Patent Trial and Appeal Board
Oral Hearing
May 21, 2015

ZTE CORP. AND ZTE (USA) INC. and MICROSOFT CORP.,

Petitioners

v.

IPR LICENSING, INC.,

Patent Owner.

IPR2014-00525

Before the Honorable SALLY C. MEDLEY,
MIRIAM L. QUINN, and BEVERLY M. BUNTING,

Administrative Patent Judges

Instituted Ground

Obviousness over the combination of:

- "Jawanda" – U.S. Patent No. 6,243,581 (Ex. 1003)
- GPRS (Ex. 1005)
- IEEE 802.11 (Ex. 1019)

IV. CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 1–8, 14–16, 19–29, 36–38, and 41–44 of the '244 patent as obvious over Jawanda, the GPRS Standards, and the IEEE 802.11 Standard.

Inst. Decision at 22

Pet. at 8, 19-28, 38-48.

Two Principal Issues In Dispute

1. Broadest reasonable interpretation of "assigned physical channels"

2. Motivation to combine Jawanda with a "draft" of the GPRS Standards available at the time

- Note: The parties treat claims 1 and 8 as representative claims.

Reply at 1, 9-10; Issue 1: Claim Construction Slides, 17-30 . Issue 2: Motivation to Combine Slides, 41-47.

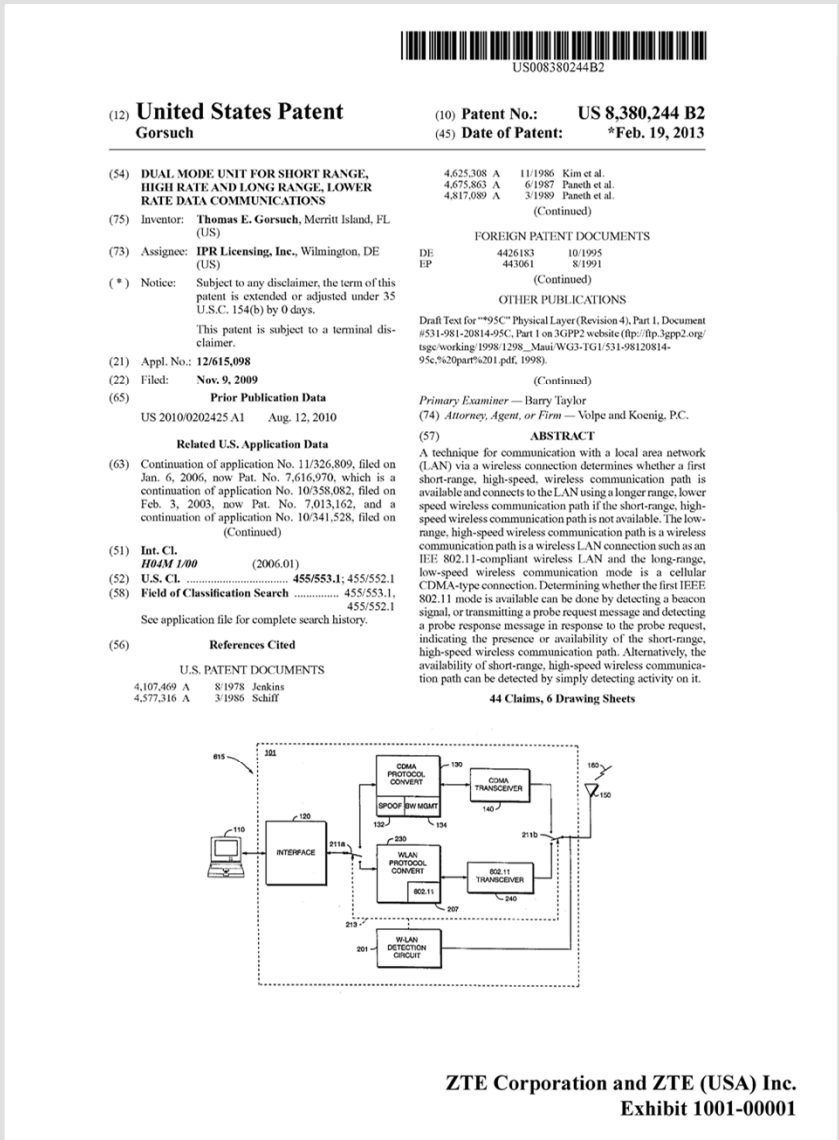
Topics

- The ’244 Patent
- The Prosecution History
- The Level of Ordinary Skill in the Art
- Claim Construction
- The Prior Art
- Motivation to Combine the Art
- Obviousness of the Independent Claims
- Obviousness of the Dependent Claims
- Secondary Considerations Support Obviousness

The ’244 Patent

The ’244 Patent (Ex. 1001)

Priority Date: September 21, 1999



US008380244B2

(12) **United States Patent**
Gorsuch

(10) **Patent No.: US 8,380,244 B2**
(45) **Date of Patent: *Feb. 19, 2013**

(54) **DUAL MODE UNIT FOR SHORT RANGE, HIGH RATE AND LONG RANGE, LOWER RATE DATA COMMUNICATIONS**

(75) Inventor: **Thomas E. Gorsuch**, Merritt Island, FL (US)

(73) Assignee: **IPR Licensing, Inc.**, Wilmington, DE (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/615,098**

(22) Filed: **Nov. 9, 2009**

(65) **Prior Publication Data**

US 2010/0202425 A1 Aug. 12, 2010

Related U.S. Application Data

(63) Continuation of application No. 11/326,809, filed on Jan. 6, 2006, now Pat. No. 7,616,970, which is a continuation of application No. 10/358,082, filed on Feb. 3, 2003, now Pat. No. 7,013,162, and a continuation of application No. 10/341,528, filed on (Continued)

(51) **Int. Cl.**
H04M 1/00 (2006.01)

(52) **U.S. Cl.** **455/553.1**; 455/552.1

(58) **Field of Classification Search** 455/553.1, 455/552.1

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,107,469	A	8/1978	Jenkins
4,577,316	A	3/1986	Schiff
4,625,308	A	11/1986	Kim et al.
4,675,863	A	6/1987	Paneth et al.
4,817,089	A	3/1989	Paneth et al.

(Continued)

FOREIGN PATENT DOCUMENTS

DE	4426183	10/1995
EP	443061	8/1991

(Continued)

OTHER PUBLICATIONS

Draft Text for “*95C” Physical Layer (Revision 4), Part 1, Document #531-981-20814-95C, Part 1 on 3GPP2 website (ftp://ftp.3gpp2.org/tsgc/working/1998/1298_Maui/WG3-TG1/531-98120814-95c,%20part%201.pdf, 1998).

(Continued)

Primary Examiner — Barry Taylor
(74) *Attorney, Agent, or Firm* — Volpe and Koenig, P.C.

(57) **ABSTRACT**

A technique for communication with a local area network (LAN) via a wireless connection determines whether a first short-range, high-speed, wireless communication path is available and connects to the LAN using a longer range, lower speed wireless communication path if the short-range, high-speed wireless communication path is not available. The low-range, high-speed wireless communication path is a wireless communication path is a wireless LAN connection such as an IEE 802.11-compliant wireless LAN and the long-range, low-speed wireless communication mode is a cellular CDMA-type connection. Determining whether the first IEEE 802.11 mode is available can be done by detecting a beacon signal, or transmitting a probe request message and detecting a probe response message in response to the probe request, indicating the presence or availability of the short-range, high-speed wireless communication path. Alternatively, the availability of short-range, high-speed wireless communication path can be detected by simply detecting activity on it.

44 Claims, 6 Drawing Sheets

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1001-00001

Related U.S. Application Data

Continuation of application No. 11/326,809, filed on Jan. 6, 2006, now Pat. No. 7,616,970, which is a continuation of application No. 10/358,082, filed on Feb. 3, 2003, now Pat. No. 7,013,162, and a continuation of application No. 10/341,528, filed on (Continued)

Jan. 13, 2003, now Pat. No. 7,024,222, which is a continuation of application No. 09/400,136, filed on Sep. 21, 1999, now Pat. No. 6,526,034, said application No. 10/358,082 is a continuation of application No. 09/400,136, filed on Sep. 21, 1999, now Pat. No. 6,526,034.

Ex. 1001 (244 Patent)

Pet. at 6.

Overview of the ’244 Patent

B. The ’244 Patent (Ex. 1001)

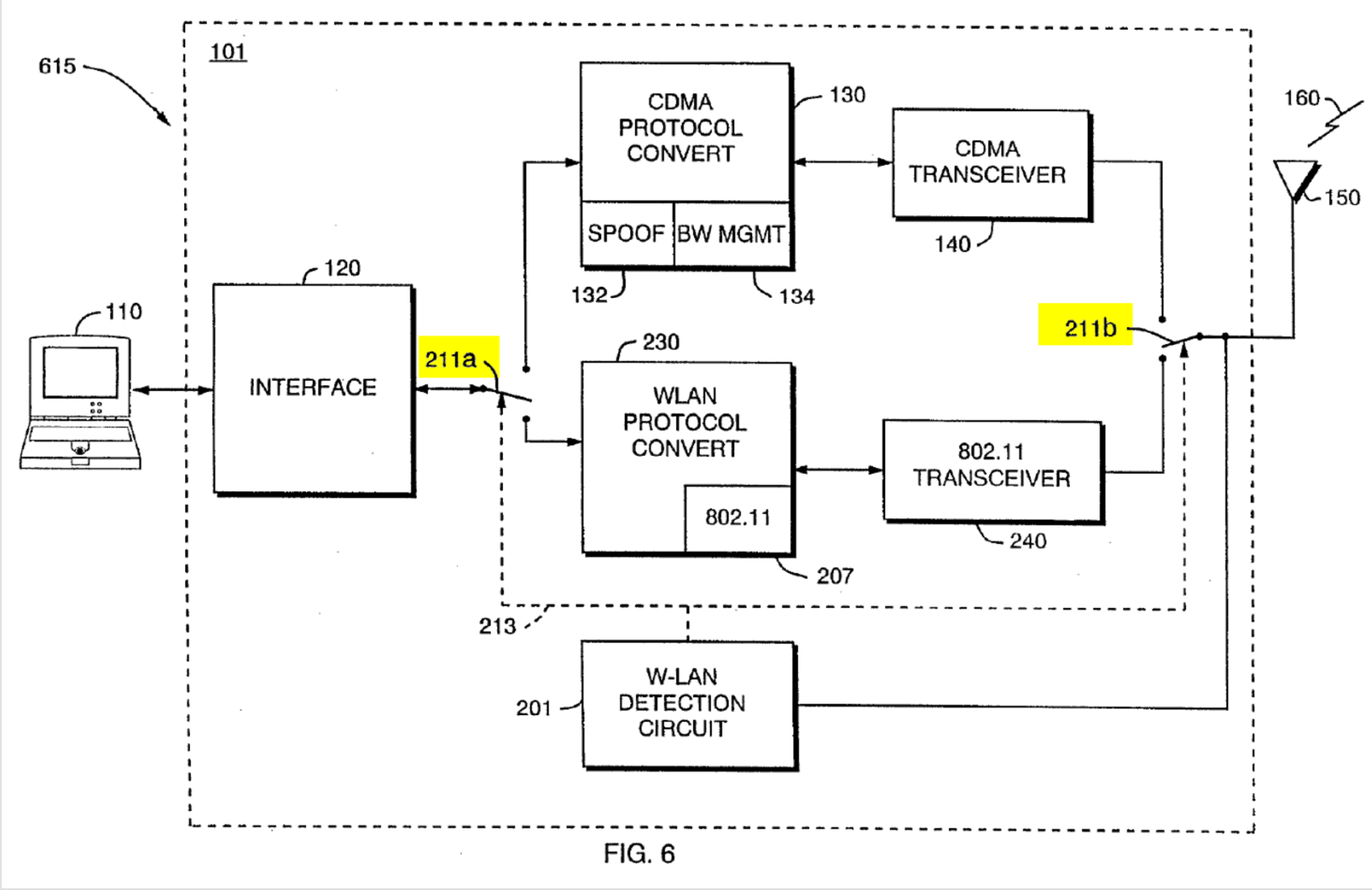
The ’244 patent is directed to a system and method of short-range, high-speed, and long-range, lower-speed, data communications using a dual-mode unit. Ex. 1001, Abstract. In an embodiment, a subscriber unit 101 connects to a computer 110 via a computer interface 120, to transmit data over the Internet via a first communication route or second communication route (*id*. at 9:27–57) as shown in Figure 6:

Inst. Decision at 4

Inst. Decision at 4 (citing Ex. 1001 (244 Patent) at Abstract, 9:27-37, Fig.6); Pet. at 15-16.

