be used to perform the dial-up authentication, allowing exchange of login information and user resource information between a client and a RADIUS server, the server containing a database. During an authentication session, the login information is sent to the RADIUS server, the user is authenticated, and the server returns the user data record provisioned in the database; such information may include the IP address assignment, the source and destination filter IDs, allowed access time, and other information. Nelson at [0107]; *see also* Nelson at FIG. 17, [0105]-[0106]. > These and other objects of the invention are achieved in part by providing remote users with user terminals having both a receiver for receiving satellite direct radio broadcasting and a communication device for communicating with an Internet service provider via a communication link that is from a satellite direct radio system broadcast separate. Rothblatt I at 12; *see also* Rothblatt I at 10-12, FIGs. 1, 9A, 9B,

Claim	Connexion by Boeing
	 FIG. 9A Rothblatt II at FIG. 9A; *see also* Rothblatt II at 2:30-35, 3:20-23, 14:59-68, 15:32-65, 17:3-24; FIGs. 1, 5, 9B.

Claim	Connexion by Boeing
	The present invention further provides a wireless access network which obtains customer-inputted identification information related to the prepaid account. The information is transmitted to an authentication server through the global communications network for authenticating information to thereby provide authorization to the system. The authentication server reviews the information through a central database containing the prepaid account information of the prepaid card including the prepaid balance amount. Upon authentication, the authentication server provides the customer with authorization for access to and the corresponding charge rates of the remote access services through an authentication client." Wu at [0009]; *see also* Wu at [0006], [0014]-[0019], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063], FIG. 1. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

[25] The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection.	Connexion by Boeing discloses "wherein the data connection is one of a wired data connection and a wireless data connection." *See, e.g.*, Boeing tested flights with 802.11b access, but the company plans to offer 802.11a as well as 802.11g by the time of rollout, according to Stan Deal, vice president of global network sales for Boeing Connexion. Boeing has offered wired Internet access via jacks inside cabins for some time. But wireless Ethernet access is much easier to deploy in planes because wire does not have to be pulled through the planes, Deal says. Ellison at 97-104.

	When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Suwanateep at 9. ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the server as the access point. The aircrafts will house both e-mail and Internet servers. The type of LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b wireless network, for instance. Suwanateep at 15. As of the connection establishment, the passengers plug into a Local Area Network on the plane; logging onto global. ISP provides quick access to onboard web content and email delivery service. Once the dial-up is made from the 56k laptop's modem via the seatback telephone, the requests are intercepted by the onboard server at 11 Kbps rate and then the onboard proxy server sends a signal to the ground ISP server at rate up to 64Kbps to retrieve messages. The email transfers from the onboard server to laptop at the 56Kbps speed supported by the onboard LAN. Total download time may be the same. Suwanateep at 15. IFOL has an agreement with AT&T seatback telephone system to store their 20-pound airborne data servers on board. The airborne servers will be linked to the seatback- telephone handsets that are offered on virtually every domestic U.S. carrier now. The initial connection will be at 56K, but intends to speed that up in future. Simultaneously, IFOL will use existing satellite systems and ground technologies to update content, depending on timeliness of information. Methods used to update servers include:

	Inflight Updates -- via the off-aircraft communications systems, namely. North American Terrestrial System services, and Inmarsat services, on-demand requests are always addressed in real-time assuming off aircraft bandwidth availability. Direct Broadcast Satellite Updates -- If the aircraft is equipped with this capability, IFOL can support both inflight and ground based updates using this technology. 802.11B Wireless LAN (Gate link) -- Enables high-speed updates of less timely information and content prior to the aircraft departure. Suwanateep at 33. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu. Connexion by Boeing, Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,

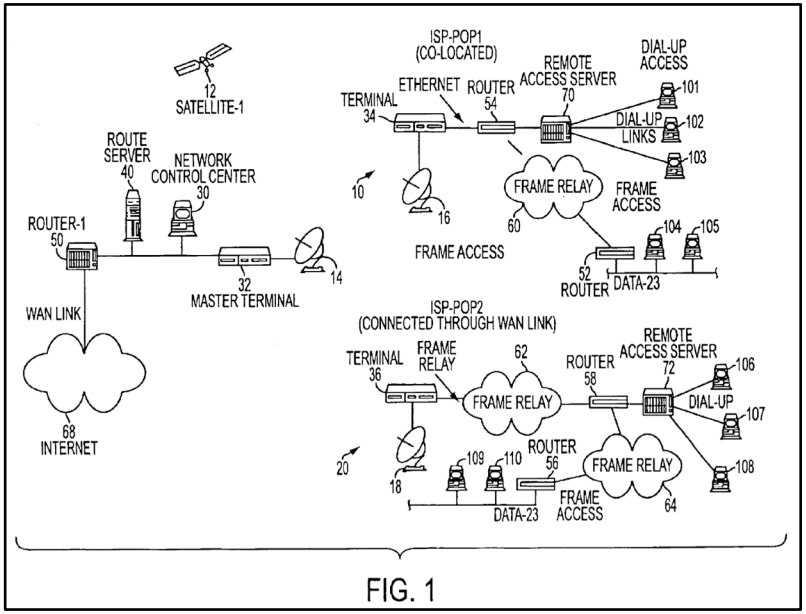


FIG. 1

Agarwal at FIG. 1; *see also* Agarwal at 3:18-20; 3:38-63.

> The primary purpose of the system 100 is to provide mobile, wireless terminals 1 with access to network resources, although it can also provide such access to fixed or mobile terminals over wireline connections as well. Mobile, wireless terminal as used herein means any mobile, wireless terminal having a MAC or other unique equipment address, such as a digital cellular handset, wireless PIA or PDA, or a computer with a wireless network adaptor.

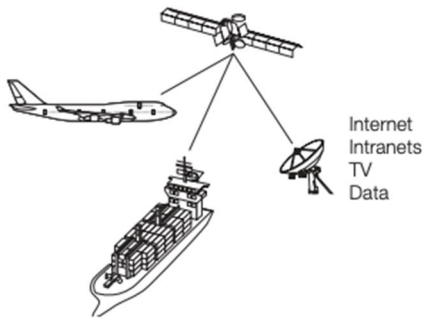
Hagen at [0040]; *see also* Hagen at [0039], [0041], [0042], [0045], [0056], [0162].

> Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Hence, it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers.

Jahn I at 2; *see also* Jahn I at 1-4.

	Aircraft multimedia services will be offered to passengers soon via back-seat screens and IP cable networks. Jahn II at Abstract; *see also* Jahn II at 3 ("The wireless access solution is compatible with other kinds of IFE . . . it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers."). The plurality of interface (I/O) units may include an Ethernet interface unit 115, modem 120, communications (COM) port 135, Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) port 130, Primary Rate Interface (PRI) port 125, ARINC-429 (Aeronautical Radio, Inc.) bus interface unit 145, and ARINC-573 bus interface unit 140. The Ethernet unit 115 may include ports for interconnection to the HIMs 155 and to the external terminal station (TS), and may be used to connect to the wireless local area network (LAN) transceiver 182 providing a high-speed data path to ground terminals while the aircraft (moving object) is on the ground. Alternatively, a COTS Ethernet card attaching to an external hub (not shown) may be used. Nelson at [0035]; *see also* Nelson at [0028], [0034], [0043], FIG. 1. Furthermore, the cyberstation includes subsystems that permit it to communicate with the personal computers using wireless or optional wired connections. Ollikainen at 1:66 - 2:5; *see also* Ollikainen at 2:6-15, 2:16-26, 3:45-65, 3:66 - 4:16, 4:58 - 5:9. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0023]; *see also* Wu at [0007]-[0008], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063].

	To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[26] The Internet Hotspot of claim 24, wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices.	Connexion by Boeing discloses "wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices." *See, e.g.*, All passengers will be able to use the service simultaneously, with data rates of 5Mbps to receive and 1.5Mbps to transmit. Rates should not decrease as more users use the services The enabling technology is a proprietary solid-state phased array antenna, which allows for two-way data transmission. Shim, Richard, "Boeing aims to connect the friendly skies," ZDNET NEWS, April 27, 2000, *available at* https://web.archive.org/web/20010625185126/http://www.zdnet.com/zdnn/stories/news/0,4586,2556871,00.html;

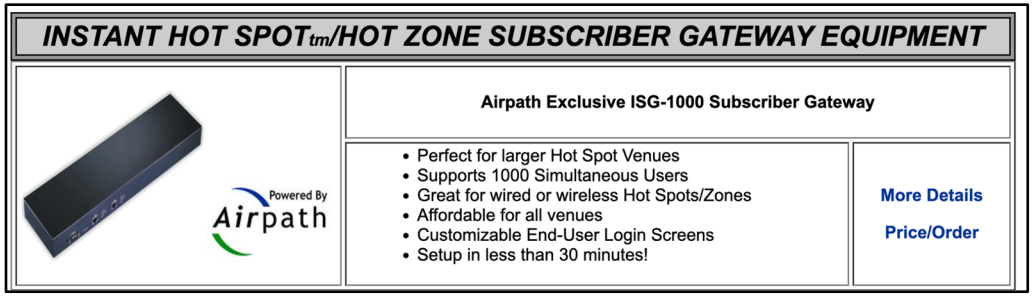


Connexion by Boeing provides high-speed broadband communication services to mobile platforms, including aircraft and maritime vessels. Through the service, connectivity is delivered directly to laptops and personal digital assistants (PDAs) in flight, providing airline passengers and operators of executive aircraft for government and the private sector with personalized and secure real-time access to the Internet, company intranets and television and news content. The Connexion by Boeing broadband approach also permits applications to link aircraft data systems with airline operations, enhancing aircraft operational efficiency on the ground and in the air.

The Boeing Company Annual Report (2003), *available at* https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf.

	> Ultimately, the service will be available everywhere airplanes can fly. The perceived service will initially be available to commercial airline customers in North America and anticipated in 2002 in Europe. Additional global regions will be added as the service matures. Suwanateep at 9. > When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD-ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. An optional ARINC 429 PCMCIA interface allows the cabin file server to utilize aircraft data such as position reporting and maintenance information. This airborne computer is very versatile due to its extensive interface capabilities and removable hard drive. It also allows the computer to be updated and tested on the ground without removal from the aircraft. Suwanateep at 9. > Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line simultaneously. Suwanateep at 9. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu. Connexion by Boeing, Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users “in transit” or “while traveling” (‘469 patent Background) away

from their homes or offices. Modifying Connexion by Boeing with Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, or Wu, for example, to incorporate this limitation. *See, e.g.*,



Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp.

> It is therefore an object of the present invention to provide a method and apparatus to allow airline passengers or other remotely located users, to access the Internet during the course of an airline flight, or from remote land-based locations.

Bruner at [0008]; *see also* Bruner at [0011], [0021], Bruner at FIG. 1.

> The service scenario considers travelers in aircraft on the move. In the future, airliners will provide a variety of entertainment and communications equipment to the passenger. Since people are becoming more and more used to their own communications equipment, such as

mobile phones and laptops with Internet connection, either through a network interface card or dial-in access through modems, business travelers will soon be demanding wireless access to communication services.

Jahn I at 1; *see also* Jahn I at FIG. 1, 1-3, 5.

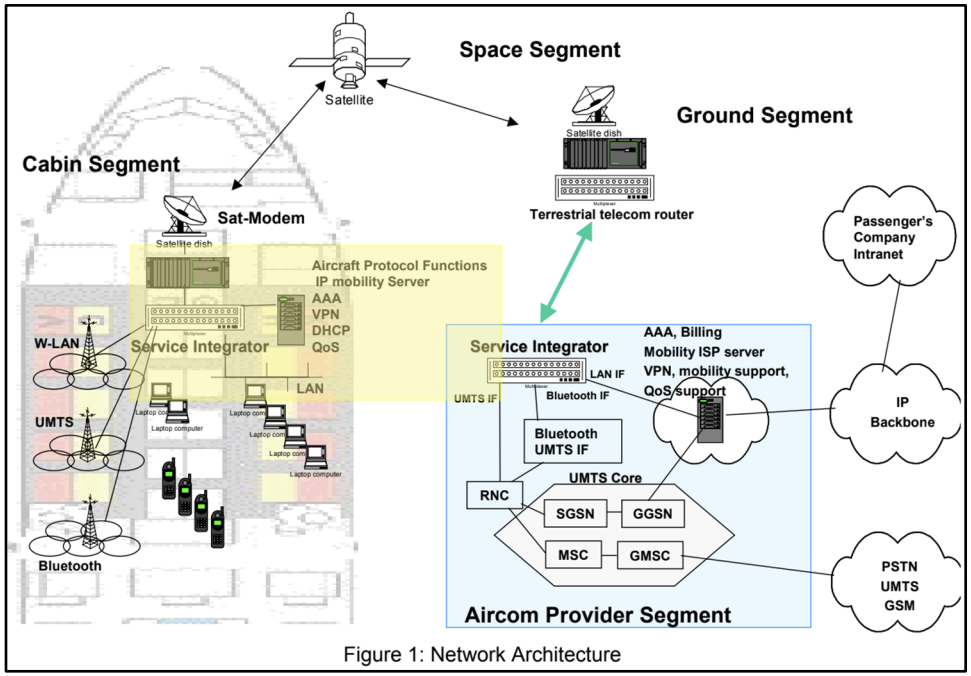


Figure 1: Network Architecture

Jahn II at 2, FIG. 1; *see also* Jahn II at 1-3, FIGs. 3-4.

MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun.

MTN Cruise Ship Internet Services at

	https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). > System 100 may include a plurality of components to provide higher data bandwidth and passenger access technology for facilitating data applications, examples being Internet Web browsing and email retrieval. These components include Direct Broadcast Service (DBS) satellite decoder 152, passenger cabin dial-up access system 151, and the WGS 182. Other components of system 100 can help facilitate data communications over the existing NATS data network. Nelson at [0032]; *see also* Nelson at [0028], [0034]. > Since the number of connections are not limited by physical connecting ports, a large number of customers can easily be accommodated within the wireless coverage area. Wu at [0005]; *see also* Wu at FIG. 1, [0006], [0037], [0044], [0048], [0058]. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[28] The Internet Hotspot of claim 26, wherein the data connections include wireless data connections.	Connexion by Boeing discloses "wherein the data connections include wireless data connections." *See, e.g.*, > ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the

server as the access point. The aircrafts will house both e-mail and Internet servers. The type of LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b wireless network, for instance.

Suwanateep at 15 (emphasis added).

IFOL has an agreement with AT&T seatback telephone system to store their 20-pound airborne data servers on board. The airborne servers will be linked to the seatback- telephone handsets that are offered on virtually every domestic U.S. carrier now. The initial connection will be at 56K, but intends to speed that up in future. Simultaneously, IFOL will use existing satellite systems and ground technologies to update content, depending on timeliness of information. Methods used to update servers include:

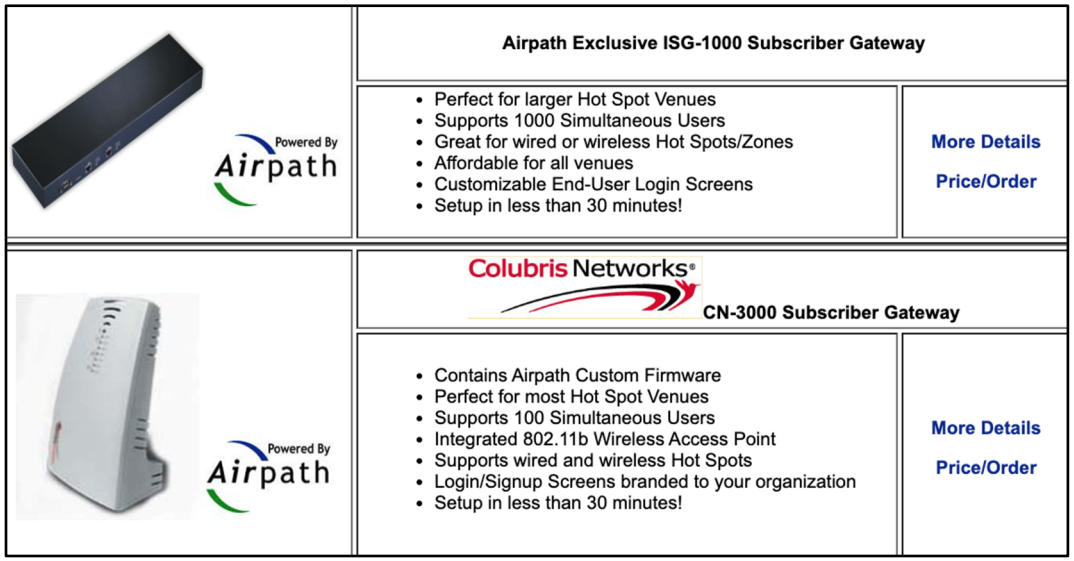
Inflight Updates -- via the off-aircraft communications systems, namely. North American Terrestrial System services, and Inmarsat services, on-demand requests are always addressed in real-time assuming off aircraft bandwidth availability.
Direct Broadcast Satellite Updates -- If the aircraft is equipped with this capability, IFOL can support both inflight and ground based updates using this technology.
802.11B Wireless LAN (Gate link) -- Enables high-speed updates of less timely information and content prior to the aircraft departure.

Suwanateep at 33.

Boeing tested flights with 802.11b access, but the company plans to offer 802.11a as well as 802.11g by the time of rollout, according to Stan Deal, vice president of global network sales for Boeing Connexion. Boeing has offered wired Internet access via jacks inside cabins for some time. But wireless Ethernet access is much easier to deploy in planes because wire does not have to be pulled through the planes, Deal says.

Ellison at 97-104.

To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would

	have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and Wu. Connexion by Boeing, Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at

	https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp. > The service integrator will provide the interfaces for the wireless and wired service access points in the cabin, as well as the interface to the terrestrial networks at aircom provider site. Jahn I at 4; *see also* Jahn I at 1-2, 4. > When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Jahn II at 2-3, FIGs. 3-4. > MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see generally id.* > The cyberstation thus provides a means for implementing a variety of customized stand-alone receiver-transmitter stations that can provide service to multiple household or business personal computers using wireless or optional wire local area networks as a local communication system. Ollikainen at 2:16-26.

	The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]; *see also* Wu at [0029], [0040], [0049], FIG. 1. To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[32] The Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network.	Connexion by Boeing discloses "wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network." *See, e.g.*, Boeing tested flights with 802.11b access, but the company plans to offer 802.11a as well as 802.11g by the time of rollout, according to Stan Deal, vice president of global network sales for Boeing Connexion. Boeing has offered wired Internet access via jacks inside cabins for some time. But wireless Ethernet access is much easier to deploy in planes because wire does not have to be pulled through the planes, Deal says. Ellison at 97-104. ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the server as the access point. The aircrafts will house both e-mail and Internet servers. The type of

	LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b wireless network, for instance. Suwanateep at 15. To the extent Connexion by Boeing does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Connexion by Boeing further renders the limitation obvious in light of other references, such as Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu. Connexion by Boeing, Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu concern the similar subject matter as Connexion by Boeing, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Connexion by Boeing with Clark, Hagen, Jahn I, Jahn II, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Connexion by Boeing with those of Clark, Hagen, Jahn I, Jahn II, Nelson or Wu, for example, to incorporate this limitation. *See, e.g.*, In one embodiment, the satellite and terrestrial microwave communication system transfers information using a satellite transponder or fixed terrestrial microwave radio via an ethernet packet switching protocol such as, for example, the IEEE 802 series of protocols or any proprietary protocols the TCP/IP protocol used on the World Wide Web. Clark at 3:1-9. The system 100 generally comprises one or more geographically dispersed network access points, which in this embodiment are radio frequency wireless access points (WAP) 3, 4. The WAPs 3, 4 may be conventional devices equipped with wireless network adaptors embodying the IEEE 802.11 Wireless LAN or Bluetooth wireless network communications standards, or other devices providing similar functionality. Examples of such devices include the Home Wireless Gateway product sold by 3COM Corporation, the Spectrum High Rate AP 41X1 Ethernet Access Point product sold by Symbol Technologies, and the Aironet 340 Series Access Points product sold by Cisco Systems. Hagen at [0042]; *see also* Hagen at [0039], [0041], [0042], [0045].

	When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Jahn I at 2; *see also* Jahn I at 1-2. Several wireless access segments in the aircraft cabin, namely a wireless LAN according to IEEE 802.11b standard for IP services, an UMTS pico-cell for personal and data communications, and Bluetooth 1.1, as well as a standard wired IP LAN." Jahn II at 3. The WGS 182 may be, for example, a wireless LAN transceiver (as shown in FIG. 1) based on the IEEE 802.11 specifications which can allow transfer of high-speed data to the server 110 in the airport when the aircraft (moving object) is on the ground. The ACU may act as the gateway to a ground-based data center via the North American Terrestrial System (NATS) network. Nelson at [0030]; *see also* Nelson at FIG. 1, [0028], [0110]. The wireless network interface and the wireless access point 26 conforms with the Institute of Electrical and Electronics Engineers (IEEE) standard 802.11 and extensions thereof such as IEEE 802.11a and 802.11b for standardizing wireless local area networks (wireless LANs). Wu at [0050]; *see also* Wu at FIG. 1, [0052]-[0054]. It would have been obvious to a person of ordinary skill in the art that any member of the 802.11 standard family could be employed to permit interoperability of standard Wi-Fi components. The '469 patent specification itself acknowledges that a person of ordinary skill in the art would understand that the "wireless access point 40 can employ a security protocol of a type that is known to persons skilled in the art, such as the 802.11b security protocol, or any subsequent or future versions of the 802.11 standard. Such security protocols may be generally designated as 802.11X, where X can be any version or implementation of the 802.11 standard." '469 patent at 5:19-25. It was well understood that "each new 'flavor' of the technology results in a new suffix to 802.11." "Going WiFi" at 82; *see also id.* at

	133 ("The fundamental components of a WLAN are clear-cut. And it's relatively easy to describe the 802.11 suite in basic networking terms."). As set forth in the accompanying contentions, the 802.11n standard had furthermore not been drafted by the time of the alleged priority date, rendering claim 32 invalid. *See also* "Going Wifi" at 116-117 ("The 802.11n Task Group is *working on a high-speed variant* of the existing 802.11 standards . . . However, don't expect to see these newer, faster standards for a number of years."). To the extent that Connexion by Boeing does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Connexion by Boeing, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

EXHIBIT E-10

Exhibit E-10 to American's Preliminary Invalidity Contentions

Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

"Inflight Internet Connectivity Technology and Its Application on E-Commerce," by Manasuda Suwanateep ("Suwanateep") was published with the University of Thailand in July 2002.[1] Suwanateep is prior art to the '469 Patent under at least Pre-AIA 35 U.S.C. §§ 102(a), (b) and (g) as to claims 24, 25, 26, 28, and 32 (the "Asserted Claims") of the '469 Patent.

To the extent Plaintiff alleges Suwanateep does not disclose any particular limitation of the Asserted Claims of the '469 Patent, either expressly or inherently, any purported differences are such that the claimed subject matter as a whole would have been obvious in view of the knowledge of one skilled in the art. It would have further been obvious to a person of ordinary skill in the art as of the priority date of the '469 Patent to modify Suwanateep or combine the teachings of Suwanateep with other prior art in a manner that would have rendered the Asserted Claims invalid as obvious, including but not limited to any combination of the following:

- Invalid under 35 U.S.C. § 102 by Suwanateep;
- Invalid under 35 U.S.C. § 103 by Suwanateep and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 6,894,990 to Agarwal et al. ("Agarwal") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2002/0138625 to Bruner et al. ("Bruner") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 6,445,777 to Clark ("Clark") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 6,968,394 to El-Rafie ("El-Rafie") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2002/0075844 to Hagen ("Hagen") and the knowledge of a person of ordinary skill in the art;

[1] Defendant's invalidity charts, in some instances, rely at least in part on Plaintiff's apparent positions regarding the scope of its claims for purposes of asserting infringement. Nothing in these claim charts should be understood as an admission relating to infringement, either literally or under the doctrine of equivalents, or as an admission relating to Defendant's understanding of the proper interpretation or scope of the Asserted Claims. Defendant reserves the right to rely on additional citations or sources of evidence that may also be applicable, or that may become applicable in light of any Court Order on claim construction, changes in Plaintiff's infringement contentions, or information obtained during discovery as the case proceeds.

- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2003/0051041 to Kalavade et al. ("Kalavade") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Korean Patent No. 2003/0029267 to Hyunwoo Lee ("Lee") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2007/0008937 to Mody et al. ("Mody") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2003/0055975 to Nelson et al. ("Nelson") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 6,377,981 to Ollikainen et al. ("Ollikainen") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Czech Patent No. 2,000,578 to Martine Rothblatt ("Rothblatt I") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 6,105,060 to Martine Rothblatt ("Rothblatt II") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2004/0109449 to Seo ("Seo") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent No. 5,987,430 to Van Horne et al. ("Van Horne") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of U.S. Patent Application No. 2003/0050041 to Wu ("Wu") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Airpath Wireless Hot Spot ("Airpath Wireless Hot Spot") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Connexion by Boeing ("Connexion by Boeing") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of MTN Cruise Ship Internet Services ("MTN Cruise Ship Internet Services") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of StratosNet ("Stratos") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Tenzing Global ("Tenzing Global") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of Wireless Cabin ("Wireless Cabin") and the knowledge of a person of ordinary skill in the art;

- Invalid under 35 U.S.C. § 103 by Suwanateep in view of "Aeronautical Communications for Personal and Multimedia Services via Satellite" by M. DeSanctis et al. ("DeSanctis") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of "Dimensioning of Aeronautical Satellite Services" by Jahn et al. ("Jahn I") and the knowledge of a person of ordinary skill in the art; and/or
- Invalid under 35 U.S.C. § 103 by Suwanateep in view of "Passenger Multimedia Service Concept via Future Satellite Systems" by A. Jahn, M. Holzbock, M. Riera, N. Díaz, and M. Werner ("Jahn II") and the knowledge of a person of ordinary skill in the art.

As the United States Supreme Court held in *KSR Int'l Co. v. Teleflex, Inc.*, "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." 550 U.S. 398, 416 (2007). The Supreme Court further held: "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.* at 417. The Supreme Court further held: "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *Id.* at 421.

Defendant reserves the right to amend or supplement this claim chart at a later date as more fully set forth in the Invalidity Contentions.

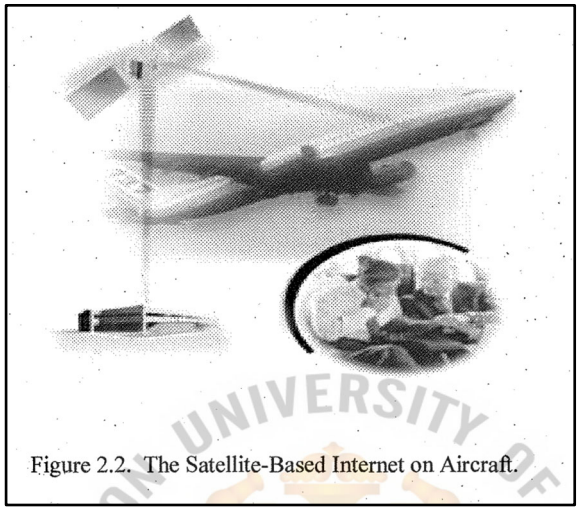
EXHIBIT E-10

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
[24] An Internet Hotspot comprising:	To the extent the preamble is limiting, Suwanateep discloses an Internet Hotspot. *See, e,g*., Two Inflight Internet architectures are as the real time broadband and cached narrowband. Their services are slightly different, although based on the same market prospectives. The satellites are developed as communication means of the systems. Suwanateep at Abstract. The satellite-based architecture is developed by Boeing Company, the biggest aircraft maker and the best in aviation technology, and with joint ventures to make the Internet most compatible while inflight. The system blends proprietary software, satellite and land networking, and onboard LANs. With satellite enhancement, the first technology uses a full-capacity telecommunication infrastructure to offer a real-time, high speed, truly broadband cable-quality Internet service equivalent to what users have on the ground. The system provides Internet and company Intranet access, unlimited connectivity to airborne environment. Suwanateep at 5. The cabin file server (Figure 2.3) allows the same type of Local Area Network. It is designed for the unique requirements of the aircraft environment. Its small size and minimum cooling requirements allows it to be mounted in any convenient .location in the cabin. The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Seats are configured for connectivity: Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line Simultaneously.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Suwanateep at 8-9. When a laptop computer and a network interface card· is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to· the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD-ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II · PCMCIA slots. Suwanateep at 9. These new wireless networks. standard known as Wi-Fi have no encryption protections, making them. vulnerable to even unsophisticated hackers. The company should not be responsible for security on its networks because the Internet carries security risks. For Internet security, users should install personal firewall. Wireless LAN manufacturers readily acknowledge the security problems with the IEEE 802.1 lB standard and have recently taken steps to strengthen their security. Suwanateep at 25. Connexion One provides a dedicated environment for demonstrating the robustness and inflight operability of the Connexion service. The cabin is equipped with onboard server, router and service-analysis equipment and, also, is outfitted to demonstrate security enhancement capabilities the venture is pursuing for commercial airline customers. Seats are configured for demonstrating connectivity to the Connexion service. On the exterior, the top of the aircraft fuselage is outfitted with phased array antennas to enable real-time, Ku satellite-based data transmission and reception. The aircraft permits the airline

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	evaluators assessing the enhanced consumer 39,000 feet and operational benefits of real-time broadband services to personally test the service by having it perform multiple, simultaneous high~bandwidth tasks ranging from data transfer and full-featured e-mail to streaming video and global web site access. Airline technical teams have found the service to be as robust or superior to the high-speed connections they enjoy at home or in the office. Suwanateep at 26-27. Participants in the survey, ages 25-65, must have taken at least one trip on an airline during three months and must have access to a laptop or other portable computing device for their travel. Suwanateep at 44. Travelers have a need to use the laptop: For the business traveler, it makes efficient use of that downtime on an airplane. Suwanateep at 44.
[24.a] a satellite dish communicating with the Internet via one or more data links with a satellite;	Suwanateep discloses "a satellite dish communicating with the Internet via one or more data links with a satellite." *See, e.g.*,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



Suwanateep at 6, FIG. 2.2.

In 1986, Boeing has developed a proprietary solid-state phased array, transceiver antenna that is the key enabler for the two-way broadband communications service. The new design will improve system performance and overall capability. Proprietary Boeing technology, in particular a satellite antenna developed originally for military command and control centers, will provide a virtual pipe to the Internet-enabled aircraft. Suwanateep at 7.

The flat, two-inch antenna and additional wiring would be attached to each top of aircraft, stretching 55 inches across the top of a plane upper fuselage with which commercial aircraft already in service would need to be retrofitted. The phased array antenna provides enhanced response to directional changes by steering signals· electronically vs. mechanically, permitting instantaneous and continuous connections between satellites and customer aircraft. The device adjusts to keep in touch with the

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	nearest satellite. That helps avoid interruptions. Suwanateep at 7-8. The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Seats are configured for connectivity. Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line simultaneously. Suwanateep at 9. Space System is consisted of Satellite Transponders. The service uses Ku-band satellite transponders. Once in orbit, the satellite will be parked in an orbital slot located at 63 degrees West longitude and provide air travelers with the first real-time broadband Internet access over the North Atlantic. Suwanateep at 10. The satellite-based architecture is developed by Boeing Company, the biggest aircraft maker and the best in aviation technology, and with joint ventures to make the Internet most compatible while inflight. The system blends proprietary software, satellite and land networking, and onboard LANs. Suwanateep at 5. With satellite enhancement, the first technology uses a full-capacity telecommunication infrastructure to offer a real-time, high speed, truly broadband cable-quality Internet service equivalent to what users have on the ground. The system provides Internet and company Intranet access, unlimited connectivity to airborne environment. Suwanateep at 5.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are differentiated by airlines that enable this technology. Suwanateep at 12. Connexion One provides a dedicated environment for demonstrating the robustness and inflight operability of the Connexion service. The cabin is equipped with onboard server, router and service-analysis equipment and, also, is outfitted to demonstrate security enhancement capabilities the venture is pursuing for commercial airline customers. Seats are configured for demonstrating connectivity to the Connexion service. On the exterior, the top of the aircraft fuselage is outfitted with phased array antennas to enable real-time, Ku satellite-based data transmission and reception. The aircraft permits the airline evaluators assessing the enhanced consumer 39,000 feet and operational benefits of real-time broadband services to personally test the service by having it perform multiple, simultaneous high-bandwidth tasks ranging from data transfer and full-featured e-mail to streaming video and global web site access. Airline technical teams have found the service to be as robust or superior to the high-speed connections they enjoy at home or in the office. Suwanateep at 26-27.

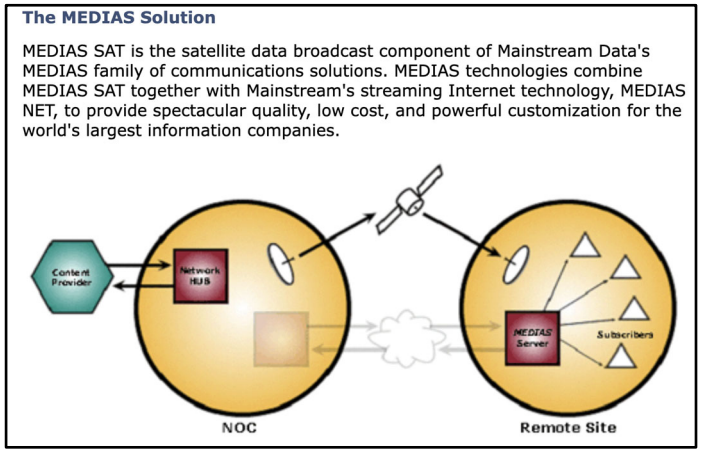
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

Table 4.1. Summary of Connexion Technology.

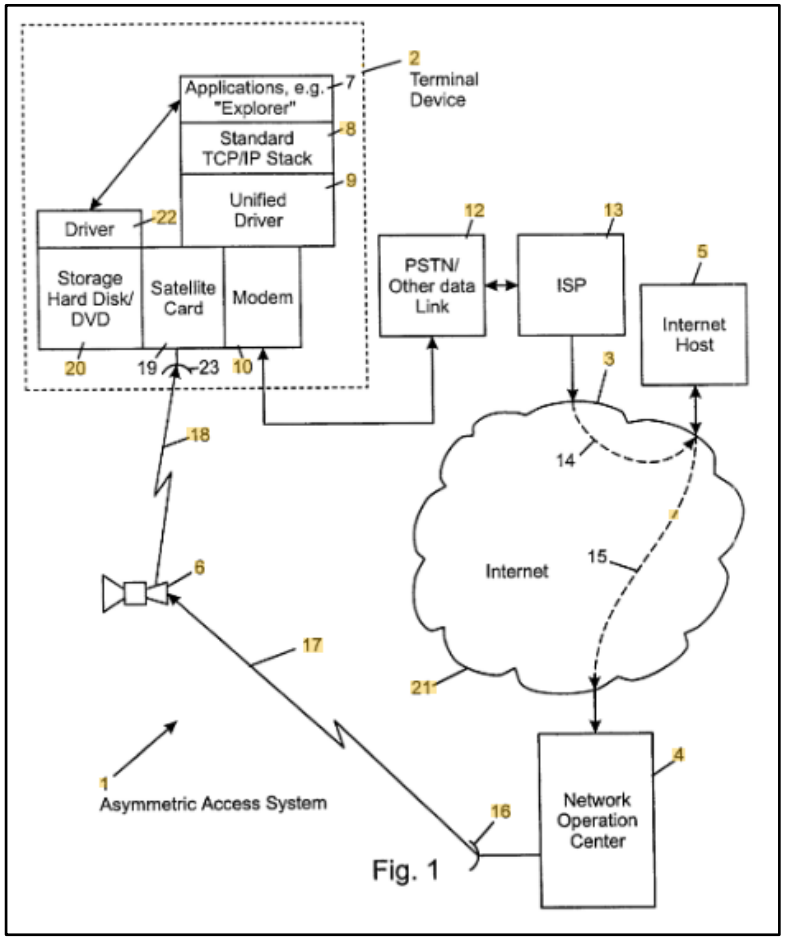
Connexion	by BOEING
Technology Partner Satellite	Airia, InFlight Network (IFN) by Rockwell, Collins/News Corp./Globalstar, Thomson, CSF Sextant and Astrium, CNN inflight, ESPN, CNBC, Eurosport Inmarsat, Loral Space and Communications, Mitsubishi Electronic Corporation (MELCO) group, Finmeccanica and Alenia Aerospazio
Feature	Provide two-way broadband data services to passengers and crew at 5 Mbps to receive communications and 1.5 Mbps for outbound transmissions, company. The service uses Loral Skynet's Ku-band transponders and proprietary phased array antennas. With advancements in new technologies. Connexion speed 128 kilobytes; most of US$100 million Airborne antennas, Airborne Cabin File Server, Routers and Associated Wiring, Network Operations Center(NOC)
Airborne antennas	At 5 Mbps and support responses at T1 rates; 55 inches stretch across the top of a plane's upper fuselage. That helps avoid interruptions. The phased array antenna locks on a satellite by steering its signals electronically. There are no moving parts. The antenna remains in constant contact with the satellite.
Airborne Cabin File Server	Support the interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots.
Space System	Satellite transponders of Ku-band Loral Skynet.
Availability	North American airline customers at first. Late 2003, in Europe, over the Atlantic and Pacific oceans and Asia.
Internet Fee	The pricing remains open to change. Free of charge or paid TV programme. Approximately $17.50 per hour For internet access, flat-rate options for each leg of a trip.

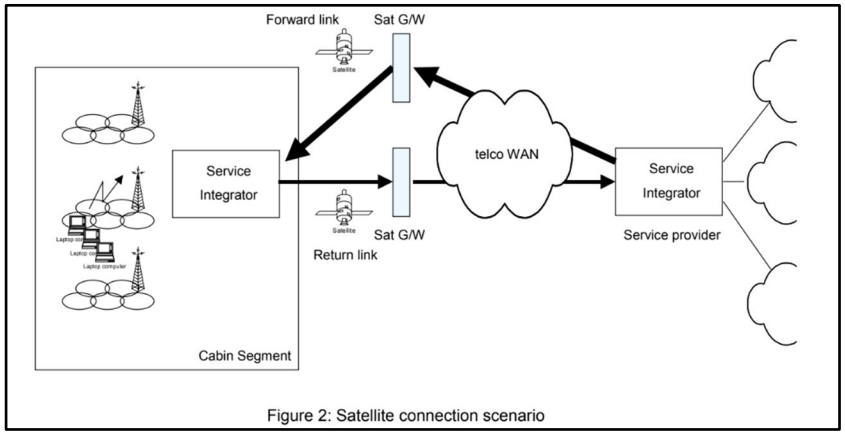
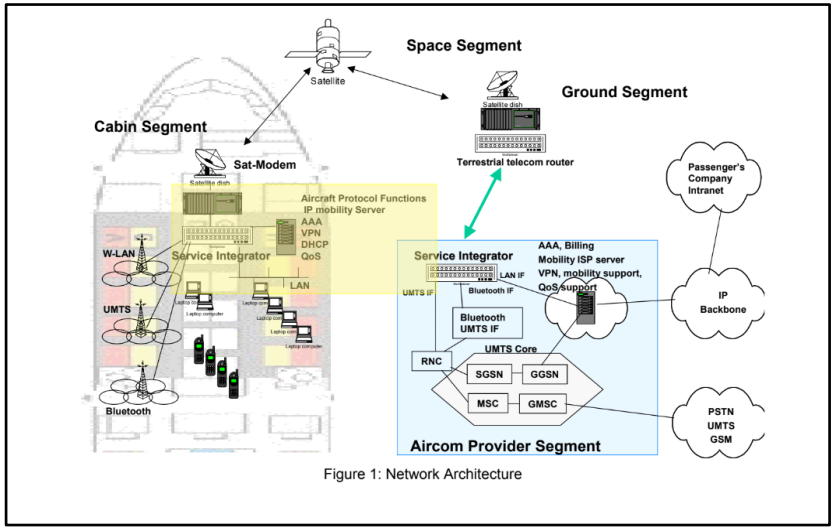
Suwanateep at Table 4.1.

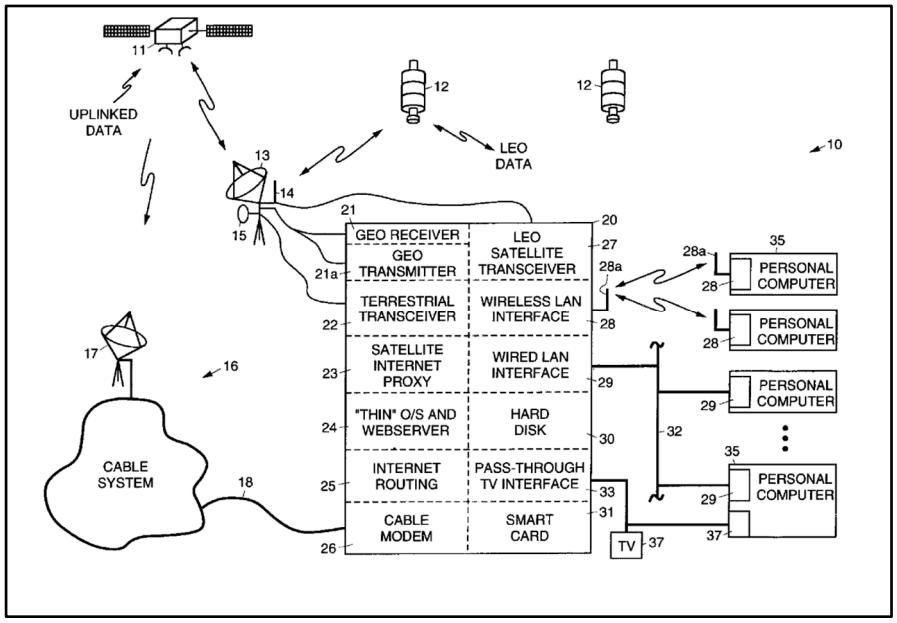
To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and Stratos. Suwanateep, Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and Stratos concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and/or Stratos would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A

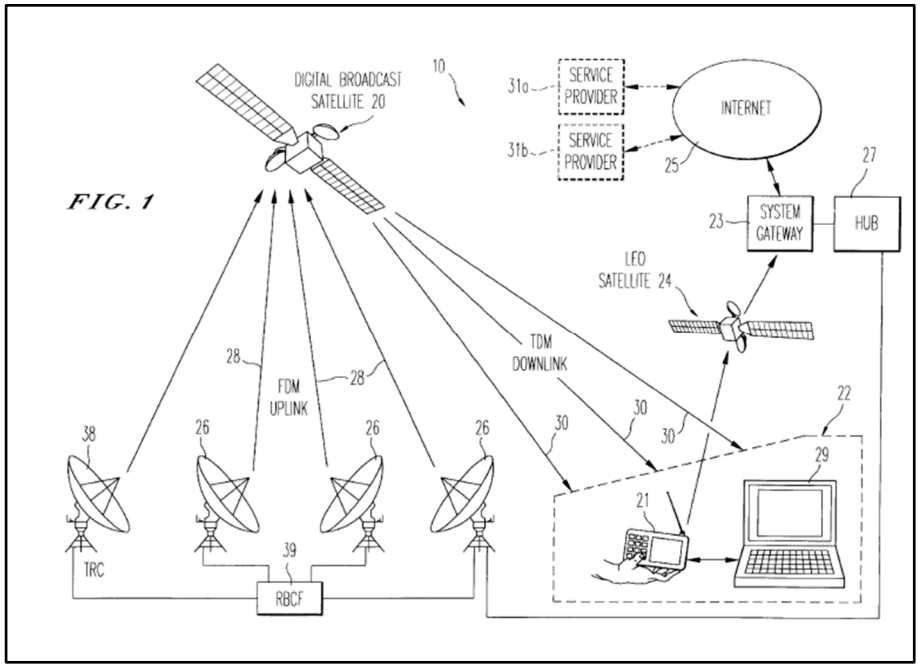
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, or Stratos, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20030819121544/http://www.mainstreamdata.com/content/_soln/soln2.html;*see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html; https://web.archive.org/web/20040215133233/http://mainstreamdata.com:80/content/_abtm/abtm0.html;https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html;

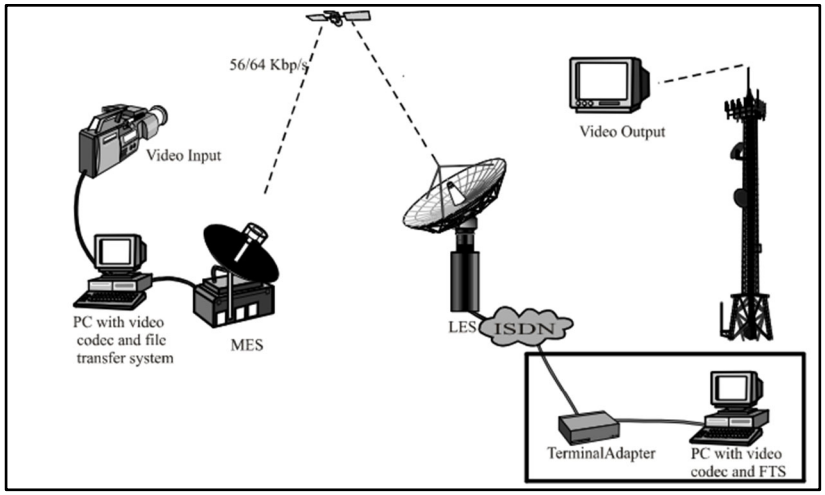
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20030808001821/http://www.mainstreamdata.com/content/_soln/soln0.html. > Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, *e.g.*, 10 or 20, and can also be used to connect corporate sites. Agarwal at 3:38-41; *see also* Agarwal at FIG. 1, 3:18-20, 3:38-63. > For airlines operating a mixed fleet of systems, the present invention integrates seamlessly on any platform. This allows for rapid deployment of services fleetwide and continuity of service as they adopt new hardware systems or equip the aircraft with wideband satellite technology for off-aircraft communications. Bruner at [0080], [0035] ("Most preferably, this relatively low bandwidth in-flight link is complemented by a high bandwidth (600 kbps) one way satellite up link to the aircraft."); *see also* Bruner at [0015], [0018], [0021], [0035], [0080].

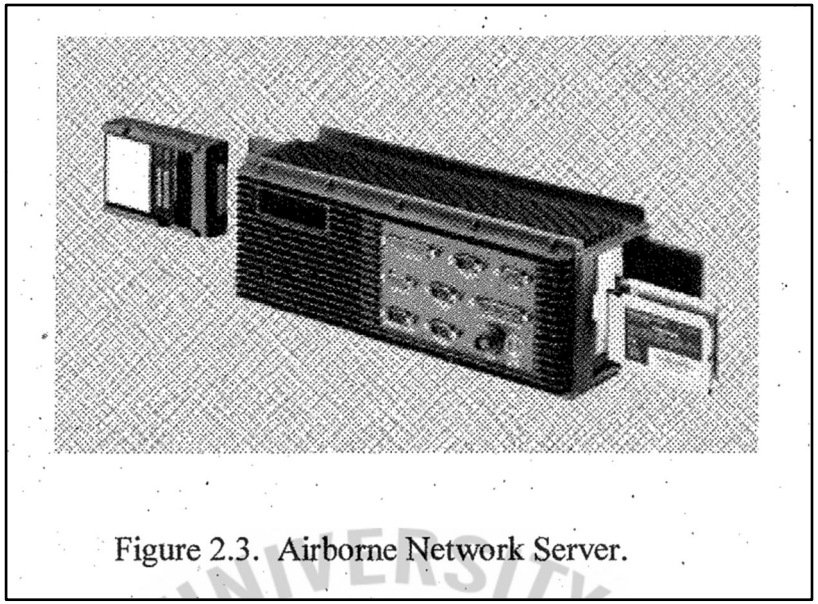
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 El-Rafie at FIG. 1; *see also* El-Rafie at 4:56-5:19.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Figure 2: Satellite connection scenario Jahn I at FIG. 2; *see also* Jahn I at 1-3, FIG. 1.  Figure 1: Network Architecture Jahn II at FIG. 1; *see also* Jahn II at 2-4.