Overview of the ’244 Patent

Figure 6

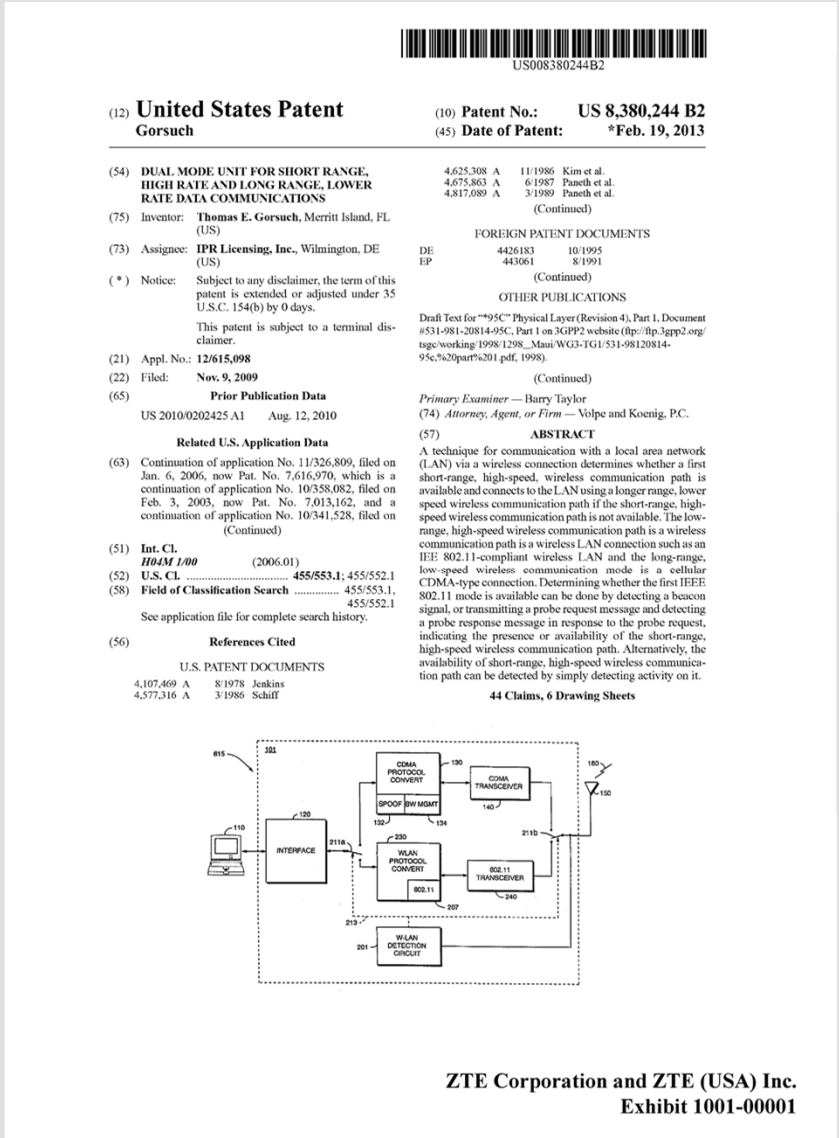


Ex. 1001 (244 Patent), Fig. 6

Inst. Decision at 5; Ex. 1001 (244 Patent), Fig. 6; *see also* Bims Decl. at ¶ 65; Reply at 6-8.

Overview of the ’244 Patent

Continuation of the ’970 Parent Patent



US008380244B2

(12) **United States Patent**
Gorsuch

(10) **Patent No.: US 8,380,244 B2**
(45) **Date of Patent: *Feb. 19, 2013**

(54) **DUAL MODE UNIT FOR SHORT RANGE, HIGH RATE AND LONG RANGE, LOWER RATE DATA COMMUNICATIONS**

(75) Inventor: **Thomas E. Gorsuch**, Merritt Island, FL (US)

(73) Assignee: **IPR Licensing, Inc.**, Wilmington, DE (US)

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4,107,469	A	8/1978	Jenkins
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4,817,089	A	3/1989	Paneth et al.

(Continued)

FOREIGN PATENT DOCUMENTS

DE	4426183	10/1995
EP	443061	8/1991

(Continued)

OTHER PUBLICATIONS

Draft Text for "*95C" Physical Layer (Revision 4), Part 1, Document #531-981-20814-95C, Part 1 on 3GPP2 website (ftp://ftp.3gpp2.org/tsgc/working/1998/1298_Maui/WG3-TG1/531-98120814-95c,%20part%201.pdf, 1998).

(Continued)

Primary Examiner — Barry Taylor
(74) *Attorney, Agent, or Firm* — Volpe and Koenig, P.C.

(57) **ABSTRACT**

A technique for communication with a local area network (LAN) via a wireless connection determines whether a first short-range, high-speed, wireless communication path is available and connects to the LAN using a longer range, lower speed wireless communication path if the short-range, high-speed wireless communication path is not available. The low-range, high-speed wireless communication path is a wireless communication path is a wireless LAN connection such as an IEE 802.11-compliant wireless LAN and the long-range, low-speed wireless communication mode is a cellular CDMA-type connection. Determining whether the first IEEE 802.11 mode is available can be done by detecting a beacon signal, or transmitting a probe request message and detecting a probe response message in response to the probe request, indicating the presence or availability of the short-range, high-speed wireless communication path. Alternatively, the availability of short-range, high-speed wireless communication path can be detected by simply detecting activity on it.

44 Claims, 6 Drawing Sheets

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Jan. 13, 2003, now Pat. No. 7,024,222, which is a continuation of application No. 09/400,136, filed on Sep. 21, 1999, now Pat. No. 6,526,034, said application No. 10/358,082 is a continuation of application No. 09/400,136, filed on Sep. 21, 1999, now Pat. No. 6,526,034.

Ex. 1001 (244 Patent)

Pet. at 1.

’970 Parent Patent Held Invalid

Based on Dr. Stark’s Testimony

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

INTERDIGITAL COMMUNICATIONS, INC., INTERDIGITAL TECHNOLOGY CORPORATION, IPR LICENSING, INC.,
Appellants

v.

UNITED STATES INTERNATIONAL TRADE COMMISSION,
Appellee

NOKIA, INC., MICROSOFT MOBILE OY,
Intervenors

ZTE CORPORATION, ZTE (USA) INC.,
Intervenors

2014-1176

Appeals from the United States International Trade Commission in Investigation No. 337-TA-800.

Decided: February 18, 2015

RICHARD P. BRESS, Latham & Watkins LLP, Washington, DC, argued for appellants. Also represented by

IPR Licensing, Inc.
Exhibit 2023
ZTE Corp v. IPR Licensing, Inc.
IPR2014-00525

Ex. 2023-0001

J.A. 30498–99. Thus, according to InterDigital’s own expert, in the context of this patent “assign,” “allocate,” and “use” have the same meaning. It follows that the corresponding claim limitation is satisfied when a subscriber unit can use two or more physical layer channels for communication. InterDigital has provided no compelling contrary evidence and has not shown that any other understanding of the construction it proposed is more appropriate.

Ex. 2023-00018

Having rejected InterDigital’s only argument on appeal, we affirm the ALJ’s conclusion that the claims are invalid as obvious.

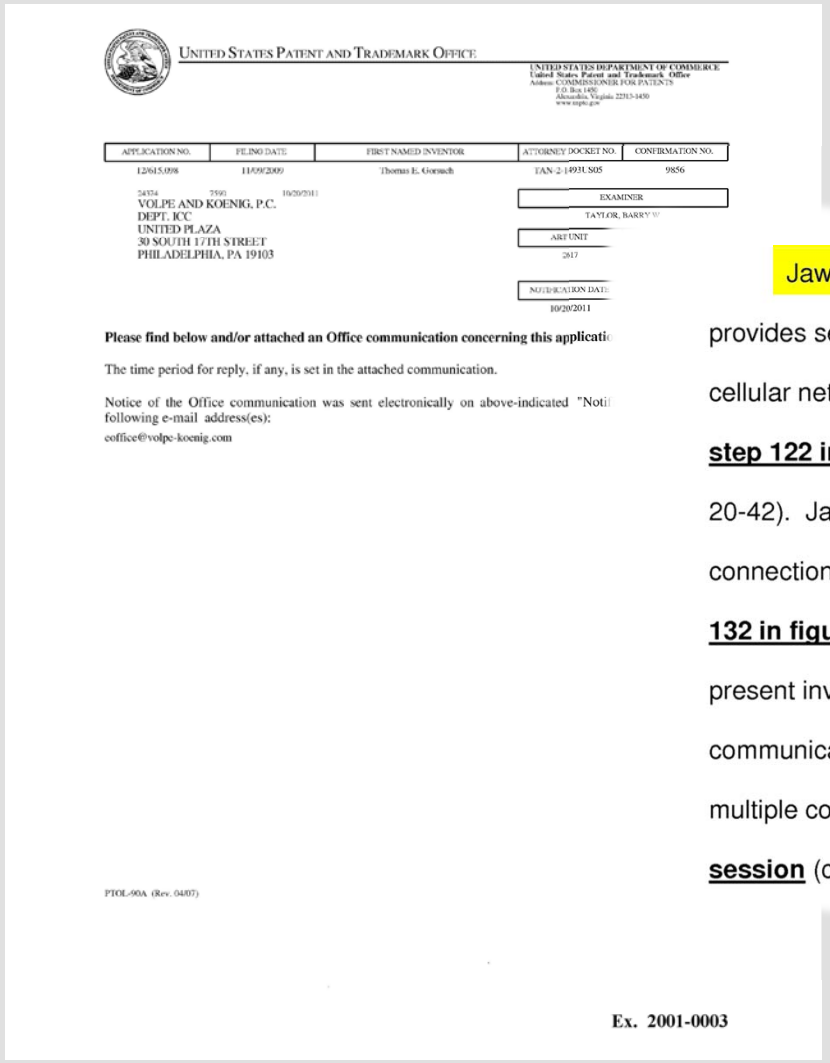
Ex. 2023-00019

Reply at 1, 4 (citing Federal Circuit opinion, Ex. 2023); Pet. at 1.

Prosecution History

Prosecution History

October 2011 rejection over Jawanda



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/615,098	11/09/2009	Thomas E. Gorsuch	TAN-2-1493.US05	9856

24374 7590 10/20/2011

VOLPE AND KOENIG, P.C.
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UNITED PLAZA
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER
TAYLOR, BARRY W

ART UNIT
2617

NOTIFICATION DATE
10/20/2011

Please find below and/or attached an Office communication concerning this applicati

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Noti following e-mail address(es):
coffice@volpe-koenig.com

PTOL-90A (Rev. 04/07)

Ex. 2001-0003

Jawanda teaches a dual mode phone that uses a network access arbitrator that provides seamlessly handoff transfer of datagrams from WWAN connection (i.e. cellular network) to WLAN connection, **WHILE maintaining WWAN connection** (**see step 122 in figure 4**, abstract, col. 3 lines 1-27, col. 3 line 66 – col. 4 line 19, col. 5 lines 20-42). Jawanda even teaches seamlessly handoff transfer of datagrams from WLAN connection to WWAN connection **WHILE maintaining WLAN connection** (**see step 132 in figure 4**, col. 5 line 62 – col. 6 line 20). Jawanda is extremely clear in that the present invention provides an improved method and system for wireless data communication in which transfer of datagrams may be seamlessly handed off between multiple concurrent wireless data connections **while maintaining an application-level session** (col. 6 lines 11-20)..

Ex. 2001-0008

PO Resp. at 5 (citing Ex. 2001).

Prosecution History

April 2012 interview addressed Jawanda

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	12/615,098	GORSUCH, THOMAS E.	
	Examiner	Art Unit	
	BARRY TAYLOR	2617	

All participants (applicant, applicant's representative, PTO personnel):

(1) *BARRY TAYLOR*. (3)____.

(2) *Robert Leonard*. (4)____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Lemilainen 6,243,581 and Jawanda 6,243,581.*.

Substance of Interview

(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed prior art applied to independent claim 1. Applicants will propose an amendment in response to the interview on 4/11/2012. The Examiner requested a Terminal Disclaimer to overcome parent patent 6,526,034.

thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/Barry W Taylor/
Primary Examiner, Art Unit 2617

U.S. Patent and Trademark Office
PTOL-413 (Rev. 8/11/2010) **Interview Summary** Paper No. 20120411

IPR Licensing, Inc.
Exhibit 2001
ZTE Corp v. IPR Licensing, Inc.
IPR2014-00525

Ex. 2001-0001

Ex. 2001-0001

PO Resp. at 5 (citing Ex. 2001).

Prosecution History

May 2012 Notice of Allowance is silent as to Jawanda

Application/Control Number: 12/615,098
Art Unit: 2617

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons

Applicants in filing the terminal disclaimer has overc
rejection based on a nonstatutory double patenting ground
application or patent (U.S. Patent 6,526,034) is shown to b
application. The subject matter claimed in the instant appl
patent (U.S. Patent 6,526,034) and is covered by the pater
application claim common subject matter.

Any comments considered necessary by applicant r
than the payment of the issue fee and, to avoid processing
accompany the issue fee. Such submissions should be clearly labeled "
Statement of Reasons for Allowance."

Conclusion

2. Prior art of record (5,577,033) Chang et al teaches in a Local Area
environment wherein a channel manager monitors traffic on the physical
during periods when there is no traffic, the channel manager disconnects
channel while maintain the logical channel. When new datagram traffic b
channel manager will reassign a physical channel. During this process a
channel is described as being suspended and later resumed in order to r
bandwidth on demand (col. 7 lines 51-62).

ZTE Corporation

Conclusion

2. Prior art of record (5,577,033) Chang et al teaches in a Local Area Network environment wherein a channel manager monitors traffic on the physical channel and during periods when there is no traffic, the channel manager disconnects the physical channel while maintain the logical channel. When new datagram traffic begins, the channel manager will reassign a physical channel. During this process a physical channel is described as being suspended and later resumed in order to release bandwidth on demand (col. 7 lines 51-62).

Ex. 1018-00006

However, Chang et al is not strictly limited to a method and subscriber unit comprising: a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels; an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network as recited in independent claims 1, 11 and depicted in figure 6.

Ex. 1018-00007

Pet. at 18; *see also* Ex. 1002 (Bims Decl.) at ¶ 85).

Level of Ordinary Skill in the Art

Level of Ordinary Skill in the Art

Not addressed in Patent Owner Response

D. Level of Skill of a Person of Ordinary Skill in the Art

The person of ordinary skill in the art of the 244 patent would have a master's degree or the equivalent in electrical engineering and three or more years of work experience relating to data communications over wireless networks. (Ex. 1002 (Bims Decl.) at ¶90).

Pet. at 18-19

Pet. at 18-19.

Claim Construction

Claim 1

1. A subscriber unit comprising:
a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels;
an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and
a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network.

Ex. 1001 (244 Patent) at 11:6-16

Ex. 1001 (244 Patent), 11:6-16.

"assigned physical channels"

ZTE's proposed construction

	ZTE
plurality of assigned physical channels	**plurality of physical channels available for the subscriber unit to select for use**
release	**make no longer assigned**
allocate	**select for use**
deallocate	**select to stop using**

Pet. at 10

Pet. at 10.

"assigned physical channels"

ZTE's construction is consistent with the BRI

"plurality of assigned physical channels"

means

"plurality of physical channels available for the subscriber unit to select for use"

Pet. at 10.

"assigned physical channels"

ZTE's construction is consistent with the BRI

"Assign" is the opposite of "release" and, thus, a state of "assigned" or "released" describes whether or not the subscriber unit has been given permission to use a physical channel. (Ex. 1002 (Bims Decl.) at ¶¶97-99). Similarly, "allocate" is the opposite of "deallocate" and, thus, a state of "allocated" or "deallocated" describes whether or not the subscriber unit has selected to use or to stop using an assigned channel. (*Id.*) This is driven by the well-known network requirement that a subscriber unit cannot use (allocate) a resource (physical channel) until it has been made available (assigned) to the subscriber unit. (Ex. 1002 (Bims Decl.) at ¶97).

Pet. at 11

Pet. at 11; *see also* Reply at 3-4 (replying to PO Resp. at 3, 13-15, 26).

"assigned physical channels"

Dr. Stark confirmed the two-step process

claim construction. In the '244 Patent, as construed by the District Court and the parties, the cellular physical channels are "assigned," meaning "available for the subscriber unit to select for use." Ex. 2009 (Markman Op.) at 14. That is, physical channels are ***first*** made available, and one or more of those available channels are ***then*** selected for use by the subscriber unit. This selection requires the subscriber

Ex. 2005 (Stark Decl.), ¶ 70

Reply at 3-4 (replying to PO Resp. at 25-26); *see also* Stark Tr. at 31:14-16.

"assigned physical channels"

ZTE's construction is supported by the specification

¶¶98-99). The specification of the 244 patent teaches that the subscriber unit includes a bandwidth management function that selects assigned channels for use [*i.e.*, allocates assigned channels] as needed to send data. (Ex. 1001 (244 Patent) 7:24-29; Ex. 1002 (Bims Decl.) at ¶98). For example, the specification explains how the subscriber unit may allocate assigned channels depending on whether the channels are needed to send data at any particular time:

Pet. at 11

continuously available. However, wireless bandwidth is allocated only when there is actual data present from the terminal equipment to the CDMA transceiver **140**. Therefore, the network layer need not allocate the assigned wireless bandwidth for the entirety of the communications session. That is, when data is not being presented upon the terminal equipment to the network equipment, the bandwidth management function **134** deallocates initially assigned radio channel bandwidth **160** and makes it available for another transceiver and another subscriber unit **101**.

Ex. 1001 (244 Patent), 10:34-43

Pet. at 11.

"assigned physical channels"

Patent Owner takes "select" out of context

at 11. This selection of the number of channels needed to send data has nothing to do with merely using or not using the assigned channels. The ordinary meaning of "select" is "[t]o choose from among several; to pick out." Ex. 2012 (American Heritage Dictionary, 3d ed.) at 741. Therefore, when the subscriber unit "selects" channels for use, the selected channels are a subset of a larger group of channels.

PO Resp. at 26

Reply at 4-5 (replying to PO Resp. at 13-15. 17-18).

"assigned physical channels"

Dr. Stark equates "allocate" and "use"

Q So in the context of the '970 patent specification, your definition of allocate is use, correct?

A No, select for use.

* * *

Q Well, I'll show you a copy of your transcript at page 498. At line 4 you were asked the question, your definition of assigned, right, is to allocate for use? Answer: My definition of assigned in general is to -- Question: Let me -- Within the context of the '970. Answer: Okay. Yes, I kind of assumed that -- I'm sorry. Yes, I kind of assumed that. Yes, my definition of assigned is to use the channel actually.

* * *

Question: So allocate is use? Answer: Allocate, use, assign, yes.

Ex. 1025 (Stark Tr.) at 38:7-10, 17-24, 39:1-2.

Reply at 4-5 (replying to PO Resp .at 13-15, 17-18).

"assigned physical channels"

Dr. Stark equates "allocate" and "use"

A In the '970 patent and in the '244 patent, the selection, the allocation is done by the subscriber unit. The subscriber unit, when it allocates or selects, it's going to use because it has data.

So when you allocate in the '970 or the '244 patent, when a channel -- when physical layer channels are allocated, they're going to be used, and they've been selected for use and they're going to be used.

Ex. 1025 (Stark Tr.) at 39:1-8

Reply at 4-5 (replying to PO Resp. at 13-15, 17-18).

"assigned physical channels"

No requirement of selecting a subset

Patent Owner also incorrectly asserts that the phrase "assigned physical channels" mandates that the subscriber unit be capable of selecting "a subset of a larger group of channels." PO Resp. at 26.[4] Patent Owner plucks the word "subset" from a single sentence of the specification, which describes only an "example" of how a subset of channels "may" be configured, not how the channels *must* be configured. *See* Ex. 1001, at 7:24-29. Contrary to Patent Owner's

Reply at 5

Reply at 5; *see also* Reply at 3-8 (replying to PO Resp. at 3, 14-15, 26).

"assigned physical channels"

Cannot narrow claims by "same proceeding disavowal"

> Alternatively, Patent Owner indicates that they disavow expressly, in this proceeding, any claim scope of "automatic valuation" that is broader than an AVM, and that the Board should take this express disavowal into account and construe "automatic valuation" as an AVM. Patent Owner cites several cases that they

IPR2013-00034, Paper 42, at 11

> We are not aware of any proceeding where a tribunal has taken into account a disavowal made in the same proceeding ("same proceeding disavowal"). Instead, we are only aware of situations

IPR2013-00034, Paper 42, at 11

> opportunity to amend claims to reflect the scope it desires. If Patent Owner chooses not to avail itself of the opportunity to amend, it is reasonable to accord the claims their scope under the broadest reasonable construction, without regard to the substance of any same proceeding disavowal.

IPR2013-00034, Paper 42, at 12

Reply at 6 (citing *Microstrategy, Inc. v. Zillow, Inc.*, IPR2013-00034 (PTAB Final Decision, Mar. 27, 2014), at 11-15).

"assigned physical channels"

Specification expressly states it is not limited to embodiments

Patent Owner's argument is, in any event, inconsistent with the specification in several ways. For example, the specification expressly states that the claims are not limited to the specific embodiments described. *See* Ex. 1001, 10:65-11:3.

Reply at 8

65 While this invention has been particularly shown and described with references to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention encompassed by the appended claims.

Ex. 1001 (244 Patent), 10:65-11:3

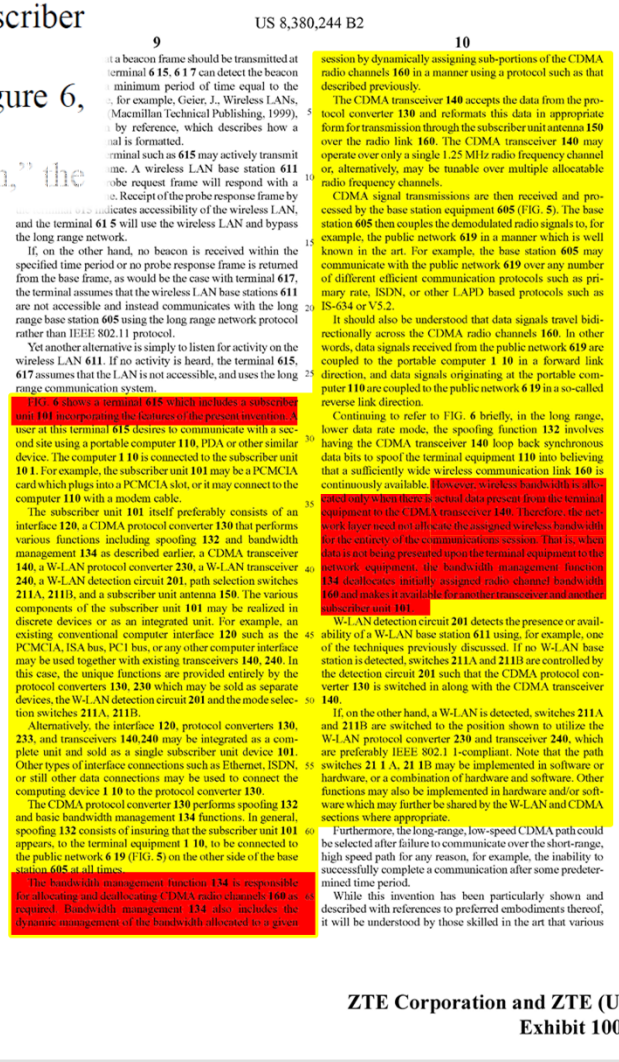
Reply at 8.