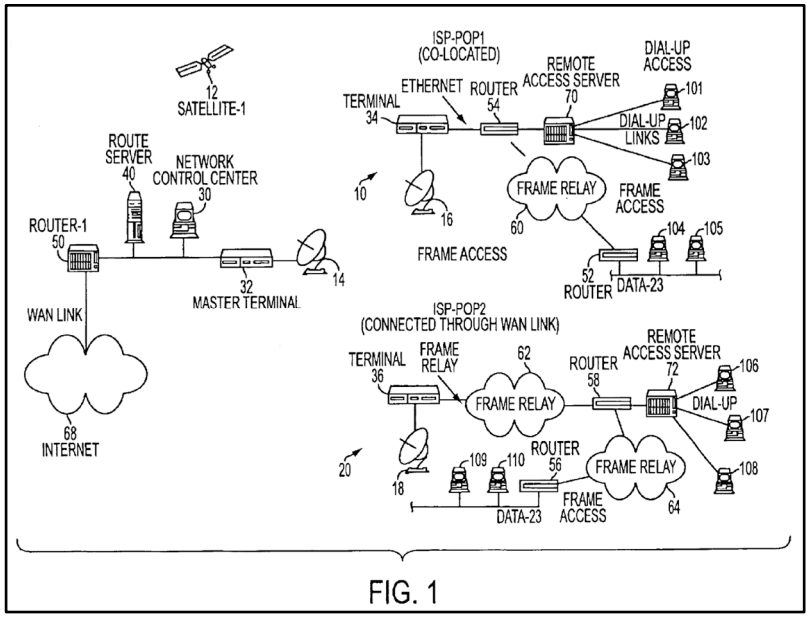
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The system architecture 600 further includes on the aircraft a DSS receiver/decoder and antenna (not shown) to help facilitate the broadband service. Nelson at [0056]; *see also* Nelson at [0015], [0053]-[0054], [0056], [0058]-[0059], [0061], FIG. 6.  Ollikainen at FIG. 1; *see also* Ollikainen at 2:58-3:45; 3:65-4:17.

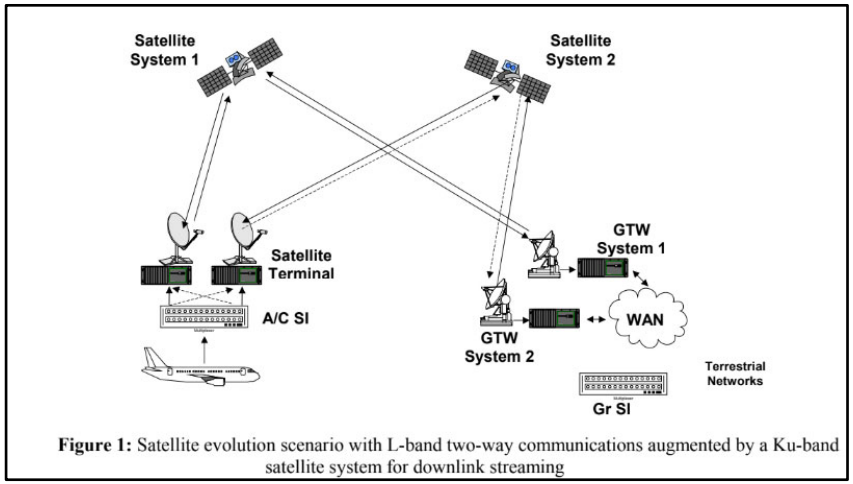
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Rothblatt I & II at FIG. 1; *see also* Rothblatt I at FIGs. 3, 5, 1-2, 5, 8-9; Rothblatt II at FIGs. 3, 5, 2:16-21, 2:46-64, 3:12-15, 6:20-27.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; .https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would

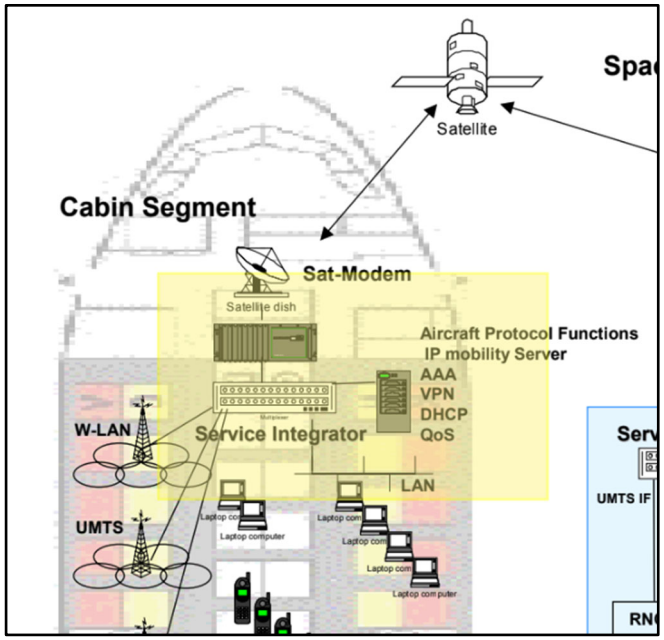
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.b] at least one router operatively coupled to the satellite dish;	Suwanateep discloses "at least one router operatively coupled to the satellite dish." *See, e.g.*,  Figure 2.3. Airborne Network Server. Suwanateep at 10, FIG. 2.3.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	> The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Suwantateep at 9. > In addition to the antenna, the system requires a server and router -- powerful machines used to operate computer networks. It will also wire the aircraft to carry the service, potentially building a data port into every seat on the plane. Suwantateep at 10. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and Wu. Suwanateep, Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 FIG. 1 Agarwal at FIG. 1; *see also* Agarwal at 2:29-36, 3:18-20, 3:38-63, 4:56-65.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at 3-4, *see also* DeSanctis at FIG. 2.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

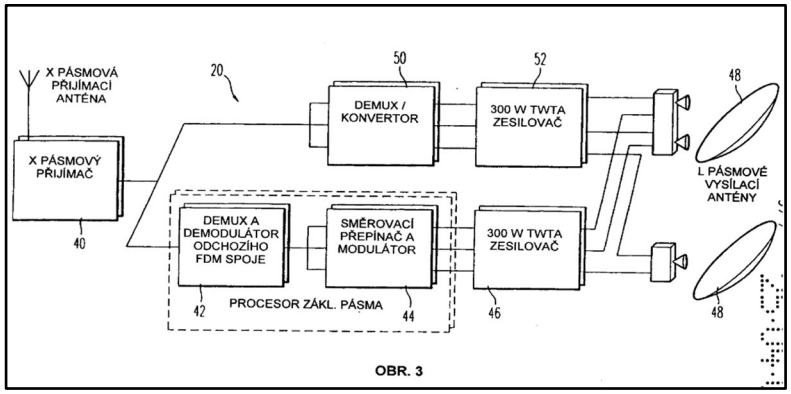


Jahn I at 2, FIG. 1 (excerpt); *id*. ("The WirelessCabin architecture and its components are conceptually depicted in Figure 1."); *see also* Jahn I at 2-4, FIG. 2.

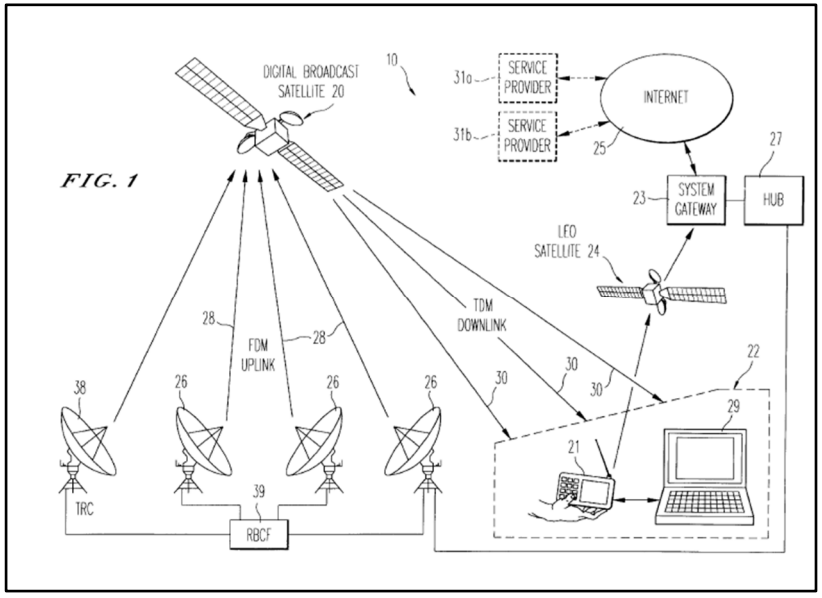
> In the simple case of native IP, a router can connect the wired LAN segment and the wireless IEEE 802.11b access points. Furthermore, other protocol entities needed for IP services in the cabin (such as DHCP, mobility and AAA server) are linked here.

Jahn II at 4-5.

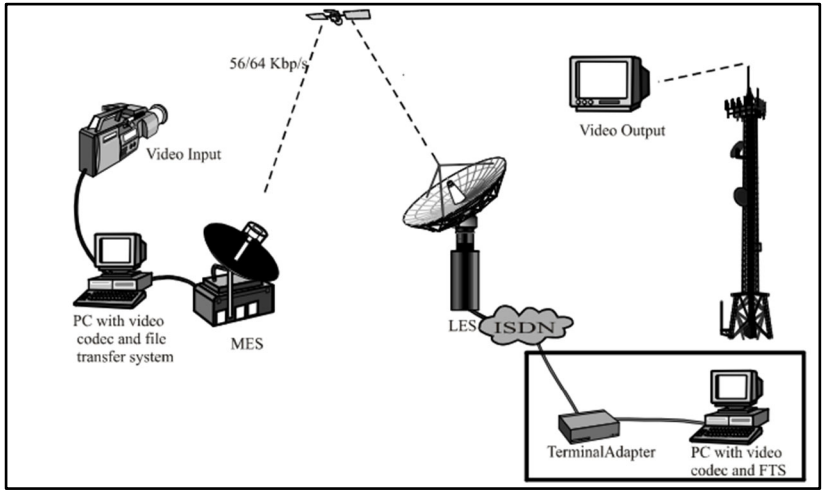
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



Rothblatt I at FIG. 3; *see also* Rothblatt I at FIG. 5, 2, 12.



Rothblatt II at FIG. 1, *see also* Rothblatt II at FIG. 5, 3:20-23, 11:55-65, 16:28-48; 17:9-16.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The internet network node 610 comprises a router 206 connected to the backbone network 200, a plurality of switches 612 and 618, and routers 614 and 616 connected to subscribers. Seo at [0051]; *see also* Seo at [0033], [0026]-[0027], [0049]-[0051].  Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.

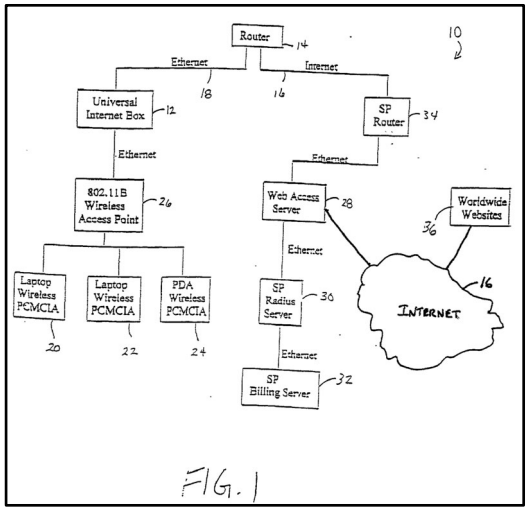
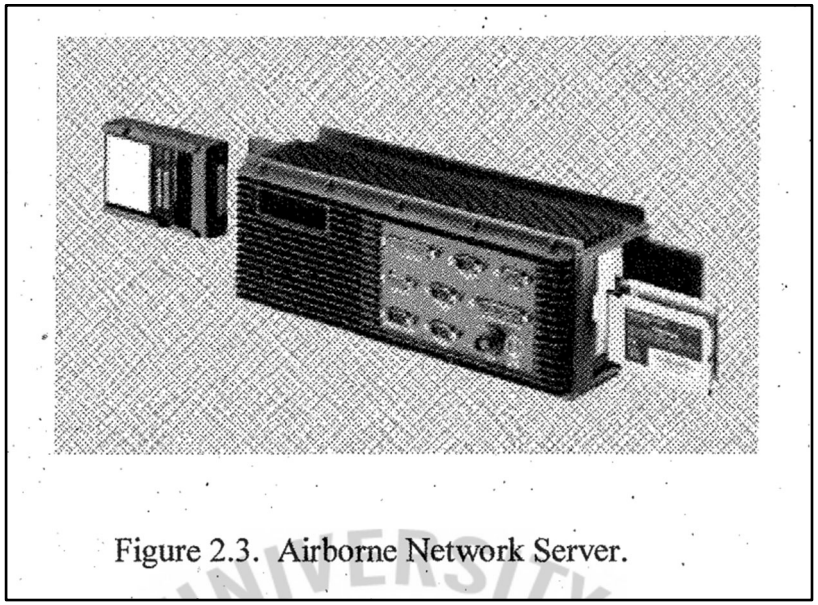
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for providing a customer with a prepaid wireless remote access service for one embodiment of the present invention"); *see also* Wu at [0058]-[0059]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.c] a subscriber access unit operatively coupled between the satellite dish and the at	Suwanateep discloses "a subscriber access unit operatively coupled between the satellite dish and the at least one router, the subscriber access unit being capable of authenticating a subscription

EXHIBIT E-10

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet; and	account associated with a user prior to allowing the user access to the Internet." *See, e.g.*, Internet Fee The price has fluctuated and remains open to change. For the onboard service fee, the service will cost passengers about $20 per hour (likely less than $8 a minute of inflight phone call). The passengers can watch paid television program, access their corporate Intranet and surf. Up to four live television channels will be offered at either free of charge or paid programs. Those charges are likely to be around $17.50 per hour but also may include flat-rate options for each leg of a trip. For the payment, passengers. will use. credit cards to pay charges. They will type the credit card information into the system when they sign on and it will remember the card number so passengers don't have to retype the number the next time they fly. Suwanateep at 12-13.

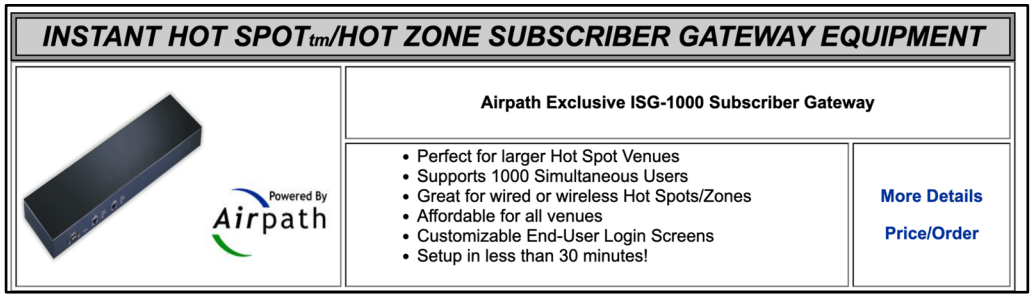
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Figure 2.3. Airborne Network Server. Suwanateep at 10, FIG. 2.3. The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Suwanateep at 9. In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are differentiated by airlines that enable this technology. Suwanateep at 12.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The service fees are based on bandwidth usage. The pricing is variable according to the airlines. It is hard to distinguish because the technology and its service are different, though based on the same technology. It is hard to say whether the price is reasonable or not. The service will cost $4.95 an hour over North America and $9.95 an hour on international flights; reading or sending email would cost an extra 50 cents a page. The flight from Hong Kong to Vancouver, the Cathay Pacific system charges US$ 5.99 a minute for Internet access from aircraft vendor terminal: It costs at US $10 to 20 to upload and download up to 500KB of mail during a day's travel including all connecting flights that offer the service for instance. Passengers, who want to send or receive long e-mails, like video clips or lengthy attachment, would be charged more. Most of the systems are being designed to scan their email headers before they receive them in order that passengers can decide which messages to accept now or later. Suwanateep at 17 (concerning Tenzing). Business users will be billed through pre-established corporate accounts while leisure travelers will be billed through their credit cards. Suwanateep at 17. InFlightOnLine claims a hardware platform independent implementation, meaning that the company can deliver ·Internet services with existing natTowband infrastructure as.well as future broadband capabilities like Connexion. IFOL provides software and on-board servers to implement its services, with lots of content. Suwanateep at 32. This software develops a customized inflight portal with the airline's brand. The inflight portal can also serve as an airline's customer service access point, extending the many

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	information and assistance services such as the airline information. The high-performance software is a building-block technology that powers e-mail and accelerates content delivery on any on-board server — managing and adjusting to the available communications bandwidth. Suwantateep at 33. IFOL has an agreement with AT&T seatback telephone system to store their 20-pound airborne data servers on board. The airborne servers will be linked to the seatback-telephone. handsets that are offered on virtually every domestic U.S. carrier now. The initial connection will be at 56K, but intends to speed that up in future. Simultaneously, IFOL will use existing satellite systems and ground technologies to update content, depending on timeliness of information. Methods used to update servers include: Suwanateep at 33. The IFOL ground operations center detects changes on the ground sites that need to be synchronized with the aircraft to provide the most up-to-date information. In addition to determining the best method to update the airborne server, the ground center performs the following functions: (1) Supports routing, tracking and management of traffic and transactions from airborne users. (2) Supplies billing functionality, including real time credit card processing for inflight transactions. (3) Manages and stores user profiles, enabling metrics, personalized web experiences and redundancy. (4) Stores data for all applications and ensures regular synchronization with partner content sites to provide the most up-to-date information. (5) Provides security to· verify that only those persons with appropriate rights can see the

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	data. Suwanateep at 34. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Lee, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and Wu. Suwanateep, Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, or Wu, for example, to incorporate this limitation. *See, e.g.*,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



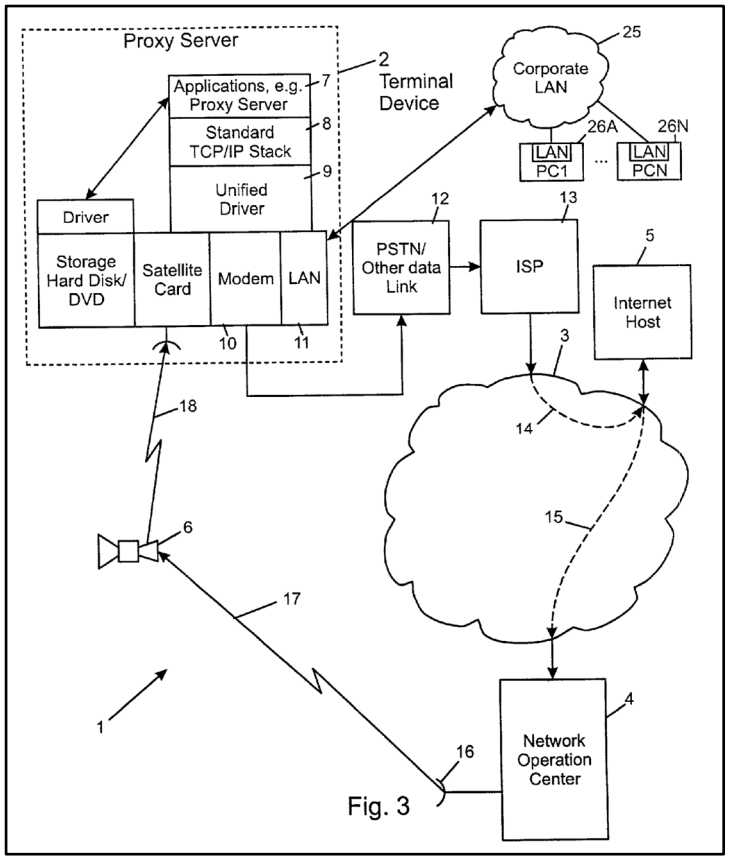
Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp.

Airpath Wireless Hot Spot at https://web.archive.org/web/20030201104447/http://airpath.com/hsbs.asp; *see also* https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; https://web.archive.org/web/20030720022617/http://airpath.com/Services/instanthsp_details.htm.

> The ADS is the inflight remote server 19 that preferably serves content to inflight users of the system and also acts as a gateway to the ground based servers (16, 34, 37, 40) for additional content. From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat.

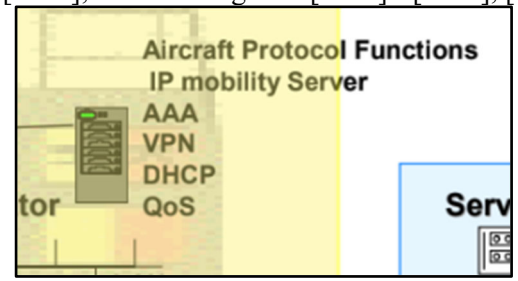
Bruner at [0023]; *see also* Bruner at FIGs. 2-3, [0021]-[0032], [0080].

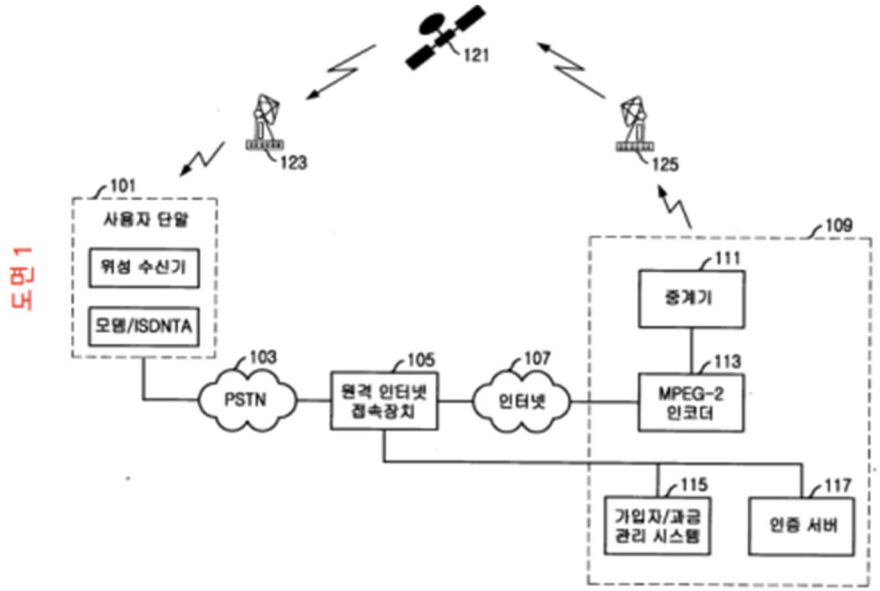
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



El-Rafie at FIG. 3; *see also* El-Rafie at 4:50-67.

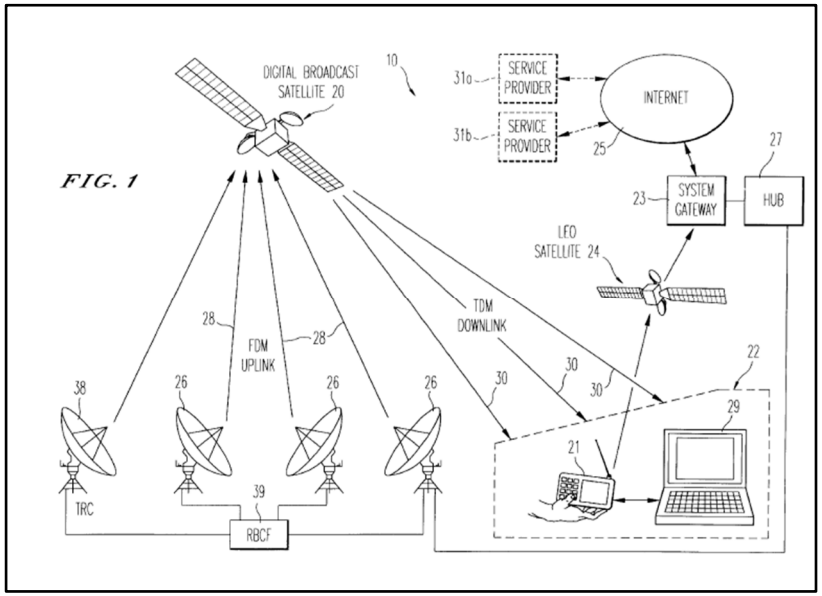
Thus, as described in detail herein, the NAS performs registration, authentication, and other functions necessary to provide visiting mobile terminals with access to the public network 16, while simultaneously controlling access by such visitors to the local private network 10, whose public network connection resources are being used to provide such

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	access. Hagen [0043]; *see also* Hagen at [0011] - [0013], [0048], [0050], [0059], [0066], [0093].  Jahn I at 2, FIG. 1 (excerpt); *see also* Jahn I at 2-3. It is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 8; *id*. at 2-3, 7. One or more embodiments of the invention are directed to a Converged Billing/Authorization Gateway (CBG) that enables a wireless WAN operator to provide LAN access service to its existing WAN subscribers with a single bill and account. The CBG can integrate the authentication and billing systems of wireless operators with authentication and billing mechanisms used in LAN networks. The WAN operator's backend systems typically interface with a home location register (HLR) database, while the LAN mechanisms typically use protocols like RADIUS. The CBG integrates these two systems such that a WAN subscriber can access LAN services using the subscriber's WAN identity, thus avoiding the need for a separate bill for LAN usage. Further, the WAN operator can offer value-added services while leveraging its existing billing and authentication infrastructure. The CBG can be a server component that is preferably

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	deployed close to the carrier's network and links into the carrier's network. Kalavade at [0056]; *id.* at [0207] ("The access server at the hotspot, such as, *e.g.*, a Cisco Router or a Nokia Access controller intercepts the session and sends a pre-defined web page to the user. This typically queries the user for a login and a password . . . Once authenticated, the RADIUS server responds with an Access Response to the RADIUS client."), [0012], [0016], [0021], [0022], [0023], [0063], [0071], FIGs. 1-3.  Lee at FIG. 1; *see also* Lee at [0001], [0003], [0015] - [0016], [0018] - [0019], [0025] - [0035], [0037], FIG. 1, FIG. 3. When activated, the access control software 14 receives an access request from a user of one of a plurality of mobile communications devices (18_1, 18_2, . . . 18_n) wherein the particular wireless client or mobile communications device 18_1 is attempting to contact

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	the access point 12 to establish access to the communications network 16, such as a WLAN. The AP 12 forwards the request to a corresponding authentication server 20 configured to authenticate the user based on credit information, such as account balance, pre-paid credit charges, and the like. It should be noted that there may be additional networks between wireless network 16 and the authentication server 20 including, for example, wired, wireless and satellite networks. A data base 24 associated with the authentication server stores and maintains the user-based credit balance information. In one configuration, the authentication server 20 may access the account information directly. Optionally, server 20 may operate as a proxy for another accounting/ authentication server 28, 29 over a network 26 (such as a private data network or PDN) wherein servers 28, 29 operate as a final authentication server having access to the user credit records (*e.g.*, a server controlled by the credit card based Issuing agency or pre-paid data card issuer). When an access accept response message is received by AP 12 from the authentication server 20 authenticating the user, AP 12 enables access of the associated client device 18 to the WLAN Mody at [0019]; *see also* Mody at [0002], [0004], [0010], [0011], [0018]-[0024], FIG. 1.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The PCTEL RADIUS-compatible Segue(TM) Network Gateway performs several critical functions for both the mobile subscriber and the service provider. At the most basic level it serves as a router. In its routing capacity, the Segue(TM) Network Gateway aggregates all of the traffic from a Wireless Local Area Network (WLAN). Among other important functions, the Gateway and the Controller (1) attempt to verify that users are authorized to be on the network; (2) ensures that authorized users have valid IP addresses; and (3) connects to a system that maintains subscriber information and that can perform billing operations. Such systems are generically referred to as AAA Brokers because they perform Authorization, Authentication, and Accounting. The PCTEL Segue(TM) Network Controller serves as a centralized location, responsible for serving customized subscriber and location sensitive contents to users of the network. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021219113817/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=94443. *See also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030810191006/http://www.mtnsat.com:80/enhanced_internet.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030424090006/http://www.mtnsat.com/internet.htm. The cyberstation 20 provides continuous connectivity to satellite-based data delivery services with a full-time low-bandwidth LEO return path to support information requests,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	feedback delivery, data billing and status/diagnostic reporting. Ollikainen at 3:6-23; *see also* Ollikainen at 4:24-31. The identification code is preferably assigned to the user by the ISP when the user subscribes to the Internet via the user terminal 22. The ISP may assign the user an identification code, password, or both, and require that the user be for example, it sends to the user terminal 22 an Internet browser screen, one or both of these identifiers entered via a keyboard 122 or a card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem, which may be recognized by the ISP upon initiation of the login sequence from the user terminal 22. Rothblatt I at 10; *see also* Rothblatt I at 2, 11-12, FIGs. 1, 5.  Rothblatt II at FIG. 1; *see also* Rothblatt II at FIG. 5, 3:20-23, 3:62-4:3, 11:55-65, 14:59-68, 15:32-65.

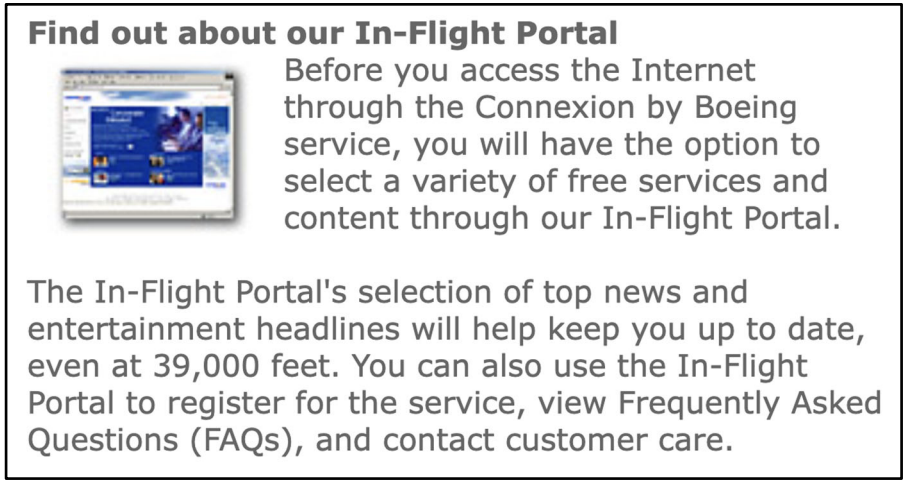
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	A subscriber authenticated as a predetermined multicast group connects with the management server 102 of the CP 100 a via the wide area network 610 and the backbone network 200 through path B of FIG. 5b in order to request IGMP (Internet Group Management Protocol). When the subscriber is proved to be legitimate, the management server 102 of the CP 100 a performs authentication, and authorizes the multicast group. Seo at [0078]; *see also* Seo at [0027], [0033], [0039], [0078], FIGs. 3, 5b, 5d. Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html; https://web.archive.org/web/20060320175337/http://www.stratosglobal.com/documents/factSheets/sdx1100_userGuide_overview.pdf; https://web.archive.org/web/20120413092410/http://www.stratosglobal.com:80/About%20Stratos/~/media/Documents/Corp/Public/corp/corp_financial/corp_financial_annualReport2002Financial

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	sOnly.ashx. > In the next step, the client software determines if billing information has been pre-stored in memory. Preferably the user has pre-stored such billing information, such as during the set-up process and this information is read from memory. The software 90 checks for stored billing information. If there is pre-stored billing information, "yes" is returned in step 648. If there is no pre-stored billing information, processing proceeds to a series of billing information requests (steps 649-653) in which billing information is requested from the user. In an alternative embodiment, billing is not required and processing proceeds to step 665. Van Horne at 8:66-9:9; *see also* Van Horne at 11:3-17, 12:29-43, 16:49-17:30. > The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. Wu at [0043]; *see also* Wu at [0010]-[0019] ("querying the customer for authentication information . . . authenticating the authentication information provided by the customer . . . checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check."), [0009], [0014], [0021], [0029], [0031], [0037], [0041], [0043], [0048], [0058]-[0063]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	It would have been further obvious to a person of ordinary skill in the art that subscription authentication was a routine and commercially available component of any paid wireless Internet architecture. *See* "Going WiFi" Glossary ("AAA (Authentication, Authorization, and Accounting). A term for a framework that enables intelligent access control to computer resources by enforcing policies, auditing usage, and providing the information necessary to bill for services."). To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.d] a web-ready device operatively coupled to the at least one router, the web-ready device having a browser application operating thereon for accessing the Internet;	Suwanateep discloses "a web-ready device operatively coupled to the at least one router, the web-read device having a browser application operating thereon for accessing the Internet." *See, e.g.*, When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Suwanateep at 9. In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are differentiated by airlines that enable this technology. (See Appendix B)

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Suwanateep at 12. The access gains by runnmg an application downloaded ahead of time from software kit on the airplane or alternatively by a standard dial-up networking connection with standard POP3 email program. Suwanateep at 16. The pricing is variable according to the airlines. It is hard to distinguish because the technology and its service are different, though based on the same technology. It is hard to say whether the price is reasonable or not. The service will cost $4.95 an hour over North America and $9.95 an hour on international flights; reading or sending email would cost an extra 50 cents a page. The flight from Hong Kong to Vancouver, the Cathay Pacific system charges US$ 5.99 a minute for Internet access from aircraft vendor terminal: It costs at US $10 to 20 to upload and download up to 500KB of mail during a day's travel including all connecting flights that offer the service for instance. Passengers, who want to send or receive long e-mails, like video clips or lengthy attachment, would be charged more. Most of the systems are being designed to scan their email headers before they receive them in order that passengers can decide which messages to accept now or later. Suwanateep at 17 (concerning Tenzing). Business users will be billed through pre-established corporate accounts while leisure travelers will be billed through their credit cards. Suwanateep at 17. InFlightOnLine claims a hardware platform independent implementation, meaning that the company can deliver ·Internet services with existing natTowband infrastructure as.well as future broadband capabilities like Connexion. IFOL provides

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	software and on-board servers to implement its services, with lots of content. Suwanateep at 32. IFOL has an agreement with AT&T seatback telephone system to store their 20" pound airborne data servers on board. The airborne servers will be linked to the seatback-telephone handsets that are offered on virtually every domestic U.S. carrier Now. Suwanateep at 32. This software develops a customized inflight portal with the airline's brand. The inflight portal can also serve as an airline's customer service access point, extending the many information and assistance services such as the airline information. The high-performance software is a building-block technology that powers e-mail and accelerates content delivery on any on-board server — managing and adjusting to the available communications bandwidth. Suwantateep at 33. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and Wu. Suwanateep, Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	in the art would have further understood how to modify the disclosures of Suwanateep with those of Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*, The airborne users 13 are connected to the system via the aircraft based user terminals which are connected to an airline-based remote server computer 19. Bruner at [0021] *see also* Bruner at FIGs. 1-2, [0018], [0019], [0021]-[0024], [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password. The username and password can be provided when the user first accesses the system and provides necessary registration information to be able to use all the functions of the airborne based internet service of the present invention. Such a registration system is well known to those skilled in the art in providing internet based commerce systems."), [0029]-[0030] [0070], [0076], [0078], [0079].  Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Ln

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	av=1; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2; https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; *see also* Jones at 7:55-56; Abarbanel at 6.

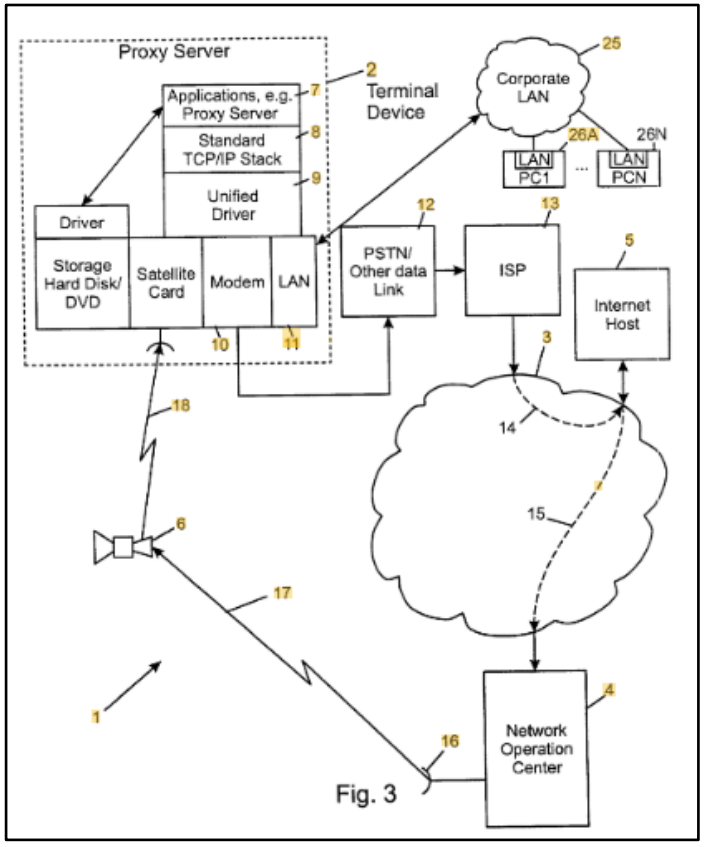
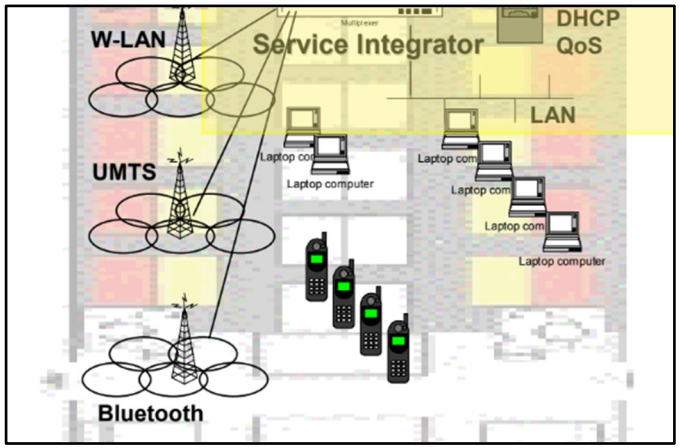
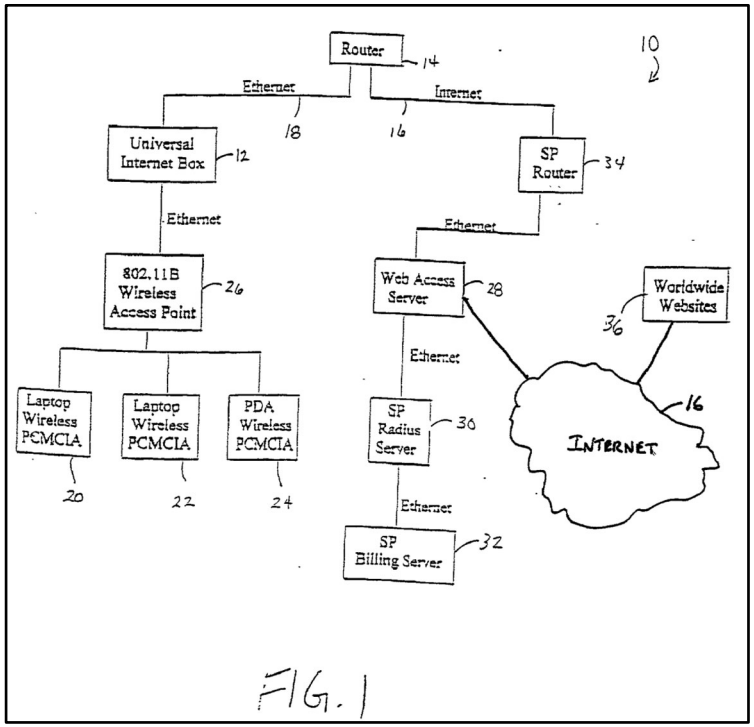


Fig. 3

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.  Jahn I at 2, FIG. 1; *see also* Jahn I at 1-2. Moreover, people are becoming more and more used to personalised equipment, such as mobile phones, laptops or PDAs, all accommodated with their own personal environment. Thus, thinking of future mobile communication from a user acceptance point of view, there is a clear demand for a **wireless access** solution for multimedia and personal communication services through users own equipment. Besides, a wireless network might also support the airline personnel (cabin crew, maintenance crew) during their daily work (e.g. for mobile data access). Jahn II at 1; *see also* Jahn II at FIGs. 1-2, 5, Abstract, 1-2. In accordance with various embodiments of the invention, users can access the LAN/WAN from a variety of terminals with different features. By way of example, terminals can include laptops and PDAs (personal digital assistants) and other mobile computing devices. These terminals can have a PCMCIA slot that can be used to attach

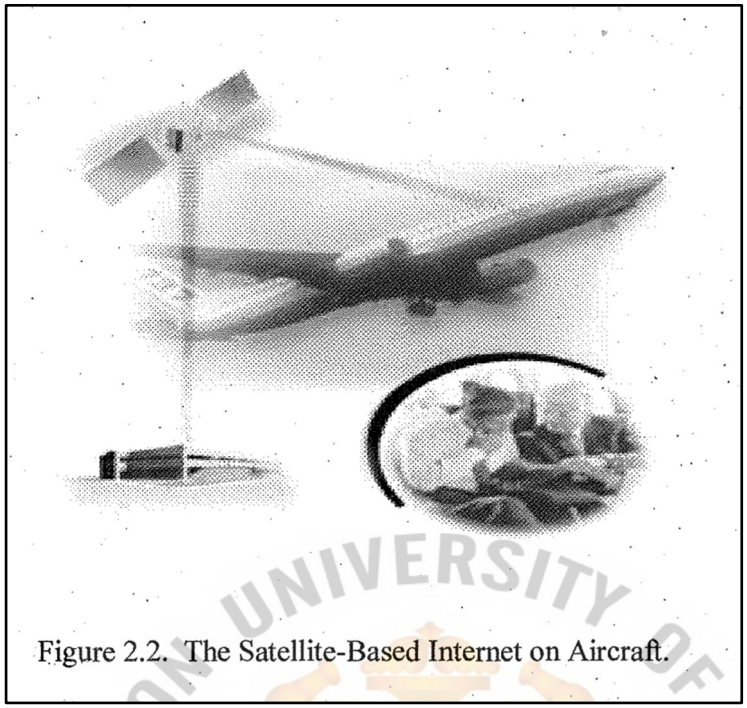
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	an 802.11 NIC. Also, many devices sold now have an integrated 802.11 network interface. Kalavade at [0071], [0072] ("A user comes to a hotspot and starts accessing the Internet through his laptop."). When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Internet routing software 25 provides the services of a router to route incoming broadcast and interactive data to the appropriate personal computer 35. Ollikainen at 3:31-44; *see also* Ollikainen at FIG. 1. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user devices. The method comprises the steps of generating an Internet access request in a portable -user terminal and sending a request to an Internet service provider via a first communication link. The ISP then determines whether the user terminal has access to the Internet and then provides the screens and multimedia data required by the user terminal to the broadcast station. The transmitting station transmits the screens and data to the user terminal via a satellite-based radio system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communications link and receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 10; *see also* Rothblatt I at 1-2, 10-12, FIG. 1.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	If the user is authorized to have Internet access, the system gateway 23 sends an Internet homepage or Web browser information to the user terminal via an FDM uplink 28 of the direct radio broadcast system. Rothblatt II at 16:57-61; *see also* Rothblatt II at 3:62-4:3, 15:57-61, 16:49-56, FIG. 1. **Optional Web Browsing** Standard Internet service normally includes Internet e-mail, as well as the capability to browse the web. *StratosNet* can do this as well, along with an FTP (File Transfer Protocol) capability, however, we also realize that some satellite terminals may not want the ability to browse the web to be available to users of their satellite phone. Therefore, Stratos offers the option to disable web browsing on your *StratosNet* account. Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; *see also* Stratos at https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://web.archive.org/web/20040612173303/http://www.stratosglobal.com:80/documents/factSheets/stratosNet_tc.pdf; https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html; https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 Wu at FIG. 1. Wu at [0038] ("The wireless stations 20,22, and 24 may include any wireless-enabled electronic device that can be used to connect to the base station 12 to remotely access the global communications network such as the Internet including the World Wide Web (WWW) for web browsing and the like."); *see also* Wu at [0008], [0023]-[0024], [0037]-[0038], [0040], [0043], [0048], [0058], [0063]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	cover pleading to Defendant's Invalidity Contentions.
[24.e] wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic;	Suwanateep discloses "wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic." *See, e.g.*, Some 11 corporate customers, who have outfitted their private aircraft with . Boeing equipment, are using the Connexion service.· The three airlines, American Airlines, United Airlines and Delta Airlines will equip a total of 1,500 aircrafts with the venture's innovative, high-speed broadband Internet connectivity service. Suwanateep at 14.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



Suwanateep at 6, FIG. 2.2.

> The cabin is equipped with onboard server, router and service-analysis equipment and is outfitted for the security enhancement capabilities pursuing for commercial airline customers. Seats are configured for connectivity. Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line simultaneously.

Suwanateep at 9.

> The IFOL ground operations center detects changes on the ground sites that need to be

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	synchronized with the aircraft to provide the most up-to-date information. In addition to determining the best method to update the airborne server, the ground center performs the following functions: (1) Supports routing, tracking and management of traffic and transactions from airborne users. (2) Supplies billing functionality, including real time credit card processing for inflight transactions. (3) Manages and stores user profiles, enabling metrics, personalized web experiences and redundancy. (4) Stores data for all applications and ensures regular synchronization with partner content sites to provide the most up-to-date information. (5) Provides security to verify that only those persons with appropriate rights can see the data. Suwanateep at 34. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Agarwal, Bruner, Connexion by Boeing, Clark, DeSanctis, Jahn II, MTN Cruise Ship Internet Services, and Wu. Suwanateep, Agarwal, Bruner, Connexion by Boeing, Jahn II, DeSanctis, MTN Cruise Ship Internet Services, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, Jahn II, MTN Cruise Ship Internet Services and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Agarwal, Bruner, Clark, Connexion

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	by Boeing, DeSanctis, Jahn II, MTN Cruise Ship Internet Services, or Wu, for example, to incorporate this limitation. *See, e.g.*, Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, e.g., 10 or 20, and can also be used to connect corporate sites. Routers 52, 54, 56 and 58 connect the terminals 34 and 36, possibly via frame relays 60, 62, 64 (or via an ethernet connection), to remote access servers 70, 72, and/or to various dial-up access units 101-110. Agarwal at 3:38-44; *see also* Agarwal at 3:18-20, 3:45-63, FIG. 1. Referring now to the drawings in detail, there is shown in FIG. 1 a schematic diagram of the hardware for operating the remote internet system 10 of the present invention to allow remote users 13, such as airline passengers, to conduct electronic commerce ("e-commerce") from a remote location 14, such as during the course of an airline flight. . . The remote system preferably includes remote communication equipment 28 operably connected with the communication network 22. Bruner at [0021]; *see also* Bruner at FIG. 1, [0002], [0011], [0013]-[0014], [0021]. FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system 100 of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit 103, and one or more wireless local area network (LAN) 104. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station. Clark at 3:66-4:7; *see also* Clark at 3:49-59, 4:8-17, 4:18-30, 6:45-49, 8:29-37.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

HOW IT WORKS

Inside the cabin, Boeing Connexion (developers of the technology) service is similar to that of any other wireless LAN, with access points connected to a server that is connected to a high-speed modem. But that's where the similarities end. The modem on an airplane connects to a phased-array antenna that is mounted externally atop a plane's fuselage, setting up a two-way connection with satellites positioned around the world. In turn, the satellites pass along this traffic and receive signals from wired ground stations.

Connexion by Boeing at Carol Ellison, *Unwire Everywhere*, PC MAGAZINE, Special Wireless Issue 2003, at 97-104; *see also* Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1#e5; The Boeing Company, 2003 Annual Report, https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf.