“assigned physical channels”

Patent Owner may not cherry-pick which features of Fig. 6 are limiting

subscriber unit – selects the physical channels for use. For example, a “subscriber unit 101 incorporating the features of the present invention” is shown in Figure 6, and described at 9:27-10:59. In this subscriber unit of “the present invention,” the

Ex. 2005 (Stark Decl. ¶ 56)



US 8,380,244 B2

9

10

a beacon frame should be transmitted at terminal **615**, **617** can detect the beacon minimum period of time equal to the for example, Geier, J., Wireless LANs, Macmillan Technical Publishing, 1999), by reference, which describes how a al is formatted.

terminal such as **615** may actively transmit ame. A wireless LAN base station **611** obe request frame will respond with a e. Receipt of the probe response frame by dicates accessibility of the wireless LAN, and the terminal **615** will use the wireless LAN and bypass the long range network.

If, on the other hand, no beacon is received within the specified time period or no probe response frame is returned from the base frame, as would be the case with terminal **617**, the terminal assumes that the wireless LAN base stations **611** are not accessible and instead communicates with the long range base station **605** using the long range network protocol rather than IEEE 802.11 protocol.

Yet another alternative is simply to listen for activity on the wireless LAN **611**. If no activity is heard, the terminal **615**, **617** assumes that the LAN is not accessible, and uses the long range communication system.

FIG. **6** shows a terminal **615** which includes a subscriber unit **101** incorporating the features of the present invention. A user at this terminal **615** desires to communicate with a second site using a portable computer **110**, PDA or other similar device. The computer **110** is connected to the subscriber unit **101**. For example, the subscriber unit **101** may be a PCMCIA card which plugs into a PCMCIA slot, or it may connect to the computer **110** with a modem cable.

The subscriber unit **101** itself preferably consists of an interface **120**, a CDMA protocol converter **130** that performs various functions including spoofing **132** and bandwidth management **134** as described earlier, a CDMA transceiver **140**, a W-LAN protocol converter **230**, a W-LAN transceiver **240**, a W-LAN detection circuit **201**, path selection switches **211A**, **211B**, and a subscriber unit antenna **150**. The various components of the subscriber unit **101** may be realized in discrete devices or as an integrated unit. For example, an existing conventional computer interface **120** such as the PCMCIA, ISA bus, PC1 bus, or any other computer interface may be used together with existing transceivers **140**, **240**. In this case, the unique functions are provided entirely by the protocol converters **130**, **230** which may be sold as separate devices, the W-LAN detection circuit **201** and the mode selection switches **211A**, **211B**.

Alternatively, the interface **120**, protocol converters **130**, **233**, and transceivers **140**,**240** may be integrated as a complete unit and sold as a single subscriber unit device **101**. Other types of interface connections such as Ethernet, ISDN, or still other data connections may be used to connect the computing device **110** to the protocol converter **130**.

The CDMA protocol converter **130** performs spoofing **132** and basic bandwidth management **134** functions. In general, spoofing **132** consists of insuring that the subscriber unit **101** appears, to the terminal equipment **110**, to be connected to the public network **619** (FIG. **5**) on the other side of the base station **605** at all times.

The bandwidth management function **134** is responsible for allocating and deallocating CDMA radio channels **160** as required. Bandwidth management **134** also includes the dynamic management of the bandwidth allocated to a given session by dynamically assigning sub-portions of the CDMA radio channels **160** in a manner using a protocol such as that described previously.

The CDMA transceiver **140** accepts the data from the protocol converter **130** and reformats this data in appropriate form for transmission through the subscriber unit antenna **150** over the radio link **160**. The CDMA transceiver **140** may operate over only a single 1.25 MHz radio frequency channel or, alternatively, may be tunable over multiple allocatable radio frequency channels.

CDMA signal transmissions are then received and processed by the base station equipment **605** (FIG. **5**). The base station **605** then couples the demodulated radio signals to, for example, the public network **619** in a manner which is well known in the art. For example, the base station **605** may communicate with the public network **619** over any number of different efficient communication protocols such as primary rate, ISDN, or other LAPD based protocols such as IS-634 or V5.2.

It should also be understood that data signals travel bidirectionally across the CDMA radio channels **160**. In other words, data signals received from the public network **619** are coupled to the portable computer **110** in a forward link direction, and data signals originating at the portable computer **110** are coupled to the public network **619** in a so-called reverse link direction.

Continuing to refer to FIG. **6** briefly, in the long range, lower data rate mode, the spoofing function **132** involves having the CDMA transceiver **140** loop back synchronous data bits to spoof the terminal equipment **110** into believing that a sufficiently wide wireless communication link **160** is continuously available. However, wireless bandwidth is allocated only when there is actual data present from the terminal equipment to the CDMA transceiver **140**. Therefore, the network layer need not allocate the assigned wireless bandwidth for the entirety of the communications session. That is, when data is not being presented upon the terminal equipment to the network equipment, the bandwidth management function **134** deallocates initially assigned radio channel bandwidth **160** and makes it available for another transceiver and another subscriber unit **101**.

W-LAN detection circuit **201** detects the presence or availability of a W-LAN base station **611** using, for example, one of the techniques previously discussed. If no W-LAN base station is detected, switches **211A** and **211B** are controlled by the detection circuit **201** such that the CDMA protocol converter **130** is switched in along with the CDMA transceiver **140**.

If, on the other hand, a W-LAN is detected, switches **211A** and **211B** are switched to the position shown to utilize the W-LAN protocol converter **230** and transceiver **240**, which are preferably IEEE 802.1 1-compliant. Note that the path switches **21 1 A**, **21 1B** may be implemented in software or hardware, or a combination of hardware and software. Other functions may also be implemented in hardware and/or software which may further be shared by the W-LAN and CDMA sections where appropriate.

Furthermore, the long-range, low-speed CDMA path could be selected after failure to communicate over the short-range, high speed path for any reason, for example, the inability to successfully complete a communication after some predetermined time period.

While this invention has been particularly shown and described with references to preferred embodiments thereof, it will be understood by those skilled in the art that various

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1001-00017

Red = PO’s Cherry-Picked Features

Yellow = Other Features of Figure 6

Reply at 8 (responding to PO Resp. at 3, 14-15, 26).

Claim 1

"maintain a communication session"

1. A subscriber unit comprising:
a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels;
an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and
a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network.

Ex. 1001 (244 Patent) at 11:6-16

Ex. 1001 (244 Patent), 11:6-16.

"maintain a communication session"

ZTE proposes InterDigital's District Court construction

1. A subscriber unit comprising:
a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels;
an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and
a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network.

Ex. 1001 (244 Patent) at 11:6-16

InterDigital
maintain a logical connection with the cellular wireless network when none of the plurality of physical channels are in use by the subscriber unit

Pet. at 14

- **Not disputed.**

Pet. at 14; Reply at 2 n.3.

The Prior Art

Jawanda (Ex. 1003)

U.S. Patent No. 6,243,581

US006243581B1

(12) **United States Patent**
Jawanda

(10) **Patent No.: US 6,243,581 B1**
(45) **Date of Patent: Jun. 5, 2001**

(54) **METHOD AND SYSTEM FOR SEAMLESS ROAMING BETWEEN WIRELESS COMMUNICATION NETWORKS WITH A MOBILE TERMINAL**

(75) Inventor: **Jastinder Jawanda**, Plano, TX (US)

(73) Assignee: **Nortel Networks Limited**, Montreal (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/209,581**

(22) Filed: **Dec. 11, 1998**

(51) **Int. Cl.**[7] **H04Q 7/20**; H04Q 7/24; H04L 12/28; H04L 12/56

(52) **U.S. Cl.** **455/432**; 455/437; 455/557; 370/338; 370/401; 370/913

(58) **Field of Search** 455/466, 426, 455/432, 436, 442, 550, 556, 557, 437, 440, 11.1; 370/315, 323, 331, 332, 338, 349, 401, 913

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,457,680	*	10/1995	Kamm et al.	455/432 X
5,600,707	*	2/1997	Miller, II	455/434
5,790,952	*	8/1998	Seazholtz et al.	455/432
5,796,727	*	8/1998	Harrison et al.	370/338
5,878,343	*	3/1999	Robert et al.	455/424
5,930,241	*	7/1999	Fried	370/328
5,961,607	*	10/1999	Schaefers	455/432 X
6,052,589	*	4/2000	Persson et al.	455/433

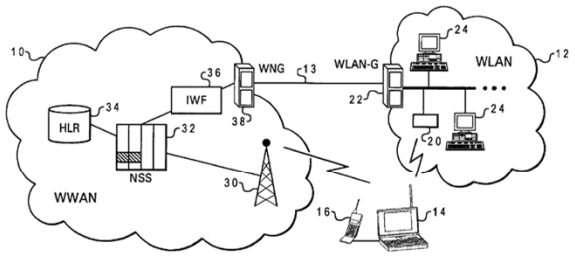
* cited by examiner

Primary Examiner—Tracy Legree
(74) *Attorney, Agent, or Firm*—Bruce E. Garlick; James A. Harrison

(57) **ABSTRACT**

A mobile computer system capable of seamless roaming between wireless communication networks includes data processing resources for executing software, a plurality of wireless interfaces that supports simultaneous wireless connections with first and second wireless communication networks, and a network access arbitrator that routes data communicated between the software executed by the data processing resources and the first and second wireless communication networks. To permit seamless roaming, the network access arbitrator routes the data to the first wireless communication network via a first wireless interface and then seamlessly reroutes the data to a second wireless communication network via a second wireless interface. According to one embodiment, the network access arbitrator reroutes the data in response to the data bandwidths of the connections with the first and second wireless communication networks.

11 Claims, 4 Drawing Sheets



ZTE Corporation and ZTE (USA) Inc.
Exhibit 1003-00001

(22) Filed: **Dec. 11, 1998**

(57) **ABSTRACT**

A mobile computer system capable of seamless roaming between wireless communication networks includes data processing resources for executing software, a plurality of wireless interfaces that supports simultaneous wireless connections with first and second wireless communication networks, and a network access arbitrator that routes data communicated between the software executed by the data processing resources and the first and second wireless communication networks. To permit seamless roaming, the network access arbitrator routes the data to the first wireless communication network via a first wireless interface and then seamlessly reroutes the data to a second wireless communication network via a second wireless interface. According to one embodiment, the network access arbitrator reroutes the data in response to the data bandwidths of the connections with the first and second wireless communication networks.

Ex. 1003 (Jawanda)

Pet. at 4, 19-20.

Jawanda (Ex. 1003)

Figure 1

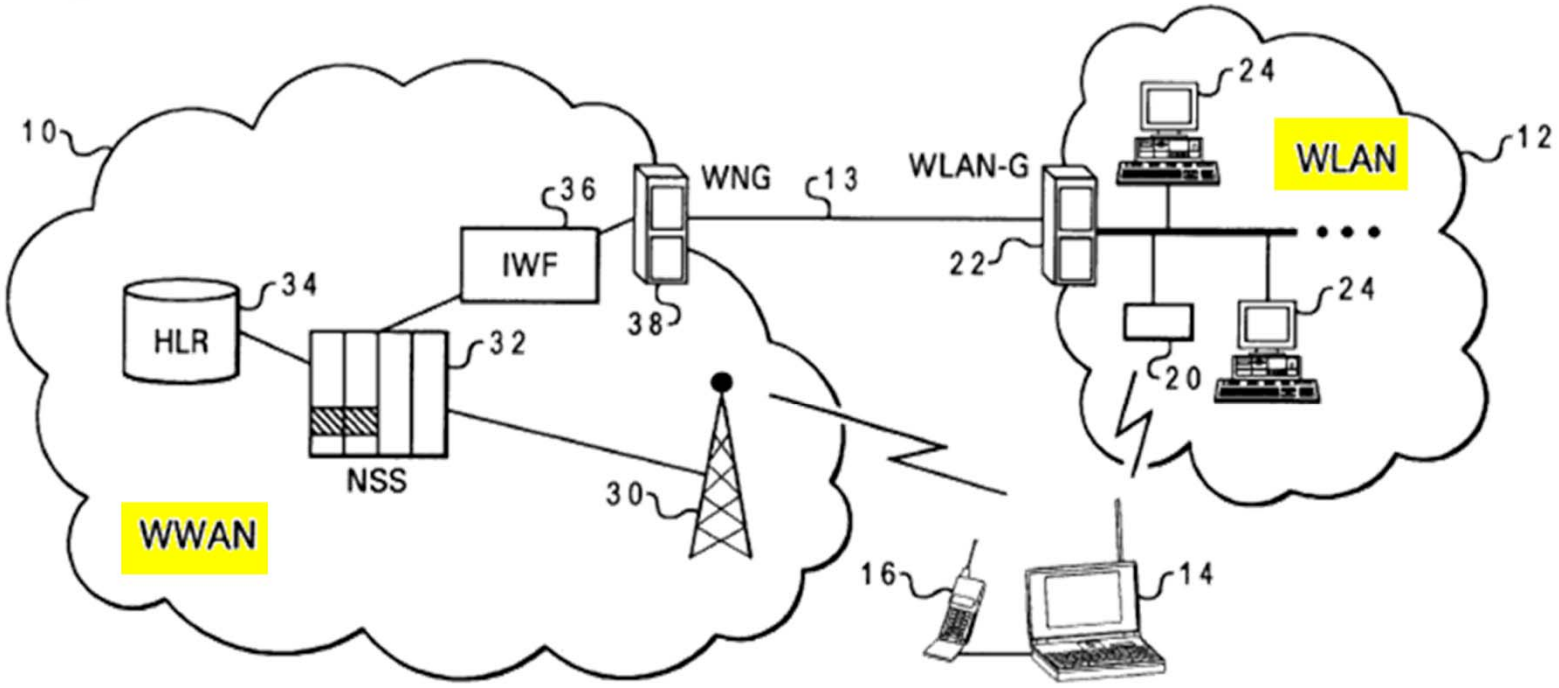


Fig. 1

Ex. 1003 (Jawanda) at Fig. 1

WWAN = Wireless Wide Area Network (cellular)
WLAN = Wireless Local Area Network

Pet. at 26; Ex. 1003 (Jawanda) at Fig. 1, 2:42-47.

Jawanda (Ex. 1003)

Figure 3

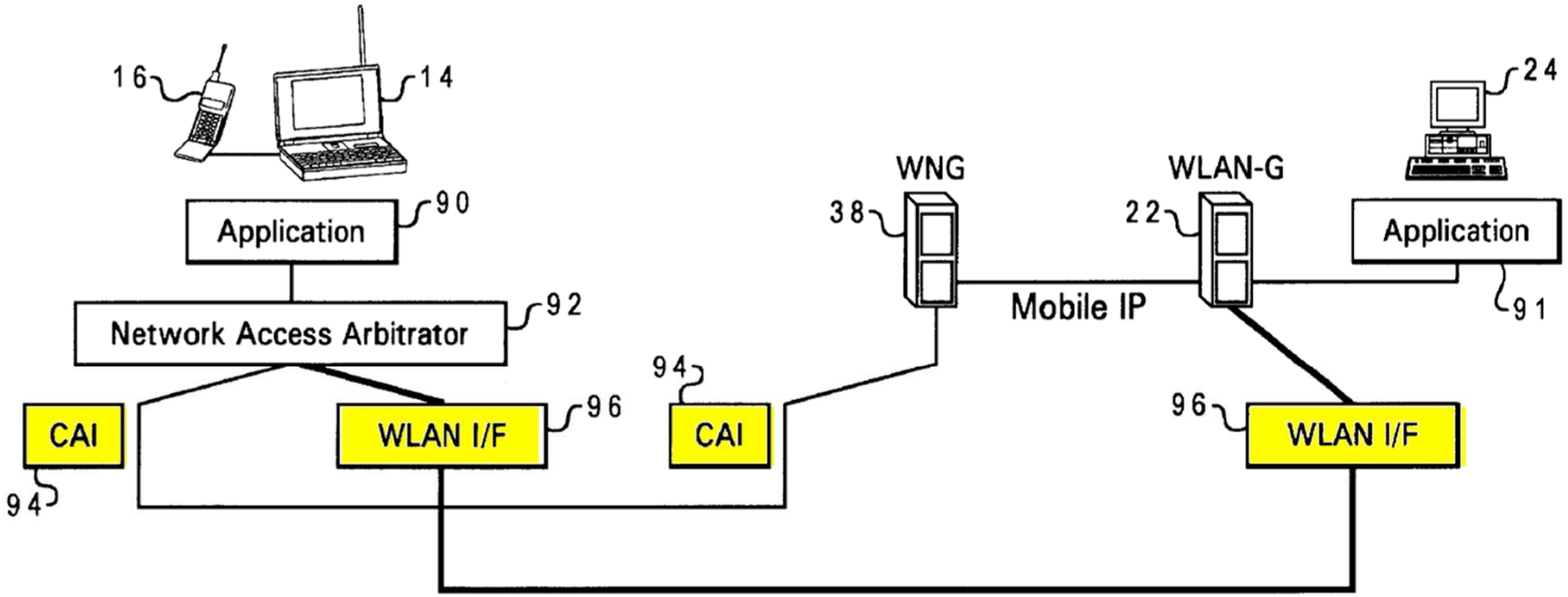


Fig. 3

Ex. 1003 (Jawanda) at Fig. 3

CAI = Cellular Access Interface (to WWAN)
WLAN I/F = Wireless Local Area Network

Pet. at 23; Ex. 1003 (Jawanda) at Fig. 3, 2:42-47, 4:8-15.

GPRS Standards (Ex. 1005)

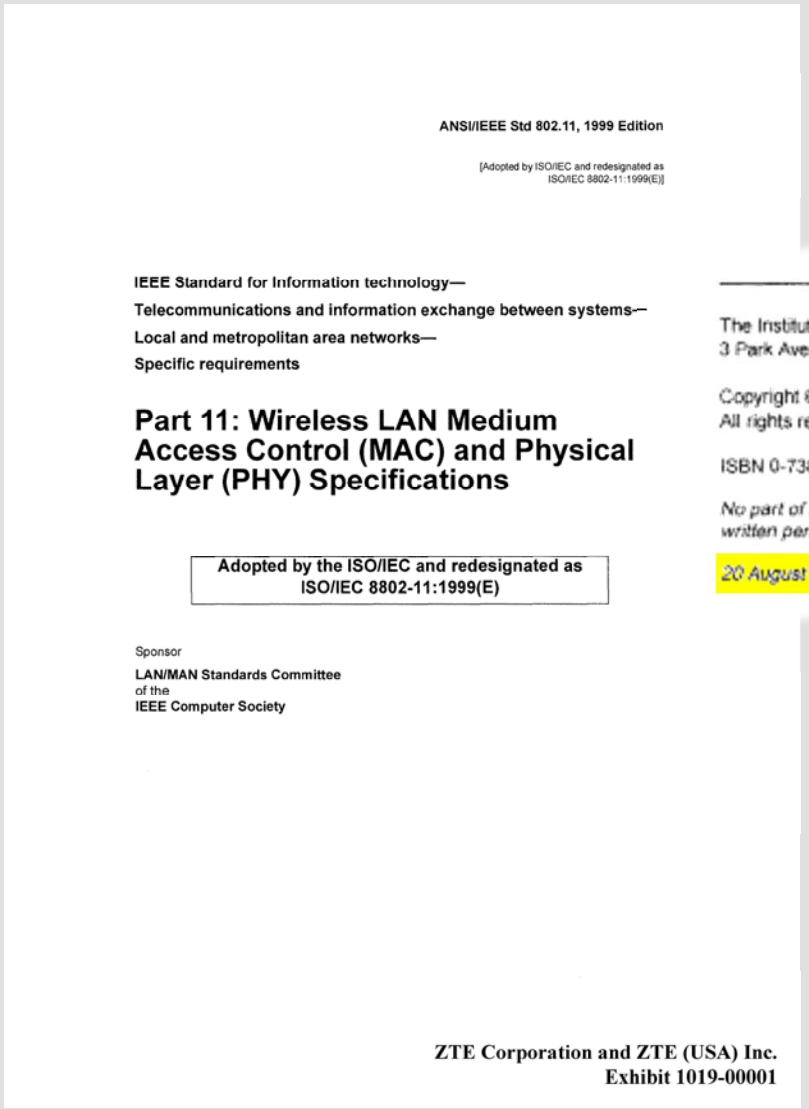
Ten section from the General Packet Radio Service ("GPRS")

GPRS Standards	General Packet Radio Service Standards[2]		1005
	GSM 02.60 v. 6.1.1 R97	Nov. 1998	1005.01
	GSM 03.02 v. 6.1.0 R97	July 1998	1005.02
	GSM 03.60 v. 6.1.1 R97	Aug. 1998	1005.03
	GSM 04.07 v. 6.1.0 R97	July 1998	1005.04
	GSM 04.08 v. 6.1.1 R97	Aug. 1998	1005.05
	GSM 04.60 v. 6.1.0 R97	Aug. 1998	1005.06
	GSM 04.64 v. 6.1.0 R97	July 1998	1005.07
	GSM 04.65 v. 6.1.0 R97	July 1998	1005.08
	GSM 05.01 v. 6.1.1 R97	July 1998	1005.09
	GSM 03.64 v. 6.1.0 R97	Oct. 1998	1005.10

Inst. Decision at 7

Pet. at 4, 6.

802.11 Standard (Ex. 1019)



ANSI/IEEE Std 802.11, 1999 Edition

[Adopted by ISO/IEC and redesignated as ISO/IEC 8802-11:1999(E)]

IEEE Standard for Information technology—
Telecommunications and information exchange between systems—
Local and metropolitan area networks—
Specific requirements

Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

Adopted by the ISO/IEC and redesignated as ISO/IEC 8802-11:1999(E)

Sponsor
LAN/MAN Standards Committee
of the
IEEE Computer Society

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1019-00001

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

ISBN 0-7381-1658-0

20 August 1999

SH94740

Ex. 1019-00003

Pet. at 6.

"Draft" Documents are Available

No dispute that "draft" documents are available to interested public

For purposes of this petition, "GPRS Standards" refers to the ten sections of the Global System for Mobile Communication ("GSM") standard listed above, which define portions of the General Packet Radio Service ("GPRS"). Each of the constituent sections of the GPRS Standards is undisputedly prior art because it was available to the interested public in or before November 1998. (Ex. 1007 (3GPP TR 21.900); Ex. 1002 (Bims Decl. at ¶¶120-121).

Pet. at 6

Pet. at 6-7 (citing Ex. 1002 (Bims Decl. at ¶¶120-121).

"Draft" Documents are Available

No dispute that "draft" documents are available to interested public

18	Q	Okay. And why do you say that Jawanda could be used
19		with draft standards as opposed to final standards?
20	A	Well, the reason is because interested parties can gain
21		access to draft versions of cellular protocol standards
22		prior to their official publication.