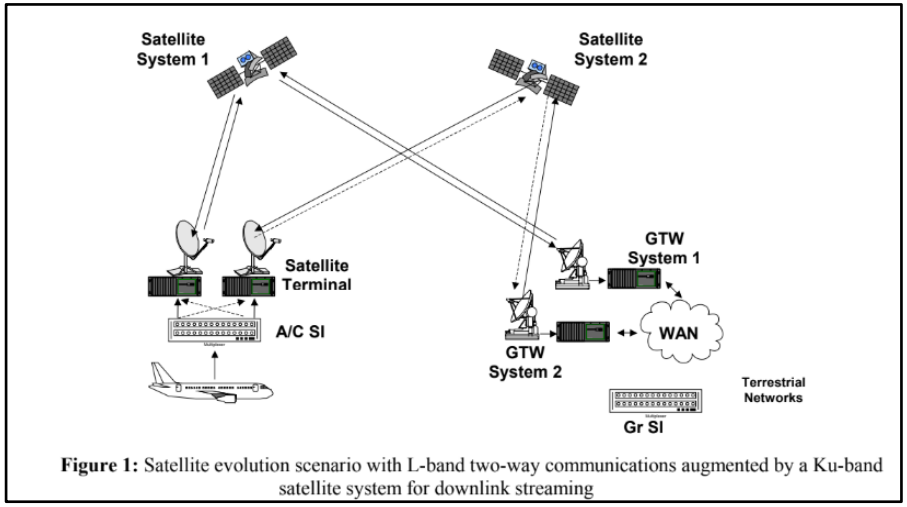


Figure 1: Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming

DeSanctis at FIG. 1; *see also* DeSanctis at FIG. 2, 2-3.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The service scenario considers travellers in aircraft on the move. Future airliners will provide a variety of entertainment and communications equipment to the passenger to make the journey more pleasant through in-flight entertainment, more productive through business communication facilities, and more secure through tele-medicine and surveillance facilities on board. A variety of services is needed, each having a different bandwidth demand and different types of communication protocols. Many of the services will be available to the passenger by means of cabin-installed equipment, such as TV screens, a rescue compartment with tele-medicine equipment, or fixed installed satellite phones. Jahn II at 2; *see also* Jahn II at 3, 7, 6, 8, FIGs. 1, 5. **Wireless** Check E-Mail, surf the web or play games ….from anywhere on the ship! Maritime Telecommunications Network, the source for innovative offshore communications solutions for nearly a decade, is introducing their newest offering, Wireless Internet Access. A first for the maritime industry, a true Wireless network can be installed onboard just about any vessel. Access Points are installed throughout the vessel and terminated at our server onboard. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm;

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030105020053/http://www.mtnsat.com/press/2002/pressrelease_031202.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). > The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]; *see also* Wu at Abstract, [0001], [0006]-[0019], [0022], [0023], [0030], [0037], [0040], [0041]. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Agarwal, Bruner, Suwanateep, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu. Suwanateep, Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Agarwal, Bruner, Clark, Connexion by

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*, Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, e.g., 10 or 20, and can also be used to connect corporate sites. Routers 52, 54, 56 and 58 connect the terminals 34 and 36, possibly via frame relays 60, 62, 64 (or via an ethernet connection), to remote access servers 70, 72, and/or to various dial-up access units 101-110. Agarwal at 3:38-44; *see also* Agarwal at 3:18-20, 3:45-63, FIG. 1. Referring now to the drawings in detail, there is shown in FIG. 1 a schematic diagram of the hardware for operating the remote internet system 10 of the present invention to allow remote users 13, such as airline passengers, to conduct electronic commerce ("e-commerce") from a remote location 14, such as during the course of an airline flight. . . The remote system preferably includes remote communication equipment 28 operably connected with the communication network 22. Bruner at [0021]; *see also* Bruner at FIG. 1, [0002], [0011], [0013]-[0014], [0021]. FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system 100 of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit 103, and one or more wireless local area network (LAN) 104. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station. Clark at 3:66-4:7; *see also* Clark at 3:49-59, 4:8-17, 4:18-30, 6:45-49, 8:29-37.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

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Connexion by Boeing at Carol Ellison, *Unwire Everywhere*, PC MAGAZINE, Special Wireless Issue 2003, at 97-104; *see also* Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1#e5; The Boeing Company, 2003 Annual Report, https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf.

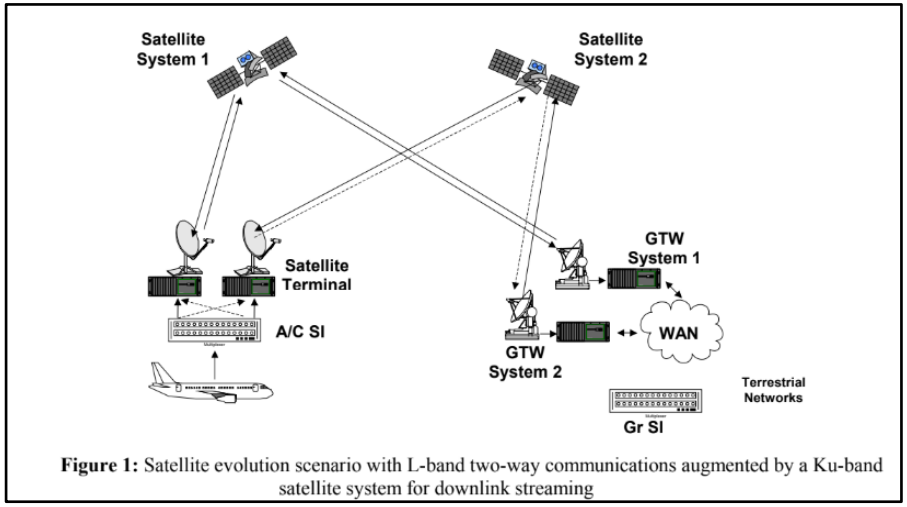
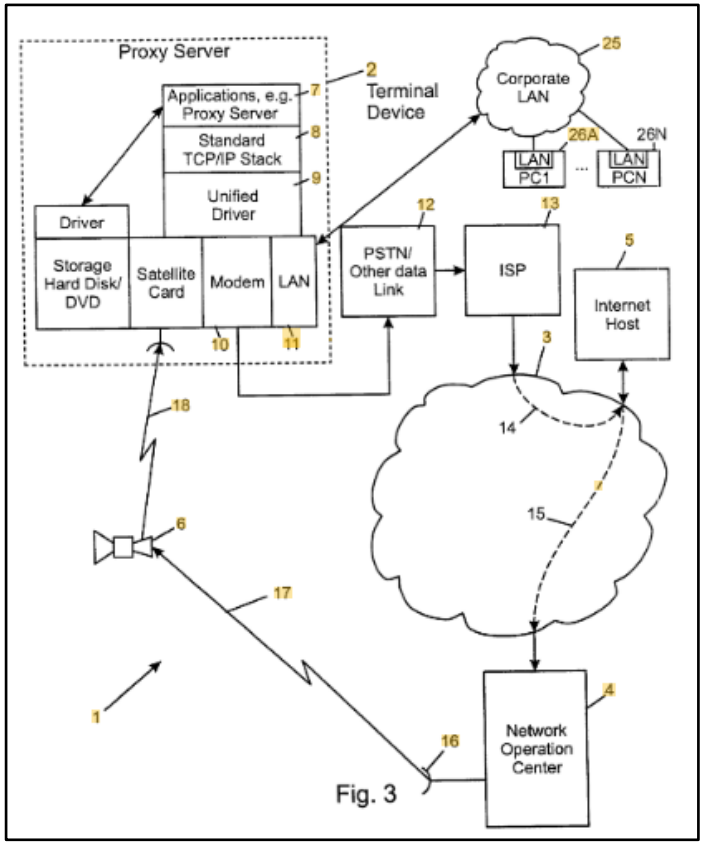


Figure 1: Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming

DeSanctis at FIG. 1; *see also* DeSanctis at FIG. 2, 2-3.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	 El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	ABSTRACT—This paper addresses the traffic dimensioning for aeronautical services. Specifically, it focuses on wireless services such as UMTS and W-LAN in aircraft cabins that connect the passenger via satellite to terrestrial infrastructure. Jahn I at 1; *see also* Jahn I at 1-2. The service scenario considers travellers in aircraft on the move. Future airliners will provide a variety of entertainment and communications equipment to the passenger to make the journey more pleasant through in-flight entertainment, more productive through business communication facilities, and more secure through tele-medicine and surveillance facilities on board. A variety of services is needed, each having a different bandwidth demand and different types of communication protocols. Many of the services will be available to the passenger by means of cabin-installed equipment, such as TV screens, a rescue compartment with tele-medicine equipment, or fixed installed satellite phones. Jahn II at 2; *see also* Jahn II at 3, 7, 6, 8, FIGs. 1, 5.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Wireless Check E-Mail, surf the web or play games ….from anywhere on the ship! Maritime Telecommunications Network, the source for innovative offshore communications solutions for nearly a decade, is introducing their newest offering, Wireless Internet Access. A first for the maritime industry, a true Wireless network can be installed onboard just about any vessel. Access Points are installed throughout the vessel and terminated at our server onboard. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030105020053/http://www.mtnsat.com/press/2002/pressrelease_031202.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities).

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html. > The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]; *see also* Wu at Abstract, [0001], [0006]-[0019], [0022], [0023], [0030], [0037], [0040], [0041]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.f] wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router.	Suwanateep discloses "wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router." *See, e.g.*, > The system has contracted with the third party content provider to provide customized, destination-based, licensed content, including worldwide, national and local news, sports and features - from more than 3,000 publications in its global digital content network,

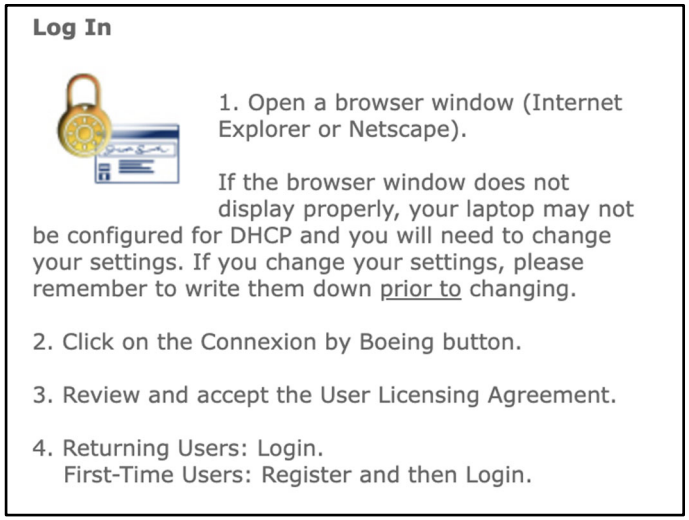
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	then filter, deliver and instantaneously integrate it into the system. As a result, airline passengers will be able to choose from a multitude of personalized real-time services including Internet and corporate Intranet access, E-Commerce, live entertainment and information. The system offers multilingual programming. Selections will be based on the specific needs of the customers in different regional markets. This content complements full Internet/company Intranet access and infuses the service with the time-sensitive data but will not iiritially supply voice service. Suwanateep at 11. In this Internet environment, it eliminates the complexity and expense of maintaining multiple phonelines and user accounts for each individual connection under conventional schemes. Internet usage may be enabled and monitored on an individual basis. Those services are differentiated by airlines that enable this technology. (See Appendix B) Suwanateep at 12. As of the connection establishment, the passengers plug into a Local Area Network on the plane; logging onto global. ISP provides quick access to onboard web content and email delivery service. Suwanateep at 15. However, it offers only limited, preloaded web browsing, and disables for corporate, America Online AOL, or web-based email such as Hotmail or Yahoo. E-mail responses and web pages that contain time-sensitive content might cause some delays though. The current system operates at 11 Kbps (compare with ground-based connection 56.6k moderns), while the high-speed connection system will run at 5Mbps, about 500 times faster. The web content is accessible only for the paying email customers. In the future, passengers may be able to call ahead for certain popular sites to be cached before they board particular flights so they can see them in the air. For airlines that enable this

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	technology. (See Appendix B). Suwanateep at 17. Internet Fee The price has fluctuated and remains open to change. For the onboard service fee, the service will cost passengers about $20 per hour (likely less than $8 a minute· of inflight phone call). The passengers can watch paid television program, access their corporate Intranet and surf. Up to four live television channels will be offered at either free of charge or paid programs. Those charges are likely to be around $17.50 per hour but also may include flat-rate options for each leg of a trip. For the payment, passengers. will use. credit cards to pay charges. They will type the credit card information into the system when they sign on and it will remember the card number so passengers don't have to retype the number the next time they fly. Suwanateep at 12-13. The system above exemplifies the technology of Connexion by Boeing (See Company Profile). In 2000, Connexion (See Company Profile) is the separate business unit to focus this effort, especially developing the broadband inflight Internet technology. Connexion by Boeing is the market-leading initiative to bring commercial broadband data sertices to commercial and executive aircraft during flight, allowing passengers to have access to Internet, firewall-protected Intranet access, E-Commerce, television, news and entertainment content, and transmit and receipt of data. Aircraft operators also benefit from inflight Internet access to aircraft and crew data. Boeing studies the potential applicability of the Connexion broadband in-flight data services for enhancing aviation security. Suwanateep at 13.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	According to the new sophisticated technology of the inflight Internet access, any business can exploit from it as a tool of E-Commerce. The proposed system is done as the online onboard duty free service. There are steps to process the online onboard DFS system. Suwanateep at 66-67. (1) Registration: On the technology-enabled airlines, the passengers with the laptops can access the duty free web site after the registration or applying for the membership by referring to their travel document like passport number, flight and date of traveling. Suwanateep at 66-67. (2) Makes a purchase: The passengers can access the DFS web site via Internet. In the cached system, the DFS web site can be loaded in the cabin file proxy server as one of its contents to allow any users to perform the online shopping. The duty free merchandisers negotiate with member airlines flying to its country to provide the CDROM catalog to passengers who wish to buy duty free items. The CDROM duty free service includes the DFS items and the instruction to conyey the online purchase process. For the changes in items or their prices, the CDROM catalogs can be updated before the flight. As the content updates while inflight, all of the orders will be sent to the DFS ground server some time before the arrivals at its destination. In the real time internet system, the airline passengers can access the DFS web site to view the items and process the online purchase. The passengers can ask for the CD ROM of DFS product catalogs instead of the paper brochure to display personally on their laptops to save time downloading the graphics. And passenger with no personal laptop can view the DFS program from the onboard Internet vender terminals, which may be provided in some airlines: After they have chosen the items, they can make a purchase via the inflight. The fee will be responsible by the passengers. Contrarily, the airlines will support the fee of the vender terminal. Actually, with the travel information, the airline passengers can purchase the

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	DFS inflight or even before the trip from home or office. Suwanateep at 67-68. (3) The delivery and the payment: The delivery can be done at the destination only, or there may be home delivery service if the passengers cannot transport it themselves. The payment by credit cards is acceptable with the identical name of the travelers only. Passengers can sign credit card slip at the reception point or pay cash at airport pickup counter. The credit card can be authenticated once they swipe the card. The pre-registration in the DFS web site would assure the authentication of the cardholders. The cash _payment is acceptable at the DFS pick-up counter at the destination airport. The passengers must present the airline ticket or boarding pass and pick up as soon as they arrive at the destination. The home delivery can be arranged for the piggybacking passengers if it exceeded certain amounts purchased and within the airline destinations, perhaps by the later time in the following flights. Suwanateep at 68. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and Wu. Suwanateep, Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to

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	modify the disclosures of Suwanateep with those of Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, Rothblatt II, or Wu, for example, to incorporate this limitation. *See, e.g.*, > From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. The ADS server 19 operates a host of software components including an HTTP server, DHP server, DNS server, database server, mail server and preferably chat and streaming servers. After the PPP connection is established, the ADS server 19 will provide an IP address, DNS server address and any default gateway information to the user 13. From this point, the user utilizes his or her internet browser software running on the laptop to access a variety of content. In an alternative embodiment, a screen and keyboard can be provided at the passengers seat for the user 13 connection, eliminating the need for the user to have his or her laptop computer. Bruner at [0023]; *see also* Bruner at [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password."), [0021], [0029], [0078], [0079].

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	 Connexion by Boeing at https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; Suwanateep at 9. > For these users, the only point of access to the private network 10 is through the network's own router 14, which is easily secured by the network administrator. At the same time, private network users/clients may be permitted to access the private network 10 via wireline network connections or via wireless mobile terminals 23 through private WAPs 21. Private WAPs are preferably maintained at locations that are not publicly accessible or are otherwise configured to limit access to authorized clients of the private network 10. These users can then gain access to the public network through the private network's router 14. Hagen at [0060]; *see also* Hagen at [0059], [0185], FIG. 14.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	The provision of such a heterogeneous access network with collectively mobile users requires the development authentication, admission and accounting (AAA) in the mobile network, especially taking into account the necessity to support different pricing concepts for each passenger in the mobile network and the interaction of airline, satellite provider, aircom service provider and terrestrial service providers. Jahn I at 3; *see also* Jahn I at 1-3, FIG. 1. Since IP traffic at IP connection level can be monitored only before the IS stream multiplexing, it is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 7-8; *see also* Jahn II at 3, FIGs. 1, 5. On Norwegian Sun, NCL guests can now surf the Internet by the pool, in the meeting rooms, in and around the Internet Cafe and the reception (atrium) area. The installation of the Wi Fi software is simple, requiring no reconfiguration of the guest's computer and will take up no hard drive space once the guest leaves the ship. Laptops are also available for rent at the Internet Café onboard. The Wi Fi network card costs $10 per day and passengers are charged either by the minute or can purchase 33-, 100- or 250-minute packages for as low as 40 cents per minute. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030701164753/http://ncl.com/news/pr102302.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm;

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805. For basic network access services (such as Internet access), the data communication server can perform dial-up authentication when the user connects to the server. PPP can be advantageously used to provide a plurality of in-protocol authentication methods. Preferably, a remote access dial-up user service (RADIUS) may be used to perform the dial-up authentication, allowing exchange of login information and user resource information between a client and a RADIUS server, the server containing a database. During an authentication session, the login information is sent to the RADIUS server, the user is authenticated, and the server returns the user data record provisioned in the database; such information may include the IP address assignment, the source and destination filter IDs, allowed access time, and other information. Nelson at [0107]; *see also* Nelson at FIG. 17, [0105]-[0106]. These and other objects of the invention are achieved in part by providing remote users with user terminals having both a receiver for receiving satellite direct radio broadcasting and a communication device for communicating with an Internet service provider via a communication link that is from a satellite direct radio system broadcast separate. Rothblatt I at 12; *see also* Rothblatt I at 10-12, FIGs. 1, 9A, 9B,

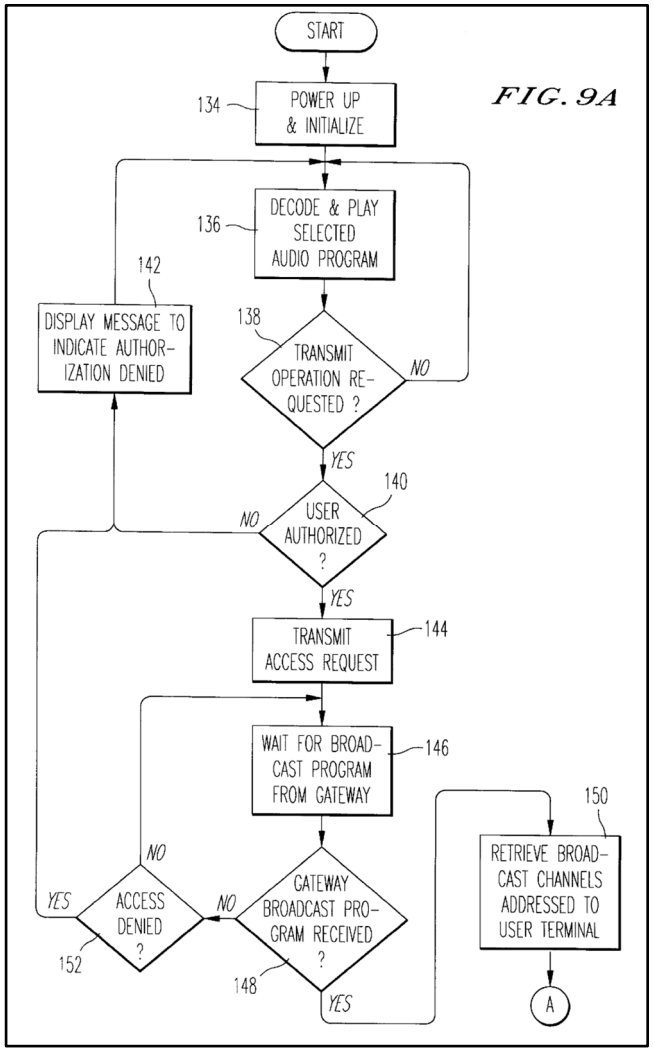
Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	

FIG. 9A

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Rothblatt II at FIG. 9A; *see also* Rothblatt II at 2:30-35, 3:20-23, 14:59-68, 15:32-65, 17:3-24; FIGs. 1, 5, 9B. > The present invention further provides a wireless access network which obtains customer-inputted identification information related to the prepaid account. The information is transmitted to an authentication server through the global communications network for authenticating information to thereby provide authorization to the system. The authentication server reviews the information through a central database containing the prepaid account information of the prepaid card including the prepaid balance amount. Upon authentication, the authentication server provides the customer with authorization for access to and the corresponding charge rates of the remote access services through an authentication client." Wu at [0009]; *see also* Wu at [0006], [0014]-[0019], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063], FIG. 1. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[25] The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection.	Suwanateep discloses "The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection." *See, e.g.*, > When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Suwanateep at 9.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the server as the access point. The aircrafts will house both e-mail and Internet servers. The type of LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b wireless network, for instance. Suwanateep at 15. As of the connection establishment, the passengers plug into a Local Area Network on the plane; logging onto global. ISP provides quick access to onboard web content and email delivery service. Once the dial-up is made from the 56k laptop's modem via the seatback telephone, the requests are intercepted by the onboard server at 11 Kbps rate and then the onboard proxy server sends a signal to the ground ISP server at rate up to 64Kbps to retrieve messages. The email transfers from the onboard server to laptop at the 56Kbps speed supported by the onboard LAN. Total download time may be the same. Suwanateep at 15. IFOL has an agreement with AT&T seatback telephone system to store their 20-pound airborne data servers on board. The airborne servers will be linked to the seatback-telephone handsets that are offered on virtually every domestic U.S. carrier now. The initial connection will be at 56K, but intends to speed that up in future. Simultaneously, IFOL will use existing satellite systems and ground technologies to update content, depending on timeliness of information. Methods used to update servers include: Inflight Updates -- via the off-aircraft communications systems, namely. North American Terrestrial System services, and Inmarsat services, on-demand requests are always addressed in real-time assuming off aircraft bandwidth availability.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Direct Broadcast Satellite Updates -- If the aircraft is equipped with this capability, IFOL can support both inflight and ground based updates using this technology. 802.11B Wireless LAN (Gate link) -- Enables high-speed updates of less timely information and content prior to the aircraft departure. Suwanateep at 33. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu. Suwanateep, Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

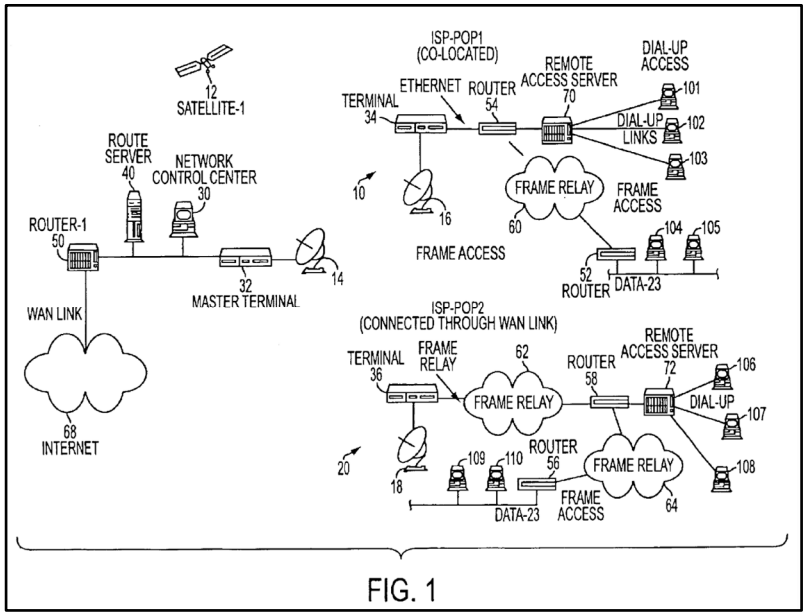


FIG. 1

Agarwal at FIG. 1; *see also* Agarwal at 3:18-20; 3:38-63.

> The primary purpose of the system 100 is to provide mobile, wireless terminals 1 with access to network resources, although it can also provide such access to fixed or mobile terminals over wireline connections as well. Mobile, wireless terminal as used herein means any mobile, wireless terminal having a MAC or other unique equipment address, such as a digital cellular handset, wireless PIA or PDA, or a computer with a wireless network adaptor.

Hagen at [0040]; *see also* Hagen at [0039], [0041], [0042], [0045], [0056], [0162].

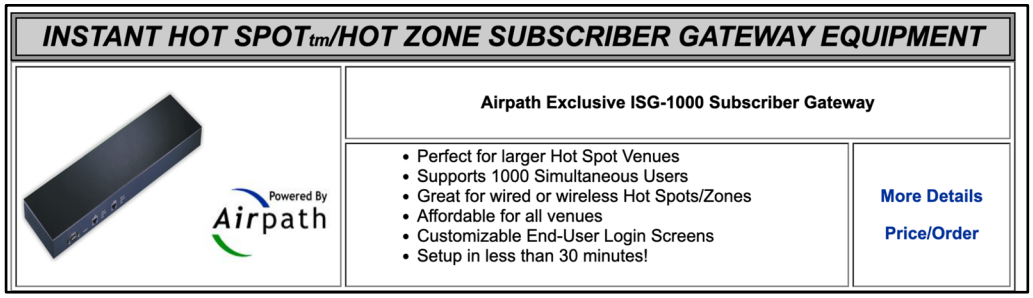
> Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	in the cabin seats. Hence, it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers. Jahn I at 2; *see also* Jahn I at 1-4. Aircraft multimedia services will be offered to passengers soon via back-seat screens and IP cable networks. Jahn II at Abstract; *see also* Jahn II at 3 ("The wireless access solution is compatible with other kinds of IFE . . . it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers."). The plurality of interface (I/O) units may include an Ethernet interface unit 115, modem 120, communications (COM) port 135, Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) port 130, Primary Rate Interface (PRI) port 125, ARINC-429 (Aeronautical Radio, Inc.) bus interface unit 145, and ARINC-573 bus interface unit 140. The Ethernet unit 115 may include ports for interconnection to the HIMs 155 and to the external terminal station (TS), and may be used to connect to the wireless local area network (LAN) transceiver 182 providing a high-speed data path to ground terminals while the aircraft (moving object) is on the ground. Alternatively, a COTS Ethernet card attaching to an external hub (not shown) may be used. Nelson at [0035]; *see also* Nelson at [0028], [0034], [0043], FIG. 1. Furthermore, the cyberstation includes subsystems that permit it to communicate with the personal computers using wireless or optional wired connections. Ollikainen at 1:66 - 2:5; *see also* Ollikainen at 2:6-15, 2:16-26, 3:45-65, 3:66 - 4:16, 4:58 - 5:9. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. A central network access server maintained by a wireless service provider is linked between the

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0023]; *see also* Wu at [0007]-[0008], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[26] The Internet Hotspot of claim 24, wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices.	Suwanateep discloses "The Internet Hotspot of claim 24, wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices." *See, e.g.*, Ultimately, the service will be available everywhere airplanes can fly. The perceived service will initially be available to commercial airline customers in North America and anticipated in 2002 in Europe. Additional global regions will be added as the service matures. Suwanateep at 9. When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD-ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. An

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	optional ARINC 429 PCMCIA interface allows the cabin file server to utilize aircraft data such as position reporting and maintenance information. This airborne computer is very versatile due to its extensive interface capabilities and removable hard drive. It also allows the computer to be updated and tested on the ground without removal from the aircraft. Suwanateep at 9. Since Internet traffic tends to happen in bursts, the cabin file-server not only allows multiple users to share access to a single physical connection, but also allows them to be on-line simultaneously. Suwanateep at 9. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu. Suwanateep, Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, or Wu, for example, to incorporate this limitation. *See, e.g.*,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")



Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp.

> It is therefore an object of the present invention to provide a method and apparatus to allow airline passengers or other remotely located users, to access the Internet during the course of an airline flight, or from remote land-based locations.

Bruner at [0008]; *see also* Bruner at [0011], [0021], Bruner at FIG. 1.

> The service scenario considers travellers in aircraft on the move. In the future, airliners will provide a variety of entertainment and communications equipment to the passenger. Since people are becoming more and more used to their own communications equipment, such as mobile phones and laptops with Internet connection, either through a network interface card or dial-in access through modems, business travellers will soon be demanding wireless access to communication services.

Jahn I at 1; *see also* Jahn I at FIG. 1, 1-3, 5.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")

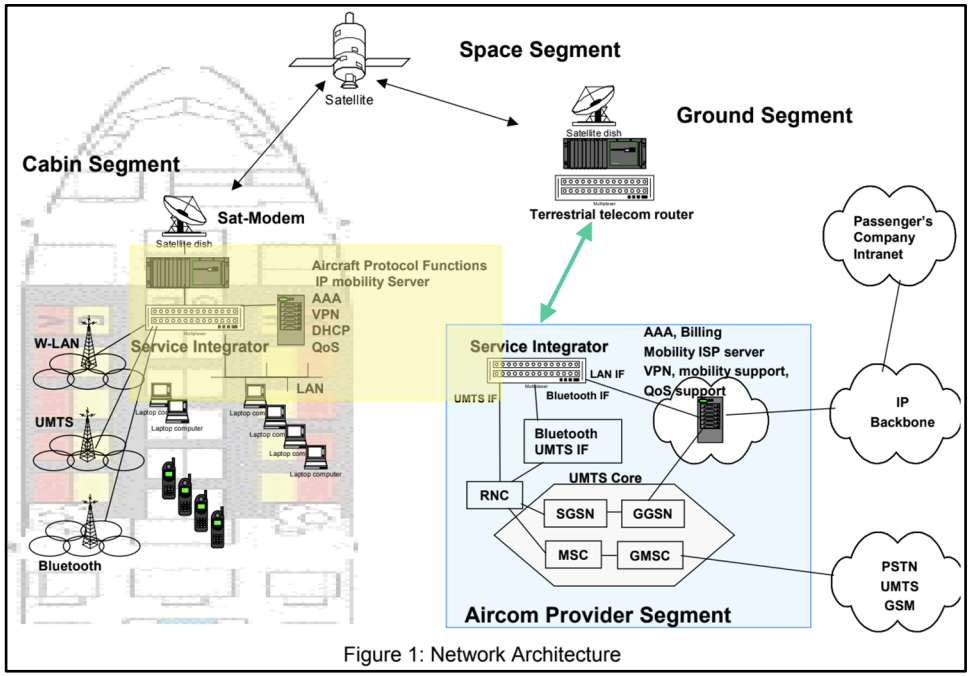


Figure 1: Network Architecture

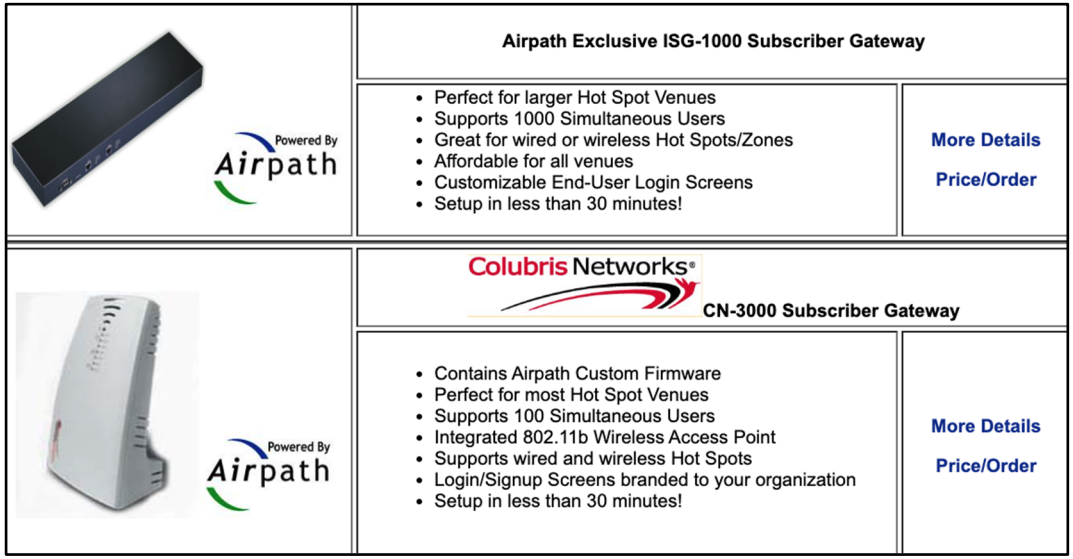
Jahn II at 2, FIG. 1; *see also* Jahn II at 1-3, FIGs. 3-4.

> MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun.

MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see also* MTN Cruise Ship Internet Services at

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). > System 100 may include a plurality of components to provide higher data bandwidth and passenger access technology for facilitating data applications, examples being Internet Web browsing and email retrieval. These components include Direct Broadcast Service (DBS) satellite decoder 152, passenger cabin dial-up access system 151, and the WGS 182. Other components of system 100 can help facilitate data communications over the existing NATS data network. Nelson at [0032]; *see also* Nelson at [0028], [0034]. > Since the number of connections are not limited by physical connecting ports, a large number of customers can easily be accommodated within the wireless coverage area. Wu at [0005]; *see also* Wu at FIG. 1, [0006], [0037], [0044], [0048], [0058]. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[28] The Internet Hotspot of claim 26, wherein the data connections include wireless data connections.	Suwanateep discloses "The Internet Hotspot of claim 26, wherein the data connections include wireless data connections." *See, e.g.*, > ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the server as the access point. The aircrafts will house both e-mail and Internet servers. The type of LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b **wireless network**, for instance. Suwanateep at 15 (emphasis added). IFOL has an agreement with AT&T seatback telephone system to store their 20-pound airborne data servers on board. The airborne servers will be linked to the seatback-telephone handsets that are offered on virtually every domestic U.S. carrier now. The initial connection will be at 56K, but intends to speed that up in future. Simultaneously, IFOL will use existing satellite systems and ground technologies to update content, depending on timeliness of information. Methods used to update servers include: Inflight Updates -- via the off-aircraft communications systems, namely. North American Terrestrial System services, and Inmarsat services, on-demand requests are always addressed in real-time assuming off aircraft bandwidth availability. Direct Broadcast Satellite Updates -- If the aircraft is equipped with this capability, IFOL can support both inflight and ground based updates using this technology. 802.11B Wireless LAN (Gate link) -- Enables high-speed updates of less timely information and content prior to the aircraft departure. Suwanateep at 33. To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and Wu. Suwanateep, Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services,

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Ollikainen, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/ne

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	ws0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp. The service integrator will provide the interfaces for the wireless and wired service access points in the cabin, as well as the interface to the terrestrial networks at aircom provider site. Jahn I at 4; *see also* Jahn I at 1-2, 4. When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Jahn II at 2-3, FIGs. 3-4. MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see generally id.* The cyberstation thus provides a means for implementing a variety of customized stand-alone receiver-transmitter stations that can provide service to multiple household or business personal computers using wireless or optional wire local area networks as a local communication system.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	Ollikainen at 2:16-26. > The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]; *see also* Wu at [0029], [0040], [0049], FIG. 1. To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[32] The Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network.	Suwanateep discloses "The Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network." *See, e.g.*, > ANS is an onboard Local Area Network that connects each seatback telephone bay to an onboard proxy server, based on IEEE 802.11b. The connection on behalf of the individual users is routed through the proxy server, hence the term proxy at speed of 11 Mbps. Each laptop wireless LAN card also has a hardware-defined address, which in turn is mapped into the server as the access point. The aircrafts will house both e-mail and Internet servers. The type of LAN varies between airlines. Cathay Pacific has installed USB ports in its seats, while SAS is with an 802.11 b wireless network, for instance. Suwanateep at 15.

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	To the extent Suwanateep does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Suwanateep further renders the limitation obvious in light of other references, such as Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu. Suwanateep, Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu concern the similar subject matter as Suwanateep, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Suwanateep with Clark, Hagen, Jahn I, Jahn II, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Suwanateep with those of Clark, Hagen, Jahn I, Jahn II, Nelson or Wu, for example, to incorporate this limitation. *See, e.g.*, In one embodiment, the satellite and terrestrial microwave communication system transfers information using a satellite transponder or fixed terrestrial microwave radio via an ethernet packet switching protocol such as, for example, the IEEE 802 series of protocols or any proprietary protocols the TCP/IP protocol used on the World Wide Web. Clark at 3:1-9. The system 100 generally comprises one or more geographically dispersed network access points, which in this embodiment are radio frequency wireless access points (WAP) 3, 4. The WAPs 3, 4 may be conventional devices equipped with wireless network adaptors embodying the IEEE 802.11 Wireless LAN or Bluetooth wireless network communications standards, or other devices providing similar functionality. Examples of such devices include the Home Wireless Gateway product sold by 3COM Corporation, the Spectrum High Rate AP 41X1 Ethernet Access Point product sold by Symbol Technologies, and the Aironet 340 Series Access Points product sold by Cisco Systems. Hagen at [0042]; *see also* Hagen at [0039], [0041], [0042], [0045].

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Jahn I at 2; *see also* Jahn I at 1-2. Several wireless access segments in the aircraft cabin, namely a wireless LAN according to IEEE 802.11b standard for IP services, an UMTS pico-cell for personal and data communications, and Bluetooth 1.1, as well as a standard wired IP LAN." Jahn II at 3. The WGS 182 may be, for example, a wireless LAN transceiver (as shown in FIG. 1) based on the IEEE 802.11 specifications which can allow transfer of high-speed data to the server 110 in the airport when the aircraft (moving object) is on the ground. The ACU may act as the gateway to a ground-based data center via the North American Terrestrial System (NATS) network. Nelson at [0030]; *see also* Nelson at FIG. 1, [0028], [0110]. The wireless network interface and the wireless access point 26 conforms with the Institute of Electrical and Electronics Engineers (IEEE) standard 802.11 and extensions thereof such as IEEE 802.11a and 802.11b for standardizing wireless local area networks (wireless LANs). Wu at [0050]; *see also* Wu at FIG. 1, [0052]-[0054]. It would have been obvious to a person of ordinary skill in the art that any member of the 802.11 standard family could be employed to permit interoperability of standard Wi-Fi components. The '469 patent specification itself acknowledges that a person of ordinary skill in the art would understand that the "wireless access point 40 can employ a security protocol of a type that is known to persons skilled in the art, such as the 802.11b security protocol, or any subsequent or

Claim	Inflight Internet Connectivity Technology and Its Application on E-Commerce ("Suwanateep")
	future versions of the 802.11 standard. Such security protocols may be generally designated as 802.11X, where X can be any version or implementation of the 802.11 standard." '469 patent at 5:19-25. It was well understood that "each new 'flavor' of the technology results in a new suffix to 802.11." "Going WiFi" at 82; *see also id.* at 133 ("The fundamental components of a WLAN are clear-cut. And it's relatively easy to describe the 802.11 suite in basic networking terms."). As set forth in the accompanying contentions, the 802.11n standard had furthermore not been drafted by the time of the alleged priority date, rendering claim 32 invalid. *See also* "Going Wifi" at 116-117 ("The 802.11n Task Group is *working on a high-speed variant* of the existing 802.11 standards . . . However, don't expect to see these newer, faster standards for a number of years."). To the extent that Suwanateep does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Suwanateep, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

EXHIBIT E-13

Exhibit E-13 to American s Preliminary Invalidity Contentions

U.S. Patent Application No. 2003/0050041 ("Wu")

U.S. Patent Application No. 2003/0050041 ("Wu") titled "Network system for providing prepaid wireless remote access service" was filed by Robert Wu on September 7, 2001 and published on March 13, 2003.[1] Wu is prior art to the '469 Patent under at least Pre-AIA 35 U.S.C. §§ 102 (a), (e) and (g) as to claims 24, 25, 26, 28, and 32 (the "Asserted Claims") of the '469 Patent.

To the extent Plaintiff alleges Wu does not disclose any particular limitation of the Asserted Claims of the '469 Patent, either expressly or inherently, any purported differences are such that the claimed subject matter as a whole would have been obvious in view of the knowledge of one skilled in the art. It would have further been obvious to a person of ordinary skill in the art as of the priority date of the '469 Patent to modify Wu or combine the teachings of Wu with other prior art in a manner that would have rendered the Asserted Claims invalid as obvious, including but not limited to any combination of the following:

- Invalid under 35 U.S.C. § 102 by Wu;
- Invalid under 35 U.S.C. § 103 by Wu and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 6,894,990 to Agarwal et al. ("Agarwal") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2002/0138625 to Bruner et al. ("Bruner") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 6,445,777 to Clark ("Clark") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 6,968,394 to El-Rafie ("El-Rafie") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2002/0075844 to Hagen ("Hagen") and the knowledge of a person of ordinary skill in the art;

[1] Defendant's invalidity charts, in some instances, rely at least in part on Plaintiff's apparent positions regarding the scope of its claims for purposes of asserting infringement. Nothing in these claim charts should be understood as an admission relating to infringement, either literally or under the doctrine of equivalents, or as an admission relating to Defendant's understanding of the proper interpretation or scope of the Asserted Claims. Defendant reserves the right to rely on additional citations or sources of evidence that may also be applicable, or that may become applicable in light of any Court Order on claim construction, changes in Plaintiff's infringement contentions, or information obtained during discovery as the case proceeds.

- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2003/0051041 to Kalavade et al. ("Kalavade") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Korean Patent No. 2003/0029267 to Hyunwoo Lee ("Lee") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2007/0008937 to Mody et al. ("Mody") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2003/0055975 to Nelson et al. ("Nelson") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 6,377,981 to Ollikainen et al. ("Ollikainen") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Czech Patent No. 2,000,578 to Martine Rothblatt ("Rothblatt I") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 6,105,060 to Martine Rothblatt ("Rothblatt II") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent Application No. 2004/0109449 to Seo ("Seo") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of U.S. Patent No. 5,987,430 to Van Horne et al. ("Van Horne") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Airpath Wireless Hot Spot ("Airpath Wireless Hot Spot") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Connexion by Boeing ("Connexion by Boeing") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of MTN Cruise Ship Internet Services ("MTN Cruise Ship Internet Services") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of StratosNet ("Stratos") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Tenzing Global ("Tenzing Global") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of Wireless Cabin ("Wireless Cabin") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of "Aeronautical Communications for Personal and Multimedia Services via Satellite" by M. DeSanctis et al. ("DeSanctis") and the knowledge of a person of ordinary skill in the art;

- Invalid under 35 U.S.C. § 103 by Wu in view of "Dimensioning of Aeronautical Satellite Services" by Jahn et al. ("Jahn I") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Wu in view of "Passenger Multimedia Service Concept via Future Satellite Systems" by A. Jahn, M. Holzbock, M. Riera, N. Díaz, and M. Werner ("Jahn II") and the knowledge of a person of ordinary skill in the art; and/or
- Invalid under 35 U.S.C. § 103 by Wu in view of "Inflight Internet Connectivity Technology and Its Application on E-Commerce," by Manasuda Suwanateep ("Suwanateep") and the knowledge of a person of ordinary skill in the art.

As the United States Supreme Court held in *KSR Int'l Co. v. Teleflex, Inc.*, "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." 550 U.S. 398, 416 (2007). The Supreme Court further held: "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.* at 417. The Supreme Court further held: "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *Id.* at 421.

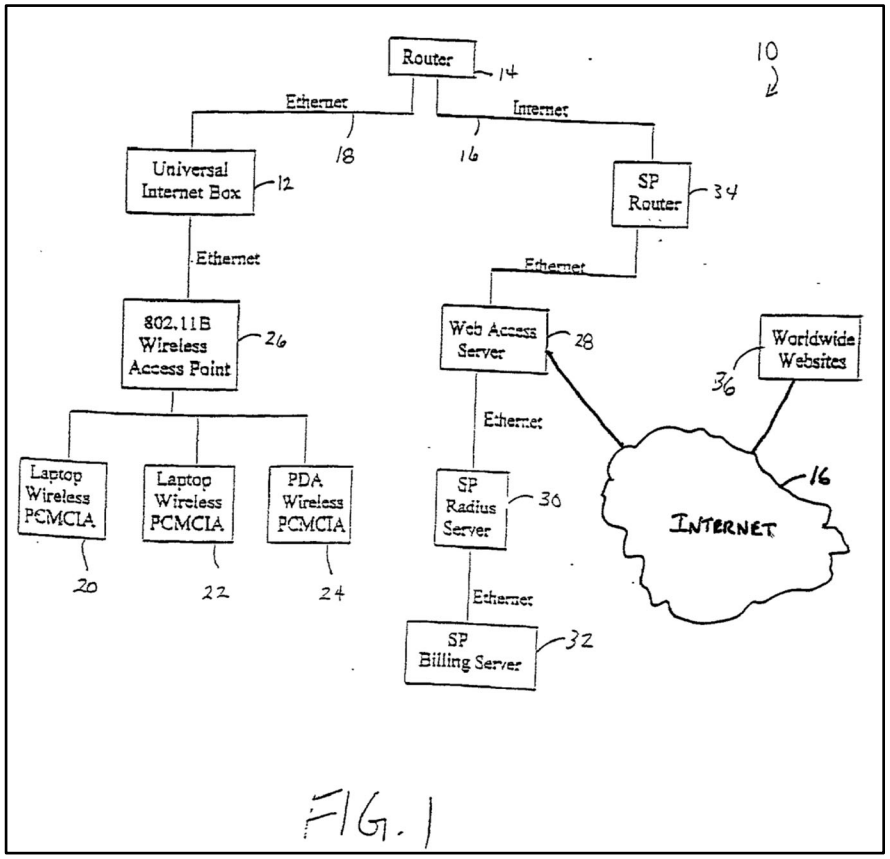
Defendant reserves the right to amend or supplement this claim chart at a later date as more fully set forth in the Invalidity Contentions.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
[24] An Internet Hotspot comprising:	To the extent the preamble is limiting, Wu discloses an Internet Hotspot. *See, e.g.*, When away from home or office, people often take their portable electronic devices with them. The main problem faced by users of such portable electronic devices is the limited availability of communications network access in public places such as airports, convention centers, bus terminals, shopping centers, restaurants, arenas, and the like. Wu at [0003]. Accordingly, there is a need for a network system to provide customers in public areas

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	with prepaid wireless access to communications networks. The prepaid wireless access allows the customers to maintain connection at any location within a wireless coverage area. Wu at [0005]. The network system requires minimal space for executing operations, is discretely located, and can operate over a large public area without the physical constraints and limitations of hardwiring, connecting ports, and user interface equipment. The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]. The base station is responsible for all the wireless stations within a particular wireless coverage area. The base station is further connected to wired networks for facilitating communication traffic beyond the wireless coverage area including, but not limited to, publically accessible networks including the global communications network (i.e., the Internet). Wu at [0007]. a base station including a wireless access point for communicating through a wireless medium with a wireless station operated by a customer Wu at [0011]. In the present invention, there is generally provided a base station in communication with one or more wireless stations comprising, for example, portable electronic devices. The base station is responsible for all the wireless stations within a certain wireless coverage area. The base station is typically connected to additional wired networks for

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. Wu at [0023]. The base station 12 provides broadband service network for high speed access to the global communications network 16 (i.e., the Internet). . . The base station 12 may be implemented in a variety of environments where multiple customers may obtain high speed access to the global communications network 16 (i.e., the Internet) over a range of IP configurations (e.g. fixed IP, DHCP client, or private IP) on the wireless stations 20, 22, and 24. Wu at [0039]. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. Wu at [0043].
[24.a] a satellite dish communicating with the Internet via one or more data links with a satellite;	Wu discloses "a satellite dish communicating with the Internet via one or more data links with a satellite." *See, e.g.*,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")

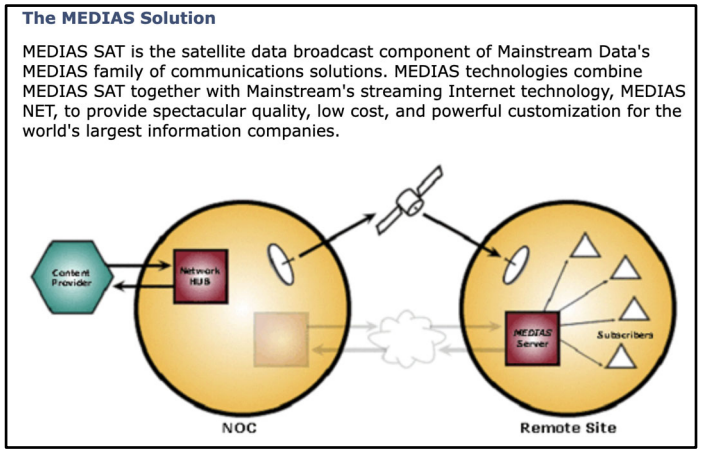


Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for providing a customer with a prepaid wireless remote access service for one embodiment of the present invention").