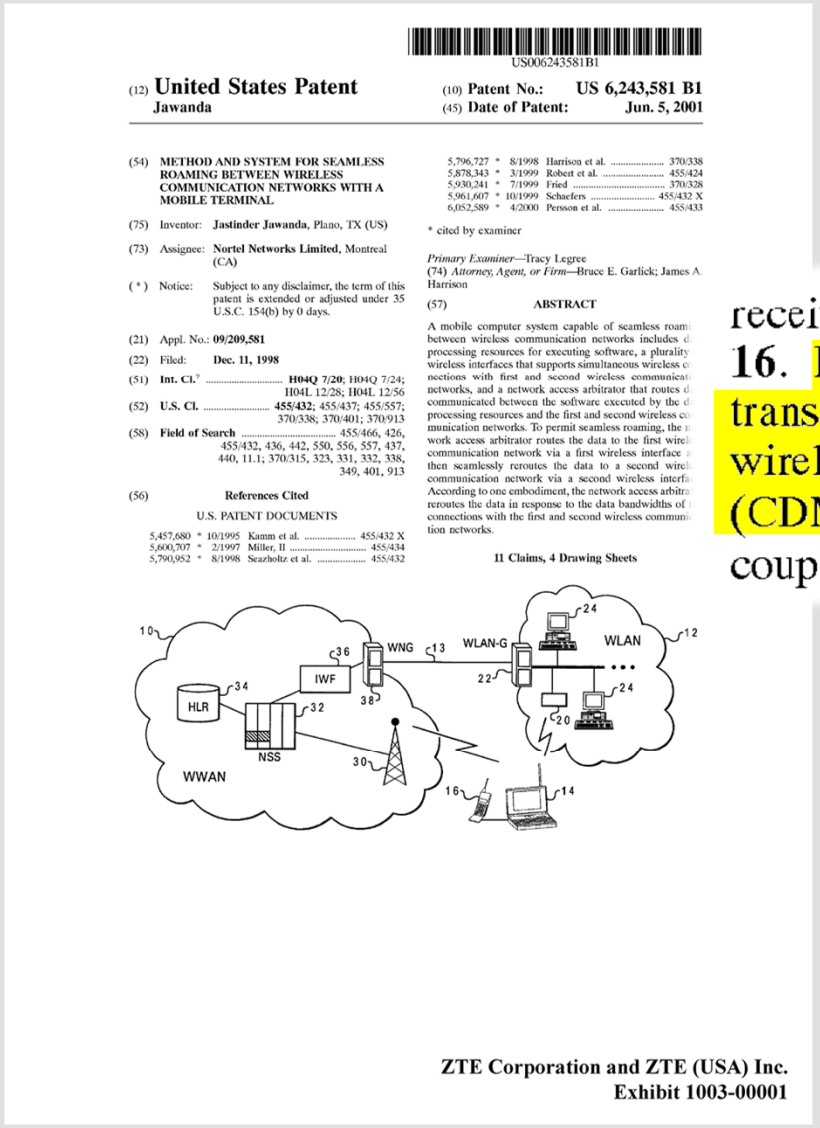
Ex. 2006 (Bims Tr.) at 24:18-22

Pet. at 6-7 (citing Ex. 1002 (Bims Decl. at ¶¶120-121); Reply at 10-11 (replying to PO Resp. at 43).

Motivation to Combine

Motivation to Combine w/ GPRS

Jawanda provides an express motivation



US006243581B1

(12) **United States Patent**
Jawanda

(10) **Patent No.: US 6,243,581 B1**
(45) **Date of Patent: Jun. 5, 2001**

(54) **METHOD AND SYSTEM FOR SEAMLESS ROAMING BETWEEN WIRELESS COMMUNICATION NETWORKS WITH A MOBILE TERMINAL**

(75) Inventor: **Jastinder Jawanda**, Plano, TX (US)

(73) Assignee: **Nortel Networks Limited**, Montreal (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/209,581**

(22) Filed: **Dec. 11, 1998**

(51) **Int. Cl.**[7] **H04Q 7/20**; H04Q 7/24; H04L 12/28; H04L 12/56

(52) **U.S. Cl.** **455/432**; 455/437; 455/557; 370/338; 370/401; 370/913

(58) **Field of Search** 455/466, 426, 455/432, 436, 442, 550, 556, 557, 437, 440, 11.1; 370/315, 323, 331, 332, 338, 349, 401, 913

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,457,680	*	10/1995	Kamm et al.	455/432 X
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5,790,952	*	8/1998	Seazholtz et al.	455/432
5,796,727	*	8/1998	Harrison et al.	370/338
5,878,343	*	3/1999	Robert et al.	455/424
5,930,241	*	7/1999	Fried	370/328
5,961,607	*	10/1999	Schaefers	455/432 X
6,052,589	*	4/2000	Persson et al.	455/433

* cited by examiner

Primary Examiner—Tracy Legree
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(57) **ABSTRACT**

A mobile computer system capable of seamless roami between wireless communication networks includes d processing resources for executing software, a plurality wireless interfaces that supports simultaneous wireless c nections with first and second wireless communicati networks, and a network access arbitrator that routes d communicated between the software executed by the d processing resources and the first and second wireless co munication networks. To permit seamless roaming, the n work access arbitrator routes the data to the first wirel communication network via a first wireless interface then seamlessly reroutes the data to a second wirel communication network via a second wireless interfa According to one embodiment, the network access arbitra reroutes the data in response to the data bandwidths of connections with the first and second wireless communi tion networks.

11 Claims, 4 Drawing Sheets

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1003-00001

receives wireless signals from one or more mobile phones **16**. For data connections, such wireless signals can be transmitted according to any currently available or future wireless data protocol such as code division multiple access (CDMA), CDPD, or GPRS. Base station **30** is further coupled to a network subsystem (NSS) **32**, which in the

Ex. 1003 (Jawanda) at 3:6-9

Pet. at 26, 38; *see also* Ex. 1002 (Bims Decl.) at ¶¶ 181-82.

Motivation to Combine w/GPRS

The "draft" GPRS documents are draft "wireless data protocols"

Q And document 1005.03 describes a GPRS draft wireless data protocol?

MS. HOLLOWAY: Object, vague.

THE WITNESS: It says -- Its title is Digital Cellular Telecommunication System General Packet Radio Service (GPRS) Service Description. So, yes, it's describing part of the protocol that was in the draft form at this point.

MR. JONES: Q So it describes a draft wireless data protocol, correct?

A Yes.

Ex. 1025 (Stark Tr.) at 94:24 - 95:10

Reply at 10-11 (replying to PO Resp. at 37, 43).

Motivation to Combine w/ GPRS

POSITA would look to GPRS

In addition to the express mention of GPRS in Jawanda, it would have been an obvious design choice to a person of ordinary skill in the art that the mobile phone in Jawanda be selected to comply with the then-existing, well-known GPRS Standards. (Ex. 1002 (Bims Decl.) at ¶ 166). *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("When 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."). Naturally, a person of ordinary skill would have found it obvious to reference the GPRS Standards for details about how to implement the cellular features taught in Jawanda. (Ex. 1002 (Bims Decl.) at ¶ 122).

Pet. at 27

Pet. at 27; *see also* Ex. 1002 (Bims Decl.) at ¶¶ 122, 166.

Motivation to Combine w/ GPRS

POSITA would look to GPRS

(internal quotation omitted). Indeed, as the Supreme Court has cautioned, "[r]igid preventative rules that deny fact-finders recourse to common sense, however, are neither necessary nor consistent with the law." *KSR Int'l Co. v Teleflex Inc.*, 550 U.S. 389, 421 (2007). As explained by Dr. Bims, persons working in the field would not ignore the drafts of cellular standards documents. Ex. 2006 (Bims Tr.), at 24:9-27:2, 168:18-171:5. On the contrary, given the timeframe required for developing a final product, Dr. Bims testified that it is imperative for cell phone manufacturers to be aware of and keep up with the developing standards. *Id.*

Reply at 11

Reply at 11 (responding to PO Resp. at 37, 43).

Motivation to Combine w/ GPRS

POSITA would not ignore drafts of the GPRS Standards

Q Right. And why would they rely on those draft standards -- is what I'm asking you -- in light of the teachings of Jawanda?

A Well, typically vendors of cellular network products, including chip vendors as well as equipment vendors, look to draft versions of cellular protocol standards to begin the development efforts for their products so that, by the time the draft version of the cellular protocol becomes officially published, they have products in the marketplace that are compliant to the standard.

Ex. 2006 (Bims Tr.) at 25:19 - 26:7

Reply at 10-11 (replying to PO Resp. at 37, 43).

Motivation to Combine w/ GPRS

Dr. Stark's "then-existing GPRS Standards" excludes Ex. 1005.03

Q You state in paragraph 40 that at the time of the invention, in the then-existing GPRS standards, the PDP context was not maintained when the physical channels were not in use.

A Yes.

Q So in the then-existing GPRS standards there was a PDP context, it was just not maintained when the physical channels were not in use, right?

A I think the point is that -- and I refer to the release version matrix, Exhibit 2019 -- that the 3.60 part of the standard, the first release -- the release 97 was 6.11, not 6.1.1.

* * *

So there was no -- I mean, it wasn't finalized until 6.11. So there was no PDP context of 3.6. Essentially, the standard didn't become finalized until 6.11, release 97.

Ex. 1025 (Stark Tr.) at 72:4-15, 73:2-5

Reply at 10 n.5 (replying to use of "then-existing" in PO Resp. at 9-13, 34-37).

Motivation to Combine w/ IEEE 802.11

Jawanda suggests WLAN

US006243581B1

(12) **United States Patent**
Jawanda

(10) **Patent No.: US 6,243,581 B1**
(45) **Date of Patent: Jun. 5, 2001**

(54) **METHOD AND SYSTEM FOR SEAMLESS ROAMING BETWEEN WIRELESS COMMUNICATION NETWORKS WITH A MOBILE TERMINAL**

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(21) Appl. No.: **09/209,581**

(22) Filed: **Dec. 11, 1998**

(51) **Int. Cl.**[7] **H04Q 7/20**; H04Q 7 H04L 12/28; H04L 1

(52) **U.S. Cl.** **455/432**; 455/437; 455/ 370/338; 370/401; 370

(58) **Field of Search** 455/466, 455/432, 436, 442, 550, 556, 557, 440, 11.1; 370/315, 323, 331, 332, 349, 401,

(56) **References Cited**

U.S. PATENT DOCUMENTS

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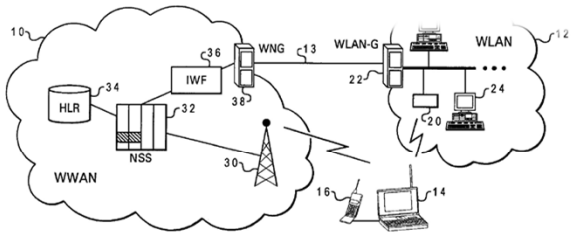
5,600,707	*	2/1997	Miller, II	455
5,790,952	*	8/1998	Seazholtz et al.	455
5,796,727	*	8/1998	Harrison et al.	370/338
5,878,343	*	3/1999	Robert et al.	455/424
5,930,241	*	7/1999	Fried	370/328

incorporated herein by reference. Wireless network adapter **20** is in all respects like the conventional network adapter cards utilized to interface fixed terminals **24** to WLAN **12**, except that one or more mobile terminals **14** can obtain a high bandwidth wireless connection to WLAN **12** via wireless network adapter **20**.