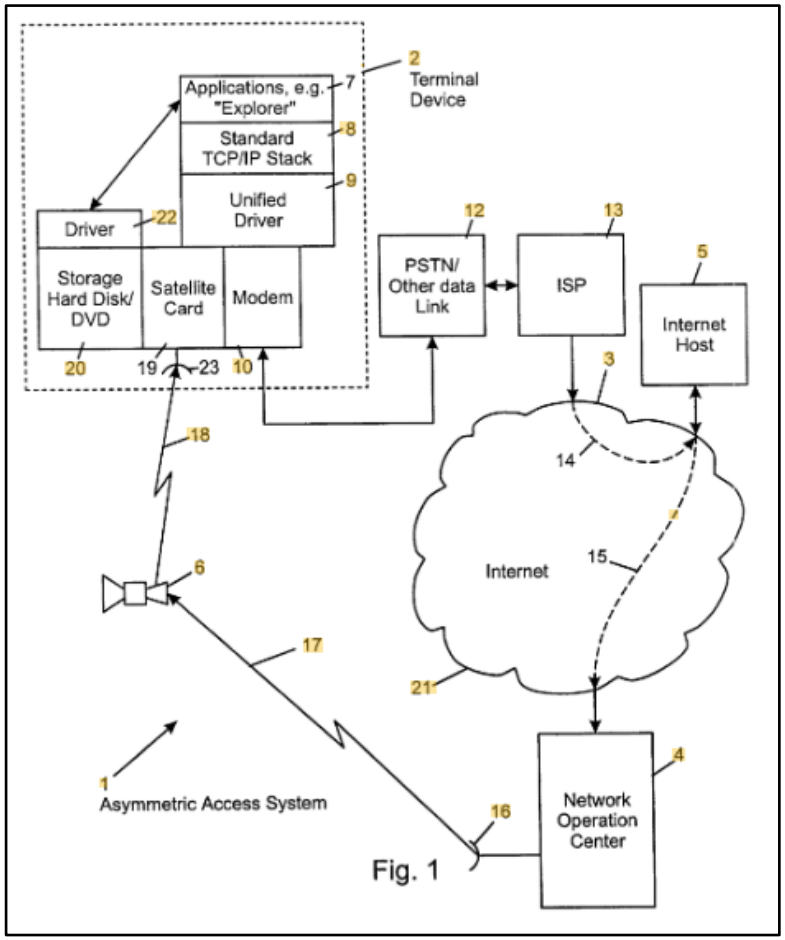
> The base station is responsible for all the wireless stations within a particular wireless coverage area. The base station is further connected to wired networks for facilitating communication traffic beyond the wireless coverage area including, but not limited to,

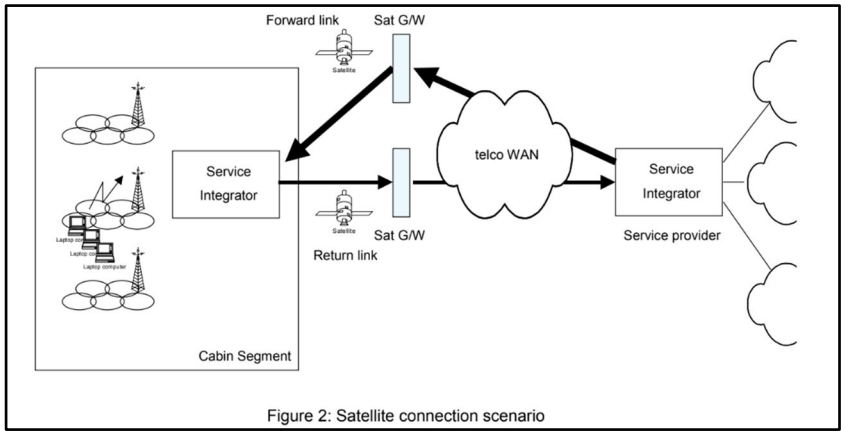
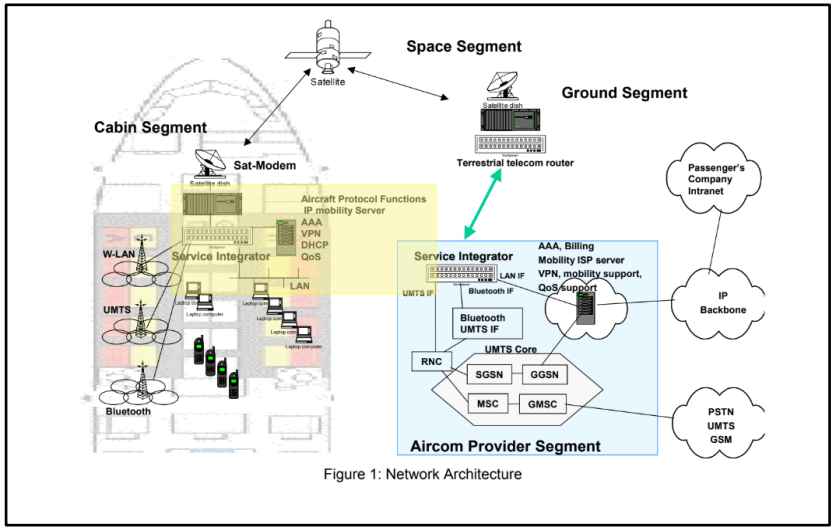
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	publically accessible networks including the global communications network (i.e., the Internet). Wu at [0007]. The wireless stations 20,22, and 24 may include any wireless-enabled electronic device that can be used to connect to the base station 12 to remotely access the global communications network such as the Internet including the World Wide Web (WWW) for web browsing and the like. Wu at [0038]. The base station 12 provides broadband service network for high speed access to the global communications network 16 (i.e., the Internet). . . The base station 12 may be implemented in a variety of environments where multiple customers may obtain high speed access to the global communications network 16 (i.e., the Internet) over a range of IP configurations (e.g. fixed IP, DHCP client, or private IP) on the wireless stations 20, 22, and 24. Wu at [0039]. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. Wu at [0043]. The connection between the wireless access point 26 and the base station 12 may include any high bandwidth communication channels such as ethernet networks, frame relay networks, synchronous optical network (SONET), asynchronous transfer mode (ATM) networks, digital subscriber loop (xDSL) networks, cable networks, satellite links, T1/T3/E1 trunk lines, integrated services digital network (ISDN), satellite feed lines,

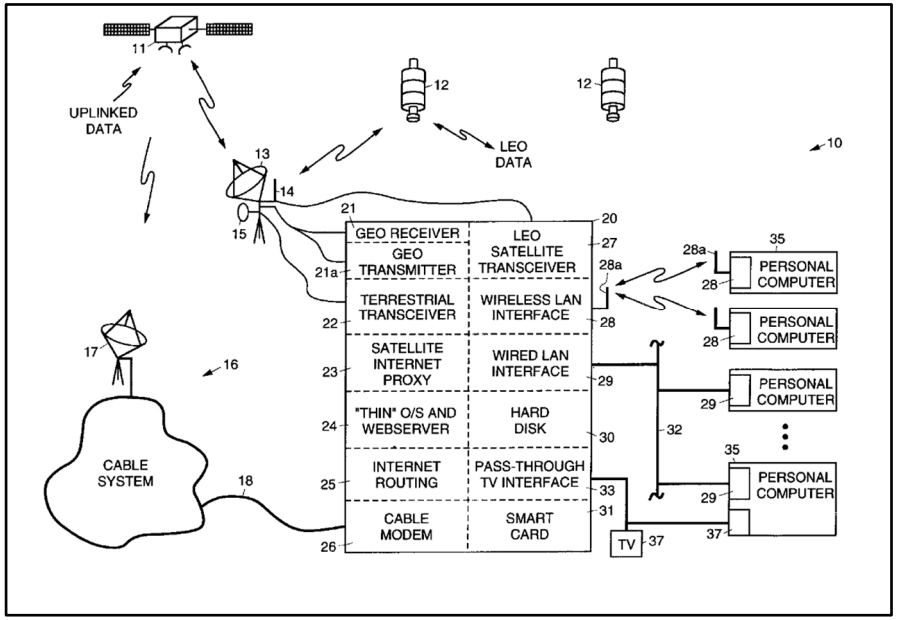
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	digital cable feed lines, and the like for data transfer through a global communications network (i.e., the Internet). Wu at [0048]. With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. Wu at [0058]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and Stratos. Wu, Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and Stratos concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, and/or Stratos would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt I, Rothblatt II, or Stratos, for example, to incorporate this limitation. *See, e.g.*,

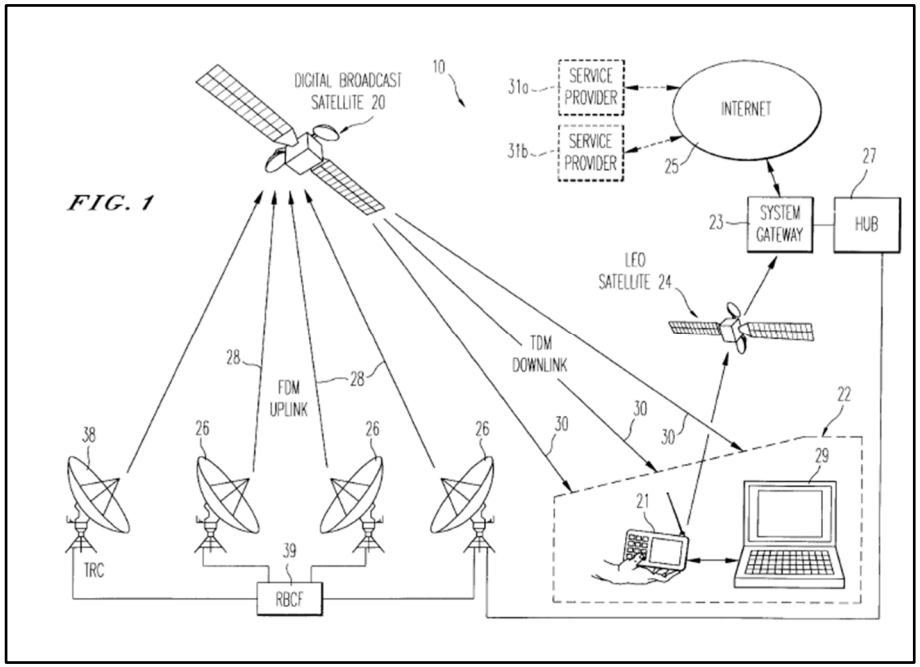
Claim	U.S. Patent Application No. 2003/0050041 (“Wu”)
	 Airpath Wireless Hot Spot at https://web.archive.org/web/20030819121544/http://www.mainstreamdata.com/content/_soln/soln2.html;*see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html; https://web.archive.org/web/20040215133233/http://mainstreamdata.com:80/content/_abtm/abtm0.html;https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html; https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20030808001821/http://www.mainstreamdata.com/content/_soln/soln0.html. Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes

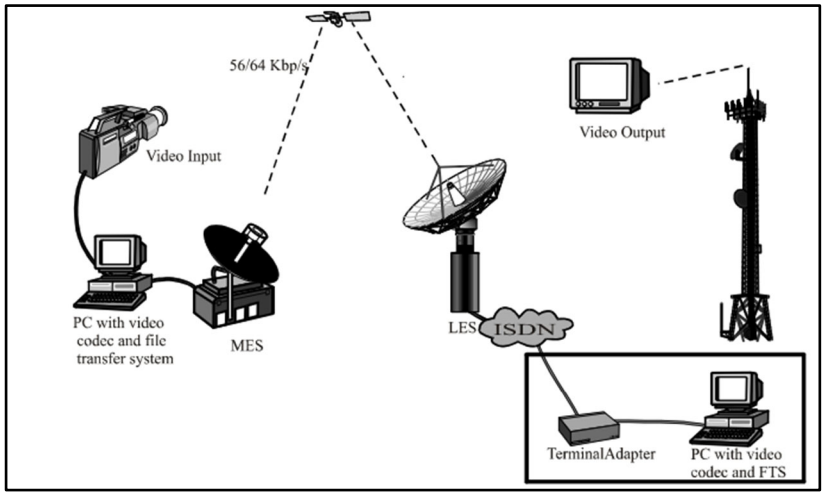
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	14, 16, 18 to Internet Service Providers, *e.g.*, 10 or 20, and can also be used to connect corporate sites. Agarwal at 3:38-41; *see also* Agarwal at FIG. 1, 3:18-20, 3:38-63. For airlines operating a mixed fleet of systems, the present invention integrates seamlessly on any platform. This allows for rapid deployment of services fleetwide and continuity of service as they adopt new hardware systems or equip the aircraft with wideband satellite technology for off-aircraft communications. Bruner at [0080], [0035] ("Most preferably, this relatively low bandwidth in-flight link is complemented by a high bandwidth (600 kbps) one way satellite up link to the aircraft."); *see also* Bruner at [0015], [0018], [0021], [0035], [0080].

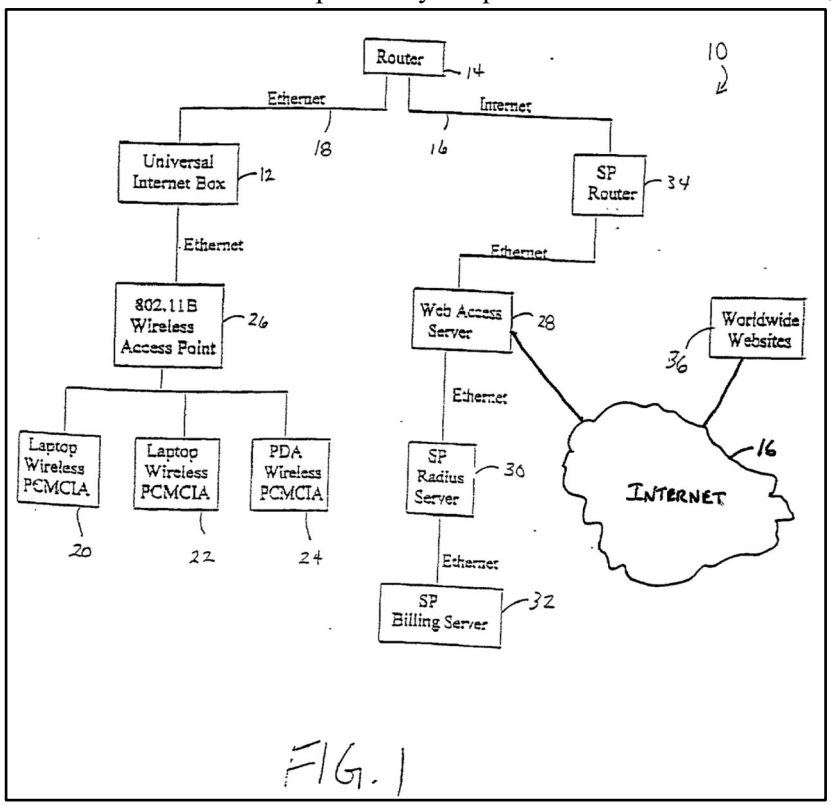
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 El-Rafie at FIG. 1; *see also* El-Rafie at 4:56-5:19.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Figure 2: Satellite connection scenario Jahn I at FIG. 2; *see also* Jahn I at 1-3, FIG. 1.  Figure 1: Network Architecture Jahn II at FIG. 1; *see also* Jahn II at 2-4. The system architecture 600 further includes on the aircraft a DSS receiver/decoder and

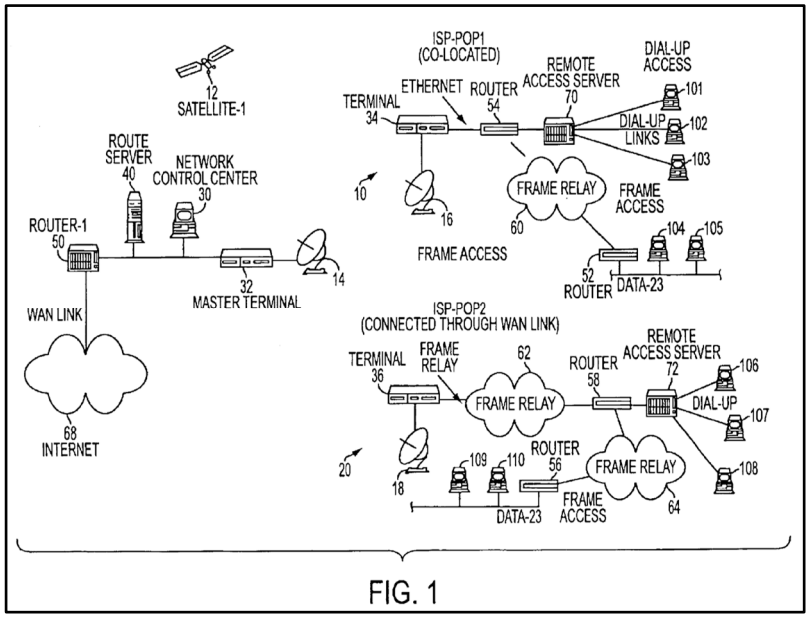
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	antenna (not shown) to help facilitate the broadband service. Nelson at [0056]; *see also* Nelson at [0015], [0053]-[0054], [0056], [0058]-[0059], [0061], FIG. 6.  Ollikainen at FIG. 1; *see also* Ollikainen at 2:58-3:45; 3:65-4:17.

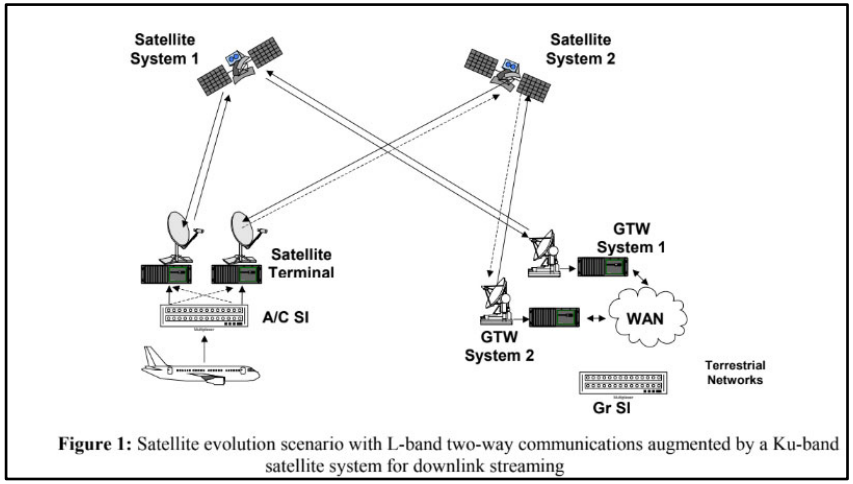
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Rothblatt I & II at FIG. 1; *see also* Rothblatt I at FIGs. 3, 5, 1-2, 5, 8-9; Rothblatt II at FIGs. 3, 5, 2:16-21, 2:46-64, 3:12-15, 6:20-27.

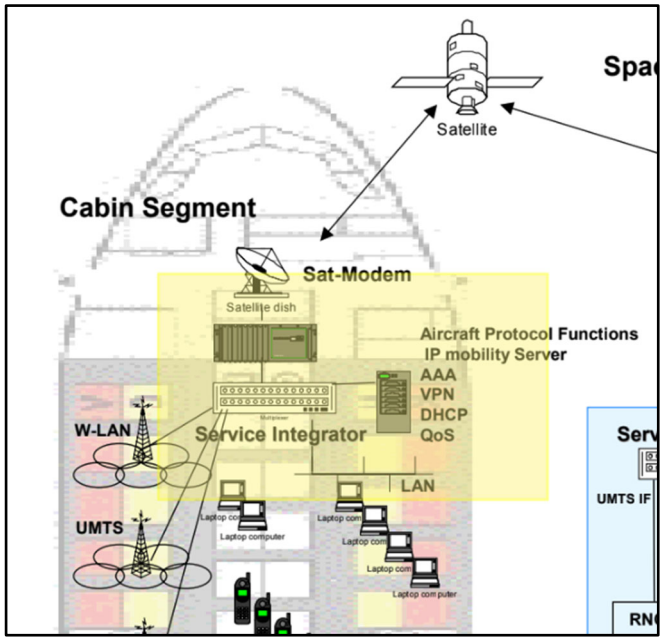
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; .https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those

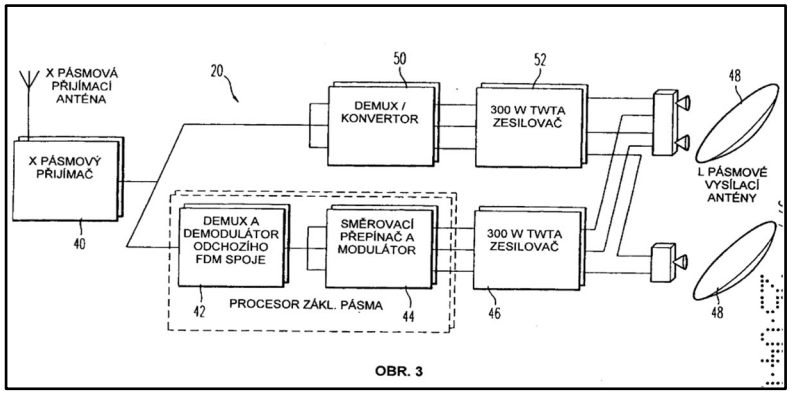
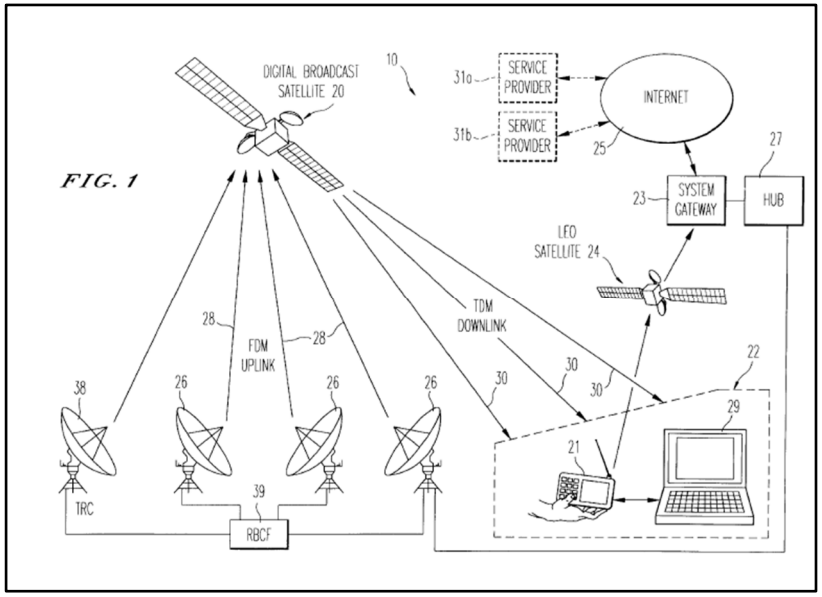
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.b] at least one router operatively coupled to the satellite dish;	Wu discloses "at least one router operatively coupled to the satellite dish." *See, e.g.*,  Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for

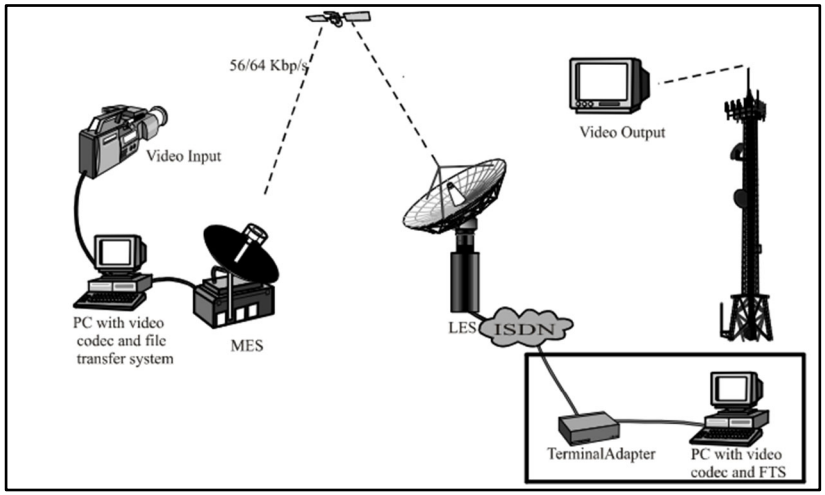
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	providing a customer with a prepaid wireless remote access service for one embodiment of the present invention"). With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. The router 14 operates to direct the communications traffic from the base station 12 through the global communications network 16 to a service provider router 34 connected at the other end thereof. The router 14 may be part of the base station 12 or as a separate unit as shown in FIG. 1. Wu at [0058]. The service provider router 34 receives the communications traffic originating from the base station 12 through the global communications network 16 and transmits it to the web access server 28. Wu at [0059]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, and Stratos. Wu, Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, and Stratos concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, and/or Stratos would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt I, Rothblatt II, Seo, or Stratos, for example, to incorporate this limitation. *See, e.g.*,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Agarwal at FIG. 1; *see also* Agarwal at 2:29-36, 3:18-20, 3:38-63, 4:56-65.

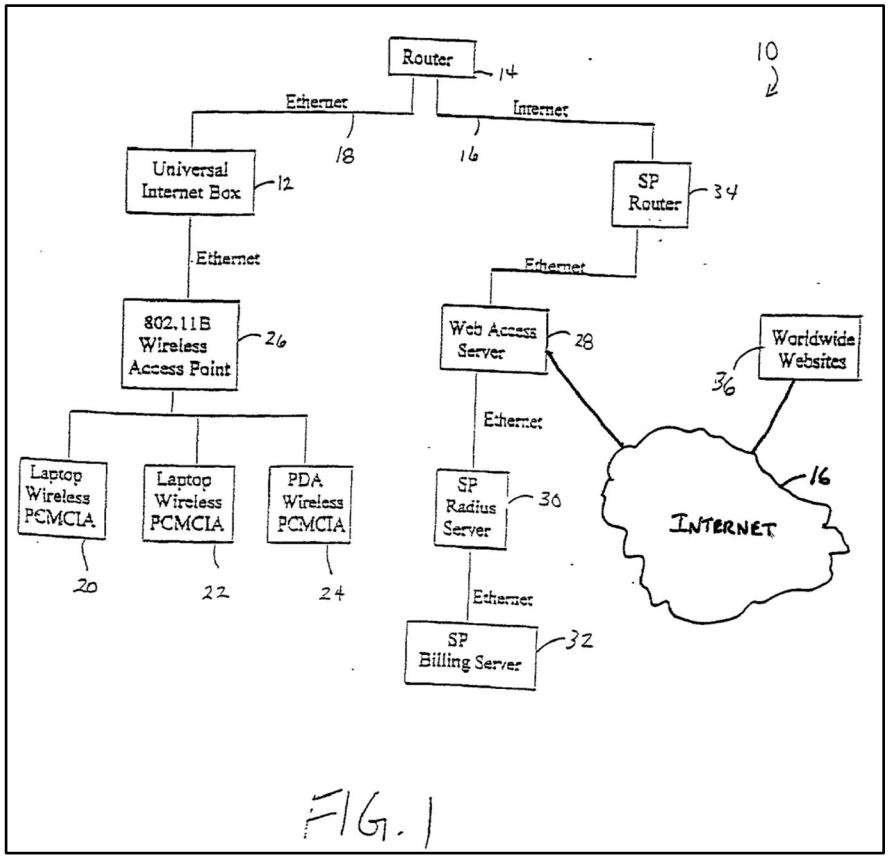
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at 3-4, *see also* DeSanctis at FIG. 2.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Jahn I at 2, FIG. 1 (excerpt); *id*. ("The WirelessCabin architecture and its components are conceptually depicted in Figure 1."); *see also* Jahn I at 2-4, FIG. 2. In the simple case of native IP, a router can connect the wired LAN segment and the wireless IEEE 802.11b access points. Furthermore, other protocol entities needed for IP services in the cabin (such as DHCP, mobility and AAA server) are linked here. Jahn II at 4-5.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Rothblatt I at FIG. 3; *see also* Rothblatt I at FIG. 5, 2, 12.  Rothblatt II at FIG. 1, *see also* Rothblatt II at FIG. 5, 3:20-23, 11:55-65, 16:28-48; 17:9-16.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The internet network node 610 comprises a router 206 connected to the backbone network 200, a plurality of switches 612 and 618, and routers 614 and 616 connected to subscribers. Seo at [0051]; *see also* Seo at [0033], [0026]-[0027], [0049]-[0051].  Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.c] a subscriber access unit operatively coupled between the satellite dish and the at least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet; and	Wu discloses "a subscriber access unit operatively coupled between the satellite dish and the at least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet." *See, e.g.*,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for providing a customer with a prepaid wireless remote access service for one embodiment of the present invention"). The present invention further provides a wireless access network which obtains customer-inputted identification information related to the prepaid account. The information is transmitted to an authentication server through the global communications network for

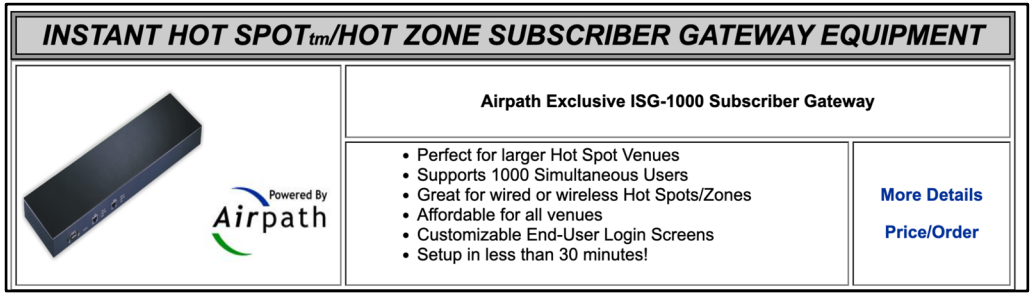
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	authenticating information to thereby provide authorization to the system. The authentication server reviews the information through a central database containing the prepaid account information of the prepaid card including the prepaid balance amount. Upon authentication, the authentication server provides the customer with authorization for access to and the corresponding charge rates of the remote access services through an authentication client. The authentication client implements the execution of the services and monitors the usage time and the charge rates for the services. Upon termination of the session, the accrued charges are tallied by the authentication client and transmitted to the authentication server whereupon the authorization is canceled. The authorization server subsequently updates the prepaid account information. Wu at [0009]. In another aspect of the present invention there is provided a method for providing a customer with a prepaid wireless remote access service, where the method comprises: connecting a base station to a wireless station operated by the customer through a wireless communication medium; querying the customer for authentication information; authenticating the authentication information provided by the customer; checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check. Wu at [0014]-[0019]. The remote central access server searches the prepaid card database residing thereon to determine the balance amount on the prepaid card. Wu at [0029].

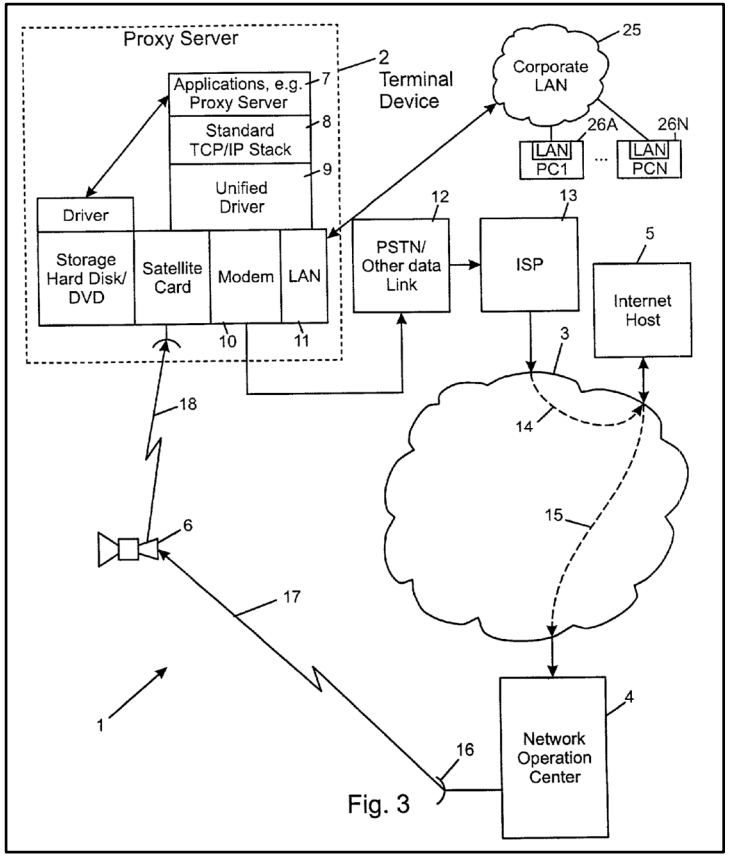
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The customer-selected security code is transmitted and securely stored in association with the PIN of the prepaid card on the central database in the remote central access server maintained by the prepaid service provider. . .Thus, to access services offered by the prepaid service provider (i.e., wireless remote access service), the customer is prompted to supply both the PIN and the customer selected security code, before providing the wireless remote access. Wu at [0031]. The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The base station 12 supports RADIUS client applications for enabling the wireless service provider to maintain the central database of customers and their PINS. RADIUS is an authentication, authorization and accounting system used by remote access service providers for controlling and maintaining access by authorized parties. The RADIUS client operates in conjunction with a RADIUS server to implement the above aims as will be described hereinafter. The base station 12 may be optionally configured to include an authentication server which is programmed to administer the customer's login name and security code (e.g. password). The service provider may further configure the base station 12 to display advertisements through the wireless stations 20, 22, and 24 to the customer. Wu at [0041].

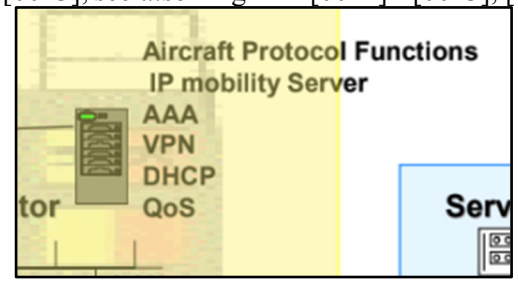
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Further functions executed by the base station **12** include DNS redirection which provides a local DNS server when the customer's DNS server is operating behind a firewall or located on a private intranet; email redirection service; home page redirection for redirecting customers to portal web site to generate advertising revenues and the like; DHCP function for supplying dynamic IP addresses, automating the transmission control protocol/Internet protocol (TCP/IP) client configuration process and maintaining records of the IP addresses to be assigned to the wireless stations; and internal customer management for storing and maintaining a customer account database and prompting the customer to input the PIN and the associated security code. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. Wu at [0043]. The portable wireless devices 20, 22, and 24 are connected to the base station 12 through a wireless access point 26 also referred to as a wireless local bridge. . . With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. The router 14 operates to direct the communications traffic from the base station 12 through the global communications network 16 to a service provider router 34 connected at the other end thereof. The router 14 may be part of the base station 12 or as a separate unit as shown in FIG. 1. The router 14 and the base station 16 are connected via a communications channel 18 such as an ethernet network, for example. Wu at [0048] and [0058]. The service provider router 34 receives the communications traffic originating from the base station 12 through the global communications network 16 and transmits it to the web

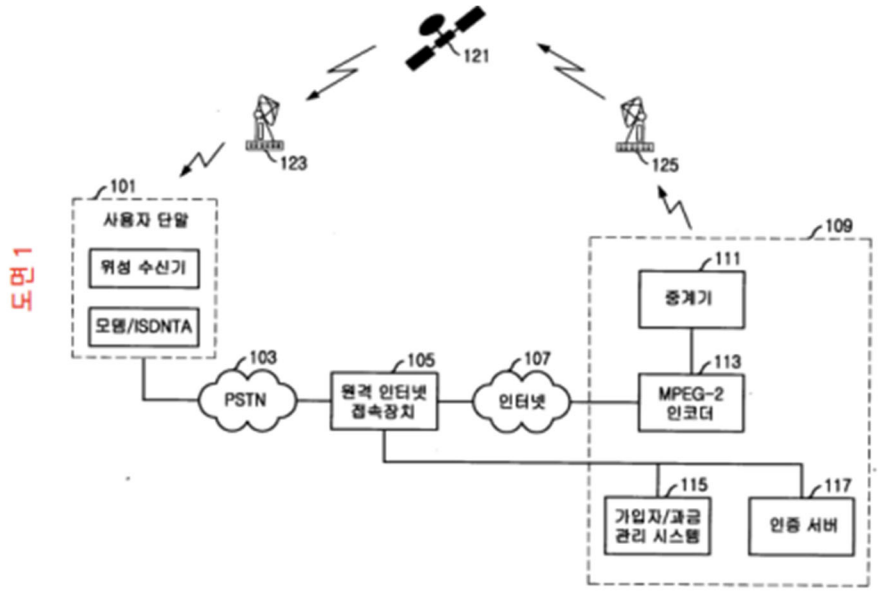
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	access server 28. The web access server 28 operates as a central gateway to the global communications network 16 with a plurality of WWW destination web servers 36 connected thereto. The web access server 28 is also connected to a Remote Authentication Dial-In User Service (Radius) server 30 and a central billing server 32 maintained by the wireless service provider, via a broadband channel such as an ethernet network, for example. The RADIUS server 30 is an authentication server that is connected to the central billing server 32 via a broadband channel such as an ethernet network, for example. The central billing server 32 includes a PIN database for storing information including account data, customer profiles, customer-selected security codes, prepaid card usage history, schedule of charge rates for the services for the wireless remote access service. Wu at [0059]. The RADIUS server 30 is a client/server-based authentication software system that is used by service providers for implementing remote access applications and maintaining customer profiles in the PIN database residing on the central billing server 32. The RADIUS server 30 can be shared by base stations 12. The RADIUS server 30 is programmed to execute authentication, authorization, and accounting procedures for checking and validating information provided by the customer desiring to access the services. Wu at [0060]. The RADIUS client is configured to provides the customer access to the global communications network only upon authorization from the RADIUS server 30. The RADIUS server 30 reviews the information provided by the customer and checks it with the central billing server 32 prior to issuing the authorization. Once access is permitted, the service charges incurred by the customer is monitored and tracked by the RADIUS server 30 through the assigned RADIUS client (i.e. the base station 12 or the web access server 28).

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Wu at [0062]. > Once the PIN and the security code (e.g. password) is furnished by the customer, the base station 12 connects to the web access server 28 maintained by the wireless service provider. The RADIUS server 30 receives an access request from the RADIUS client (i.e., the base station 12 or the web access server 28) for authentication and authorization for access. The access requests contains the PIN and security code of the customer's prepaid card. The RADIUS server 30 carries out the authentication and accounting procedures to ensure that the customer's PIN and security code are correct and valid. The information is authenticated and validated by the RADIUS server 30 through the PIN database residing on the central billing server 32. The RADIUS server 30 then reviews the balance amount on the prepaid card through the PIN database. Upon verification and review of the PIN/security code, and balance amount, the RADIUS server 30 retrieves the corresponding charge rate from the billing schedule stored on the PIN database. The RADIUS server 30 transmits an authorization message including the account information, balance amount, and charge rate to the RADIUS client (i.e. the base station 12 or the web access server 28). Wu at [0063]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Lee, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, and Van Horne. Wu, Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, and Van Horne concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Rothblatt I, Rothblatt II, Seo, Stratos, and/or Van Horne would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, or Van Horne, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp. Airpath Wireless Hot Spot at https://web.archive.org/web/20030201104447/http://airpath.com/hsbs.asp; *see also* https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; https://web.archive.org/web/20030720022617/http://airpath.com/Services/instanthsp_details.htm. The ADS is the inflight remote server 19 that preferably serves content to inflight users of the system and also acts as a gateway to the ground based servers (16, 34, 37, 40) for

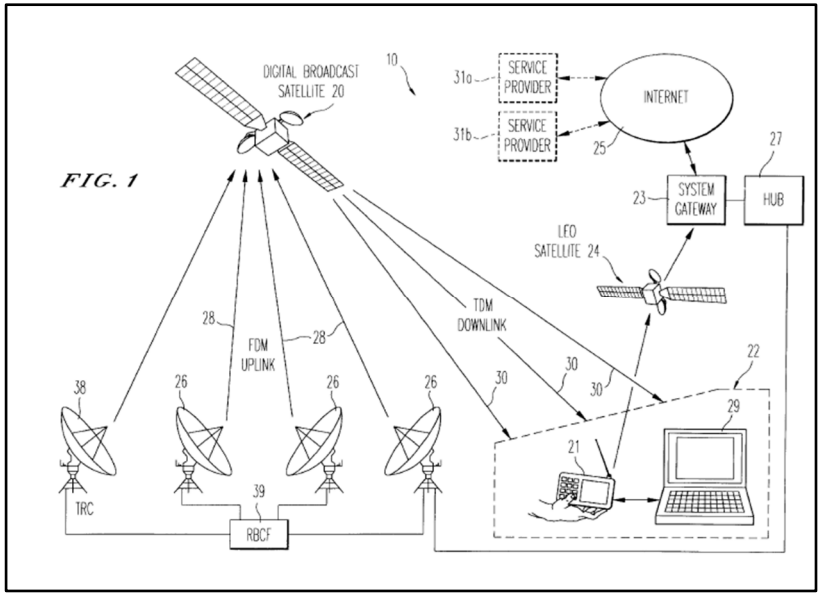
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	additional content. From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. Bruner at [0023]; *see also* Bruner at FIGs. 2-3, [0021]-[0032], [0080]. 

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	El-Rafie at FIG. 3; *see also* El-Rafie at 4:50-67. Thus, as described in detail herein, the NAS performs registration, authentication, and other functions necessary to provide visiting mobile terminals with access to the public network 16, while simultaneously controlling access by such visitors to the local private network 10, whose public network connection resources are being used to provide such access. Hagen [0043]; *see also* Hagen at [0011] - [0013], [0048], [0050], [0059], [0066], [0093].  Jahn I at 2, FIG. 1 (excerpt); *see also* Jahn I at 2-3. It is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 8; *id*. at 2-3, 7. One or more embodiments of the invention are directed to a Converged Billing/Authorization Gateway (CBG) that enables a wireless WAN operator to provide LAN access service to its existing WAN subscribers with a single bill and account. The CBG can integrate the authentication and billing systems of wireless operators with authentication and billing mechanisms used in LAN networks. The WAN operator's backend systems typically interface with a home location register (HLR) database, while the LAN mechanisms typically use protocols like RADIUS. The CBG integrates these

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	two systems such that a WAN subscriber can access LAN services using the subscriber's WAN identity, thus avoiding the need for a separate bill for LAN usage. Further, the WAN operator can offer value-added services while leveraging its existing billing and authentication infrastructure. The CBG can be a server component that is preferably deployed close to the carrier's network and links into the carrier's network. Kalavade at [0056]; *id.* at [0207] ("The access server at the hotspot, such as, *e.g.*, a Cisco Router or a Nokia Access controller intercepts the session and sends a pre-defined web page to the user. This typically queries the user for a login and a password . . . Once authenticated, the RADIUS server responds with an Access Response to the RADIUS client."), [0012], [0016], [0021], [0022], [0023], [0063], [0071], FIGs. 1-3.  Lee at FIG. 1; *see also* Lee at [0001], [0003], [0015] - [0016], [0018] - [0019], [0025] - [0035], [0037], FIG. 1, FIG. 3.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	When activated, the access control software 14 receives an access request from a user of one of a plurality of mobile communications devices (18_1, 18_2, . . . 18_n) wherein the particular wireless client or mobile communications device 18_1 is attempting to contact the access point 12 to establish access to the communications network 16, such as a WLAN. The AP 12 forwards the request to a corresponding authentication server 20 configured to authenticate the user based on credit information, such as account balance, pre-paid credit charges, and the like. It should be noted that there may be additional networks between wireless network 16 and the authentication server 20 including, for example, wired, wireless and satellite networks. A data base 24 associated with the authentication server stores and maintains the user-based credit balance information. In one configuration, the authentication server 20 may access the account information directly. Optionally, server 20 may operate as a proxy for another accounting/ authentication server 28, 29 over a network 26 (such as a private data network or PDN) wherein servers 28, 29 operate as a final authentication server having access to the user credit records (*e.g.*, a server controlled by the credit card based Issuing agency or pre-paid data card issuer). When an access accept response message is received by AP 12 from the authentication server 20 authenticating the user, AP 12 enables access of the associated client device 18 to the WLAN Mody at [0019]; *see also* Mody at [0002], [0004], [0010], [0011], [0018]-[0024], FIG. 1.

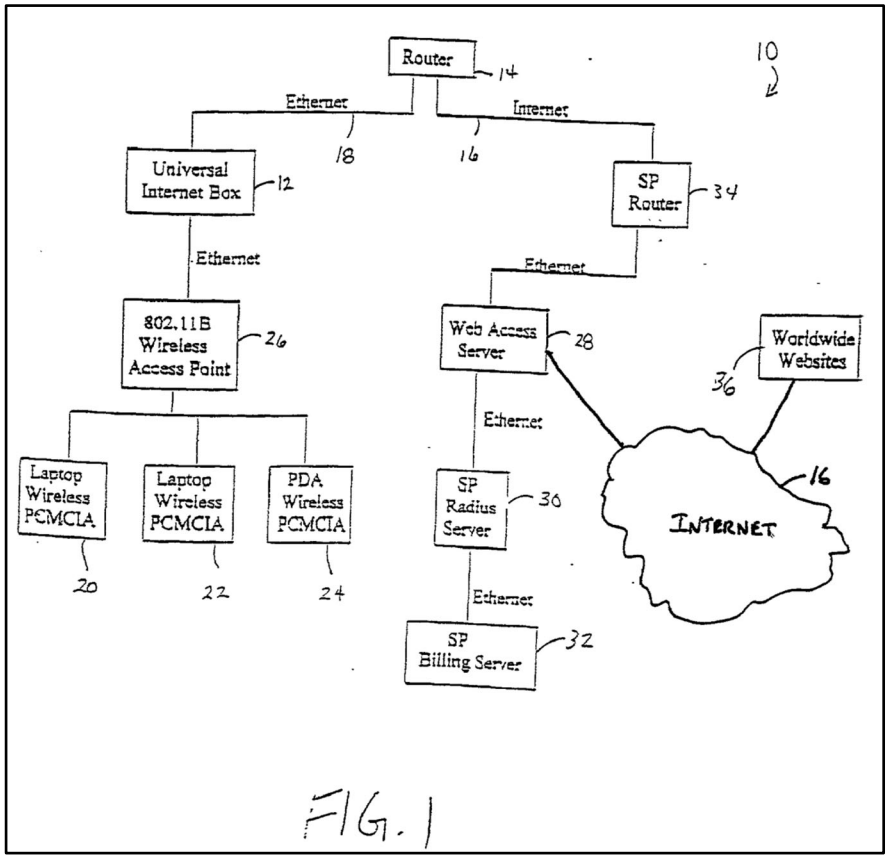
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The PCTEL RADIUS-compatible Segue(TM) Network Gateway performs several critical functions for both the mobile subscriber and the service provider. At the most basic level it serves as a router. In its routing capacity, the Segue(TM) Network Gateway aggregates all of the traffic from a Wireless Local Area Network (WLAN). Among other important functions, the Gateway and the Controller (1) attempt to verify that users are authorized to be on the network; (2) ensures that authorized users have valid IP addresses; and (3) connects to a system that maintains subscriber information and that can perform billing operations. Such systems are generically referred to as AAA Brokers because they perform Authorization, Authentication, and Accounting. The PCTEL Segue(TM) Network Controller serves as a centralized location, responsible for serving customized subscriber and location sensitive contents to users of the network. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021219113817/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=94443. *See also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030810191006/http://www.mtnsat.com:80/enhanced_internet.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030424090006/http://www.mtnsat.com/internet.htm. The cyberstation 20 provides continuous connectivity to satellite-based data delivery services with a full-time low-bandwidth LEO return path to support information requests, feedback delivery, data billing and status/diagnostic reporting.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Ollikainen at 3:6-23; *see also* Ollikainen at 4:24-31. The identification code is preferably assigned to the user by the ISP when the user subscribes to the Internet via the user terminal 22. The ISP may assign the user an identification code, password, or both, and require that the user be for example, it sends to the user terminal 22 an Internet browser screen, one or both of these identifiers entered via a keyboard 122 or a card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem, which may be recognized by the ISP upon initiation of the login sequence from the user terminal 22. Rothblatt I at 10; *see also* Rothblatt I at 2, 11-12, FIGs. 1, 5.  Rothblatt II at FIG. 1; *see also* Rothblatt II at FIG. 5, 3:20-23, 3:62-4:3, 11:55-65, 14:59-68, 15:32-65. A subscriber authenticated as a predetermined multicast group connects with the

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	management server 102 of the CP 100 a via the wide area network 610 and the backbone network 200 through path B of FIG. 5b in order to request IGMP (Internet Group Management Protocol). When the subscriber is proved to be legitimate, the management server 102 of the CP 100 a performs authentication, and authorizes the multicast group. Seo at [0078]; *see also* Seo at [0027], [0033], [0039], [0078], FIGs. 3, 5b, 5d. Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html; https://web.archive.org/web/20060320175337/http://www.stratosglobal.com/documents/factSheets/sdx1100_userGuide_overview.pdf; https://web.archive.org/web/20120413092410/http://www.stratosglobal.com:80/About%20Stratos/~/media/Documents/Corp/Public/corp/corp_financial/corp_financial_annualReport2002FinancialsOnly.ashx. In the next step, the client software determines if billing information has been pre-stored in memory. Preferably the user has pre-stored such billing information, such as during the

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	set-up process and this information is read from memory. The software 90 checks for stored billing information. If there is pre-stored billing information, "yes" is returned in step 648. If there is no pre-stored billing information, processing proceeds to a series of billing information requests (steps 649-653) in which billing information is requested from the user. In an alternative embodiment, billing is not required and processing proceeds to step 665. Van Horne at 8:66-9:9; *see also* Van Horne at 11:3-17, 12:29-43, 16:49-17:30. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that subscription authentication was a routine and commercially available component of any paid wireless Internet architecture. *See* "Going WiFi" Glossary ("AAA (Authentication, Authorization, and Accounting). A term for a framework that enables intelligent access control to computer resources by enforcing policies, auditing usage, and providing the information necessary to bill for services.").
[24.d] a web-ready device operatively coupled to the at least one router, the web-read device having a browser application operating thereon for accessing the Internet;	Wu discloses "a web-ready device operatively coupled to the at least one router, the web-read device having a browser application operating thereon for accessing the Internet." *See, e.g.*, The wireless stations are adapted to provide the customers with remote communications access to the wired networks typically in the form of a global communications network

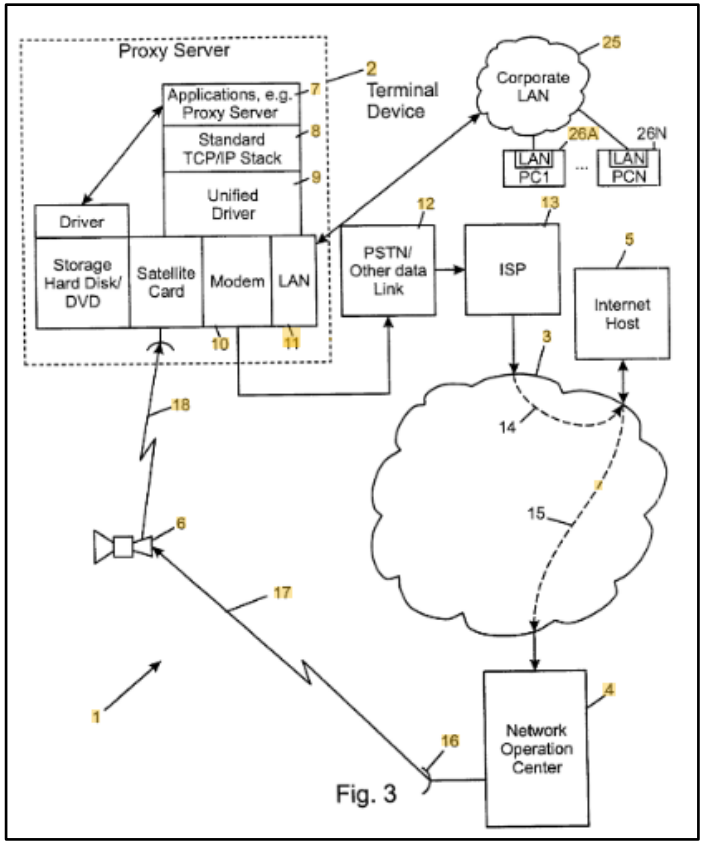
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	such as the Internet on a prepaid basis. Preferably, the customers may use their own portable electronic devices as wireless stations to access the system of the present invention. Wu at [0008]. In the present invention, there is generally provided a base station in communication with one or more wireless stations comprising, for example, portable electronic devices. The base station is responsible for all the wireless stations within a certain wireless coverage area. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. Wu at [0023]. Customers with the wireless stations are provided with remote communications access to the wired networks typically in the form of a global communications network such as the Internet on a prepaid basis. Preferably, the customers may use their own portable electronic devices as wireless stations to access the system of the present invention. Wu at [0024].

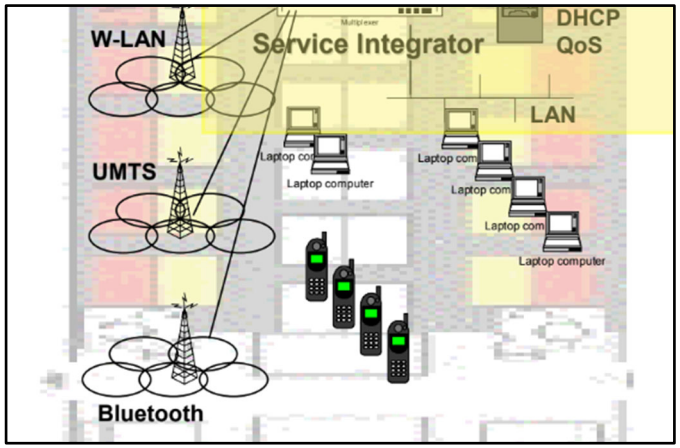
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Wu at FIG. 1. Referring to FIG. 1, a schematic diagram of one embodiment of a prepaid wireless Internet access network 10 is shown. The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The wireless stations 20,22, and 24 may include any wireless-enabled electronic device that can be used to connect to the base station 12 to remotely access the global communications network such as the Internet including the World Wide Web (WWW) for web browsing and the like. Wu at [0038]. Preferably, the customers have access to a browser software program such as Netscape Navigator from Netscape or Internet Explorer from Microsoft installed on the wireless stations. The base station 12 redirects the customer's browser to a proprietary WWW page. Wu at [0040]. Further functions executed by the base station 12 include DNS redirection which provides a local DNS server when the customer's DNS server is operating behind a firewall or located on a private intranet; email redirection service; home page redirection for redirecting customers to portal web site to generate advertising revenues and the like; DHCP function for supplying dynamic IP addresses, automating the transmission control protocol/Internet protocol (TCP/IP) client configuration process and maintaining records of the IP addresses to be assigned to the wireless stations; and internal customer management for storing and maintaining a customer account database and prompting the customer to input the PIN and the associated security code. Wu at [0043]. The portable wireless devices 20, 22, and 24 are connected to the base station 12 through

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	a wireless access point 26 also referred to as a wireless local bridge. . . With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. The router 14 operates to direct the communications traffic from the base station 12 through the global communications network 16 to a service provider router 34 connected at the other end thereof. The router 14 may be part of the base station 12 or as a separate unit as shown in FIG. 1. The router 14 and the base station 16 are connected via a communications channel 18 such as an ethernet network, for example. Wu at [0048] and [0058]. Once the PIN and the security code (e.g. password) is furnished by the customer, the base station 12 connects to the web access server 28 maintained by the wireless service provider. The RADIUS server 30 receives an access request from the RADIUS client (i.e., the base station 12 or the web access server 28) for authentication and authorization for access. Wu at [0063]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and Suwanateep. Wu, Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and Suwanateep concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, and/ or Suwanateep would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Bruner, Connexion by Boeing, El-

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt I, Rothblatt II, Stratos, or Suwanateep, for example, to incorporate this limitation. *See, e.g.*, The airborne users 13 are connected to the system via the aircraft based user terminals which are connected to an airline-based remote server computer 19. Bruner at [0021] *see also* Bruner at FIGs. 1-2, [0018], [0019], [0021]-[0024], [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password. The username and password can be provided when the user first accesses the system and provides necessary registration information to be able to use all the functions of the airborne based internet service of the present invention. Such a registration system is well known to those skilled in the art in providing internet based commerce systems."), [0029]-[0030] [0070], [0076], [0078], [0079]. **Find out about our In-Flight Portal**  Before you access the Internet through the Connexion by Boeing service, you will have the option to select a variety of free services and content through our In-Flight Portal. The In-Flight Portal's selection of top news and entertainment headlines will help keep you up to date, even at 39,000 feet. You can also use the In-Flight Portal to register for the service, view Frequently Asked Questions (FAQs), and contact customer care. Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Ln

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	av=2; https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; Suwanateep at 9; *see also* Suwanateep at 12, 16-17, 32-33; Jones 755-56; Abarbanel at 6.  El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Jahn I at 2, FIG. 1; *see also* Jahn I at 1-2. Moreover, people are becoming more and more used to personalised equipment, such as mobile phones, laptops or PDAs, all accommodated with their own personal environment. Thus, thinking of future mobile communication from a user acceptance point of view, there is a clear demand for a **wireless access** solution for multimedia and personal communication services through users own equipment. Besides, a wireless network might also support the airline personnel (cabin crew, maintenance crew) during their daily work (e.g. for mobile data access). Jahn II at 1; *see also* Jahn II at FIGs. 1-2, 5, Abstract, 1-2. In accordance with various embodiments of the invention, users can access the LAN/WAN from a variety of terminals with different features. By way of example, terminals can include laptops and PDAs (personal digital assistants) and other mobile computing devices. These terminals can have a PCMCIA slot that can be used to attach an 802.11 NIC. Also, many devices sold now have an integrated 802.11 network interface. Kalavade at [0071], [0072] ("A user comes to a hotspot and starts accessing the Internet through

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	his laptop."). When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Internet routing software 25 provides the services of a router to route incoming broadcast and interactive data to the appropriate personal computer 35. Ollikainen at 3:31-44; *see also* Ollikainen at FIG. 1. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user devices. The method comprises the steps of generating an Internet access request in a portable -user terminal and sending a request to an Internet service provider via a first communication link. The ISP then determines whether the user terminal has access to the Internet and then provides the screens and multimedia data required by the user terminal to the broadcast station. The transmitting station transmits the screens and data to the user terminal via a satellite-based radio system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communications link and receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 10; *see also* Rothblatt I at 1-2, 10-12, FIG. 1. If the user is authorized to have Internet access, the system gateway 23 sends an Internet homepage or Web browser information to the user terminal via an FDM uplink 28 of the direct radio broadcast system.

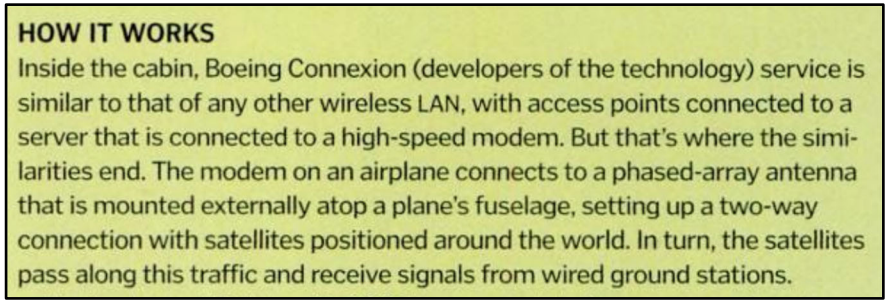
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Rothblatt II at 16:57-61; *see also* Rothblatt II at 3:62-4:3, 15:57-61, 16:49-56, FIG. 1. **Optional Web Browsing** Standard Internet service normally includes Internet e-mail, as well as the capability to browse the web. *StratosNet* can do this as well, along with an FTP (File Transfer Protocol) capability, however, we also realize that some satellite terminals may not want the ability to browse the web to be available to users of their satellite phone. Therefore, Stratos offers the option to disable web browsing on your *StratosNet* account. Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; *see also* Stratos at https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://web.archive.org/web/20040612173303/http://www.stratosglobal.com:80/documents/factSheets/stratosNet_tc.pdf; https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html; https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.e] wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic;	Wu discloses "wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic." *See, e.g.*, A network system for providing a customer with a prepaid wireless remote access service where the system comprises a base station including a wireless access point for

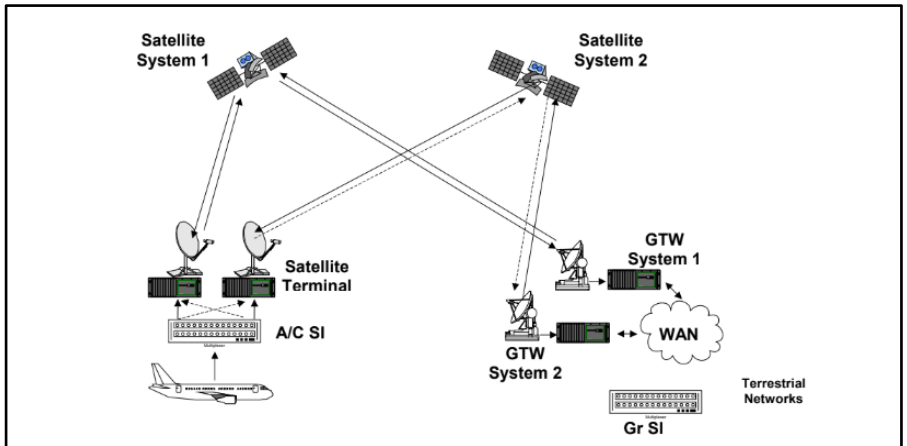
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	communicating through a wireless medium with a wireless station operated by a customer, a global communications network including a plurality of remote computer servers, the global communications network being connected to the base station, and a central access server in communication with the base station through the global communications network for providing the customer with the wireless prepaid remote access service from the wireless station to the plurality of remote computer servers. Wu at Abstract. The present invention relates generally to telecommunications systems, and more particularly, to a network system capable of providing prepaid wireless remote access service. Wu at [0001]. The present invention is generally directed to a network system capable of providing prepaid wireless remote access services. . .The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]. A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0007]. In another aspect of the present invention there is provided a method for providing a customer with a prepaid wireless remote access service, where the method comprises: connecting a base station to a wireless station operated by the customer through a wireless

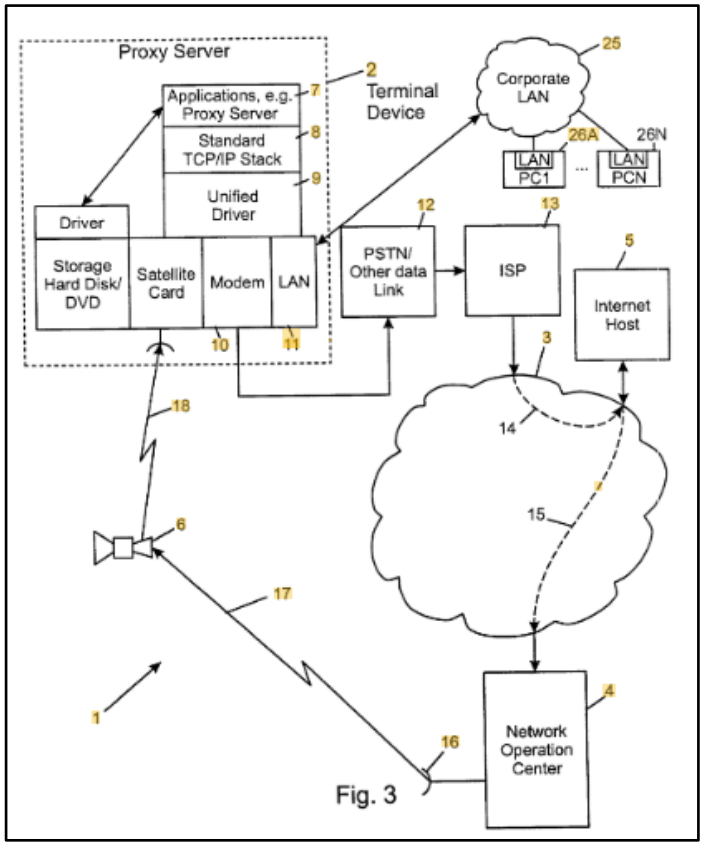
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	communication medium; querying the customer for authentication information; authenticating the authentication information provided by the customer; checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check. Wu at [0010]-[0019]. The present invention is generally directed to a wireless access network system capable of providing prepaid wireless remote access services and method of using the same. Wu at [0022]. In the present invention, there is generally provided a base station in communication with one or more wireless stations comprising, for example, portable electronic devices. The base station is responsible for all the wireless stations within a certain wireless coverage area. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0023]. If a sufficient balance amount is present, the prepaid customer is permitted to proceed with the wireless remote access service whereupon the cost for such service is deducted from the balance amount. Wu at [0030].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The base station 12 automatically re-configures the network configuration settings for wireless remote access to the global communications network. Thus, the base station 12 enables the customer to simply connect the wireless station 20, 22, or 24 in a "plug and play" mode of operation for ease of service. Wu at [0040]. The base station 12 supports RADIUS client applications for enabling the wireless service provider to maintain the central database of customers and their PINS. RADIUS is an authentication, authorization and accounting system used by remote access service providers for controlling and maintaining access by authorized parties. Wu at [0041]. The schedule of charge rates is periodically updated by the service provider. The RADIUS server 30 is a client/server-based authentication software system that is used by service providers for implementing remote access applications and maintaining customer profiles in the PIN database residing on the central billing server 32. Wu at [0060]. The central billing server 32, the RADIUS server 30 and an assigned RADIUS client which may be selected from the base station 12, or the web access server 28, in combination perform the accounting, monitoring and maintenance of the wireless remote access services provided to the customer. Wu at [0061].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	> Once connected for the remote access service, the customer may access any server on the global communications network 16 for downloading or transmitting data, software, and the like from or to the server 36. Wu at [0064]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Stratos. Wu, Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Stratos concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and/or Stratos would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, or Stratos, for example, to incorporate this limitation. *See, e.g.*, > Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, e.g., 10 or 20, and can also be used to connect corporate sites. Routers 52, 54, 56 and 58 connect the terminals 34 and 36, possibly via frame relays 60, 62, 64 (or via an ethernet connection), to remote access servers 70, 72, and/or to various dial-up access units 101-110. Agarwal at 3:38-44; *see also* Agarwal at 3:18-20, 3:45-63, FIG. 1. > Referring now to the drawings in detail, there is shown in FIG. 1 a schematic diagram of the hardware for operating the remote internet system 10 of the present invention to allow

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	remote users 13, such as airline passengers, to conduct electronic commerce ("e-commerce") from a remote location 14, such as during the course of an airline flight. . . The remote system preferably includes remote communication equipment 28 operably connected with the communication network 22. Bruner at [0021]; *see also* Bruner at FIG. 1, [0002], [0011], [0013]-[0014], [0021]. FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system 100 of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit 103, and one or more wireless local area network (LAN) 104. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station. Clark at 3:66-4:7; *see also* Clark at 3:49-59, 4:8-17, 4:18-30, 6:45-49, 8:29-37.  **HOW IT WORKS** Inside the cabin, Boeing Connexion (developers of the technology) service is similar to that of any other wireless LAN, with access points connected to a server that is connected to a high-speed modem. But that's where the similarities end. The modem on an airplane connects to a phased-array antenna that is mounted externally atop a plane's fuselage, setting up a two-way connection with satellites positioned around the world. In turn, the satellites pass along this traffic and receive signals from wired ground stations. Connexion by Boeing at Carol Ellison, *Unwire Everywhere*, PC MAGAZINE, Special Wireless Issue 2003, at 97-104; *see also* Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1#e5; The Boeing Company, 2003 Annual Report, https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf.

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	 **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at FIG. 2, 2-3.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25. ABSTRACT—This paper addresses the traffic dimensioning for aeronautical services. Specifically, it focuses on wireless services such as UMTS and W-LAN in aircraft cabins that connect the passenger via satellite to terrestrial infrastructure. Jahn I at 1; *see also* Jahn I at 1-2.

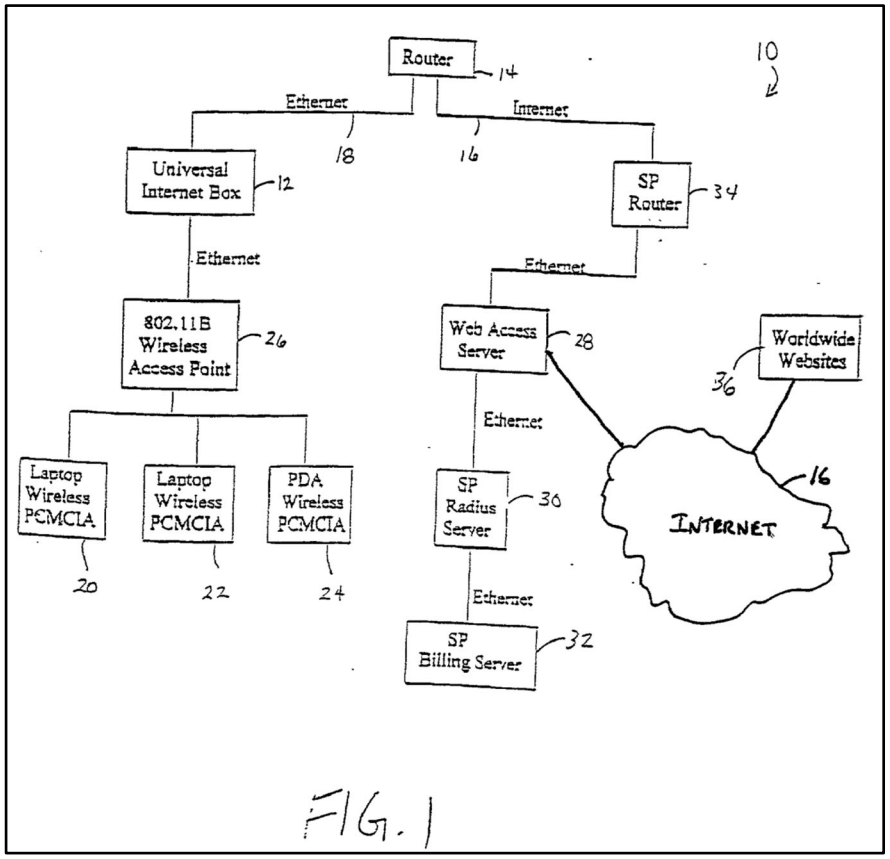
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The service scenario considers travellers in aircraft on the move. Future airliners will provide a variety of entertainment and communications equipment to the passenger to make the journey more pleasant through in-flight entertainment, more productive through business communication facilities, and more secure through tele-medicine and surveillance facilities on board. A variety of services is needed, each having a different bandwidth demand and different types of communication protocols. Many of the services will be available to the passenger by means of cabin-installed equipment, such as TV screens, a rescue compartment with tele-medicine equipment, or fixed installed satellite phones. Jahn II at 2; *see also* Jahn II at 3, 7, 6, 8, FIGs. 1, 5. **Wireless** Check E-Mail, surf the web or play games ….from anywhere on the ship! Maritime Telecommunications Network, the source for innovative offshore communications solutions for nearly a decade, is introducing their newest offering, Wireless Internet Access. A first for the maritime industry, a true Wireless network can be installed onboard just about any vessel. Access Points are installed throughout the vessel and terminated at our server onboard. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_09

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	1702_NorwegianSun.htm; https://web.archive.org/web/20030105020053/http://www.mtnsat.com/press/2002/pressrelease_031202.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.f] wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router.	Wu discloses "wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router." *See, e.g.*, The present invention is generally directed to a network system capable of providing

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	prepaid wireless remote access services. The network system is configured for implementing relatively high bandwidth communications links to customers through a wireless medium at any location within a wireless coverage area. The network system requires minimal space for executing operations, is discretely located, and can operate over a large public area without the physical constraints and limitations of hardwiring, connecting ports, and user interface equipment. Wu at [0006]. The present invention further provides a wireless access network which obtains customer-inputted identification information related to the prepaid account. The information is transmitted to an authentication server through the global communications network for authenticating information to thereby provide authorization to the system. The authentication server reviews the information through a central database containing the prepaid account information of the prepaid card including the prepaid balance amount. Upon authentication, the authentication server provides the customer with authorization for access to and the corresponding charge rates of the remote access services through an authentication client. The authentication client implements the execution of the services and monitors the usage time and the charge rates for the services. Upon termination of the session, the accrued charges are tallied by the authentication client and transmitted to the authentication server whereupon the authorization is canceled. The authorization server subsequently updates the prepaid account information. Wu at [0009]. In another aspect of the present invention there is provided a method for providing a customer with a prepaid wireless remote access service, where the method comprises: connecting a base station to a wireless station operated by the customer through a wireless communication medium; querying the customer for authentication information; authenticating the authentication information provided by the customer;

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check. Wu at [0014]-[0019]. The remote central access server searches the prepaid card database residing thereon to determine the balance amount on the prepaid card. Wu at [0029]. The customer-selected security code is transmitted and securely stored in association with the PIN of the prepaid card on the central database in the remote central access server maintained by the prepaid service provider. . .Thus, to access services offered by the prepaid service provider (i.e., wireless remote access service), the customer is prompted to supply both the PIN and the customer selected security code, before providing the wireless remote access. Wu at [0031]. The prepaid wireless service provider may verify the prepaid customer's identity such as through conventional verification methods such as by requesting personal information known only to the rightful customer. Upon proper verification, the prepaid customer is provided a new security code for immediate use. Wu at [0032]. Under this prepayment system, the prepaid card customer is permitted access to the multimedia access terminal upon appropriate authorization and clearance from the remote central billing server as will be described hereinafter. Wu at [0036].

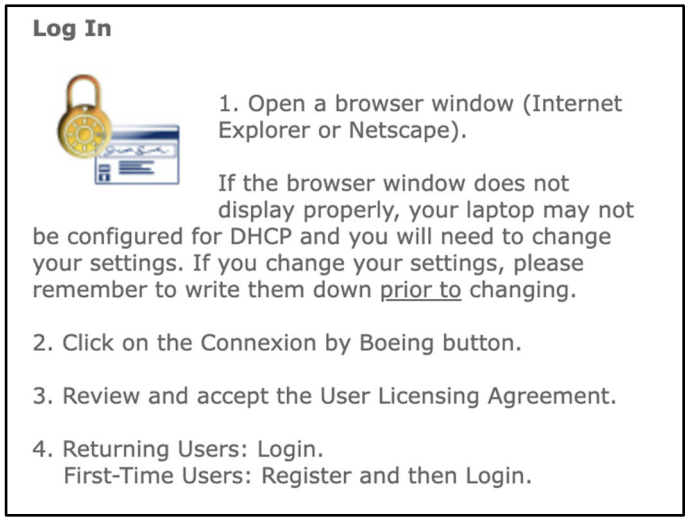
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The base station 12 supports RADIUS client applications for enabling the wireless service provider to maintain the central database of customers and their PINS. RADIUS is an authentication, authorization and accounting system used by remote access service providers for controlling and maintaining access by authorized parties. The RADIUS client operates in conjunction with a RADIUS server to implement the above aims as will be described hereinafter. The base station 12 may be optionally configured to include an authentication server which is programmed to administer the customer's login name and security code (e.g. password). The service provider may further configure the base station 12 to display advertisements through the wireless stations 20, 22, and 24 to the customer. Wu at [0041].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 Wu at FIG. 1. The portable wireless devices 20, 22, and 24 are connected to the base station 12 through a wireless access point 26 also referred to as a wireless local bridge. . . With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. The router 14 operates to direct the communications traffic from the base station 12 through the global communications

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	network 16 to a service provider router 34 connected at the other end thereof. The router 14 may be part of the base station 12 or as a separate unit as shown in FIG. 1. The router 14 and the base station 16 are connected via a communications channel 18 such as an ethernet network, for example. Wu at [0048] and [0058]. In the present invention, the customers are equipped with wireless-enabled electronic devices which are preferably portable for mobile connection to the wireless access network 10 which encompasses the global communications network 16. Wu at [0044]. The service provider router 34 receives the communications traffic originating from the base station 12 through the global communications network 16 and transmits it to the web access server 28. The web access server 28 operates as a central gateway to the global communications network 16 with a plurality of WWW destination web servers 36 connected thereto. The web access server 28 is also connected to a Remote Authentication Dial-In User Service (Radius) server 30 and a central billing server 32 maintained by the wireless service provider, via a broadband channel such as an ethernet network, for example. The RADIUS server 30 is an authentication server that is connected to the central billing server 32 via a broadband channel such as an ethernet network, for example. The central billing server 32 includes a PIN database for storing information including account data, customer profiles, customer-selected security codes, prepaid card usage history, schedule of charge rates for the services for the wireless remote access service. Wu at [0059]. The RADIUS server 30 is a client/server-based authentication software system that is used by service providers for implementing remote access applications and maintaining customer profiles in the PIN database residing on the central billing server 32. The

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	RADIUS server 30 can be shared by base stations 12. The RADIUS server 30 is programmed to execute authentication, authorization, and accounting procedures for checking and validating information provided by the customer desiring to access the services. Wu at [0060] The RADIUS client is configured to provides the customer access to the global communications network only upon authorization from the RADIUS server 30. The RADIUS server 30 reviews the information provided by the customer and checks it with the central billing server 32 prior to issuing the authorization. Once access is permitted, the service charges incurred by the customer is monitored and tracked by the RADIUS server 30 through the assigned RADIUS client (i.e. the base station 12 or the web access server 28). Wu at [0061]. Upon connection, the base station 12 prompts the portable wireless station 20, 22 or 24 to provide a valid PIN number and security code (e.g. password) corresponding to a prepaid card. Wu at [0062]. Once the PIN and the security code (e.g. password) is furnished by the customer, the base station 12 connects to the web access server 28 maintained by the wireless service provider. The RADIUS server 30 receives an access request from the RADIUS client (i.e., the base station 12 or the web access server 28) for authentication and authorization for access. The access requests contains the PIN and security code of the customer's prepaid card. The RADIUS server 30 carries out the authentication and accounting procedures to ensure that the customer's PIN and security code are correct and valid. The information is authenticated and validated by the RADIUS server 30 through the PIN database residing on the central billing server 32. The RADIUS server 30 then reviews

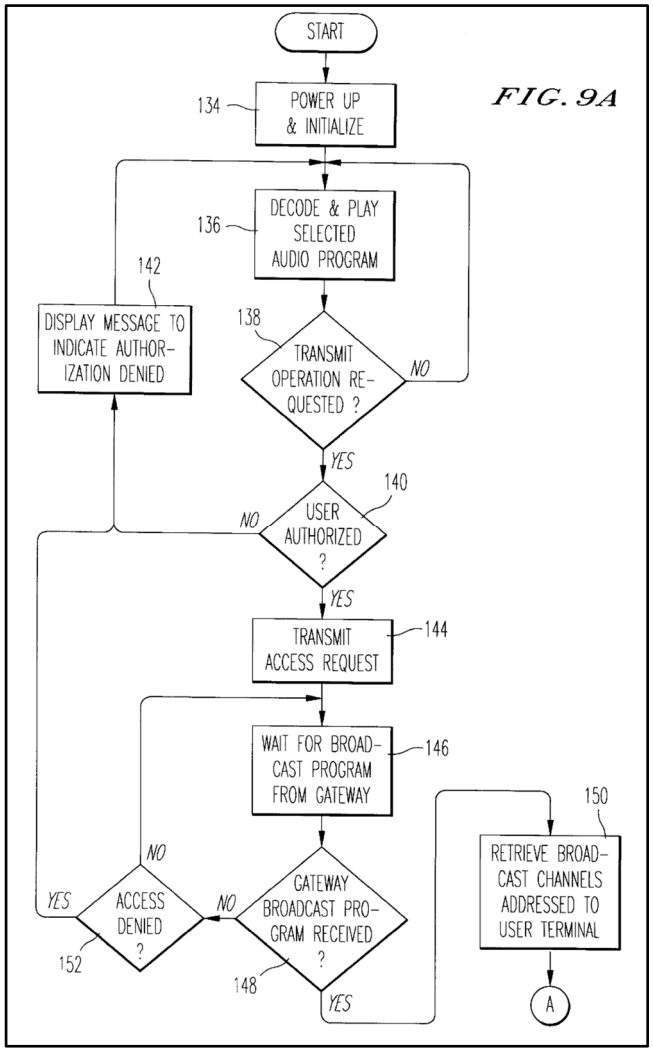
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	the balance amount on the prepaid card through the PIN database. Upon verification and review of the PIN/security code, and balance amount, the RADIUS server 30 retrieves the corresponding charge rate from the billing schedule stored on the PIN database. The RADIUS server 30 transmits an authorization message including the account information, balance amount, and charge rate to the RADIUS client (i.e. the base station 12 or the web access server 28). Wu at [0063]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, and Rothblatt II. Wu, Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, and Rothblatt II concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, and/ or Rothblatt II would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt I, or Rothblatt II, for example, to incorporate this limitation. *See, e.g.*, From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. The ADS server 19 operates a host of software components including an HTTP server, DHP server, DNS server, database server, mail server and preferably chat and streaming servers. After the PPP connection is established, the ADS

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	server 19 will provide an IP address, DNS server address and any default gateway information to the user 13. From this point, the user utilizes his or her internet browser software running on the laptop to access a variety of content. In an alternative embodiment, a screen and keyboard can be provided at the passengers seat for the user 13 connection, eliminating the need for the user to have his or her laptop computer. Bruner at [0023]; *see also* Bruner at [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password."), [0021], [0029], [0078], [0079].  Connexion by Boeing at https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; Suwanateep at 9. For these users, the only point of access to the private network 10 is through the network's

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	own router 14, which is easily secured by the network administrator. At the same time, private network users/clients may be permitted to access the private network 10 via wireline network connections or via wireless mobile terminals 23 through private WAPs 21. Private WAPs are preferably maintained at locations that are not publicly accessible or are otherwise configured to limit access to authorized clients of the private network 10. These users can then gain access to the public network through the private network's router 14. Hagen at [0060]; *see also* Hagen at [0059], [0185], FIG. 14. The provision of such a heterogeneous access network with collectively mobile users requires the development authentication, admission and accounting (AAA) in the mobile network, especially taking into account the necessity to support different pricing concepts for each passenger in the mobile network and the interaction of airline, satellite provider, aircom service provider and terrestrial service providers. Jahn I at 3; *see also* Jahn I at 1-3, FIG. 1. Since IP traffic at IP connection level can be monitored only before the IS stream multiplexing, it is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 7-8; *see also* Jahn II at 3, FIGs. 1, 5.

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	On Norwegian Sun, NCL guests can now surf the Internet by the pool, in the meeting rooms, in and around the Internet Cafe and the reception (atrium) area. The installation of the Wi Fi software is simple, requiring no reconfiguration of the guest's computer and will take up no hard drive space once the guest leaves the ship. Laptops are also available for rent at the Internet Café onboard. The Wi Fi network card costs $10 per day and passengers are charged either by the minute or can purchase 33-, 100- or 250-minute packages for as low as 40 cents per minute. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030701164753/http://ncl.com/news/pr102302.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805. For basic network access services (such as Internet access), the data communication server can perform dial-up authentication when the user connects to the server. PPP can be advantageously used to provide a plurality of in-protocol authentication methods. Preferably, a remote access dial-up user service (RADIUS) may be used to perform the dial-up authentication, allowing exchange of login information and user resource information between a client and a RADIUS server, the server containing a database. During an authentication session, the login information is sent to the RADIUS server, the user is authenticated, and the server returns the user data record provisioned in the database; such information may include the IP address assignment, the source and destination filter IDs, allowed access time, and other information. Nelson at [0107]; *see also* Nelson at FIG. 17, [0105]-[0106].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	These and other objects of the invention are achieved in part by providing remote users with user terminals having both a receiver for receiving satellite direct radio broadcasting and a communication device for communicating with an Internet service provider via a communication link that is from a satellite direct radio system broadcast separate. Rothblatt I at 12; *see also* Rothblatt I at 10-12, FIGs. 1, 9A, 9B,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	 *FIG. 9A* Rothblatt II at FIG. 9A; *see also* Rothblatt II at 2:30-35, 3:20-23, 14:59-68, 15:32-65, 17:3-24; FIGs. 1, 5, 9B.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[25] The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection.	Wu discloses "the Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection." *See, e.g.*, The base station is further connected to wired networks for facilitating communication traffic beyond the wireless coverage area including, but not limited to, publically accessible networks including the global communications network (i.e., the Internet). A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0007]. The wireless stations are adapted to provide the customers with remote communications access to the wired networks typically in the form of a global communications network such as the Internet on a prepaid basis. Wu at [0008]. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0023].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Customers with the wireless stations are provided with remote communications access to the wired networks typically in the form of a global communications network such as the internet on a prepaid basis. Wu at [0024]. The prepaid customer can obtain remote access service through the wireless network system operated by the prepaid service provider by inputting the ID code or PIN of the prepaid card into the wireless station. Wu at [0029]. The base station 12 is configured to immediately recognize new customers accessing the wireless network 10 as well as repeat customers. Wu at [0040]. Generally, the portable wireless devices 20, 22, and 24 are connected to the wired portion of the wireless access network 10 through a suitable wireless communications medium such as radio frequency signal, infrared or laser beams, or the like. Wu at [0045]. The access point 26 is a hardware device, or software used in conjunction with a computer, that serves as a communications hub for wireless clients or stations, and provides a connection to a wired network (e.g., LAN, WAN). Wu at [0048]. The wireless access point 26 provides an interface between the wireless network interface of the wireless portable device 20, 22, or 24, and the wired portion of the wireless access network 10. In this manner, the wireless network interface forms a data link between the

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	portable wireless device 20, 22 or 24 and the wireless network, and the access point 26 interfaces the wireless network with the wired portion of the wireless access network 10. Wu at [0049]. The protocols specified by IEEE 802.11 are compatible with standard Ethernet protocols, thus making wireless and wired nodes on an enterprise local area network (LAN) virtually indistinguishable. Wu at [0051]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Agarwal, Hagen, Jahn I, Jahn II, Nelson, and Ollikainen. Wu, Agarwal, Hagen, Jahn I, Jahn II, Nelson, and Ollikainen concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Agarwal, Hagen, Jahn I, Jahn II, Nelson, and/ or Ollikainen would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Agarwal, Hagen, Jahn I, Jahn II, Nelson, or Ollikainen, for example, to incorporate this limitation. *See, e.g.*,

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")

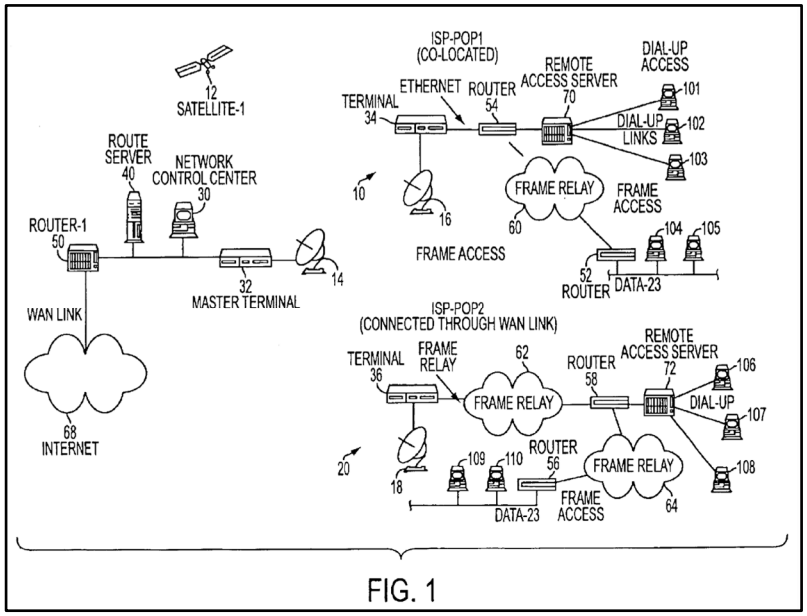


FIG. 1

Agarwal at FIG. 1; *see also* Agarwal at 3:18-20; 3:38-63.

> The primary purpose of the system 100 is to provide mobile, wireless terminals 1 with access to network resources, although it can also provide such access to fixed or mobile terminals over wireline connections as well. Mobile, wireless terminal as used herein means any mobile, wireless terminal having a MAC or other unique equipment address, such as a digital cellular handset, wireless PIA or PDA, or a computer with a wireless network adaptor.

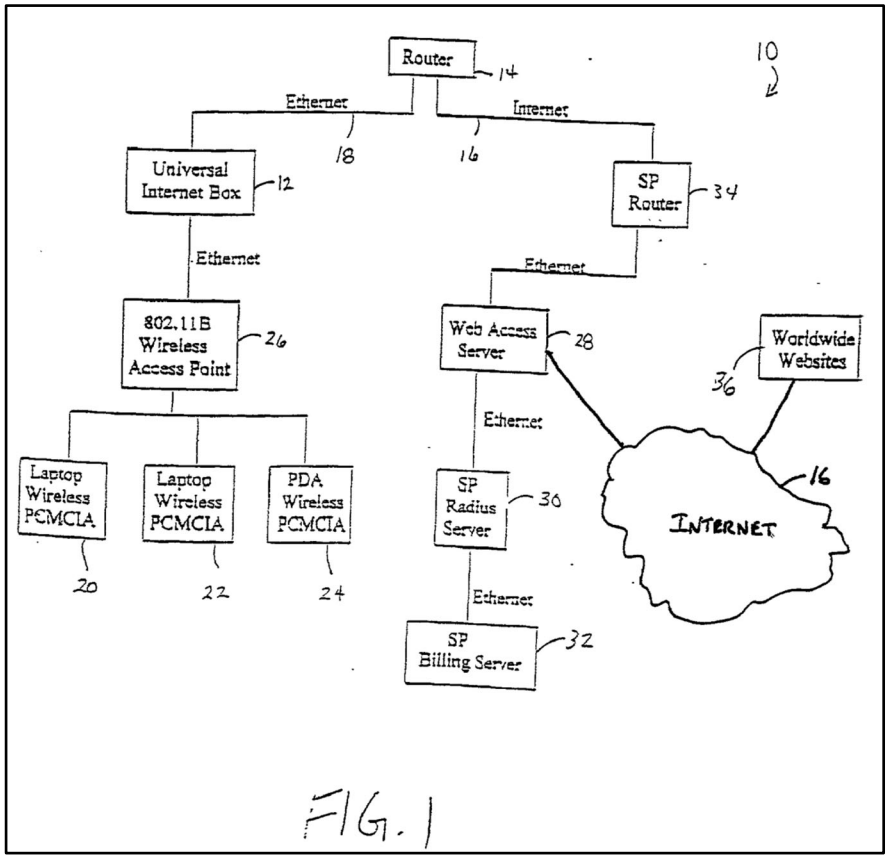
Hagen at [0040]; *see also* Hagen at [0039], [0041], [0042], [0045], [0056], [0162].

> Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Hence, it should not be seen as an alternative to wired architecture in

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	an aircraft, but as a complementary service for the passengers. Jahn I at 2; *see also* Jahn I at 1-4. Aircraft multimedia services will be offered to passengers soon via back-seat screens and IP cable networks. Jahn II at Abstract; *see also* Jahn II at 3 ("The wireless access solution is compatible with other kinds of IFE . . . it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers."). The plurality of interface (I/O) units may include an Ethernet interface unit 115, modem 120, communications (COM) port 135, Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) port 130, Primary Rate Interface (PRI) port 125, ARINC-429 (Aeronautical Radio, Inc.) bus interface unit 145, and ARINC-573 bus interface unit 140. The Ethernet unit 115 may include ports for interconnection to the HIMs 155 and to the external terminal station (TS), and may be used to connect to the wireless local area network (LAN) transceiver 182 providing a high-speed data path to ground terminals while the aircraft (moving object) is on the ground. Alternatively, a COTS Ethernet card attaching to an external hub (not shown) may be used. Nelson at [0035]; *see also* Nelson at [0028], [0034], [0043], FIG. 1. Furthermore, the cyberstation includes subsystems that permit it to communicate with the personal computers using wireless or optional wired connections. Ollikainen at 1:66 - 2:5; *see also* Ollikainen at 2:6-15, 2:16-26, 3:45-65, 3:66 - 4:16, 4:58 - 5:9. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[26] The Internet Hotspot of claim 24,	Wu discloses "the Internet Hotspot of claim 24, wherein a plurality of users may access the

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices.	Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices." *See, e.g.*, Since the number of connections are not limited by physical connecting ports, a large number of customers can easily be accommodated within the wireless coverage area. Wu at [0005]. The present invention is generally directed to a network system capable of providing prepaid wireless remote access services. The network system is configured for implementing relatively high bandwidth communications links to customers through a wireless medium at any location within a wireless coverage area. The network system requires minimal space for executing operations, is discretely located, and can operate over a large public area without the physical constraints and limitations of hardwiring, connecting ports, and user interface equipment. Wu at [0006].

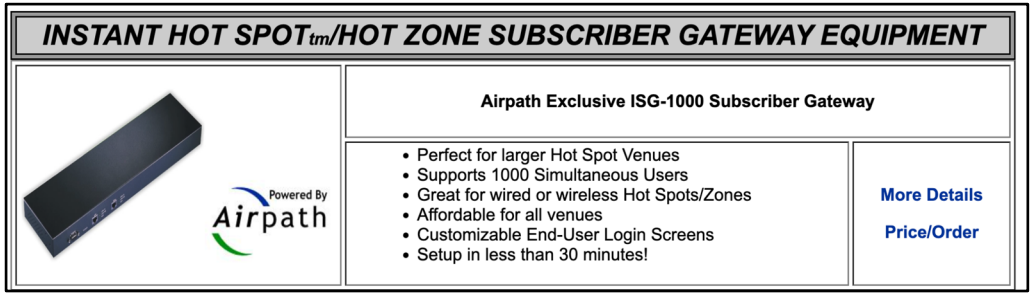
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")

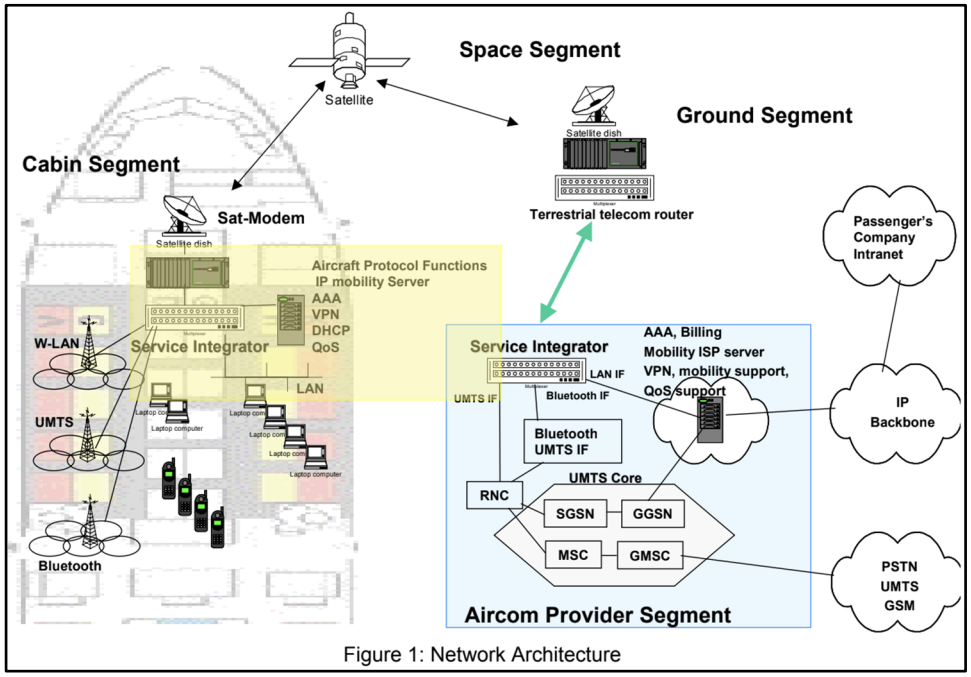


Wu at FIG. 1.