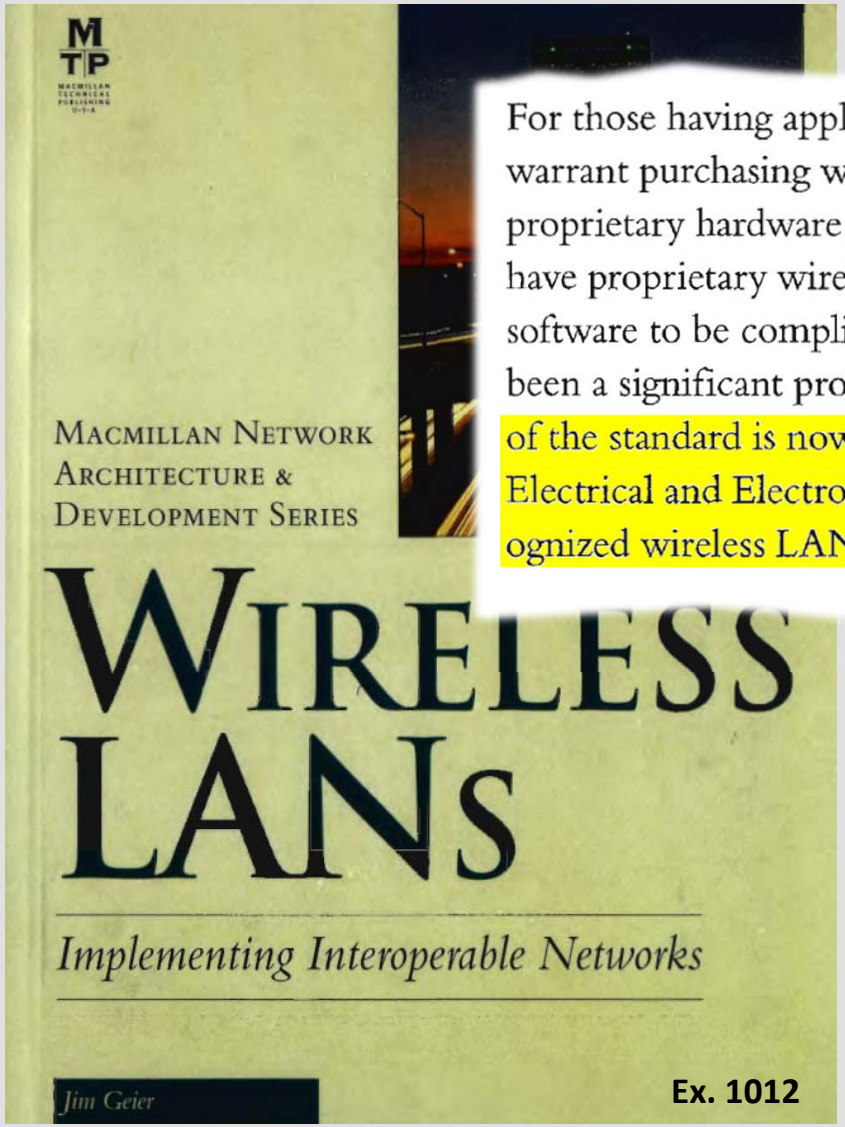
ZTE Corporation and ZTE (USA) Inc.
Exhibit 1003-00001

Ex. 1003 (Jawanda) at 2:62-67

Pet. at 27-28, 39; *see also* Ex. 1002 (Bims Decl.) at ¶¶ 138-150, 167.

Motivation to Combine w/ IEEE 802.11

First internationally recognized wireless LAN standard



Ex. 1012

For those having applications suitable for lower data rates and enough cost savings to warrant purchasing wireless connections, the only choice before 1998 was to install proprietary hardware to satisfy requirements. As a result, many organizations today have proprietary wireless networks for which you have to replace both hardware and software to be compliant with the IEEE 802.11 standard. The lack of standards has been a significant problem with wireless networking, but the first official version of the standard is now available. In response to lacking standards, the Institute for Electrical and Electronic Engineers (IEEE) developed the first internationally recognized wireless LAN standard: IEEE 802.11.

Ex. 1012-0020

Pet. at 27; *see also* Ex. 1002 (Bims Decl.) at ¶ 142.

Obviousness of the Independent Claims

Obviousness of Claims 1 and 23

Preamble: Jawanda

Claims 1 and 23	Disclosure of Jawanda
1. A subscriber unit comprising:	"A mobile computer system capable of seamless roaming between wireless communication networks includes data processing resources for executing software, a plurality of wireless interfaces that supports simultaneous wireless connections with first and second wireless communication networks, and a network access arbitrator that routes data communicated between the software executed by the data processing resources and the first and second wireless communication networks." (Ex. 1003 (Jawanda) at Abstract.)
23. A method for use in a dual mode subscriber unit, the method comprising:	

Pet. at 38

Pet. at 38.

Obviousness of Claims 1 and 23

Limitations (1a) and (23a): Jawanda

Claims 1 and 23	Disclosure of Jawanda
(1a) a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels;	"For data connections, such wireless signals can be transmitted according to any currently available or future wireless data protocol such as code division multiple access (CDMA), CDPD, or GPRS." (Ex. 1003 (Jawanda) at 3:6-9.) "In any event, a signal is transmitted via I/O adapter 78 to mobile phone 16, which responds to the signal by establishing the wireless data connection utilizing a conventional technique, for example, by requesting a connection from the MSC within NSS 32 using a message transmitted to base station 30 via control channel." (Ex. 1003 (Jawanda) at 4:8-30.)
(21a) establishing a communication session with a cellular wireless network;	

Pet. at 38

Pet. at 38; *see also* Bims Decl., ¶¶ 181-84, 232-33; Reply at 9 (replying to PO Resp. at 18).

Obviousness of Claims 1 and 23

Limitations (1a) and (23a): GPRS

Claims 1 and 23	Disclosure of Jawanda
(1a) a cellular transceiver configured to communicate with a cellular wireless network via a plurality of assigned physical channels;	In combination with GPRS Standards: "Multislot configurations for packet switched connections are defined as multiple (1 up to 8) PDTCH/Us and one PACCH for one mobile originated communication, or multiple (1 up to 8) PDTCH/Ds and one PACCH for one mobile terminated communication respectively, allocated to the same MS. In this context allocation refers to the list of PDCH that may dynamically carry the PDTCHs for that specific MS. The PACCH shall be mapped onto one PDCH carrying one PDTCH/U or PDTCH/D. That PDCH shall be indicated in the resource allocation message (see GSM 04.60)." (Ex. 1005.09 (GPRS Standard, 3GPP TS 05.01 V6.1.1 R97), at § 2 Set of channels.)
(21a) establishing a communication session with a cellular wireless network;	

Pet. at 38-39

Pet. at 38-39; *see also* Pet. at 20-22;
Bims Decl., ¶¶ 181-84, 232-33; Reply at 9 (replying to PO Resp. at 18).

Obviousness of Claims 1 and 23

Limitation (1b): Jawanda

Claim 1	Disclosure of Jawanda and IEEE 802.11
(1b) an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and	with entities coupled to external network 13. As discussed further herein below, datagrams are preferably communicated between WWAN 10 and WLAN 12 across external network 13 utilizing the mobile internet protocol (IP) described in detail in Perkins, C., "IP Mobility Standard," RFC 2002, October 1996 available from the Internet Engineering Task Force (IETF) and incorporated herein by reference. Wireless network adapter 20 is in all respects like the conventional network adapter cards utilized to interface fixed terminals 24 to WLAN 12, except that one or more mobile terminals 14 can obtain a high bandwidth wireless connection to WLAN 12 via wireless network adapter 20." (Ex. 1003 (Jawanda) at 2:48-67.)

Pet. at 38-39

Pet. at 38-39.

Obviousness of Claims 1 and 23

Limitation (1b): Admitted Prior Art

Claim 1	Disclosure of Jawanda and IEEE 802.11
(1b) an IEEE 802.11 transceiver configured to communicate with an IEEE 802.11 wireless local area network; and	In combination with IEEE 802.11: The Background of the Invention section of the 244 patent admits that IEEE 802.11 was a publicly available and known WLAN standard: "A newly accepted standard, IEEE 802.11, specifies a protocol for the media access control (MAC) and physical (PHY) layers of a wireless LAN." (Ex. 1001 (244 Patent) at 2:27-29.)

Pet. at 39-40

Pet. at 39-40.

Obviousness of Claims 1 and 23

Limitations (1c) and (23b/c): Jawanda

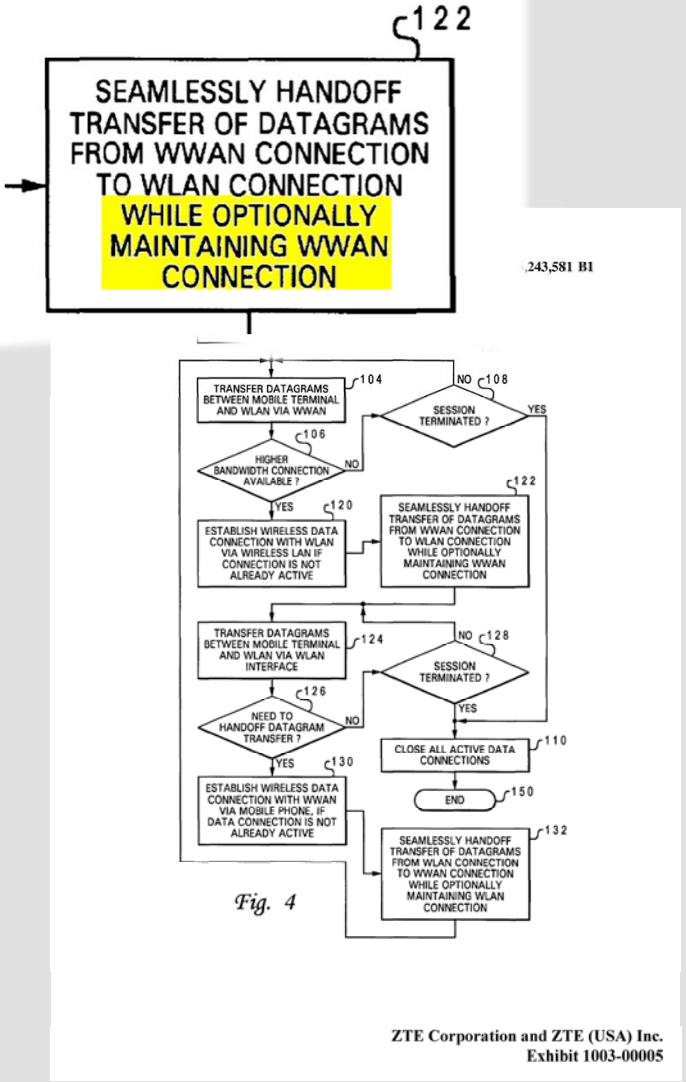
Claims 1 and 23	Disclosure of Jawanda
(1c) a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network.	"Then, as depicted at block 122, network access arbitrator 92 causes the transfer of datagrams to be seamlessly handed off from the wireless connection with WWAN 10 to the wireless connection with WLAN 12 while maintaining the session between applications 90 and 91. Thus, following block 122, datagrams are routed between application 90 and application 91 utilizing the higher bandwidth data path between WLAN interfaces 96 rather than between CAIs 94, as shown at block 124." (Ex. 1003 (Jawanda) at 5:34-39.) "Seamlessly handoff transfer of datagrams from WWAN connection to WLAN connection while optionally maintaining WWAN connection" (Ex. 1003 (Jawanda) at Fig. 4, label 122.)
(23b/c) maintaining the communication session in an absence of any physical channels associated with the cellular wireless network; and communicating packet data with an IEEE 802.11 wireless local area network while maintaining the communication session with the cellular wireless network.	

Pet. at 40

Pet. at 40; *see also* Pet. at 22-25 (citing Bims Decl., ¶¶ 134-35, 192-95, 200-03);
Reply at 12-13 (citing Bims Decl., ¶¶ 126-30, 156-157, 193-95, 200-04).

Obviousness of Claims 1 and 23

Jawanda: "maintaining a communication session" when not in use



Ex. 1002 (Bims Decl.) at ¶195). Jawanda further teaches that after the handoff to the higher bandwidth WLAN connection, the WWAN connection (cellular connection) may optionally be maintained or terminated. (Ex. 1003 (Jawanda) at Fig. 4 at box 122, 5:64–6:1; Ex. 1002 (Bims Decl.) at ¶195). So after moving the session to transfer datagrams using the WLAN instead of the WWAN, the cellular connection can be maintained even when it is not used to transfer datagrams. (Ex. 1003 (Jawanda) at 5:32-34; Ex. 1002 (Bims Decl.) at ¶195). Once the session

Pet. at 24

Pet. at 24 (citing Ex. 1003 (Jawanda) at Fig. 4).