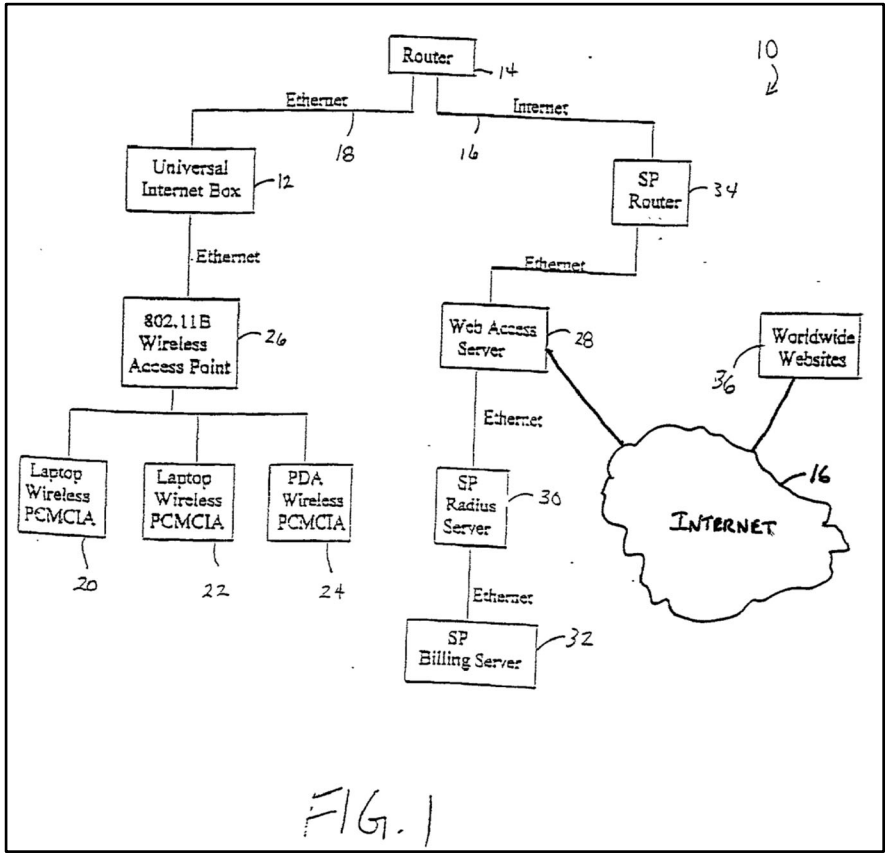
Referring to FIG. 1, a schematic diagram of one embodiment of a prepaid wireless Internet access network 10 is shown. The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The number of portable wireless devices accessible to the wireless access network 10 is unlimited, and may include more than the three devices specifically shown in FIG. 1, depending on the access capacity of the wireless access network 10, particularly the base station 12. Wu at [0044]. The portable wireless devices 20, 22, and 24 are connected to the base station 12 through a wireless access point 26 also referred to as a wireless local bridge. . . With reference again to FIG. 1, the base station 12 is connected to the global communications networks 16 (i.e., the Internet) through a router 14. The router 14 operates to direct the communications traffic from the base station 12 through the global communications network 16 to a service provider router 34 connected at the other end thereof. The router 14 may be part of the base station 12 or as a separate unit as shown in FIG. 1. The router 14 and the base station 16 are connected via a communications channel 18 such as an ethernet network, for example. Wu at [0048] and [0058]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Nelson. Wu, Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Nelson concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu

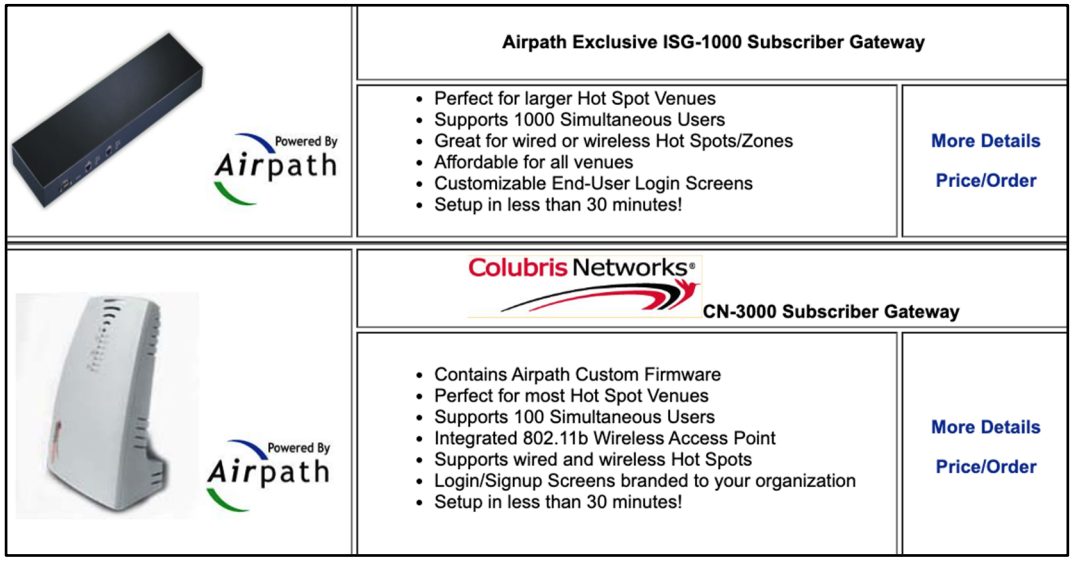
Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	with Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and/or Nelson would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, or Nelson, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp. It is therefore an object of the present invention to provide a method and apparatus to allow airline passengers or other remotely located users, to access the Internet during the course of an airline flight, or from remote land-based locations. Bruner at [0008]; *see also* Bruner at [0011], [0021], Bruner at FIG. 1. The service scenario considers travellers in aircraft on the move. In the future, airliners will provide a variety of entertainment and communications equipment to the passenger.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Since people are becoming more and more used to their own communications equipment, such as mobile phones and laptops with Internet connection, either through a network interface card or dial-in access through modems, business travellers will soon be demanding wireless access to communication services. Jahn I at 1; *see also* Jahn I at FIG. 1, 1-3, 5.  Figure 1: Network Architecture Jahn II at 2, FIG. 1; *see also* Jahn II at 1-3, FIGs. 3-4.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). System 100 may include a plurality of components to provide higher data bandwidth and passenger access technology for facilitating data applications, examples being Internet Web browsing and email retrieval. These components include Direct Broadcast Service (DBS) satellite decoder 152, passenger cabin dial-up access system 151, and the WGS 182. Other components of system 100 can help facilitate data communications over the existing NATS data network. Nelson at [0032]; *see also* Nelson at [0028], [0034]. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[28] The Internet Hotspot of claim 26,	Wu discloses "the Internet Hotspot of claim 26, wherein the data connections include wireless

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
wherein the data connections include wireless data connections.	data connections." *See, e.g.*, The prepaid customer can obtain remote access service through the wireless network system operated by the prepaid service provider by inputting the ID code or PIN of the prepaid card into the wireless station. Wu at [0029].  FIG. 1

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	Wu at FIG. 1. Referring to FIG. 1, a schematic diagram of one embodiment of a prepaid wireless Internet access network 10 is shown. The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and 24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]. The base station 12 is configured to immediately recognize new customers accessing the wireless network 10 as well as repeat customers. Wu at [0040]. In this manner, the wireless network interface forms a data link between the portable wireless device 20, 22 or 24 and the wireless network, and the access point 26 interfaces the wireless network with the wired portion of the wireless access network 10. Wu at [0049]. To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Ollikainen. Wu, Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and Ollikainen concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, and/or Ollikainen

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, or Ollikainen, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp.

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	The service integrator will provide the interfaces for the wireless and wired service access points in the cabin, as well as the interface to the terrestrial networks at aircom provider site. Jahn I at 4; *see also* Jahn I at 1-2, 4. When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Jahn II at 2-3, FIGs. 3-4. MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see generally id.* The cyberstation thus provides a means for implementing a variety of customized stand-alone receiver-transmitter stations that can provide service to multiple household or business personal computers using wireless or optional wire local area networks as a local communication system. Ollikainen at 2:16-26. To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[32] The Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network.	Wu discloses "the Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network." *See, e.g.*, In the preferred embodiment of the wireless access network 10, the portable wireless devices 20, 22, and 24 and the wireless access point 26 communicates through radio wave transmissions. The wireless network interface and the wireless access point 26 conforms with the Institute of Electrical and Electronics Engineers (IEEE) standard 802.11 and extensions thereof such as IEEE 802.11a and 802.11b for standardizing wireless local area networks (wireless LANs). Wu at [0050]. In one form of the present invention, the wireless access point 26 and the wireless interface card (not shown) of the wireless stations 20, 22, and 24 may be based on the 802.11b also known as WI-FI. Wu at [0052]. In another form of the present invention, the wireless access point 26 and the wireless interface card (not shown) of the wireless stations 20, 22, and 24 may be based on the 802.11a standard. Wu at [0053]. In another form of the present invention, the wireless access point 26 and the wireless interface card (not shown) of the wireless stations 20, 22, and 24 may be based on the 802.11g standard which offer data rates at about 54 Mbps in the 2.4 GHz range. Wu at [0054].

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	To the extent Wu does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Wu further renders the limitation obvious in light of other references, such as Clark, Hagen, Jahn I, Jahn II, and Nelson. Wu, Clark, Hagen, Jahn I, Jahn II, and Nelson concern the similar subject matter as Wu, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Wu with Clark, Hagen, Jahn I, Jahn II, and/ or Nelson would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Wu with those of Clark, Hagen, Jahn I, Jahn II, or Nelson, for example, to incorporate this limitation. *See, e.g.*, > In one embodiment, the satellite and terrestrial microwave communication system transfers information using a satellite transponder or fixed terrestrial microwave radio via an ethernet packet switching protocol such as, for example, the IEEE 802 series of protocols or any proprietary protocols the TCP/IP protocol used on the World Wide Web. Clark at 3:1-9. > The system 100 generally comprises one or more geographically dispersed network access points, which in this embodiment are radio frequency wireless access points (WAP) 3, 4. The WAPs 3, 4 may be conventional devices equipped with wireless network adaptors embodying the IEEE 802.11 Wireless LAN or Bluetooth wireless network communications standards, or other devices providing similar functionality. Examples of such devices include the Home Wireless Gateway product sold by 3COM Corporation, the Spectrum High Rate AP 41X1 Ethernet Access Point product sold by Symbol Technologies, and the Aironet 340 Series Access Points product sold by Cisco Systems. Hagen at [0042]; *see also* Hagen at [0039], [0041], [0042], [0045]. > When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	interface, Bluetooth, and W-LAN IEEE 802.11b. Jahn I at 2; *see also* Jahn I at 1-2. Several wireless access segments in the aircraft cabin, namely a wireless LAN according to IEEE 802.11b standard for IP services, an UMTS pico-cell for personal and data communications, and Bluetooth 1.1, as well as a standard wired IP LAN." Jahn II at 3. The WGS 182 may be, for example, a wireless LAN transceiver (as shown in FIG. 1) based on the IEEE 802.11 specifications which can allow transfer of high-speed data to the server 110 in the airport when the aircraft (moving object) is on the ground. The ACU may act as the gateway to a ground-based data center via the North American Terrestrial System (NATS) network. Nelson at [0030]; *see also* Nelson at FIG. 1, [0028], [0110]. It would have been obvious to a person of ordinary skill in the art that any member of the 802.11 standard family could be employed to permit interoperability of standard Wi-Fi components. The '469 patent specification itself acknowledges that a person of ordinary skill in the art would understand that the "wireless access point 40 can employ a security protocol of a type that is known to persons skilled in the art, such as the 802.11b security protocol, or any subsequent or future versions of the 802.11 standard. Such security protocols may be generally designated as 802.11X, where X can be any version or implementation of the 802.11 standard." '469 patent at 5:19-25. It was well understood that "each new 'flavor' of the technology results in a new suffix to 802.11." "Going WiFi" at 82; *see also id.* at 133 ("The fundamental components of a WLAN are clear-cut. And it's relatively easy to describe the 802.11 suite in basic networking terms."). As set forth in the accompanying contentions, the 802.11n standard had furthermore not been drafted by the time of the alleged priority date, rendering claim 32 invalid. *See also* "Going Wifi" at 116-117 ("The 802.11n Task Group is *working on a high-speed variant* of the existing 802.11 standards . . . However, don't expect to see these newer, faster standards for a number of years.").

Claim	U.S. Patent Application No. 2003/0050041 ("Wu")
	To the extent that Wu does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Wu, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.

EXHIBIT E-16

Exhibit E-16 to American's Preliminary Invalidity Contentions

Czech Patent No. 2,000,578 ("Rothblatt I")

Czech Patent No. 2,000,578 ("Rothblatt I") titled "System for Providing Global Access to Internet by Portable Device by Making Use of Low-Orbital Satellites and Satellite System of Direct Radio Transmission," was filed by Martine Rothblatt on August 18, 1998, and published on August 16, 2000.[1] Rothblatt is prior art to the '469 Patent under at least Pre-AIA 35 U.S.C. §§ 102(a), (b), (e), and (g) as to claims 24, 25, 26, 28, and 32 (the "Asserted Claims") of the '469 Patent. These contentions quote from the machine translation of Rothblatt I available at the European Patent Office's website, https://worldwide.espacenet.com/patent/search/family/005469644/publication/CZ2000578A3?q=pn%3DCZ2000578A3 (last accessed on June 19, 2025). Defendant expressly reserves the right to revise or otherwise amend its contentions concerning Rothblatt I based on any certified translation prepared for the parties to this action.

To the extent Plaintiff alleges Rothblatt I does not disclose any particular limitation of the Asserted Claims of the '469 Patent, either expressly or inherently, any purported differences are such that the claimed subject matter as a whole would have been obvious in view of the knowledge of one skilled in the art. It would have further been obvious to a person of ordinary skill in the art as of the priority date of the '469 Patent to modify Rothblatt I or combine the teachings of Rothblatt I with other prior art in a manner that would have rendered the Asserted Claims invalid as obvious, including but not limited to any combination of the following:

- Invalid under 35 U.S.C. § 102 by Rothblatt I;
- Invalid under 35 U.S.C. § 103 by Rothblatt I and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 6,894,990 to Agarwal et al. ("Agarwal") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2002/0138625 to Bruner et al. ("Bruner") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 6,445,777 to Clark ("Clark") and the knowledge of a person of ordinary skill in the art;

[1] Defendant's invalidity charts, in some instances, rely at least in part on Plaintiff's apparent positions regarding the scope of its claims for purposes of asserting infringement. Nothing in these claim charts should be understood as an admission relating to infringement, either literally or under the doctrine of equivalents, or as an admission relating to Defendant's understanding of the proper interpretation or scope of the Asserted Claims. Defendant reserves the right to rely on additional citations or sources of evidence that may also be applicable, or that may become applicable in light of any Court Order on claim construction, changes in Plaintiff's infringement contentions, or information obtained during discovery as the case proceeds.

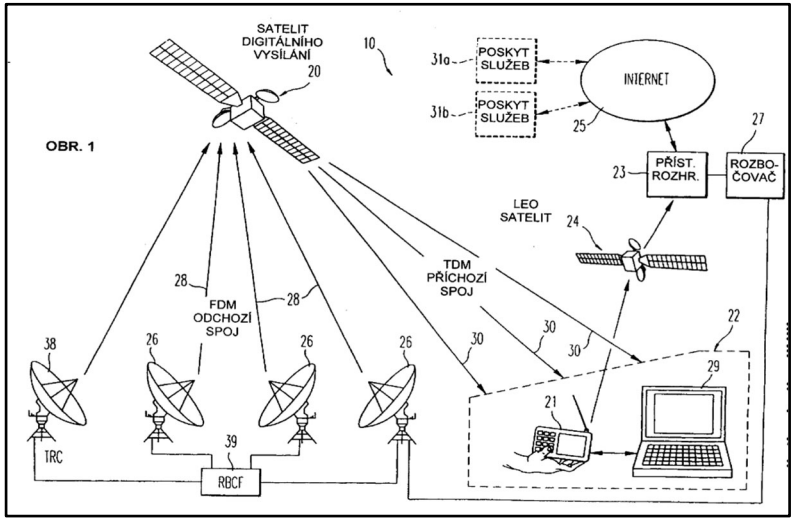
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 6,968,394 to El-Rafie ("El-Rafie") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2002/0075844 to Hagen ("Hagen") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2003/0051041 to Kalavade et al. ("Kalavade") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of Korean Patent No. 2003/0029267 to Hyunwoo Lee ("Lee") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2007/0008937 to Mody et al. ("Mody") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 6,377,981 to Ollikainen et al. ("Ollikainen") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2003/0055975 to Nelson et al. ("Nelson") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 6,105,060 to Martine Rothblatt ("Rothblatt II") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2004/0109449 to Seo ("Seo") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent No. 5,987,430 to Van Horne et al. ("Van Horne") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of U.S. Patent Application No. 2003/0050041 to Wu ("Wu") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of Airpath Wireless Hot Spot ("Airpath Wireless Hot Spot") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of Connexion by Boeing ("Connexion by Boeing") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of MTN Cruise Ship Internet Services ("MTN Cruise Ship Internet Services") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of StratosNet ("Stratos") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of Tenzing Global ("Tenzing Global") and the knowledge of a person of ordinary skill in the art;

- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of Wireless Cabin ("Wireless Cabin") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of "Aeronautical Communications for Personal and Multimedia Services via Satellite" by M. DeSanctis et al. ("DeSanctis") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of "Dimensioning of Aeronautical Satellite Services" by Jahn et al. ("Jahn I") and the knowledge of a person of ordinary skill in the art;
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of "Passenger Multimedia Service Concept via Future Satellite Systems" by A. Jahn, M. Holzbock, M. Riera, N. Díaz, and M. Werner ("Jahn II") and the knowledge of a person of ordinary skill in the art; and/or
- Invalid under 35 U.S.C. § 103 by Rothblatt I in view of "Inflight Internet Connectivity Technology and Its Application on E-Commerce," by Manasuda Suwanateep ("Suwanateep") and the knowledge of a person of ordinary skill in the art.

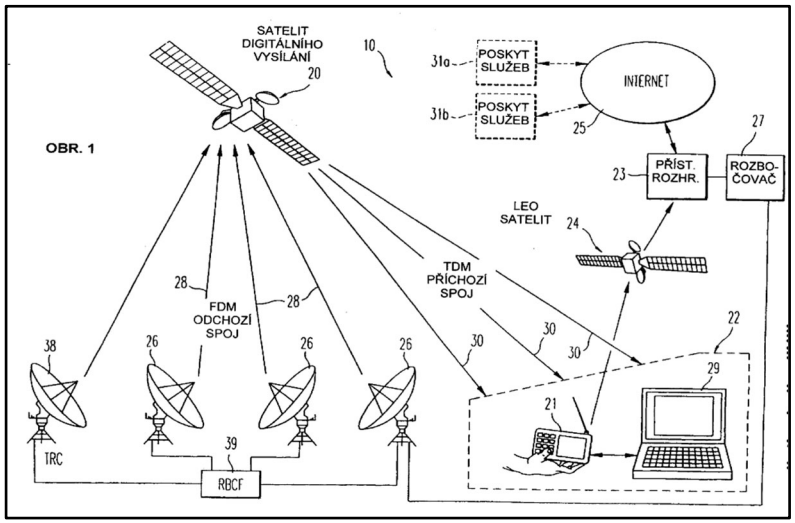
As the United States Supreme Court held in *KSR Int'l Co. v. Teleflex, Inc.*, "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." 550 U.S. 398, 416 (2007). The Supreme Court further held: "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.* at 417. The Supreme Court further held: "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *Id.* at 421.

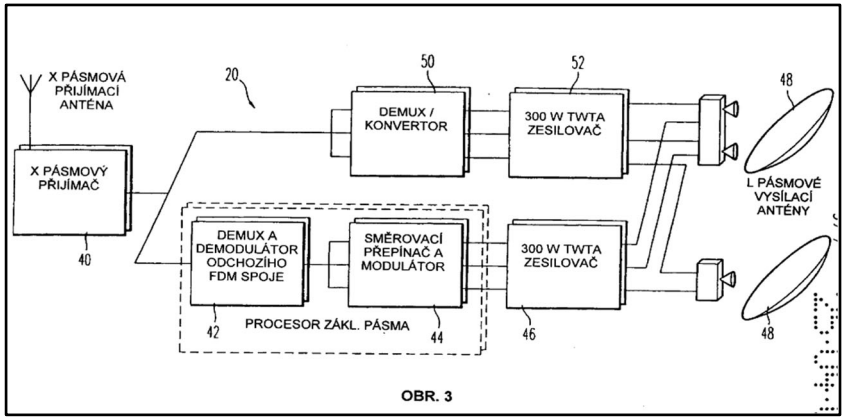
Defendant reserves the right to amend or supplement this claim chart at a later date as more fully set forth in the Invalidity Contentions.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
[24] An Internet Hotspot comprising:	To the extent the preamble is limiting, Rothblatt I discloses an Internet Hotspot. *See, e.g.*, The essence of the invention It is an object of the present invention to provide a system and method that enables global access to the Internet via inexpensive, portable user terminals.

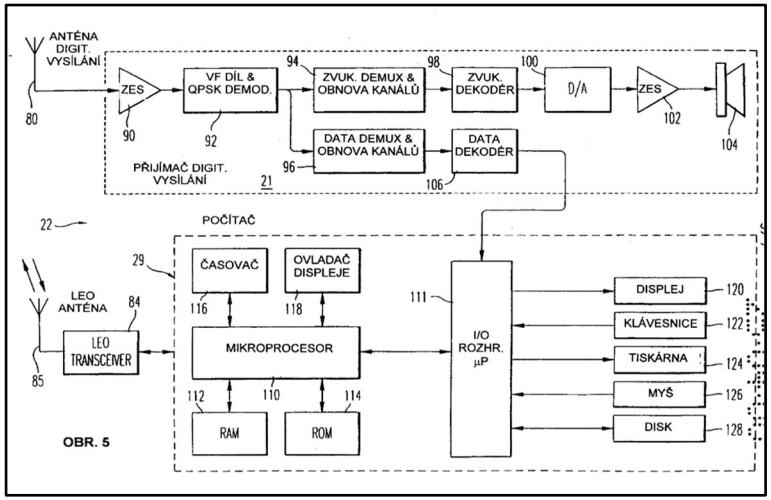
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at 1. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user equipment. The method comprises the steps of generating an Internet access request in a portable user terminal and sending the request to an Internet service provider via a first communication link. The Internet service provider then determines whether the user terminal has the right to access the Internet, and then provides the screens and multimedia data required by the user terminal to the broadcasting station. The transmitting station transmits screens and data to the user terminal via a direct radio satellite broadcasting system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communication link and to receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 2. 

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at Fig. 1. FIG. 1 shows the overall operation of a global system 10 for providing Internet services to a portable device in accordance with a preferred embodiment of the invention. In the case of a useful satellite processing device, the system operates as follows. The outgoing signals 28 originate from the broadcast providers in the form of individual frequency division multiplexed (FDMA) channels transmitted from the transmitting stations 26, which are located anywhere in the line of sight of the satellite 20 with an elevation angle greater than 10 °. Each broadcaster is able to transmit directly from its own device to one of the satellites 20 by placing one or more 16 kbit / s primary channels on an FDMA carrier. Alternatively, broadcasters who do not have the means to directly access the satellite 20 may use access via a hub. For example, the access interface 23 may transmit web pages either directly to one of the live broadcast satellites 20 or indirectly through a hub 27. The use of FDMA for uplinks offers the highest achievable flexibility for operation with independent broadcasters. Rothblatt I at 5.
[24.a] a satellite dish communicating with the Internet via one or more data links with a satellite;	Rothblatt discloses "a satellite dish communicating with the Internet via one or more data links with a satellite." *See, e.g.*, Another object of the invention is to enable a user to receive satellite live broadcasts of audio programs together with satellite live broadcasts of data, including images, downloaded from the Internet or the WWW. Another object of the invention is to use at least one identification code in a control word in a broadcast program to address a satellite direct radio broadcast channel only to a selected user terminal. Rothblatt I at 1-2. In another aspect, the communication link is a low orbit satellite and the communication device is a low orbit satellite transceiver.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at 2. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user equipment. The method comprises the steps of generating an Internet access request in a portable user terminal and sending the request to an Internet service provider via a first communication link. The Internet service provider then determines whether the user terminal has the right to access the Internet, and then provides the screens and multimedia data required by the user terminal to the broadcasting station. The transmitting station transmits screens and data to the user terminal via a direct radio satellite broadcasting system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communication link and to receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 2. 

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at FIG. 1. FIG. 1 shows the overall operation of a global system 10 for providing Internet services to a portable device in accordance with a preferred embodiment of the invention. In the case of a useful satellite processing device, the system operates as follows. The outgoing signals 28 originate from the broadcast providers in the form of individual frequency division multiplexed (FDMA) channels transmitted from the transmitting stations 26, which are located anywhere in the line of sight of the satellite 20 with an elevation angle greater than 10 °. Each broadcaster is able to transmit directly from its own device to one of the satellites 20 by placing one or more 16 kbit / s primary channels on an FDMA carrier. Alternatively, broadcasters who do not have the means to directly access the satellite 20 may use access via a hub. For example, the access interface 23 may transmit web pages either directly to one of the live broadcast satellites 20 or indirectly through a hub 27. The use of FDMA for uplinks offers the highest achievable flexibility for operation with independent broadcasters. Rothblatt I at 5.  Rothblatt I at FIG. 3 ("Fig. 3 shows a way in which signal processing can be performed on board

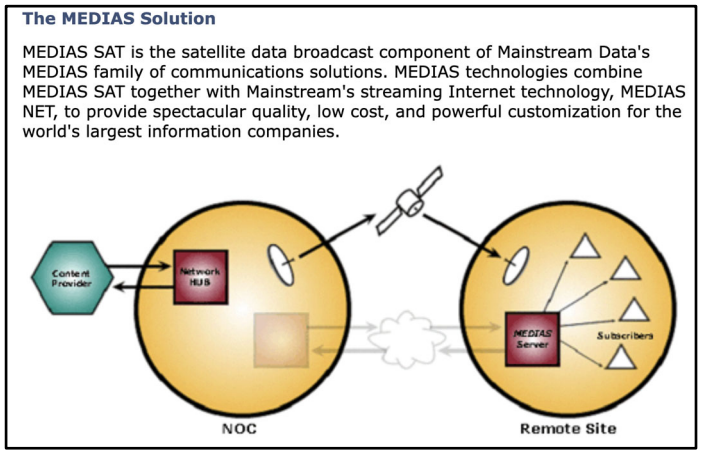
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	a satellite of the satellite radio broadcasting system of Fig. 1.").



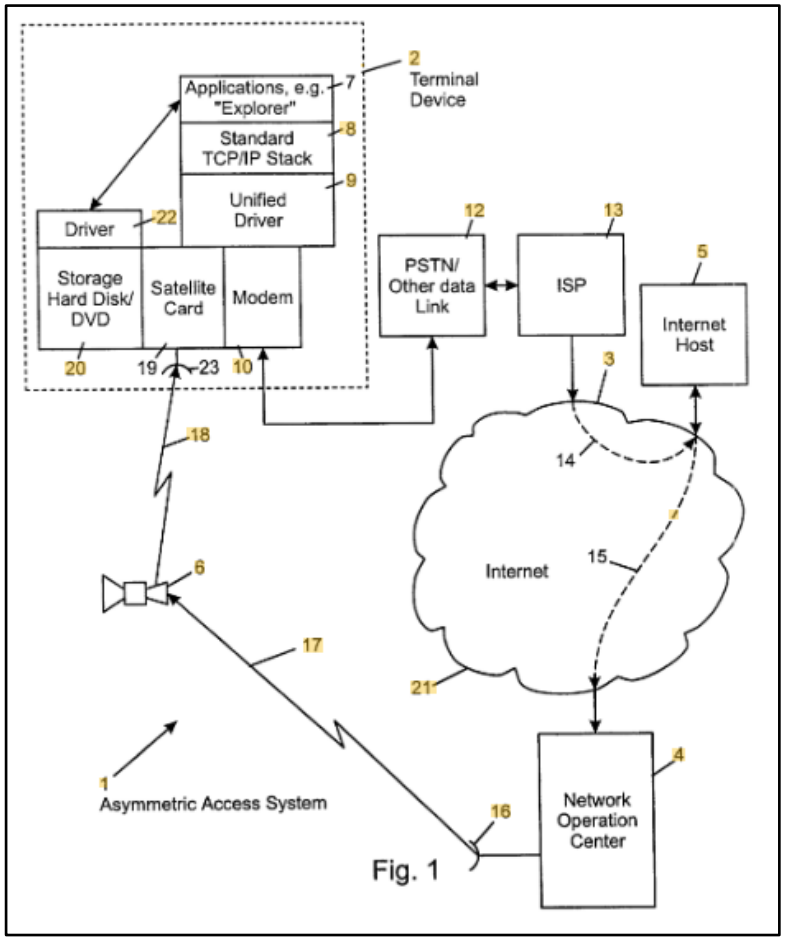
Rothblatt I at FIG. 5.

> The block diagram of the user terminal 22 of FIG. 1 is shown in FIG. 5. The user terminal 22 receives an L-band signal from the satellite 20, demodulates it, selects a selected signal from the TDM stream, and reproduces the audio or data information. The user terminal may be equipped with a small compact flat antenna 80 with a gain of about 4 to 6 dBi, which requires virtually no aiming. The user terminal 22 automatically tunes to the selected channels. Better equipped and more expensive user terminals can alternatively be equipped with antennas with a gain of 10 to 12 dBi. Because such antennas are already directional, they must be focused to achieve the best possible reception. One version of such an antenna is an array of flat antennas. The field can be built into the surface of the user terminal housing, connected as a housing cover, or it can be completely detachable and connected to the user terminal by a thin, several meters long coaxial cable. Another version of the antenna can be a helix operating in either transverse or longitudinal

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	radiation mode. Aiming is performed by rotating the antenna in azimuth and elevation. The detachable antenna can be mounted on a small pedestal or in a window frame and aimed for the best possible reception. The 10 dBi antenna has a beam width of approximately 65 ° and is therefore easy to focus on the satellite for optimal reception. The directivity of such an antenna will further improve reception in locations where otherwise reflections would cause unwanted interference. A phased array, a rod antenna with a large beam width in one direction but a small one in the other (ie a fan antenna) is another alternative. Another usable antenna is a spiral antenna for reception outside buildings and in most buildings. In certain environments (concrete or metal buildings), good reception may require the use of an external antenna. For reception in mobile user terminals, an antenna with a gain of 4 dBi is sufficient, which is mounted on the vehicle. A simple antenna of this type will work very well in an open space with large elevation angles, where there will be no significant multiple reflections. However, in areas where multiple reflectors occur, such as city centers, and where elevations are less than 60 °, measures may be necessary to suppress multiple interference. One such measure may be the use of two or three 4 dBi gain antennas mounted on the vehicle in spatially different positions. These antennas can be dynamically added to achieve directivity or combined to achieve the maximum signal at a given time. Another alternative is to install a controllable directional antenna with a gain of 10 dBi, which will constantly monitor the satellite. This last implementation is very expensive, but people who can afford it may prefer it, as it will allow them to make the most of the high quality programs offered by the system. As mobile satellite systems expand in the next decade, prices for electronically steerable antenna arrays can be expected to fall to more affordable levels. Rothblatt I at 8-9. To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt II,

Claim	Czech Patent No. 2,000,578 (“Rothblatt I”)
	and Stratos. Rothblatt I, Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt II, and Stratos concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users “in transit” or “while traveling” (‘469 patent Background) away from their homes or offices. Modifying Rothblatt I with Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt II, and/or Stratos would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Airpath Wireless Hot Spot, Agarwal, Bruner, El-Rafie, Jahn I, Jahn II, Nelson, Ollikainen, Rothblatt II, or Stratos, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20030819121544/http://www.mainstreamdata.com/content/_soln/soln2.html; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html;

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html; https://web.archive.org/web/20040215133233/http://mainstreamdata.com:80/content/_abtm/abtm0.html;https://web.archive.org/web/20040415005309/http://www.mainstreamdata.com/content/_soln/soln0.html; https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20030808001821/http://www.mainstreamdata.com/content/_soln/soln0.html. > Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, *e.g.*, 10 or 20, and can also be used to connect corporate sites. Agarwal at 3:38-41; *see also* Agarwal at FIG. 1, 3:18-20, 3:38-63. > For airlines operating a mixed fleet of systems, the present invention integrates seamlessly on any platform. This allows for rapid deployment of services fleetwide and continuity of service as they adopt new hardware systems or equip the aircraft with wideband satellite technology for off-aircraft communications. Bruner at [0080], [0035] ("Most preferably, this relatively low bandwidth in-flight link is complemented by a high bandwidth (600 kbps) one way satellite up link to the aircraft."); *see also* Bruner at [0015], [0018], [0021], [0035], [0080].

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 El-Rafie at FIG. 1; *see also* El-Rafie at 4:56-5:19.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")

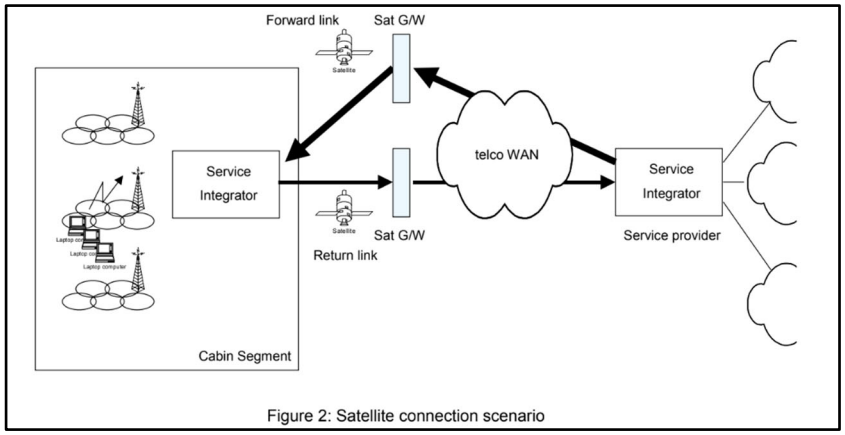


Figure 2: Satellite connection scenario

Jahn I at FIG. 2; *see also* Jahn I at 1-3, FIG. 1.

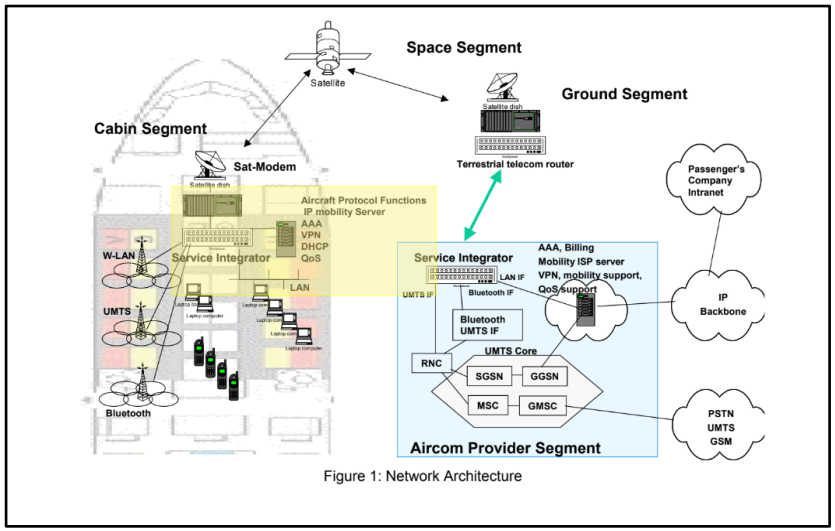
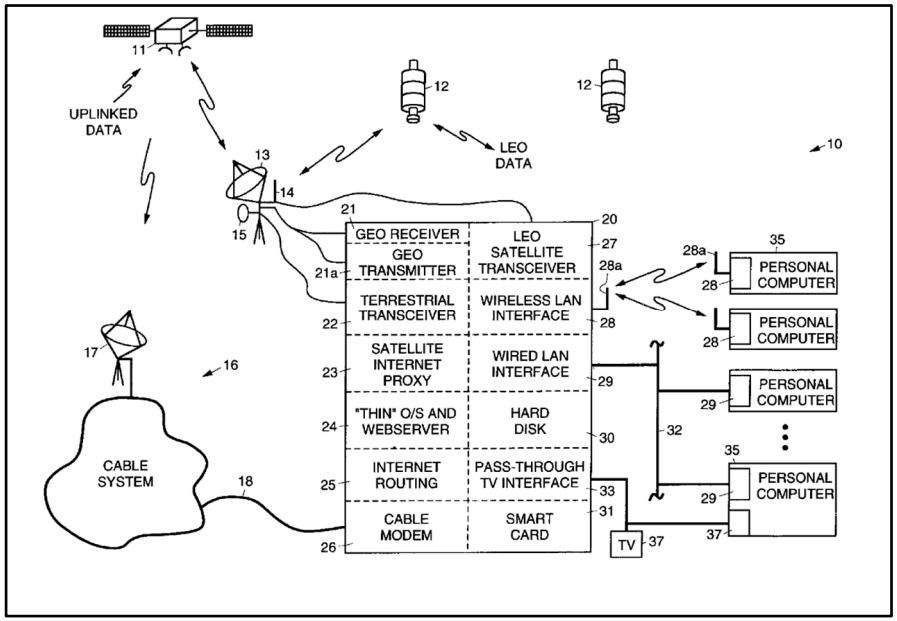
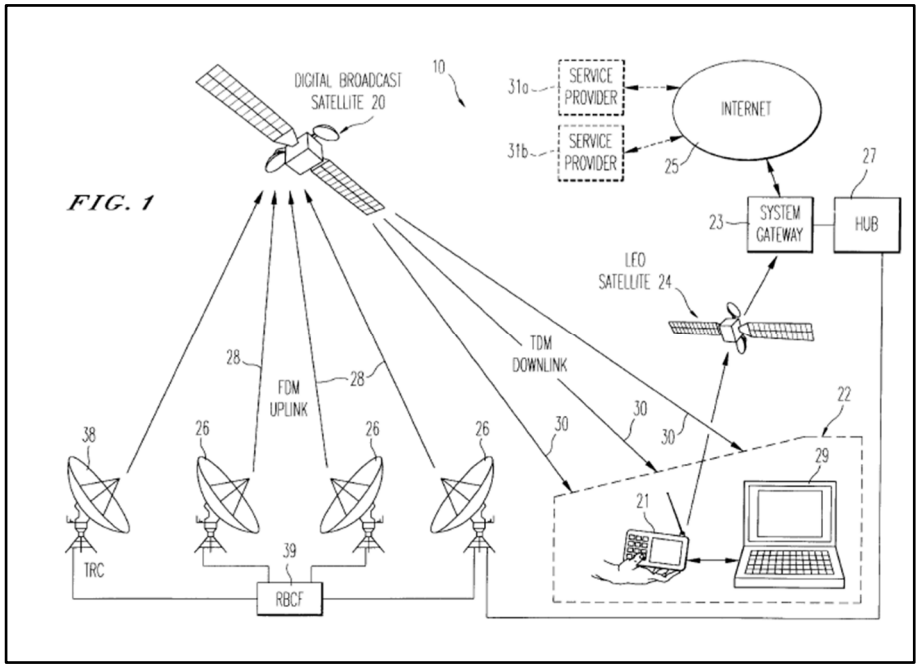
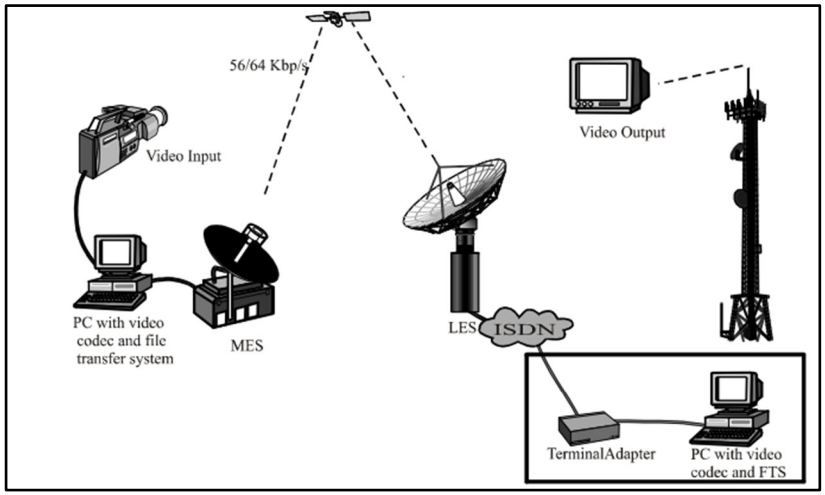


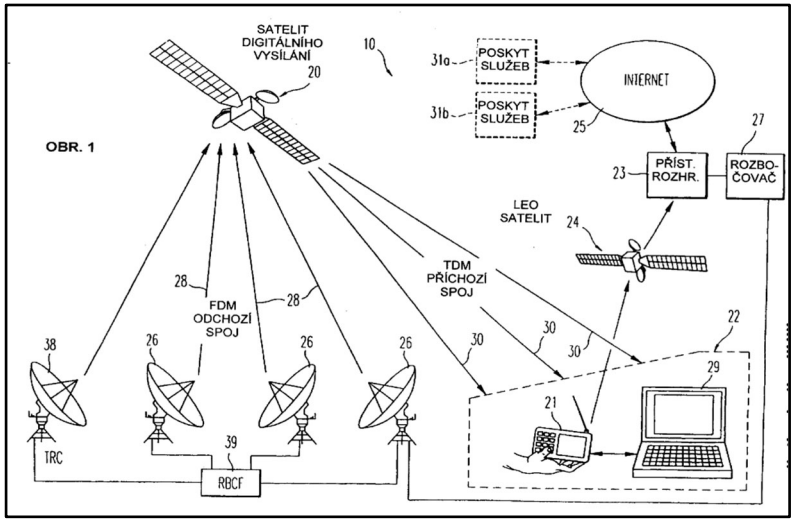
Figure 1: Network Architecture

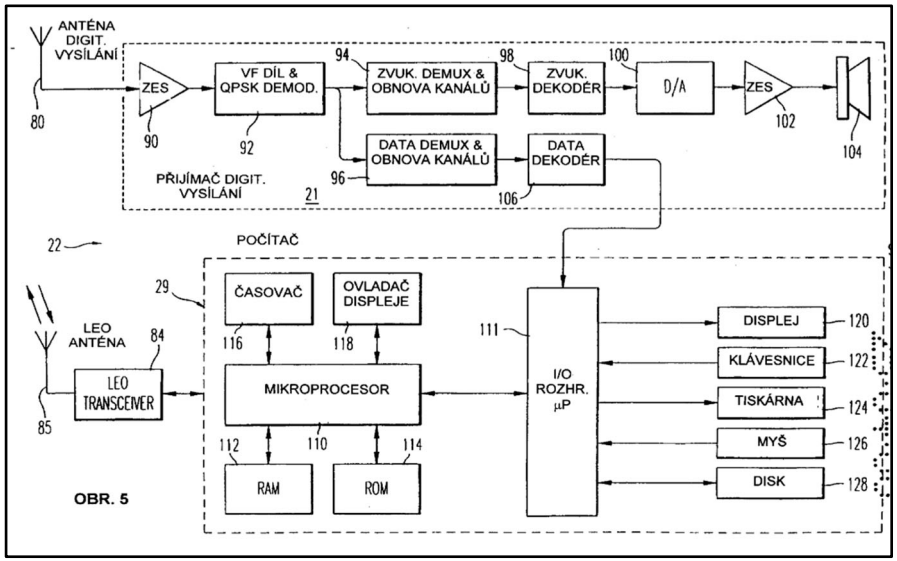
Jahn II at FIG. 1; *see also* Jahn II at 2-4.

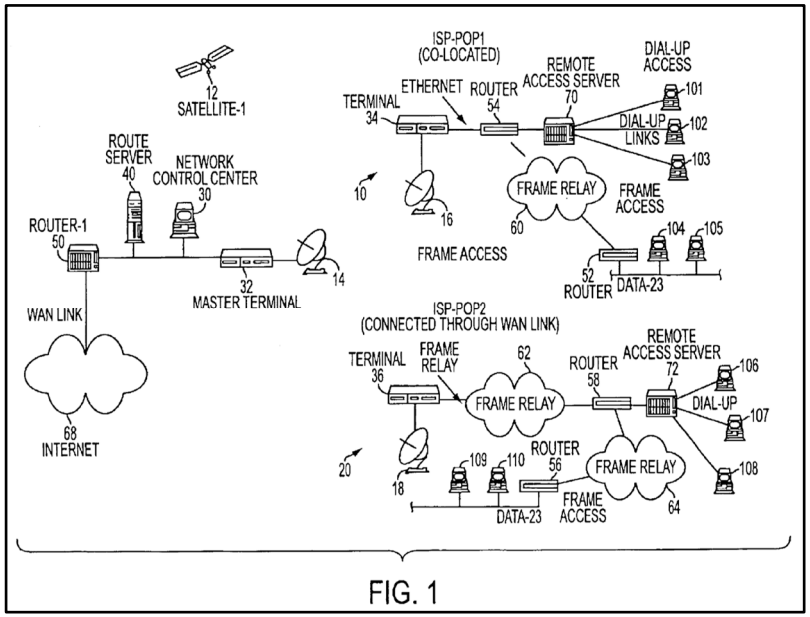
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	The system architecture 600 further includes on the aircraft a DSS receiver/decoder and antenna (not shown) to help facilitate the broadband service. Nelson at [0056]; *see also* Nelson at [0015], [0053]-[0054], [0056], [0058]-[0059], [0061], FIG. 6.  Ollikainen at FIG. 1; *see also* Ollikainen at 2:58-3:45; 3:65-4:17.

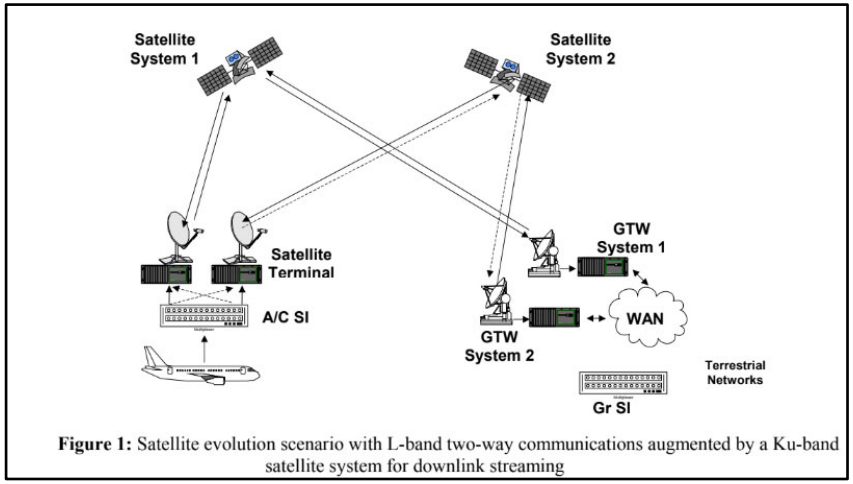
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Rothblatt II at FIG. 1; *see also* Rothblatt II at FIGs. 3, 5, 2:16-21, 2:46-64, 3:12-15, 6:20-27.

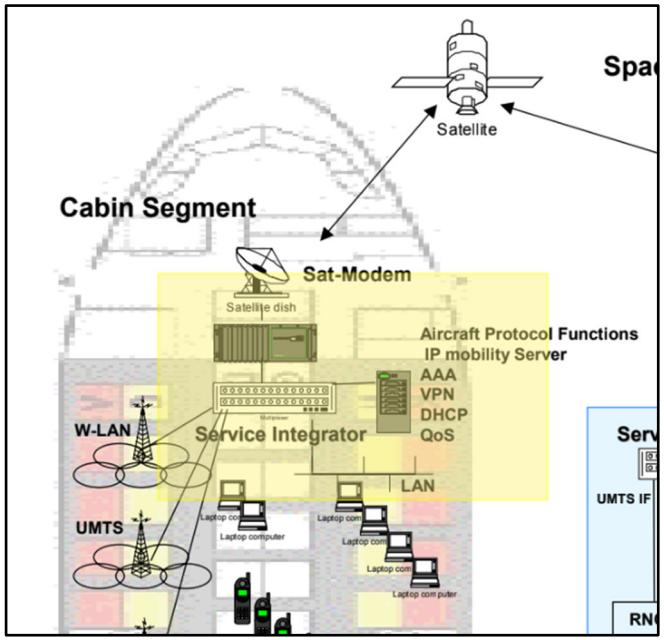
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; .https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would

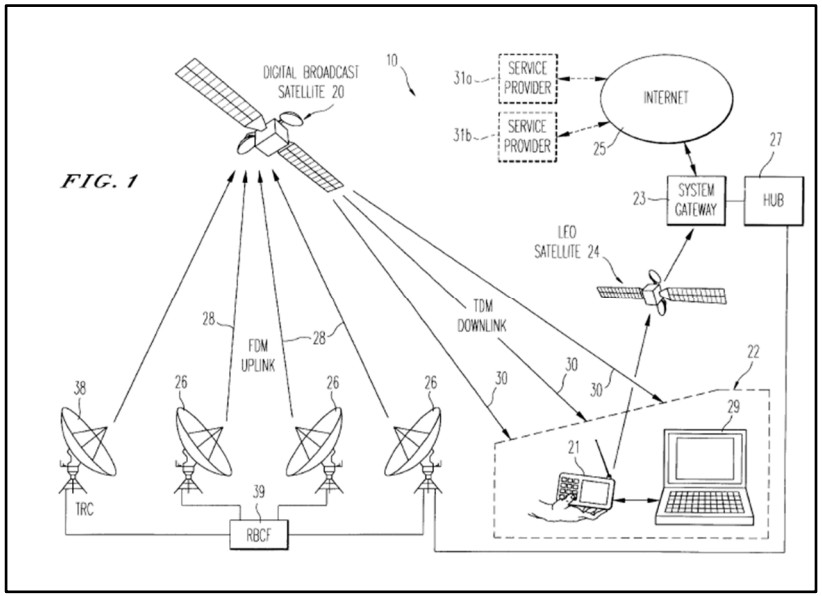
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.b] at least one router operatively coupled to the satellite dish;	Rothblatt I discloses "at least one router operatively coupled to the satellite dish." *See, e.g.*,  Rothblatt I at FIG. 1. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to

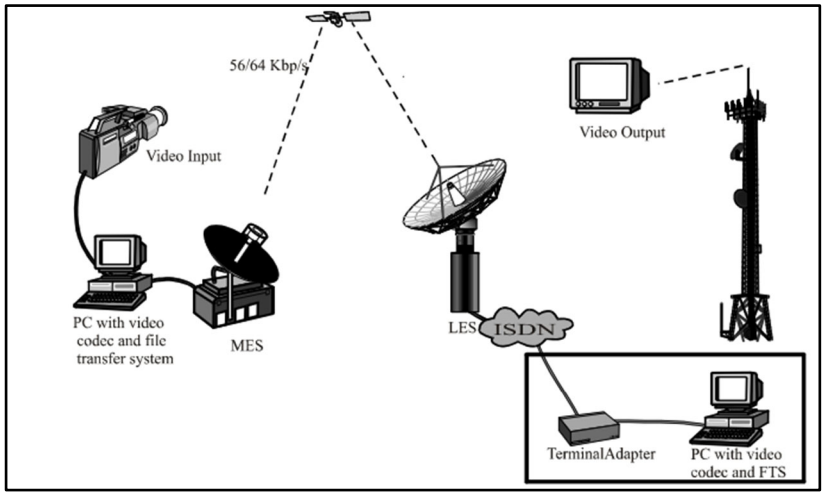
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12.  Rothblatt I at FIG. 5; *see also id.* at 2 ("Fig. 5 is a block diagram showing the construction of a user terminal that includes a digital broadcast receiver and a LEO satellite transceiver according to a preferred embodiment of the invention"). To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Agarwal,

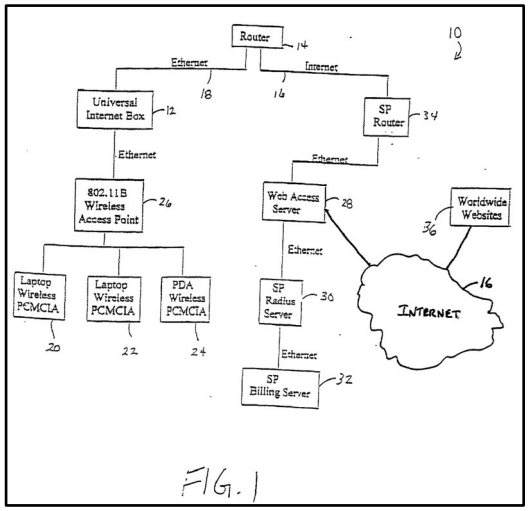
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	DeSanctis, Jahn I, Jahn II, Rothblatt II, Seo, Stratos, and Wu. Rothblatt I, Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt II, Seo, Stratos, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt II, Seo, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Agarwal, DeSanctis, Jahn I, Jahn II, Rothblatt II, Seo, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*,  FIG. 1 Agarwal at FIG. 1; *see also* Agarwal at 2:29-36, 3:18-20, 3:38-63, 4:56-65.

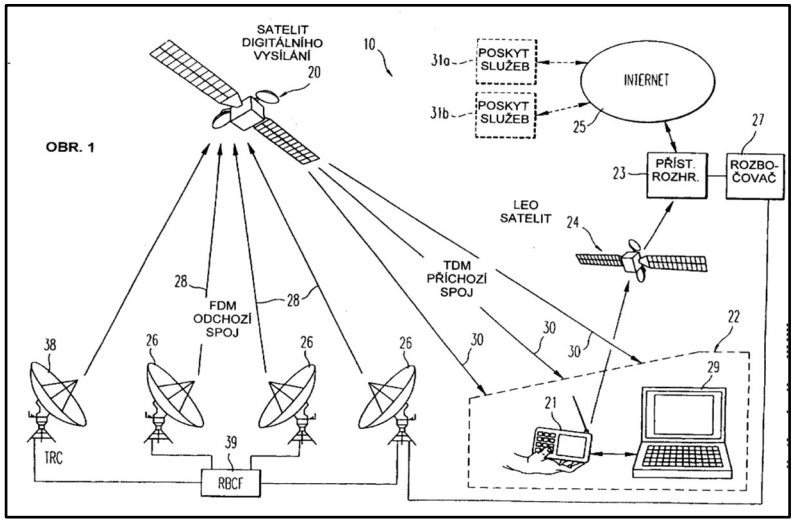
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at 3-4, *see also* DeSanctis at FIG. 2.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Jahn I at 2, FIG. 1 (excerpt); *id*. ("The WirelessCabin architecture and its components are conceptually depicted in Figure 1."); *see also* Jahn I at 2-4, FIG. 2. In the simple case of native IP, a router can connect the wired LAN segment and the wireless IEEE 802.11b access points. Furthermore, other protocol entities needed for IP services in the cabin (such as DHCP, mobility and AAA server) are linked here. Jahn II at 4-5.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Rothblatt II at FIG. 1, *see also* Rothblatt II at FIG. 5, 3:20-23, 11:55-65, 16:28-48; 17:9-16. The internet network node 610 comprises a router 206 connected to the backbone network 200, a plurality of switches 612 and 618, and routers 614 and 616 connected to subscribers. Seo at [0051]; *see also* Seo at [0033], [0026]-[0027], [0049]-[0051].

Claim	Czech Patent No. 2,000,578 (“Rothblatt I”)
	 Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.

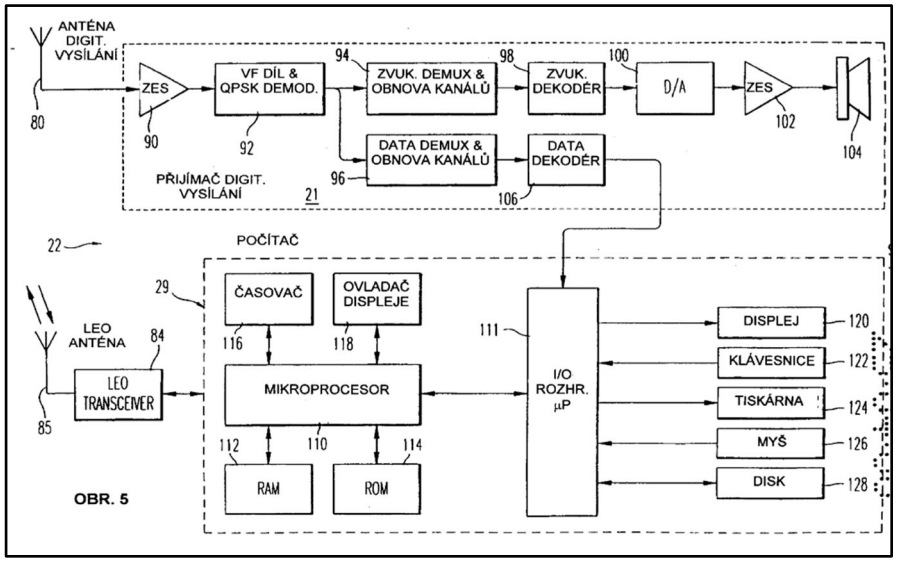
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Wu at FIG. 1. Wu at [0021] ("FIG. 1 is a schematic diagram of a wireless access network for providing a customer with a prepaid wireless remote access service for one embodiment of the present invention"); *see also* Wu at [0058]-[0059]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that satellite dishes were a routine and commercially available component of satellite-enabled multi-user wireless Internet architecture. *See, e.g.,* Clark at Cover.
[24.c] a subscriber access unit operatively coupled between the satellite dish and at least one router, the subscriber access unit	Rothblatt I discloses "a subscriber access unit operatively coupled between the satellite dish and at least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet." *See, e.g.,*

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet; and	 Rothblatt I at FIG. 1. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12. If the user has the correct authorization, the LEO transceiver 84 will subsequently send an

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	identification code, a password, if used, and / or a simple access request generated by the microprocessor 110 according to the program code to one or more access interfaces 23 via the LEO satellite 24 (block 144). The system access interface 23 verifies the user's access right by comparing the address of the LEO transceiver 84 or the user identification code with the authorization data stored in the access interface database 23. In another embodiment of the invention, determining whether a user is authorized to access the Internet is on the access interface 23. computer 29. If the user is authorized, the access interface 23 to the user terminal 22 sends an outgoing link 2B_ to the live radio system via an Internet home page or a browser. The user identification code for authorizing Internet access need not be the same as the identification code assigned by the access interface 23 or the transmitting station 26 for transmitting Internet data to the selected user terminal 22. Rothblatt I at 11. The identification code is preferably assigned to the user by the Internet service provider when the user subscribes to the Internet via user terminal 22. The Internet service provider may assign the user an identification code, a password, or both, and require the user to be able to terminal 22 sends, for example, an Internet browser screen, one or both of these identifiers being entered via keyboard 122 or card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem that may be recognized by the Internet service provider upon triggering a login sequence from the user terminal 22. Rothblatt I at 10. This step may include, for example, comparing the identification code and password with similar information that may be stored in RAM 112 or ROM 114, for authorized users of a particular user terminal 22. Alternatively, check the subscription balance on the user's debit card 130 or 130' (inserted in the card reader 126) and the user's decryption key for validity. If any of the checks fail, a user message is displayed on the display 120 in block 142 informing the user that the correct authorization does not exist.

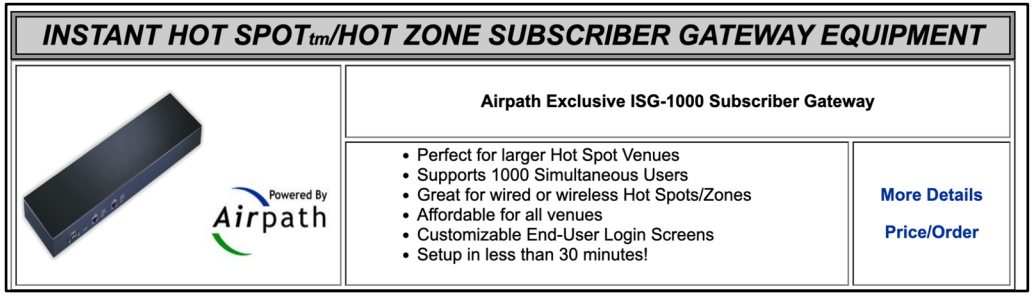
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at 11. For clarity, the access interface 23 to the system has been described above as belonging to a commercial Internet service provider, which sells subscriptions to users and then bills the Internet / WWW access to users via the access interface on a monthly basis. However, your ISP may not be a national TCP / IP network. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12.

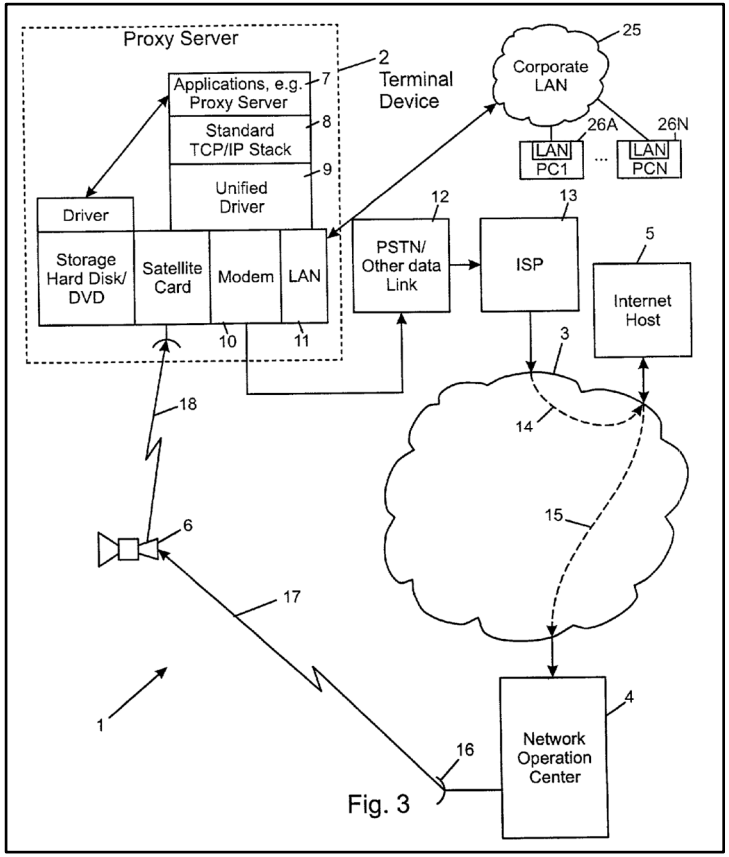
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")

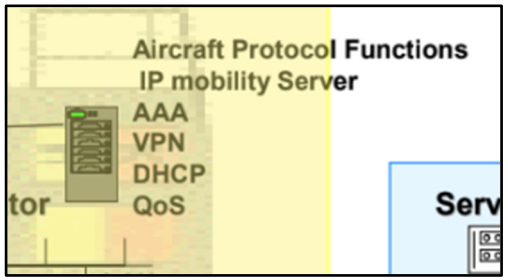


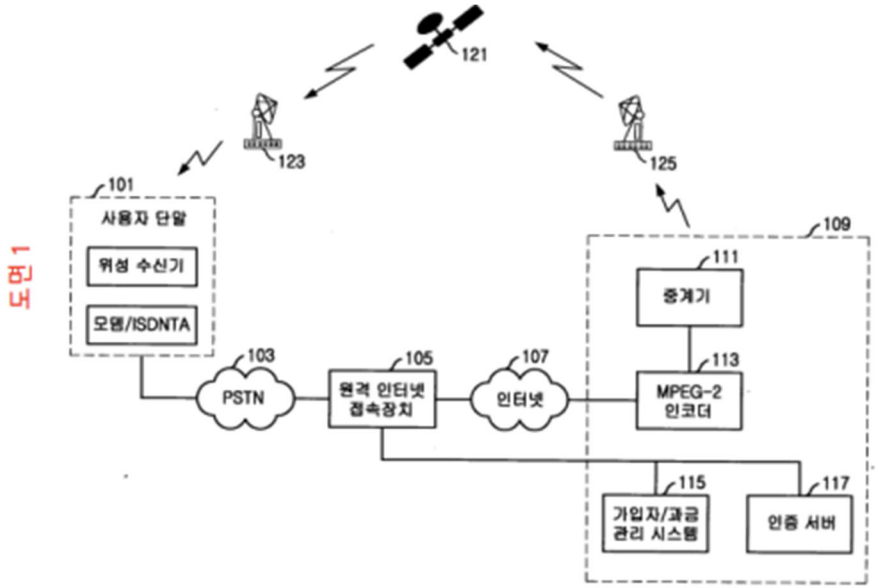
Rothblatt I at FIG. 5; *see also id.* at 2 ("Fig. 5 is a block diagram showing the construction of a user terminal that includes a digital broadcast receiver and a LEO satellite transceiver according to a preferred embodiment of the invention").

To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Lee, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt II, Seo, Stratos, Van Horne, and Wu. Rothblatt I, Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt II, Seo, Stratos, Van Horne, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt II, Seo, Stratos, Van Horne, and/or Wu would have

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Airpath Wireless Hot Spot, Bruner, El-Rafie, Hagen, Jahn I, Jahn II, Mody, MTN Cruise Ship Internet Services, Ollikainen, Rothblatt I, Rothblatt II, Seo, Stratos, Van Horne, or Wu, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp. Airpath Wireless Hot Spot at https://web.archive.org/web/20030201104447/http://airpath.com/hsbs.asp; *see also* https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; https://web.archive.org/web/20030720022617/http://airpath.com/Services/instanthsp_details.htm. The ADS is the inflight remote server 19 that preferably serves content to inflight users of the system and also acts as a gateway to the ground based servers (16, 34, 37, 40) for

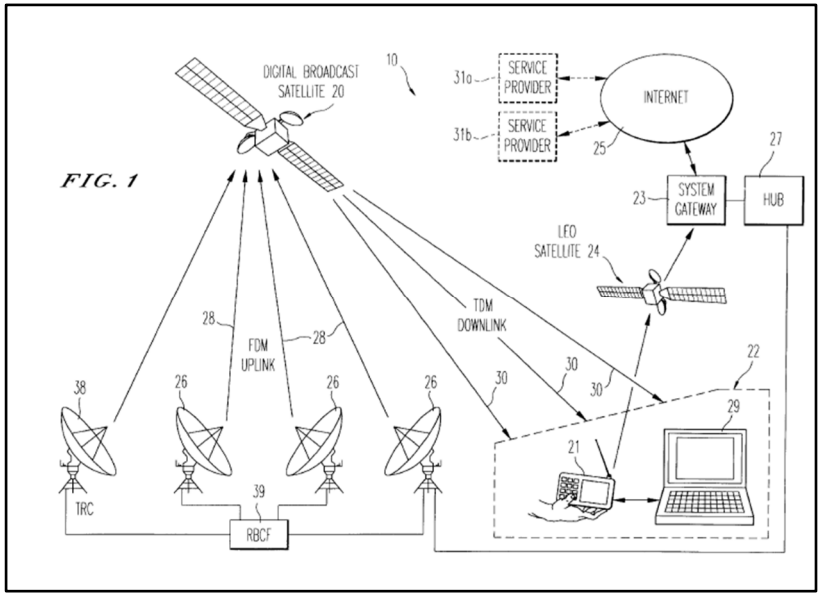
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	additional content. From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. Bruner at [0023]; *see also* Bruner at FIGs. 2-3, [0021]-[0032], [0080]. 

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	El-Rafie at FIG. 3; *see also* El-Rafie at 4:50-67. Thus, as described in detail herein, the NAS performs registration, authentication, and other functions necessary to provide visiting mobile terminals with access to the public network 16, while simultaneously controlling access by such visitors to the local private network 10, whose public network connection resources are being used to provide such access. Hagen [0043]; *see also* Hagen at [0011] - [0013], [0048], [0050], [0059], [0066], [0093].  Jahn I at 2, FIG. 1 (excerpt); *see also* Jahn I at 2-3. It is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 8; *id*. at 2-3, 7. One or more embodiments of the invention are directed to a Converged Billing/Authorization Gateway (CBG) that enables a wireless WAN operator to provide LAN access service to its existing WAN subscribers with a single bill and account. The CBG can integrate the authentication and billing systems of wireless operators with authentication and billing mechanisms used in LAN networks. The WAN operator's backend systems typically interface with a home location register (HLR) database, while

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	the LAN mechanisms typically use protocols like RADIUS. The CBG integrates these two systems such that a WAN subscriber can access LAN services using the subscriber's WAN identity, thus avoiding the need for a separate bill for LAN usage. Further, the WAN operator can offer value-added services while leveraging its existing billing and authentication infrastructure. The CBG can be a server component that is preferably deployed close to the carrier's network and links into the carrier's network. Kalavade at [0056]; *id.* at [0207] ("The access server at the hotspot, such as, *e.g.*, a Cisco Router or a Nokia Access controller intercepts the session and sends a pre-defined web page to the user. This typically queries the user for a login and a password . . . Once authenticated, the RADIUS server responds with an Access Response to the RADIUS client."), [0012], [0016], [0021], [0022], [0023], [0063], [0071], FIGs. 1-3.  Lee at FIG. 1; *see also* Lee at [0001], [0003], [0015] - [0016], [0018] - [0019], [0025] - [0035],

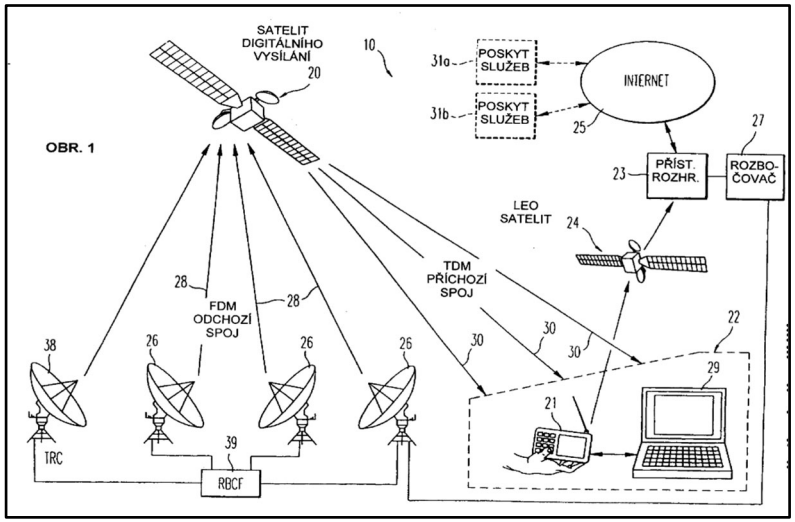
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	[0037], FIG. 1, FIG. 3. When activated, the access control software 14 receives an access request from a user of one of a plurality of mobile communications devices (18_1, 18_2, . . . 18_n) wherein the particular wireless client or mobile communications device 18_1 is attempting to contact the access point 12 to establish access to the communications network 16, such as a WLAN. The AP 12 forwards the request to a corresponding authentication server 20 configured to authenticate the user based on credit information, such as account balance, pre-paid credit charges, and the like. It should be noted that there may be additional networks between wireless network 16 and the authentication server 20 including, for example, wired, wireless and satellite networks. A data base 24 associated with the authentication server stores and maintains the user-based credit balance information. In one configuration, the authentication server 20 may access the account information directly. Optionally, server 20 may operate as a proxy for another accounting/ authentication server 28, 29 over a network 26 (such as a private data network or PDN) wherein servers 28, 29 operate as a final authentication server having access to the user credit records (*e.g.*, a server controlled by the credit card based Issuing agency or pre-paid data card issuer). When an access accept response message is received by AP 12 from the authentication server 20 authenticating the user, AP 12 enables access of the associated client device 18 to the WLAN Mody at [0019]; *see also* Mody at [0002], [0004], [0010], [0011], [0018]-[0024], FIG. 1.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	The PCTEL RADIUS-compatible Segue(TM) Network Gateway performs several critical functions for both the mobile subscriber and the service provider. At the most basic level it serves as a router. In its routing capacity, the Segue(TM) Network Gateway aggregates all of the traffic from a Wireless Local Area Network (WLAN). Among other important functions, the Gateway and the Controller (1) attempt to verify that users are authorized to be on the network; (2) ensures that authorized users have valid IP addresses; and (3) connects to a system that maintains subscriber information and that can perform billing operations. Such systems are generically referred to as AAA Brokers because they perform Authorization, Authentication, and Accounting. The PCTEL Segue(TM) Network Controller serves as a centralized location, responsible for serving customized subscriber and location sensitive contents to users of the network. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021219113817/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=94443. *See also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030810191006/http://www.mtnsat.com:80/enhanced_internet.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030424090006/http://www.mtnsat.com/internet.htm. The cyberstation 20 provides continuous connectivity to satellite-based data delivery services with a full-time low-bandwidth LEO return path to support information requests,

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	feedback delivery, data billing and status/diagnostic reporting. Ollikainen at 3:6-23; *see also* Ollikainen at 4:24-31.  Rothblatt II at FIG. 1; *see also* Rothblatt II at FIG. 5, 3:20-23, 3:62-4:3, 11:55-65, 14:59-68, 15:32-65. A subscriber authenticated as a predetermined multicast group connects with the management server 102 of the CP 100 a via the wide area network 610 and the backbone network 200 through path B of FIG. 5b in order to request IGMP (Internet Group Management Protocol). When the subscriber is proved to be legitimate, the management server 102 of the CP 100 a performs authentication, and authorizes the multicast group. Seo at [0078]; *see also* Seo at [0027], [0033], [0039], [0078], FIGs. 3, 5b, 5d.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html; https://web.archive.org/web/20060320175337/http://www.stratosglobal.com/documents/factSheets/sdx1100_userGuide_overview.pdf; https://web.archive.org/web/20120413092410/http://www.stratosglobal.com:80/About%20Stratos/~/media/Documents/Corp/Public/corp/corp_financial/corp_financial_annualReport2002FinancialsOnly.ashx. In the next step, the client software determines if billing information has been pre-stored in memory. Preferably the user has pre-stored such billing information, such as during the set-up process and this information is read from memory. The software 90 checks for stored billing information. If there is pre-stored billing information, "yes" is returned in step 648. If there is no pre-stored billing information, processing proceeds to a series of billing information requests (steps 649-653) in which billing information is requested from the user. In an alternative embodiment, billing is not required and processing

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	proceeds to step 665. Van Horne at 8:66-9:9; *see also* Van Horne at 11:3-17, 12:29-43, 16:49-17:30. The base station 12 may be integrated into the wireless access network 10 through the implementation of a commercially available device such as the ISS-2000 Internet Subscriber Server manufactured by Handlink Technology, Inc. of Hsinchu, Taiwan, which is capable of providing the above-described functional features. Wu at [0043]; *see also* Wu at [0010]-[0019] ("querying the customer for authentication information . . . authenticating the authentication information provided by the customer . . . checking a prepaid balance amount associated with the authentication information; and enabling wireless remote access service to the customer through the wireless station to a global communication network, upon affirmative authentication and prepaid balance amount check."), [0009], [0014], [0021], [0029], [0031], [0037], [0041], [0043], [0048], [0058]-[0063]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions. It would have been further obvious to a person of ordinary skill in the art that subscription authentication was a routine and commercially available component of any paid wireless Internet architecture. *See* "Going WiFi" Glossary ("AAA (Authentication, Authorization, and Accounting). A term for a framework that enables intelligent access control to computer resources by enforcing policies, auditing usage, and providing the information necessary to bill for services.").
[24.d] a web-ready device operatively coupled to the at least one router, the web-	Rothblatt I discloses "a web-ready device operatively coupled to the at least one router, the web-read device having a browser application operating thereon for accessing the Internet." *See, e.g.*,

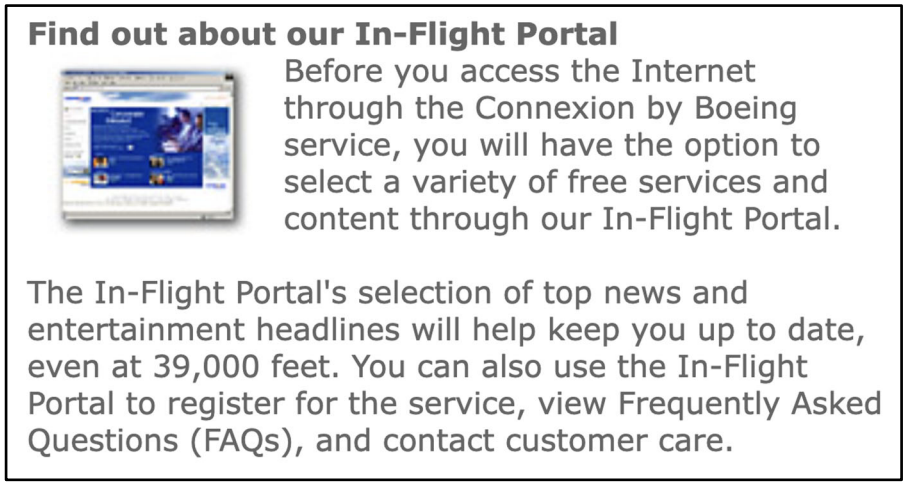
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
ready device having a browser application operating thereon for accessing the Internet;	It is an object of the invention to provide a system and method that enables global access to the Internet via inexpensive, portable user terminals. Rothblatt I at 1.  Rothblatt I at FIG. 1. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail,

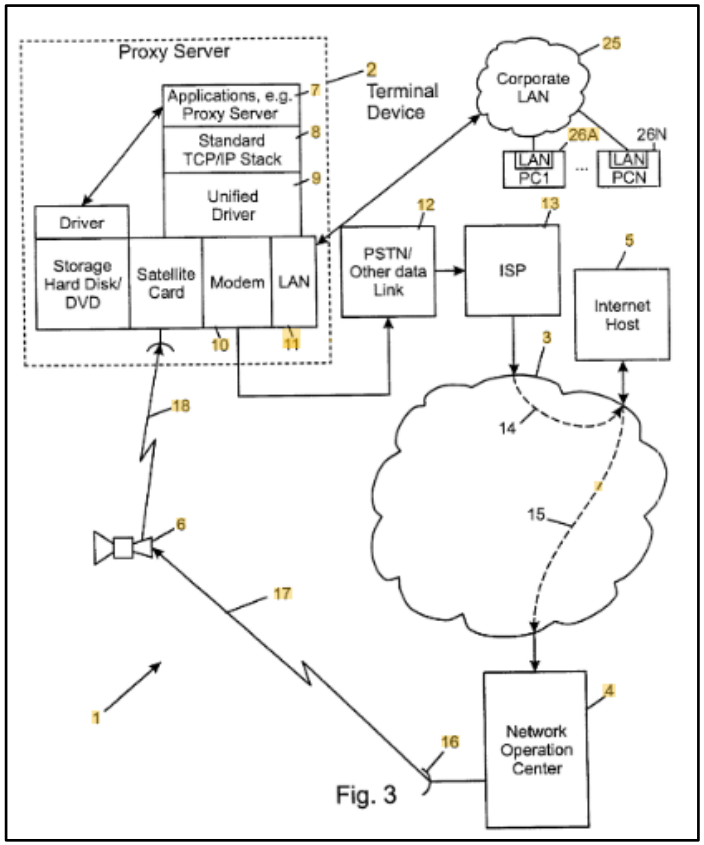
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12. These and other objects of the invention are achieved in part by providing remote users with user terminals having both a receiver for receiving satellite radio and a communication device for communicating with an Internet service provider over a communication link that is from a satellite radio system. broadcast separate. Rothblatt I at 2. In one aspect, the Internet service provider is configured to receive Internet access requests from a user terminal over a communication link. The Internet Service Provider's access interface is configured to route multimedia data requested by the user from the Internet / WWW to the broadcasting station. The broadcasting station formats the data into a broadcasting program and sends the broadcasting program to a satellite of the satellite radio broadcasting system. The user terminal can receive audio signals in the broadcast program and transmit them to the speaker, as well as display image data and continue to interact with the Internet service provider via a communication device and an input device (e.g., a keyboard or mouse). Rothblatt I at 2. In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user equipment. The method comprises the steps of generating an Internet access request in a portable user terminal and sending the request to an Internet service provider via a first communication link. The Internet service provider then determines whether the user terminal has the right to access the Internet, and then provides the screens and multimedia data required by the user terminal to the broadcasting station. The transmitting station transmits screens and data to the user terminal via a direct radio satellite broadcasting system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal

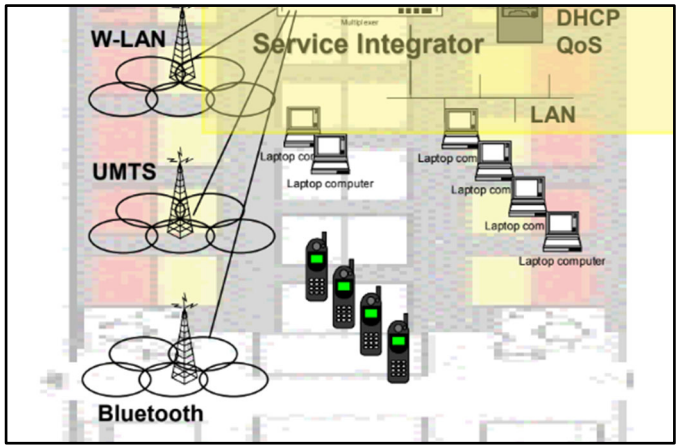
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	continues to send responses and requests to the Internet service provider over the communication link and to receive broadcast screens and multimedia data from the satellite until the Internet connection is terminated. Rothblatt I at 2. it further comprises a plurality of user terminals, the transmitting station is operative to transmit a control word together with data from the access interface to the first satellite, the control word corresponds to a selected of the plurality of user terminals, each of the plurality of user terminals is operative to receive data via the receiver does not use until the control word matches the user terminal. Rothblatt I, Claim 3. The identification code is preferably assigned to the user by the Internet service provider when the user subscribes to the Internet via user terminal 22. The Internet service provider may assign the user an identification code, a password, or both, and require the user to be able to terminal 22 sends, for example, an Internet browser screen, one or both of these identifiers being entered via keyboard 122 or card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem that may be recognized by the Internet service provider upon triggering a login sequence from the user terminal 22. Rothblatt I at 10. For clarity, the access interface 23 to the system has been described above as belonging to a commercial Internet service provider, which sells subscriptions to users and then bills the Internet / WWW access to users via the access interface on a monthly basis. However, your ISP may not be a national TCP / IP network. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12. The (I / O) interface 111 represents the serial and parallel interfaces of the microprocessor 110. As shown in Fig. 5, the data decoded by the receiver 21 can be transmitted to the computer 29 via the serial interface. The keyboard 122 and mouse 126 are used to select broadcast programs, control volume levels, make menu selections, and similar functions. Menus and screens for the display 120 may either be generated based on the program code in the microprocessor 110, or may be received web pages. The printer / plotter 124 allows the user to print the received data in addition to viewing it on the display 120. Finally, the disk drive 128 stores programs and data for the computer 29 and also allows the received data to be stored for later viewing or printing. One of the possible functions of the disk drive 128 is, for example, to combine the image or data received in real time by the digital broadcast receiver 21 and the already existing data stored on a magnetic medium. Thus, for example, an existing image or data can be updated by transmitting only new or changed information without having to always transmit the image or data as a whole. Rothblatt I at 10. To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt II, Stratos, Suwanateep, and Wu. Rothblatt I, Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II,

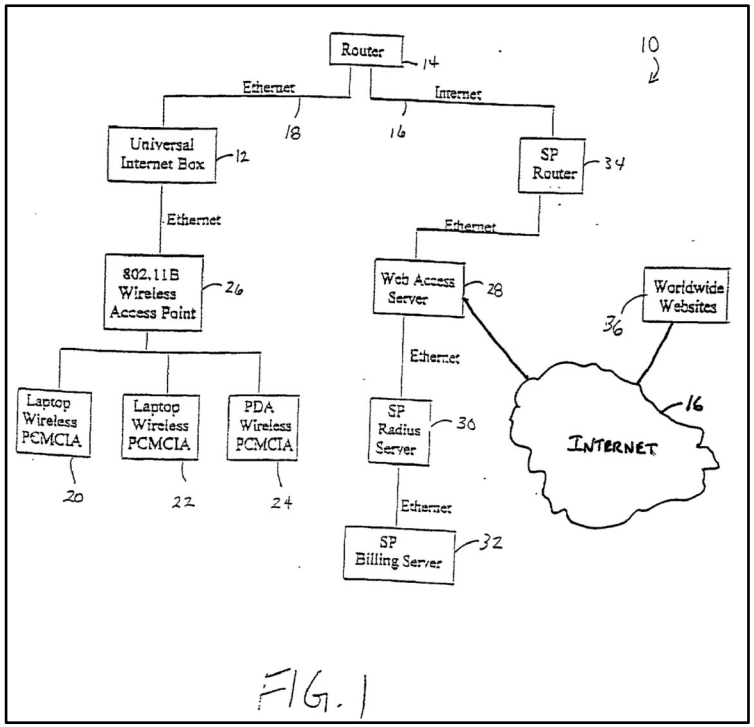
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Kalavade, Ollikainen, Rothblatt II, Stratos, Suwanateep, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt II, Stratos, Suwanateep, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Bruner, Connexion by Boeing, El-Rafie, Jahn I, Jahn II, Kalavade, Ollikainen, Rothblatt II, Stratos, Suwanateep, or Wu, for example, to incorporate this limitation. *See, e.g.*, The airborne users 13 are connected to the system via the aircraft based user terminals which are connected to an airline-based remote server computer 19. Bruner at [0021] *see also* Bruner at FIGs. 1-2, [0018], [0019], [0021]-[0024], [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password. The username and password can be provided when the user first accesses the system and provides necessary registration information to be able to use all the functions of the airborne based internet service of the present invention. Such a registration system is well known to those skilled in the art in providing internet based commerce systems."), [0029]-[0030] [0070], [0076], [0078], [0079].

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2; https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; Suwanateep at 9; *see also* Suwanateep at 12, 16-17, 32-33; Jones 755-56; Abarbanel at 6.

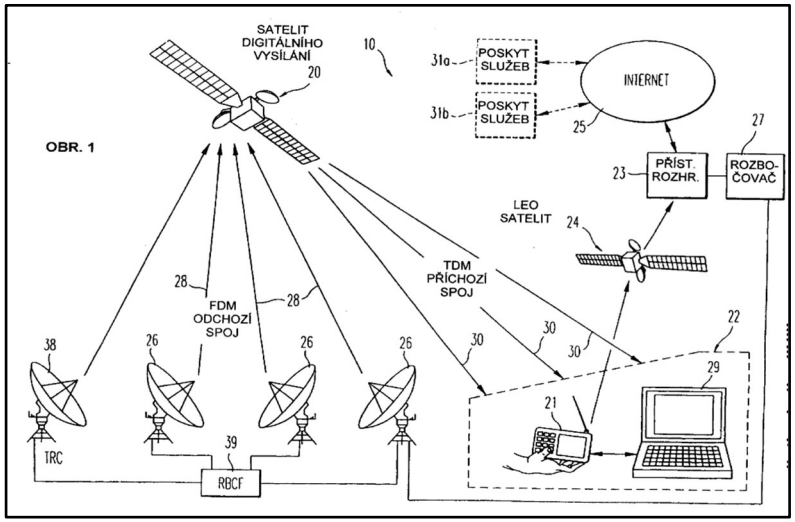
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.

Claim	Czech Patent No. 2,000,578 (“Rothblatt I”)
	 Jahn I at 2, FIG. 1; *see also* Jahn I at 1-2. Moreover, people are becoming more and more used to personalised equipment, such as mobile phones, laptops or PDAs, all accommodated with their own personal environment. Thus, thinking of future mobile communication from a user acceptance point of view, there is a clear demand for a **wireless access** solution for multimedia and personal communication services through users own equipment. Besides, a wireless network might also support the airline personnel (cabin crew, maintenance crew) during their daily work (e.g. for mobile data access). Jahn II at 1; *see also* Jahn II at FIGs. 1-2, 5, Abstract, 1-2. In accordance with various embodiments of the invention, users can access the LAN/WAN from a variety of terminals with different features. By way of example, terminals can include laptops and PDAs (personal digital assistants) and other mobile computing devices. These terminals can have a PCMCIA slot that can be used to attach an 802.11 NIC. Also, many devices sold now have an integrated 802.11 network interface. Kalavade at [0071], [0072] (“A user comes to a hotspot and starts accessing the Internet through

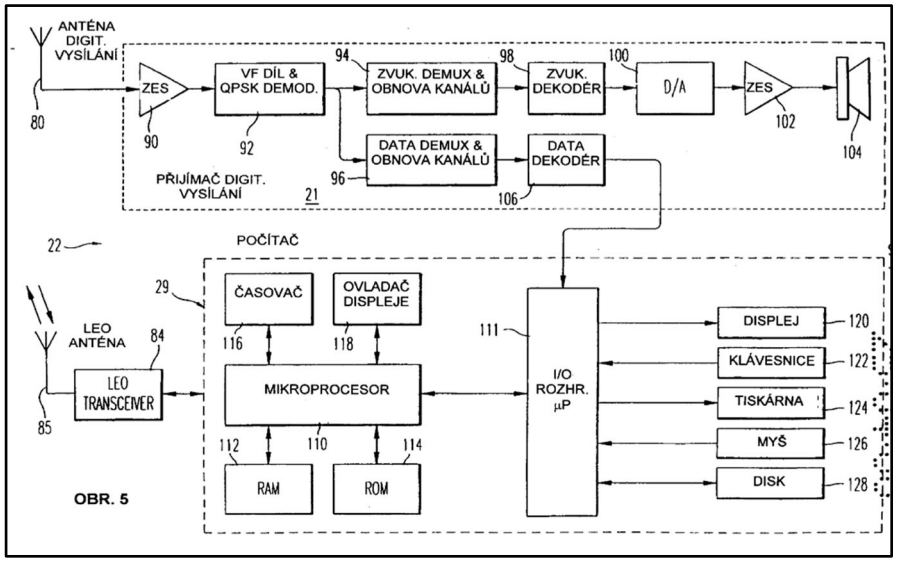
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	his laptop."). When a laptop computer and a network interface card is plugged in to the airplane seat, it will identify what kind of computer and operating system of the laptops and ask for the appropriate software. Passenger laptops interface to the cabin file server through Ethernet cabling installed throughout the cabin. Interfaces include three RS232 serial ports, a parallel printer port, connections for keyboard, mouse, floppy drive and CD- ROM, digital and analog video output and a USB port. There is also the ability to support a variety of interfaces such as Ethernet, modem and others through two Type-II PCMCIA slots. Internet routing software 25 provides the services of a router to route incoming broadcast and interactive data to the appropriate personal computer 35. Ollikainen at 3:31-44; *see also* Ollikainen at FIG. 1. If the user is authorized to have Internet access, the system gateway 23 sends an Internet homepage or Web browser information to the user terminal via an FDM uplink 28 of the direct radio broadcast system. Rothblatt II at 16:57-61; *see also* Rothblatt II at 3:62-4:3, 15:57-61, 16:49-56, FIG. 1. **Optional Web Browsing** Standard Internet service normally includes Internet e-mail, as well as the capability to browse the web. *StratosNet* can do this as well, along with an FTP (File Transfer Protocol) capability, however, we also realize that some satellite terminals may not want the ability to browse the web to be available to users of their satellite phone. Therefore, Stratos offers the option to disable web browsing on your *StratosNet* account. Stratos at https://web.archive.org/web/20030313230837/http://www.commswest.com:80/Stratos/stratos_net.pdf; *see also* Stratos at https://web.archive.org/web/20030312185057/http://home.stratosnet.com:80/appnotes/sn_ie.pdf; https://web.archive.org/web/20040612173303/http://www.stratosglobal.com:80/documents/factSh

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	eets/stratosNet_tc.pdf; https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030726011831/http://www.stratosglobal.com/solutions/environment/air/inmarsat/stratosNet.html; https://web.archive.org/web/20031009070733/http://www.stratosglobal.com/solutions/environment/land/inmarsat/bgan.html.  Wu at FIG. 1. Wu at [0038] ("The wireless stations 20,22, and 24 may include any wireless-

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	enabled electronic device that can be used to connect to the base station 12 to remotely access the global communications network such as the Internet including the World Wide Web (WWW) for web browsing and the like."); *see also* Wu at [0008], [0023]-[0024], [0037]-[0038], [0040], [0043], [0048], [0058], [0063]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.e] wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic;	Rothblatt I discloses "wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic." *See, e.g.*, > For clarity, the access interface 23 to the system has been described above as belonging to a commercial Internet service provider, which sells subscriptions to users and then bills the Internet / WWW access to users via the access interface on a monthly basis. However, your ISP may not be a national TCP / IP network. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Rothblatt I at FIG. 1.

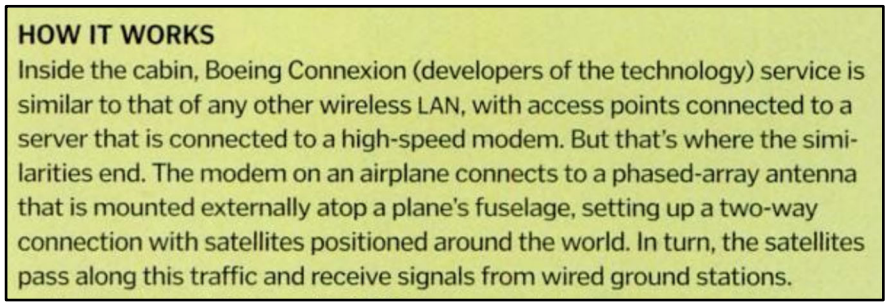
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")

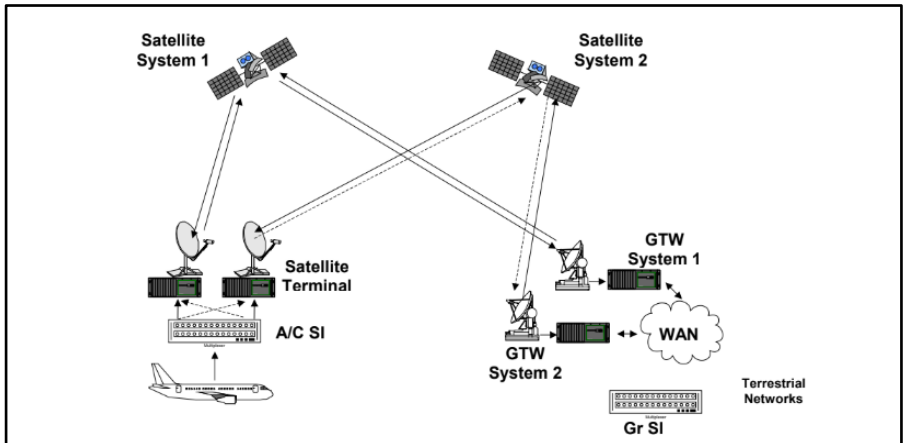


Rothblatt I at FIG. 5; *see also id.* at 2 ("Fig. 5 is a block diagram showing the construction of a user terminal that includes a digital broadcast receiver and a LEO satellite transceiver according to a preferred embodiment of the invention").

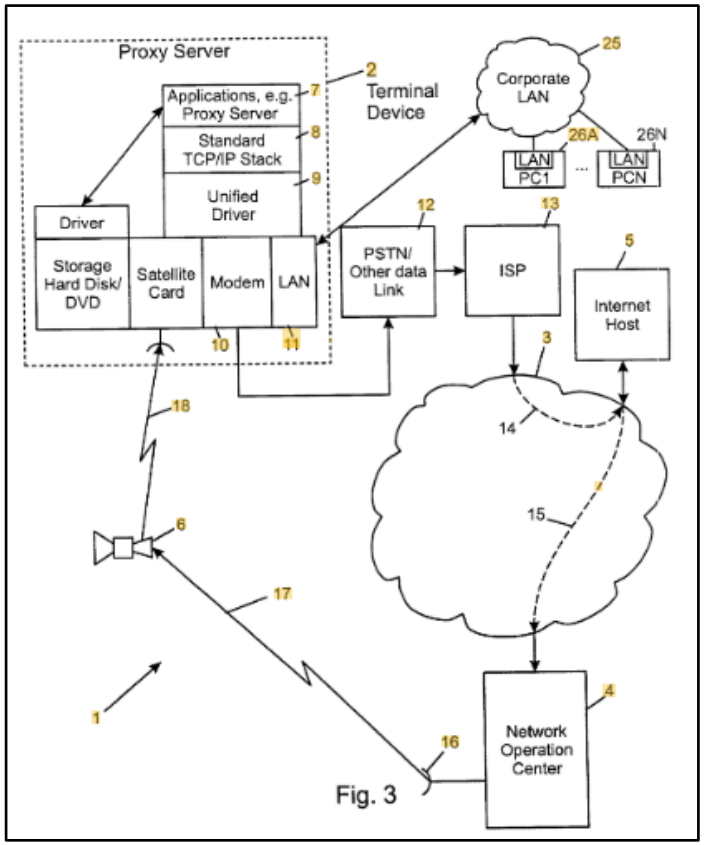
> In another aspect, the invention is directed to a method of providing global Internet access for inexpensive portable user equipment. The method comprises the steps of generating an Internet access request in a portable user terminal and sending the request to an Internet service provider via a first communication link. The Internet service provider then determines whether the user terminal has the right to access the Internet, and then provides the screens and multimedia data required by the user terminal to the broadcasting station. The transmitting station transmits screens and data to the user terminal via a direct radio satellite broadcasting system. The user terminal either reproduces or processes the data according to the user's wishes. The user terminal continues to send responses and requests to the Internet service provider over the communication link and to receive broadcast screens and multimedia data from the

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	satellite until the Internet connection is terminated. Rothblatt I at 2. it further comprises a plurality of user terminals, the transmitting station is operative to transmit a control word together with data from the access interface to the first satellite, the control word corresponds to a selected of the plurality of user terminals, each of the plurality of user terminals is operative to receive data via the receiver does not use until the control word matches the user terminal. Rothblatt I, Claim 3. To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu. Rothblatt I, Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Agarwal, Bruner, Clark, Connexion by Boeing, DeSanctis, El-Rafie, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Stratos, or Wu, for example, to incorporate this limitation. *See, e.g.*, Such a network can be used to provide connectivity via satellite-1 12 and satellite dishes 14, 16, 18 to Internet Service Providers, e.g., 10 or 20, and can also be used to connect corporate sites. Routers 52, 54, 56 and 58 connect the terminals 34 and 36, possibly via

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	frame relays 60, 62, 64 (or via an ethernet connection), to remote access servers 70, 72, and/or to various dial-up access units 101-110. Agarwal at 3:38-44; *see also* Agarwal at 3:18-20, 3:45-63, FIG. 1. Referring now to the drawings in detail, there is shown in FIG. 1 a schematic diagram of the hardware for operating the remote internet system 10 of the present invention to allow remote users 13, such as airline passengers, to conduct electronic commerce ("e-commerce") from a remote location 14, such as during the course of an airline flight. . . The remote system preferably includes remote communication equipment 28 operably connected with the communication network 22. Bruner at [0021]; *see also* Bruner at FIG. 1, [0002], [0011], [0013]-[0014], [0021]. FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system 100 of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit 103, and one or more wireless local area network (LAN) 104. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station. Clark at 3:66-4:7; *see also* Clark at 3:49-59, 4:8-17, 4:18-30, 6:45-49, 8:29-37.  **HOW IT WORKS** Inside the cabin, Boeing Connexion (developers of the technology) service is similar to that of any other wireless LAN, with access points connected to a server that is connected to a high-speed modem. But that's where the similarities end. The modem on an airplane connects to a phased-array antenna that is mounted externally atop a plane's fuselage, setting up a two-way connection with satellites positioned around the world. In turn, the satellites pass along this traffic and receive signals from wired ground stations. Connexion by Boeing at Carol Ellison, *Unwire Everywhere*, PC MAGAZINE, Special Wireless

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Issue 2003, at 97-104; *see also* Connexion by Boeing at https://web.archive.org/web/20030201115424/http://www.connexionbyboeing.com/index.cfm?Lnav=1#e5; The Boeing Company, 2003 Annual Report, https://www.annualreports.co.uk/HostedData/AnnualReportArchive/b/NYSE_BA_2003.pdf.  **Figure 1:** Satellite evolution scenario with L-band two-way communications augmented by a Ku-band satellite system for downlink streaming DeSanctis at FIG. 1; *see also* DeSanctis at FIG. 2, 2-3.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")



El-Rafie at FIG. 3; *see also* El-Rafie at 8:9-25.

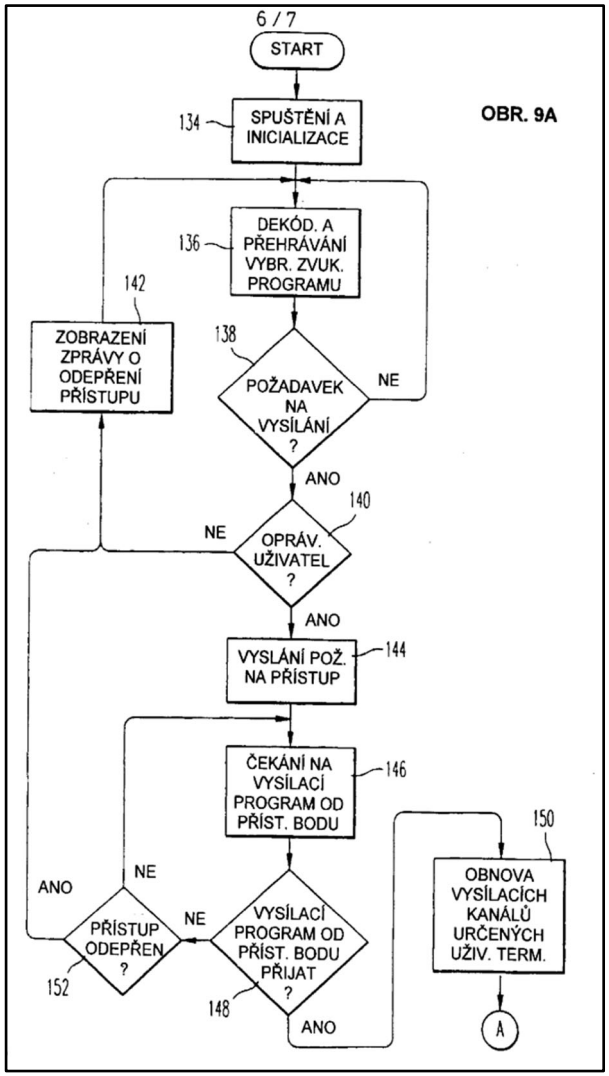
> ABSTRACT—This paper addresses the traffic dimensioning for aeronautical services. Specifically, it focuses on wireless services such as UMTS and W-LAN in aircraft cabins that connect the passenger via satellite to terrestrial infrastructure.

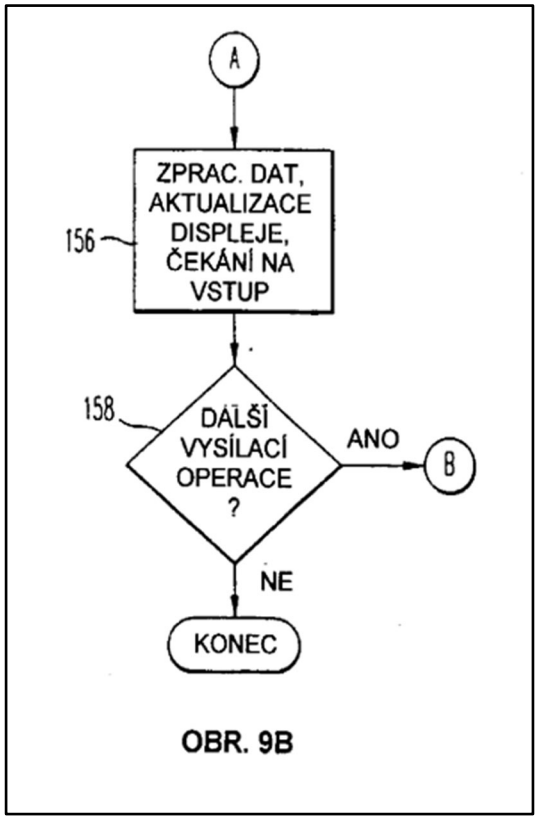
Jahn I at 1; *see also* Jahn I at 1-2.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	The service scenario considers travellers in aircraft on the move. Future airliners will provide a variety of entertainment and communications equipment to the passenger to make the journey more pleasant through in-flight entertainment, more productive through business communication facilities, and more secure through tele-medicine and surveillance facilities on board. A variety of services is needed, each having a different bandwidth demand and different types of communication protocols. Many of the services will be available to the passenger by means of cabin-installed equipment, such as TV screens, a rescue compartment with tele-medicine equipment, or fixed installed satellite phones. Jahn II at 2; *see also* Jahn II at 3, 7, 6, 8, FIGs. 1, 5. **Wireless** Check E-Mail, surf the web or play games ….from anywhere on the ship! Maritime Telecommunications Network, the source for innovative offshore communications solutions for nearly a decade, is introducing their newest offering, Wireless Internet Access. A first for the maritime industry, a true Wireless network can be installed onboard just about any vessel. Access Points are installed throughout the vessel and terminated at our server onboard. MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_09

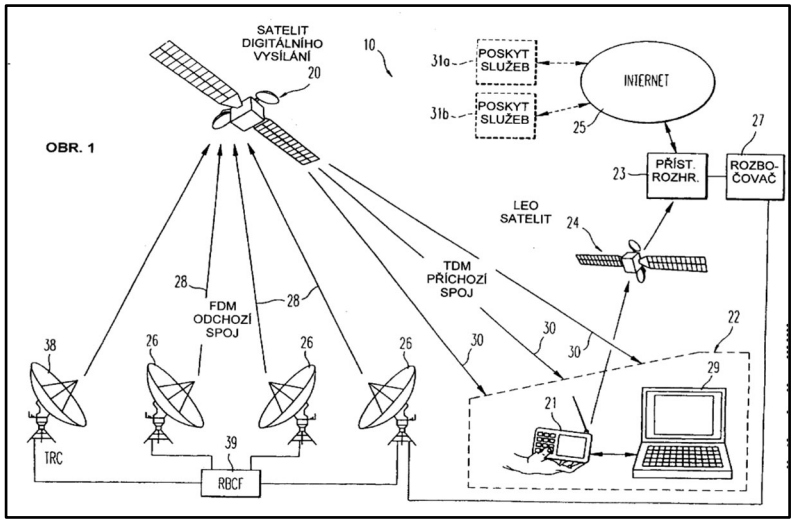
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	1702_NorwegianSun.htm; https://web.archive.org/web/20030105020053/http://www.mtnsat.com/press/2002/pressrelease_031202.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). Other computer access systems are routers (connected directly or via a PC), PABXs (fax and voice sharing), POTS (phones, cordless phones, DECT phones and facsimiles), USB support (offered by manufacturers as an alternative to RS232 and RJ45 for accessing MPDS or ISDN services) and PCMCIA (an interface supplied to provide enhancements like Bluetooth, 802.11b or Secure STU capabilities). Stratos at https://moodle.lnu.se/pluginfile.php/275910/mod_resource/content/1/Inmarsat/Maritime_Handbook.pdf; *see also* Stratos https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html; https://americantower.gcs-web.com/news-releases/news-release-details/maritime-telecommunications-network-offers-complete; https://web.archive.org/web/20030806202148/http://www.stratosglobal.com/solutions/product/fixedSatelliteServices/index.html. The manner in which the network system can be implemented and positioned inconspicuously makes the system especially suited for use in public places with limited space and high traffic throughput such as airports, hotels, cafes, public transportation centers, vehicles, restaurants, libraries, college campuses, and the like. Wu at [0006]; *see also* Wu at Abstract, [0001], [0006]-[0019], [0022], [0023], [0030], [0037], [0040], [0041]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[24.f] wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router.	Rothblatt I discloses "wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router." *See, e.g.*,

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Rothblatt I at FIG. 9A.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 OBR. 9B Rothblatt I at FIG. 9B. After the user terminal has the last requested file and does not request further Internet access (negative branch of decision block 158), Internet access can be terminated. The user may be charged for the time of the Internet connection and the amount of downloaded data with a monthly statement from the Internet service provider. Rothblatt I at 11.

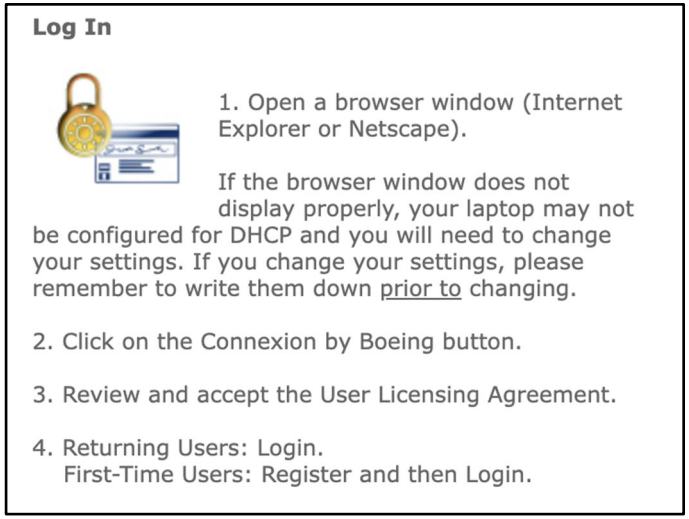
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")



Rothblatt I at FIG. 1.

For clarity, the access interface 23 to the system has been described above as belonging to a commercial Internet service provider, which sells subscriptions to users and then bills the Internet / WWW access to users via the access interface on a monthly basis. However, your ISP may not be a national TCP / IP network. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files).

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I at 12. For example, the computer may provide data requested by the user to the transmitting station 25. The transmitting station generates primary channels containing the requested data and an identification code associated with the user terminal 22. 30_. The identification code is preferably assigned to the user by the Internet service provider when the user subscribes to the Internet via user terminal 22. The Internet service provider may assign the user an identification code, a password, or both, and require the user to be able to terminal 22 sends, for example, an Internet browser screen, one or both of these identifiers being entered via keyboard 122 or card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem that may be recognized by the Internet service provider upon triggering a login sequence from the user terminal 22. Rothblatt I at 10. To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt II, and Wu. Rothblatt I , Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt II, and Wu concern the similar subject matter as Rothblatt I , namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt II, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Bruner, Connexion by Boeing, Hagen, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, Rothblatt II, or Wu, for example, to incorporate this limitation. *See, e.g.*,

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	From a laptop computer for example, an inflight passenger 13 initiates a dial-up networking PPP connection to the ADS server 19 via the inflight telephone connection (not shown) located adjacent the passenger 13, such as in the seatback or in the armrest of the airline passengers seat. The ADS server 19 operates a host of software components including an HTTP server, DHP server, DNS server, database server, mail server and preferably chat and streaming servers. After the PPP connection is established, the ADS server 19 will provide an IP address, DNS server address and any default gateway information to the user 13. From this point, the user utilizes his or her internet browser software running on the laptop to access a variety of content. In an alternative embodiment, a screen and keyboard can be provided at the passengers seat for the user 13 connection, eliminating the need for the user to have his or her laptop computer. Bruner at [0023]; *see also* Bruner at [0028] ("Preferably, as shown in FIG. 2, the user 10 upon accessing the system of the present invention via a home page 55 logs in 58 by providing a user name and password."), [0021], [0029], [0078], [0079].  **Log In** 1. Open a browser window (Internet Explorer or Netscape). If the browser window does not display properly, your laptop may not be configured for DHCP and you will need to change your settings. If you change your settings, please remember to write them down prior to changing. 2. Click on the Connexion by Boeing button. 3. Review and accept the User Licensing Agreement. 4. Returning Users: Login. First-Time Users: Register and then Login. Connexion by Boeing at

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	https://web.archive.org/web/20030208001122/http://www.connexionbyboeing.com/index.cfm?Lnav=2; *see also* Connexion by Boeing at https://web.archive.org/web/20030208001128/http://www.connexionbyboeing.com/index.cfm?Lnav=4; Suwanateep at 9. > For these users, the only point of access to the private network 10 is through the network's own router 14, which is easily secured by the network administrator. At the same time, private network users/clients may be permitted to access the private network 10 via wireline network connections or via wireless mobile terminals 23 through private WAPs 21. Private WAPs are preferably maintained at locations that are not publicly accessible or are otherwise configured to limit access to authorized clients of the private network 10. These users can then gain access to the public network through the private network's router 14. Hagen at [0060]; *see also* Hagen at [0059], [0185], FIG. 14. > The provision of such a heterogeneous access network with collectively mobile users requires the development authentication, admission and accounting (AAA) in the mobile network, especially taking into account the necessity to support different pricing concepts for each passenger in the mobile network and the interaction of airline, satellite provider, aircom service provider and terrestrial service providers. Jahn I at 3; *see also* Jahn I at 1-3, FIG. 1. > Since IP traffic at IP connection level can be monitored only before the IS stream multiplexing, it is envisaged that AAA functions must be located in the cabin to monitor for instance, volume-based accounting. Counterparts of the AAA function must be located at the service provider site, and appropriate signaling functions between both entities must be foreseen. Jahn II at 7-8; *see also* Jahn II at 3, FIGs. 1, 5.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	On Norwegian Sun, NCL guests can now surf the Internet by the pool, in the meeting rooms, in and around the Internet Cafe and the reception (atrium) area. The installation of the Wi Fi software is simple, requiring no reconfiguration of the guest's computer and will take up no hard drive space once the guest leaves the ship. Laptops are also available for rent at the Internet Café onboard. The Wi Fi network card costs $10 per day and passengers are charged either by the minute or can purchase 33-, 100- or 250-minute packages for as low as 40 cents per minute. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030701164753/http://ncl.com/news/pr102302.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20030302133410/http://www.shareholder.com/pctel/ReleaseDetail.cfm?ReleaseID=90805. For basic network access services (such as Internet access), the data communication server can perform dial-up authentication when the user connects to the server. PPP can be advantageously used to provide a plurality of in-protocol authentication methods. Preferably, a remote access dial-up user service (RADIUS) may be used to perform the dial-up authentication, allowing exchange of login information and user resource information between a client and a RADIUS server, the server containing a database. During an authentication session, the login information is sent to the RADIUS server, the user is authenticated, and the server returns the user data record provisioned in the database; such information may include the IP address assignment, the source and destination filter IDs, allowed access time, and other information. Nelson at [0107]; *see also* Nelson at FIG. 17, [0105]-[0106].

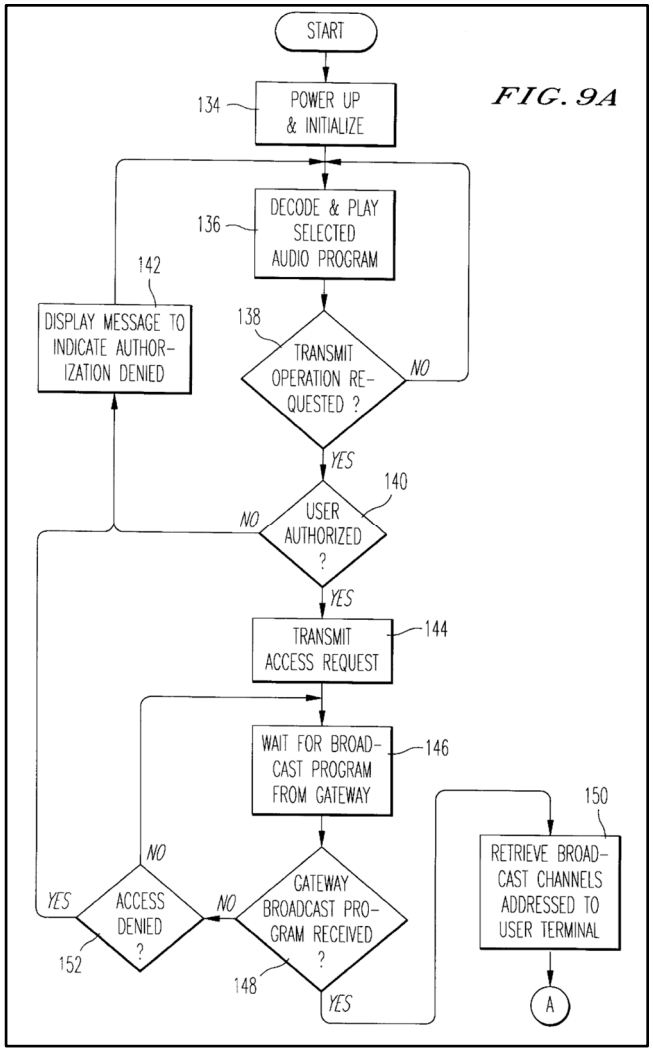
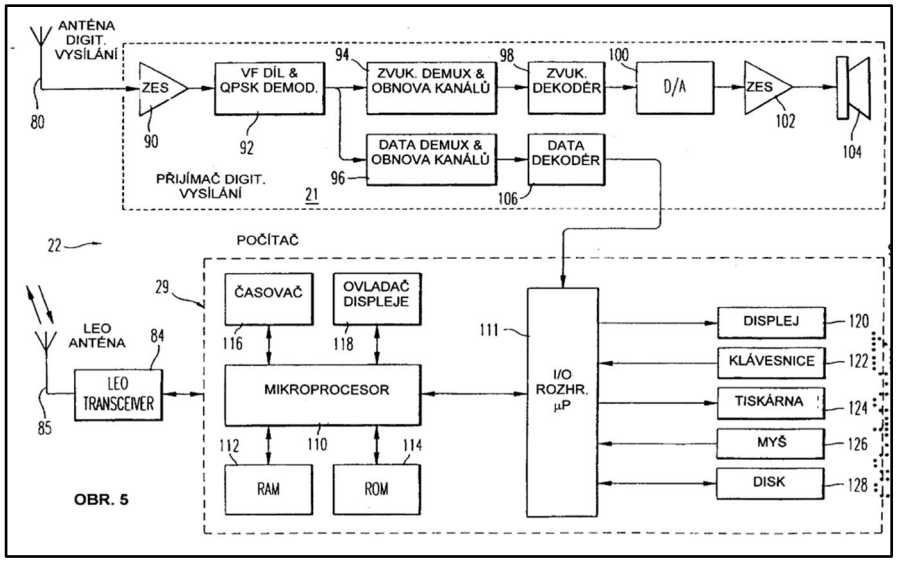
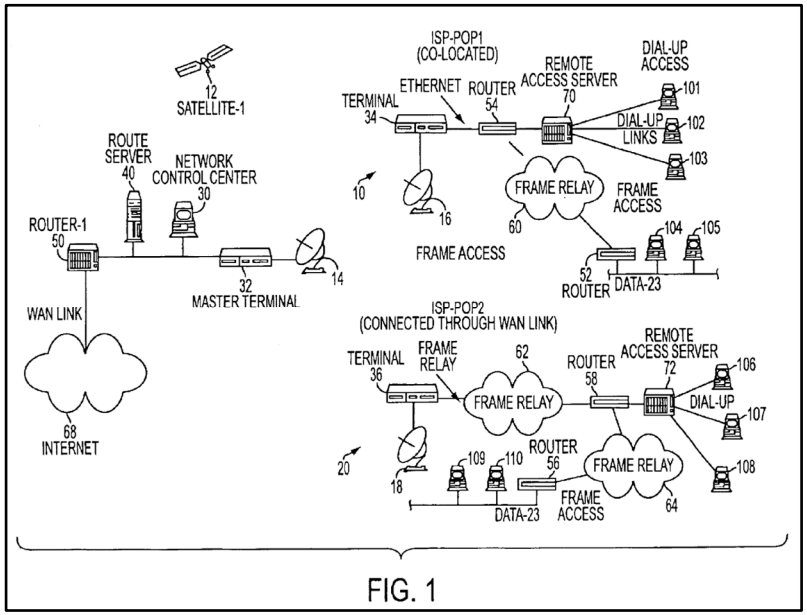
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	

FIG. 9A

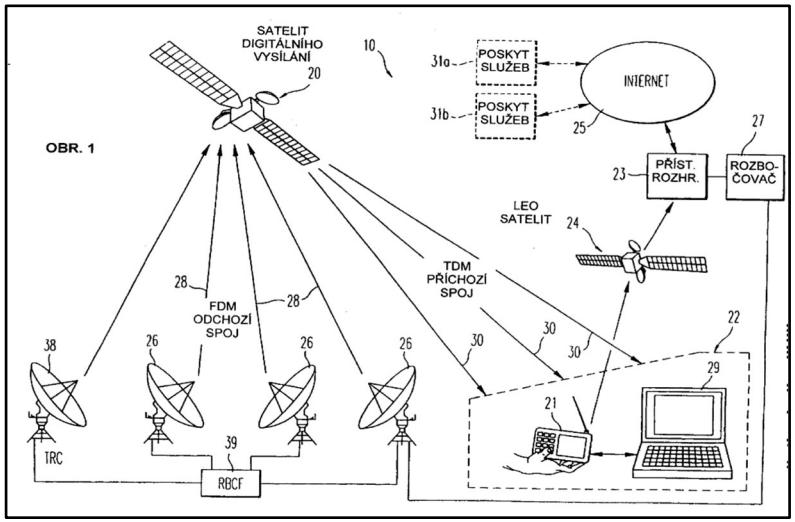
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt II at FIG. 9A; *see also* Rothblatt II at 2:30-35, 3:20-23, 14:59-68, 15:32-65, 17:3-24; FIGs. 1, 5, 9B. > The present invention further provides a wireless access network which obtains customer-inputted identification information related to the prepaid account. The information is transmitted to an authentication server through the global communications network for authenticating information to thereby provide authorization to the system. The authentication server reviews the information through a central database containing the prepaid account information of the prepaid card including the prepaid balance amount. Upon authentication, the authentication server provides the customer with authorization for access to and the corresponding charge rates of the remote access services through an authentication client." Wu at [0009]; *see also* Wu at [0006], [0014]-[0019], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063], FIG. 1. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I , those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[25] The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection.	Rothblatt I discloses "The Internet Hotspot of claim 24, wherein the data connection is one of a wired data connection and a wireless data connection." *See, e.g.*, > The identification code is preferably assigned to the user by the Internet service provider when the user subscribes to the Internet via user terminal 22. The Internet service provider may assign the user an identification code, a password, or both, and require the user to be able to terminal 22 sends, for example, an Internet browser screen, one or both of these identifiers being entered via keyboard 122 or card reader 126. Alternatively, the

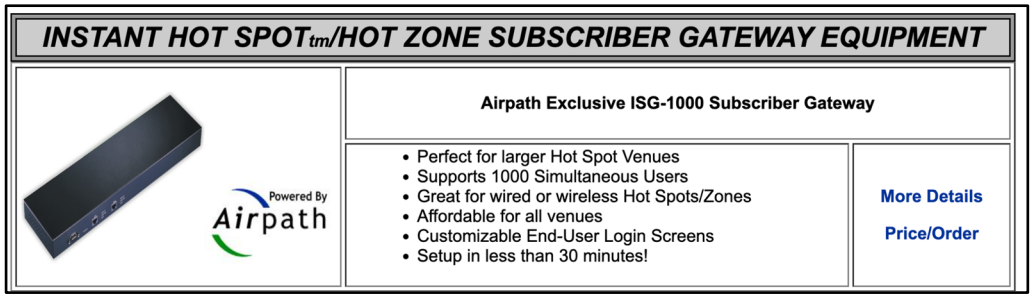
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	LEO transceiver 84 may include a wireless modem that may be recognized by the Internet service provider upon triggering a login sequence from the user terminal 22. Rothblatt I at 10.  Rothblatt I at FIG. 5; *see also id.* at 2 ("Fig. 5 is a block diagram showing the construction of a user terminal that includes a digital broadcast receiver and a LEO satellite transceiver according to a preferred embodiment of the invention"). To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu. Rothblatt I, Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Agarwal, Hagen, Jahn I, Jahn II,

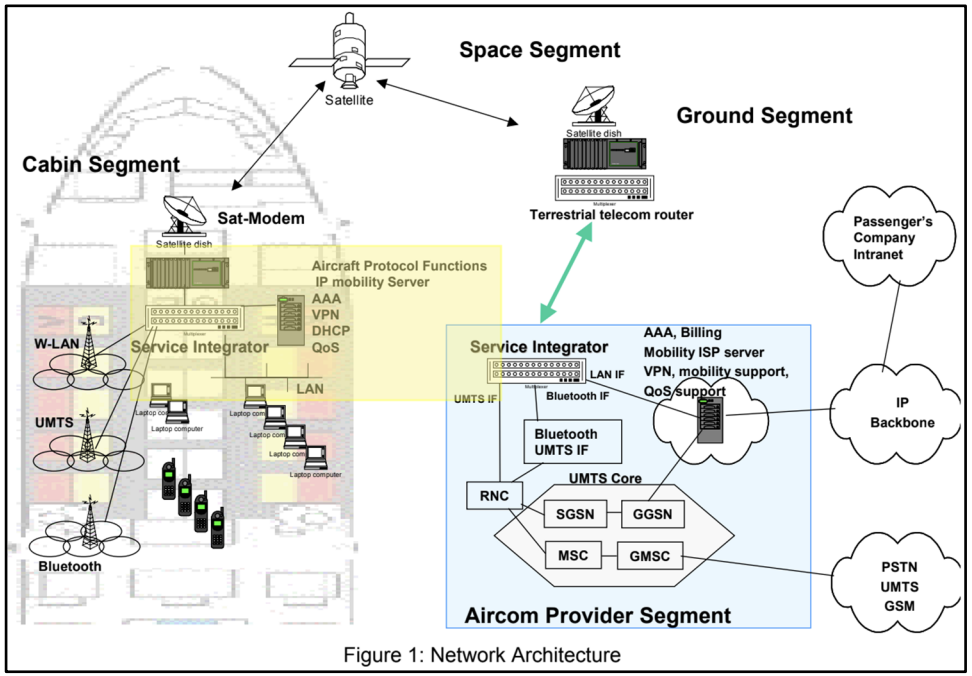
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Nelson, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Agarwal, Hagen, Jahn I, Jahn II, Nelson, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,  FIG. 1 Agarwal at FIG. 1; *see also* Agarwal at 3:18-20; 3:38-63. The primary purpose of the system 100 is to provide mobile, wireless terminals 1 with access to network resources, although it can also provide such access to fixed or mobile terminals over wireline connections as well. Mobile, wireless terminal as used herein means any mobile, wireless terminal having a MAC or other unique equipment address, such as a digital cellular handset, wireless PIA or PDA, or a computer with a wireless

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	network adaptor. Hagen at [0040]; *see also* Hagen at [0039], [0041], [0042], [0045], [0056], [0162]. Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Hence, it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers. Jahn I at 2; *see also* Jahn I at 1-4. Aircraft multimedia services will be offered to passengers soon via back-seat screens and IP cable networks. Jahn II at Abstract; *see also* Jahn II at 3 ("The wireless access solution is compatible with other kinds of IFE . . . it should not be seen as an alternative to wired architecture in an aircraft, but as a complementary service for the passengers."). The plurality of interface (I/O) units may include an Ethernet interface unit 115, modem 120, communications (COM) port 135, Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) port 130, Primary Rate Interface (PRI) port 125, ARINC-429 (Aeronautical Radio, Inc.) bus interface unit 145, and ARINC-573 bus interface unit 140. The Ethernet unit 115 may include ports for interconnection to the HIMs 155 and to the external terminal station (TS), and may be used to connect to the wireless local area network (LAN) transceiver 182 providing a high-speed data path to ground terminals while the aircraft (moving object) is on the ground. Alternatively, a COTS Ethernet card attaching to an external hub (not shown) may be used. Nelson at [0035]; *see also* Nelson at [0028], [0034], [0043], FIG. 1. Furthermore, the cyberstation includes subsystems that permit it to communicate with the personal computers using wireless or optional wired connections.

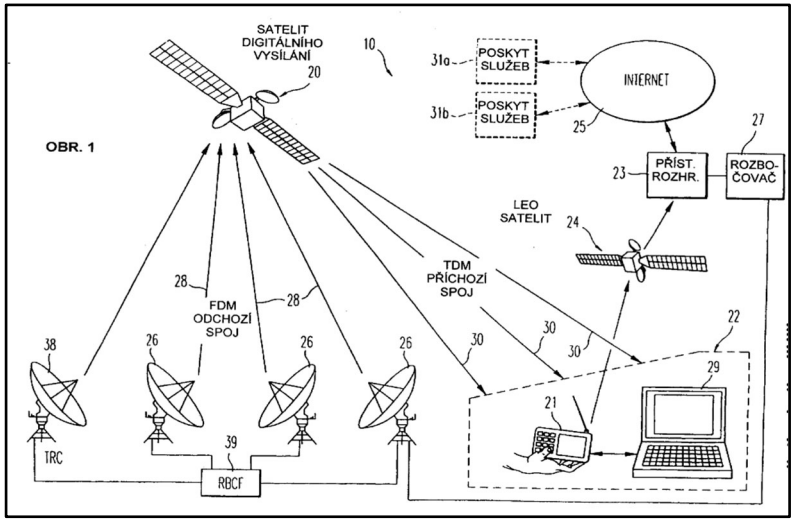
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Ollikainen at 1:66 - 2:5; *see also* Ollikainen at 2:6-15, 2:16-26, 3:45-65, 3:66 - 4:16, 4:58 - 5:9. The base station is typically connected to additional wired networks for communications beyond the wireless coverage area including, but not limited to, publically accessible networks, a global communications network (i.e., the Internet), and the like. A central network access server maintained by a wireless service provider is linked between the base station and the wired networks for implementing and maintaining prepaid remote access services to customers operating the wireless stations. Wu at [0023]; *see also* Wu at [0007]-[0008], [0029], [0031]-[0032], [0036]-[0037], [0041], [0044], [0048], [0058]-[0059], [0061]-[0063]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[26] The Internet Hotspot of claim 24, wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices.	Rothblatt I discloses "The Internet Hotspot of claim 24, wherein a plurality of users may access the Internet simultaneously at the remote location by respectively establishing data connections with the router via their web-ready devices." For clarity, the access interface 23 to the system has been described above as belonging to a commercial Internet service provider, which sells subscriptions to users and then bills the Internet / WWW access to users via the access interface on a monthly basis. However, your ISP may not be a national TCP / IP network. The system 10 for providing global Internet / WWW access to portable devices may utilize various modes of providing Internet access to user terminals 22, for example, through university computer centers or large corporate networks. Internet access for user terminals 22 can thus be provided by a number of access routers corresponding to different types of networks. Also, various

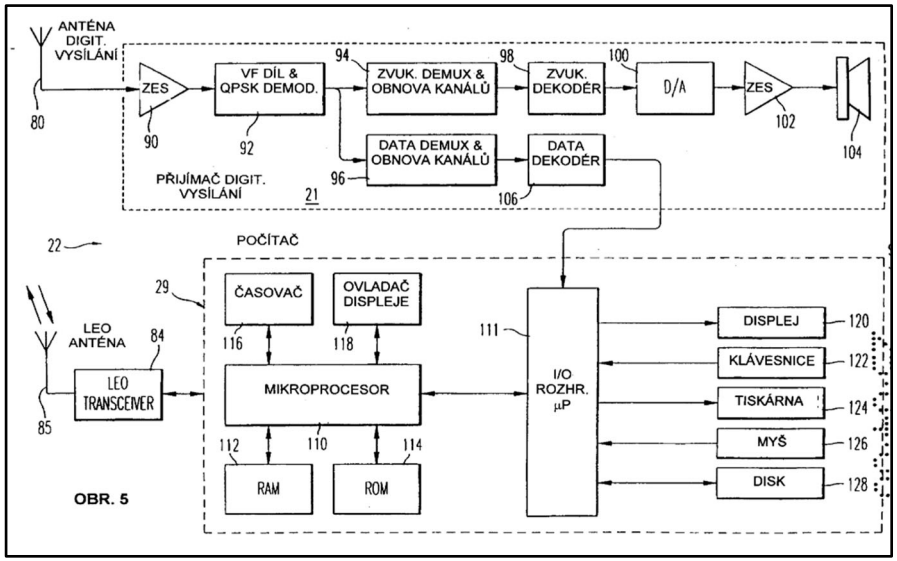
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	subscription payment arrangements (e.g., transaction-based billing) are within the scope of the invention. Users can also choose from a large number of different types of services ranging from simple dial-up access over a dial-up connection to a dedicated data connection. Broadcast programs that contain Internet information may include, but are not limited to, Web information, e-mail, Internet news, telnet service, and file transfer service (FTP files). Rothblatt I at 12.  Rothblatt I at FIG. 1. To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu. Rothblatt I, Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, and Wu concern the similar subject matter as Rothblatt I, namely the provision

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Airpath Wireless Hot Spot, Bruner, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Nelson, or Wu, for example, to incorporate this limitation. *See, e.g.*,  Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp. It is therefore an object of the present invention to provide a method and apparatus to allow airline passengers or other remotely located users, to access the Internet during the course of an airline flight, or from remote land-based locations. Bruner at [0008]; *see also* Bruner at [0011], [0021], Bruner at FIG. 1.

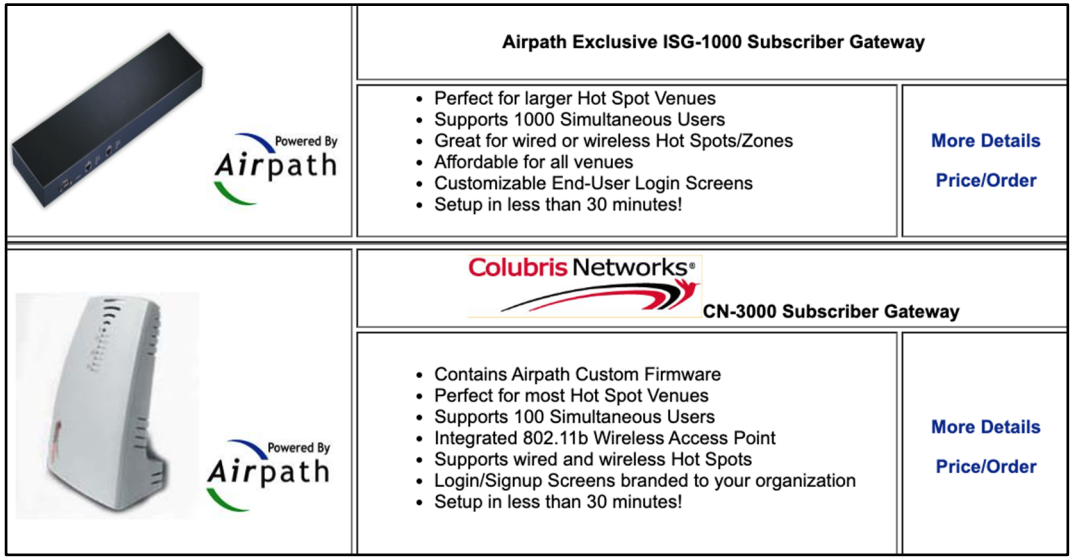
Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	The service scenario considers travellers in aircraft on the move. In the future, airliners will provide a variety of entertainment and communications equipment to the passenger. Since people are becoming more and more used to their own communications equipment, such as mobile phones and laptops with Internet connection, either through a network interface card or dial-in access through modems, business travellers will soon be demanding wireless access to communication services. Jahn I at 1; *see also* Jahn I at FIG. 1, 1-3, 5.  Figure 1: Network Architecture Jahn II at 2, FIG. 1; *see also* Jahn II at 1-3, FIGs. 3-4.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see also* MTN Cruise Ship Internet Services at https://web.archive.org/web/20030401215618/http://www.mtnsat.com/cruiseline_industry.htm; https://web.archive.org/web/20021014130443/http://www.mtnsat.com/enhanced_services.htm; https://web.archive.org/web/20030424055806/http://www.mtnsat.com/press/2003/pressrelease_032503_Xantic.htm; "At Sea But Never Out Of Touch," CRUISE INDUSTRY QUARTERLY (Summer 2003). System 100 may include a plurality of components to provide higher data bandwidth and passenger access technology for facilitating data applications, examples being Internet Web browsing and email retrieval. These components include Direct Broadcast Service (DBS) satellite decoder 152, passenger cabin dial-up access system 151, and the WGS 182. Other components of system 100 can help facilitate data communications over the existing NATS data network. Nelson at [0032]; *see also* Nelson at [0028], [0034]. Since the number of connections are not limited by physical connecting ports, a large number of customers can easily be accommodated within the wireless coverage area. Wu at [0005]; *see also* Wu at FIG. 1, [0006], [0037], [0044], [0048], [0058]. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[28] The Internet Hotspot of claim 26, wherein the data connections include wireless data connections.	Rothblatt I discloses "The Internet Hotspot of claim 26, wherein the data connections include wireless data connections." The identification code is preferably assigned to the user by the Internet service provider when the user subscribes to the Internet via user terminal 22. The Internet service provider may assign the user an identification code, a password, or both, and require the user to be able to terminal 22 sends, for example, an Internet browser screen, one or both of these identifiers being entered via keyboard 122 or card reader 126. Alternatively, the LEO transceiver 84 may include a wireless modem that may be recognized by the Internet service provider upon triggering a login sequence from the user terminal 22. Rothblatt I at 10.  Rothblatt I at FIG. 1.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	 Rothblatt I at FIG. 5; *see also id.* at 2 ("Fig. 5 is a block diagram showing the construction of a user terminal that includes a digital broadcast receiver and a LEO satellite transceiver according to a preferred embodiment of the invention"). To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and Wu. Rothblatt I, Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	modify the disclosures of Rothblatt I with those of Airpath Wireless Hot Spot, Jahn I, Jahn II, MTN Cruise Ship Internet Services, Ollikainen, or Wu, for example, to incorporate this limitation. *See, e.g.*,



Airpath Wireless Hot Spot at https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp; *see also* Airpath Wireless Hot Spot at https://web.archive.org/web/20040415004242/http://www.mainstreamdata.com/content/_news/news0.html; https://web.archive.org/web/20021003224740/http://airpath.com/instant.asp; https://web.archive.org/web/20021005225943/http://airpath.com/airpath_approved.asp.

> The service integrator will provide the interfaces for the wireless and wired service access points in the cabin, as well as the interface to the terrestrial networks at aircom provider site.

Jahn I at 4; *see also* Jahn I at 1-2, 4.

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Of course, these access technologies will co-exist with each other, beside conventional IP fixed wired networks. The wireless access solution is compatible with other kinds of IFE, such as live TV on board or provision of Internet access with dedicated installed hardware in the cabin seats. Jahn II at 2-3, FIGs. 3-4. MTN has formed a strategic alliance with PCTEL to provide wireless access to the cruise industry. Passengers may now bring their personal laptops onboard the Norwegian Sun and connect to the Internet. Digital Seas International (DSI), a subsidiary of MTN and a Verestar company, currently provides Internet services through the Internet Café onboard the vessel, where the passengers and crew can surf the Web, check e-mail and send video mail. Now, constituting an industry first, DSI is providing completely remote wireless Internet access onboard the Norwegian Sun. MTN Cruise Ship Internet Services at https://web.archive.org/web/20030105023007/http://www.mtnsat.com/press/2002/pressrelease_091702_NorwegianSun.htm; *see generally id.* The cyberstation thus provides a means for implementing a variety of customized stand-alone receiver-transmitter stations that can provide service to multiple household or business personal computers using wireless or optional wire local area networks as a local communication system. Ollikainen at 2:16-26. The wireless access network 10 generally includes a base station server or base station 12, a wireless access point 26 for connecting with one or more wireless stations 20, 22 and 24 through a wireless medium such as radio frequency signal, infrared light, laser, and the like, the global communications network 16, and a central billing server 32 with a remote authentication dial-in user service (RADIUS) server 30. The wireless stations 20, 22, and

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	24 are used by customers to connect to the base station 12 for obtaining prepaid wireless remote access services. Wu at [0037]; *see also* Wu at [0029], [0040], [0049], FIG. 1. To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.
[32] The Internet Hotspot of claim 25, wherein the wireless connection is one of an 802.11a wireless area network, an 802.11b wireless area network, an 802.11g wireless area network, and an 802.11n wireless area network.	To the extent Rothblatt I does not expressly or inherently disclose this limitation, it would have been obvious in view of the background knowledge of a person of ordinary skill in the art. Rothblatt I further renders the limitation obvious in light of other references, such as Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu. Rothblatt I, Clark, Hagen, Jahn I, Jahn II, Nelson, and Wu concern the similar subject matter as Rothblatt I, namely the provision of Internet access to users "in transit" or "while traveling" ('469 patent Background) away from their homes or offices. Modifying Rothblatt I with Clark, Hagen, Jahn I, Jahn II, Nelson and/or Wu would have only required simple substitution, would not have required extensive experimentation, and would have yielded predictable results. A person of ordinary skill in the art would have further understood how to modify the disclosures of Rothblatt I with those of Clark, Hagen, Jahn I, Jahn II, Nelson or Wu, for example, to incorporate this limitation. *See, e.g.*, In one embodiment, the satellite and terrestrial microwave communication system transfers information using a satellite transponder or fixed terrestrial microwave radio via an ethernet packet switching protocol such as, for example, the IEEE 802 series of protocols or any proprietary protocols the TCP/IP protocol used on the World Wide Web. Clark at 3:1-9. The system 100 generally comprises one or more geographically dispersed network access points, which in this embodiment are radio frequency wireless access points

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	(WAP) 3, 4. The WAPs 3, 4 may be conventional devices equipped with wireless network adaptors embodying the IEEE 802.11 Wireless LAN or Bluetooth wireless network communications standards, or other devices providing similar functionality. Examples of such devices include the Home Wireless Gateway product sold by 3COM Corporation, the Spectrum High Rate AP 41X1 Ethernet Access Point product sold by Symbol Technologies, and the Aironet 340 Series Access Points product sold by Cisco Systems. Hagen at [0042]; *see also* Hagen at [0039], [0041], [0042], [0045]. When wireless access technologies in aircraft cabins are envisaged for passenger service, the most important standards for future use are considered to be: UMTS with UTRAN air interface, Bluetooth, and W-LAN IEEE 802.11b. Jahn I at 2; *see also* Jahn I at 1-2. Several wireless access segments in the aircraft cabin, namely a wireless LAN according to IEEE 802.11b standard for IP services, an UMTS pico-cell for personal and data communications, and Bluetooth 1.1, as well as a standard wired IP LAN." Jahn II at 3. The WGS 182 may be, for example, a wireless LAN transceiver (as shown in FIG. 1) based on the IEEE 802.11 specifications which can allow transfer of high-speed data to the server 110 in the airport when the aircraft (moving object) is on the ground. The ACU may act as the gateway to a ground-based data center via the North American Terrestrial System (NATS) network. Nelson at [0030]; *see also* Nelson at FIG. 1, [0028], [0110]. The wireless network interface and the wireless access point 26 conforms with the Institute of Electrical and Electronics Engineers (IEEE) standard 802.11 and extensions thereof such as IEEE 802.11a and 802.11b for standardizing wireless local area networks

Claim	Czech Patent No. 2,000,578 ("Rothblatt I")
	(wireless LANs). Wu at [0050]; *see also* Wu at FIG. 1, [0052]-[0054]. It would have been obvious to a person of ordinary skill in the art that any member of the 802.11 standard family could be employed to permit interoperability of standard Wi-Fi components. The '469 patent specification itself acknowledges that a person of ordinary skill in the art would understand that the "wireless access point 40 can employ a security protocol of a type that is known to persons skilled in the art, such as the 802.11b security protocol, or any subsequent or future versions of the 802.11 standard. Such security protocols may be generally designated as 802.11X, where X can be any version or implementation of the 802.11 standard." '469 patent at 5:19-25. It was well understood that "each new 'flavor' of the technology results in a new suffix to 802.11." "Going WiFi" at 82; *see also id.* at 133 ("The fundamental components of a WLAN are clear-cut. And it's relatively easy to describe the 802.11 suite in basic networking terms."). As set forth in the accompanying contentions, the 802.11n standard had furthermore not been drafted by the time of the alleged priority date, rendering claim 32 invalid. *See also* "Going Wifi" at 116-117 ("The 802.11n Task Group is *working on a high-speed variant* of the existing 802.11 standards . . . However, don't expect to see these newer, faster standards for a number of years."). To the extent that Rothblatt I does not disclose any elements of this claim limitation, it would have been obvious to a person having ordinary skill in the art to combine, with the teachings of Rothblatt I, those elements, as known to them or as disclosed by other prior art identified in the cover pleading to Defendant's Invalidity Contentions.