Obviousness of Claims 1 and 23

Patent Owner has accused PDP context of infringement

a processor configured to maintain a communication session with the cellular wireless network in an absence of the plurality of assigned physical channels while the IEEE 802.11 transceiver communicates packet data with the IEEE 802.11 wireless local area network.	WCDMA/UMTS Release 6 compliant subscriber units are configured to establish packet data communication sessions with the cellular network. (3GPP TS 24.008 § 6.1.1; 3GPP TS 24.007 § 6.5.) Before a subscriber unit and a network can communicate user data, the subscriber unit must activate a PDP context. (3GPP TS 24.008 § 6.1.1; 3GPP TS 24.007 § 6.5.) PDP context is activated at and used by at least the Session Management Layer of the cellular layered protocol. (3GPP TS 24.008 § 6.1.1, and Figure 6.1; 3GPP TS 24.007 § 6.5.)
	PDP context includes a number of session management parameters including, for example, Packet Data Protocol (PDP) type, PDP address type, and Quality of Service (QoS) parameters. (3GPP TS 24.008 §§ 6.1.3.1.1, 9.5.1, 9.5.2, 10.5.6.) When the radio link connection between the user device and the network has been released, one or more active PDP contexts are preserved. (3GPP TS 23.060 §§ 6.1.2.4, 6.12.1; 3GPP TS 34.123-1 §§ 12.9.12, 12.9.13.)

Ex. 1023, at pp. 3-4

Pet. at 24 (citing Ex. 1023 (InterDigital Infringement Chart for the 244 Patent)).

Obviousness of Claims 1 and 23

Dr. Stark: PDP context would be considered a logical connection

14 A It discloses PDP context.
15 Q And that satisfies the -- what you say is the
16 logical connection required by that claim limitation,
17 correct?
18 A Yes, that's a -- would be considered a logical
19 connection.

Ex. 1025 (Stark Tr.) at 88:14-19

Reply at 12 (citing Ex. 1025 (Stark Tr.), at 87:14-88:19).

Obviousness of Claims 1 and 23

GPRS: "maintaining a communication session" when not in use

Draft EN 301 344

European Standard

Digital cellular telecommunications sy
General Packet Radio
Ser

(GSM 03.60 version 6.1

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1005.03-00001

13.4 MS

Each GPRS MS maintains MM and PDP context information in IDLE, STANDBY and READY states. The information may be contained in the SIM, the ME, and the TE. Table 9 shows the MS context fields.

Table 9: MS MM and PDP Contexts

Field	Description
MM State	Mobility management state, IDLE, STANDBY, or READY.
P-TMSI	Packet Temporary Mobile Subscriber Identity.
P-TMSI Signature	A signature used for identification checking purposes.
Routeing Area	Current routeing area.
Cell Identity	Current cell.
Channel Id	Current physical channel.
Kc	Currently used ciphering key.
CKSN	Ciphering key sequence number of Kc.
Ciphering algorithm	Selected ciphering algorithm.
Classmark	MS classmark.
DRX Parameters	Discontinuous reception parameters.
Each MM context contains zero or more of the following PDP contexts:	
PDP Type	PDP type, e.g., X.25 or IP.
PDP Address	PDP address, e.g., an X.121 address.
PDP State	Packet data protocol state, INACTIVE or ACTIVE.
Dynamic Address Allowed	Specifies whether the MS is allowed to use a dynamic address.
NSAPI	Network layer Service Access Point Identifier.
Compression	Negotiated data compression parameters.
QoS Profile Requested	The quality of service profile requested for this PDP context.
QoS Profile Negotiated	The quality of service profile negotiated for this PDP context
Radio Priority Level	The RLC/MAC priority level.

Ex. 1005.03, § 13.4

Pet. at 24-25 (citing Ex. 1005.03 § 13.4 and Ex. 1002 (Bims Decl.) at ¶¶ 201-02).

Obviousness of Claims 1 and 23

GPRS: "maintaining a communication session" when not in use

Q And I want to talk specifically about this version, version 6.1.1. This document also discloses a PDP context, correct?

A It mentions a PDP context, yes.

Q And the PDP context that Exhibit 1005.03 discloses, that PDP context must also be in the active state in order to transmit data, correct?

A I think that's what we talked about earlier.

Q And then in this version of 03.60, the PDP context can remain in the active state even after the subscriber unit finishes transmitting data, correct?

A Yes, until the timer expires or something like that.

Q Right. And that's disclosed in Exhibit 1005.03, right?

A Right.

Ex. 1025 (Stark Tr.) at 87:14-88:5

Reply at 12 (citing Ex. 1025 (Stark Tr.) 87:14-88:19, and Ex. 1002 (Bims Decl.) ¶¶ 126-130, 156-157, 200-204).

Jawanda is Consistent with GPRS

Jawanda teaches using the WLAN *instead of* the cellular connection

US006243581B1

(12) **United States Patent**
Jawanda

(10) **Patent No.: US 6,243,581 B1**
(45) **Date of Patent: Jun. 5, 2001**

(54) **METHOD AND SYSTEM FOR SEAMLESS ROAMING BETWEEN WIRELESS COMMUNICATION NETWORKS WITH A MOBILE TERMINAL**

(75) Inventor: **Jastinder Jawanda**, Plano, TX (US)

(73) Assignee: **Nortel Networks Limited**, Montreal (CA)

(*) Notice: Subject to any disclaimer, the term of patent is extended or adjusted under U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/209,581**

(22) Filed: **Dec. 11, 1998**

(51) **Int. Cl.**[7] **H04Q 7/20**; H04Q 7 H04L 12/28; H04L 1

(52) **U.S. Cl.** **455/432**; 455/437; 455/ 370/338; 370/401; 370

(58) **Field of Search** 455/466, 455/432, 436, 442, 550, 556, 557, 440, 11.1; 370/315, 323, 331, 332, 349, 401,

(56) **References Cited**

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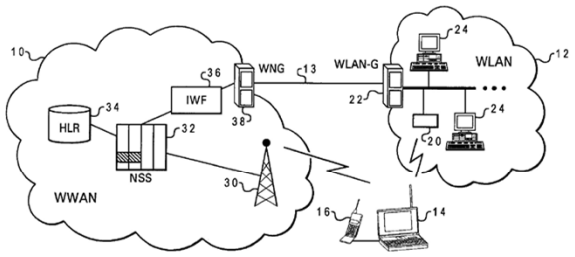
tion networks.

11 Claims, 4 Drawing Sheets



tions **90** and **91**. Thus, following block **122**, datagrams are routed between application **90** and application **91** utilizing the higher bandwidth data path between WLAN interfaces **96** rather than between CAIs **94**, as shown at block **124**.

Ex. 1003 (Jawanda) at 5:39-42

ZTE Corporation and ZTE (USA) Inc.
Exhibit 1003-00001

Reply at 13 (replying to PO Resp. at 30-31).

Obviousness of the Dependent Claims

Obviousness of Dependent Claims

Jawanda: Claims 7, 8, 29

Claims 7, 8, 29	Disclosure of Jawanda
7. The subscriber unit of claim 1, wherein at least one of the plurality of assigned physical channels is a data channel.	"For data connections, such wireless signals can be transmitted according to any currently available or future wireless data protocol such as code division multiple access (CDMA), CDPD, or GPRS." (Ex. 1003 (Jawanda) at 3:6-9.)
8. The subscriber unit of claim 1, wherein the cellular wireless network is a code division multiple access (CDMA) wireless network, and the cellular transceiver is a cellular code division multiple access (CDMA) transceiver.	
29. The method of claim 23, wherein at least one of the physical channels is a data channel.	

Pet. at 45

Pet. at 45.

Obviousness of Claim 8

GPRS network layer protocols are not incompatible with CDMA

Q And in WCDMA, it adopted the same GPRS protocols that were in the GPRS standards, right?

A Part of them. Part -- The network layer, not the physical layer protocols.

Q But you certainly agree that WCDMA incorporated the PDP context, correct?

A Yes, it incorporated that, but the physical layer channels were based on CDMA, not on TDMA. Those were the things that were incompatible.

Q Right. But WCDMA is a code division multiple access system, right?

A Yes.

Q And it uses the PDP context, correct?

A WCDMA would use that.

Ex. 1025 (Stark Tr.) at 92:7-20

Reply at 13-14 (replying to PO Resp. at 39-40).

Obviousness of Dependent Claims

Jawanda: Claims 2, 3, 22, 24, 25, 44

Claims 2, 3, 22, 24, 25, 44	Disclosure of Jawanda
2. The subscriber unit of claim 1, wherein the packet data is transmission control protocol and Internet protocol (TCP/IP) packet data.	"As discussed further herein below, datagrams are preferably communicated between WWAN 10 and WLAN 12 across external network 13 utilizing the mobile internet protocol (IP) described in detail in Perkins, C., "IP Mobility Standard," RFC 2002, October 1996 available from the Internet Engineering Task Force (IETF) and incorporated herein by reference." (Ex. 1003 (Jawanda) at 6:1-20.)
3. The subscriber unit of claim 1, wherein the communication session is a transmission control protocol (TCP) layer session, an Internet protocol (IP) layer session, or a network layer session.	

Pet. at 41

Pet. at 41.

Obviousness of Dependent Claims

Jawanda: Claims 2, 3, 22, 24, 25, 44

Claims 2, 3, 22, 24, 25, 44	Disclosure of Jawanda
22. The subscriber unit of claim 1, wherein the packet data is transmission control protocol and Internet protocol (TCP/IP) data.	"As discussed further herein below, datagrams are preferably communicated between WWAN 10 and WLAN 12 across external network 13 utilizing the mobile internet protocol (IP) described in detail in Perkins, C., "IP Mobility Standard," RFC 2002, October 1996 available from the Internet Engineering Task Force (IETF) and incorporated herein by reference." (Ex. 1003 (Jawanda) at 6:1-20.)
24. The method of claim 23, wherein the packet data is transmission control protocol and Internet protocol (TCP/IP) packet data.	

Pet. at 41

Pet. at 41.

Obviousness of Dependent Claims

Jawanda: Claims 2, 3, 22, 24, 25, 44

Claims 2, 3, 22, 24, 25, 44	Disclosure of Jawanda
25. The method of claim 23, wherein the communication session is a transmission control protocol (TCP) layer session, an Internet protocol (IP) layer session, or a network layer session.	"As discussed further herein below, datagrams are preferably communicated between WWAN 10 and WLAN 12 across external network 13 utilizing the mobile internet protocol (IP) described in detail in Perkins, C., "IP Mobility Standard," RFC 2002, October 1996 available from the Internet Engineering Task Force (IETF) and incorporated herein by reference." (Ex. 1003 (Jawanda) at 6:1-20.)
44. The method of claim 23, wherein the packet data is transmission control protocol and Internet protocol (TCP/IP) data.	

Pet. at 41-42

Pet. at 41-42.

Obviousness of Dependent Claims

Jawanda: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
4. The subscriber unit of claim 1, further comprising: a detector configured to detect the IEEE 802.11 wireless local area network; a circuit configured to select the IEEE 802.11 transceiver in response to the detector detecting the IEEE 802.11 wireless local area network.	"As depicted at block 106, a determination can be made at any time following block 102 whether or not a higher bandwidth data connection is available. The determination illustrated at block 106 can be made by WLAN interface 96, for example, which may periodically poll to determine whether a connection can be obtained directly with WLAN 12 via wireless network adapter 20. This polling behavior may entail WLAN interface 96 periodically determining whether an "advertisement" message has been received by wireless LAN adapter 64 from wireless network adapter 20. Alternatively, and less preferably since mobile terminal 14 is typically powered by a limited life battery, the determination illustrated at block 106 can represent WLAN interface 96 detecting whether an "advertisement" message transmitted by wireless LAN adapter 64 has received a response from WLAN interface 96." (Ex. 1003 (Jawanda) at 4:61-5:9; fig. 4 at label 106.)
6. The subscriber unit of claim 4, wherein the detector is configured to detect a beacon frame or a probe response frame received by the IEEE 802.11 transceiver from the IEEE 802.11 wireless local area network.	

Pet. at 42

Pet. at 42.

Obviousness of Dependent Claims

Jawanda: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
16. The subscriber unit of claim 1, further comprising: a detector configured to detect whether the IEEE 802.11 wireless local area network is available, wherein packet data is automatically communicated to the IEEE 802.11 wireless local area network when the IEEE 802.11 wireless local area network is available.	"As depicted at block 106, a determination can be made at any time following block 102 whether or not a higher bandwidth data connection is available. The determination illustrated at block 106 can be made by WLAN interface 96, for example, which may periodically poll to determine whether a connection can be obtained directly with WLAN 12 via wireless network adapter 20. This polling behavior may entail WLAN interface 96 periodically determining whether an "advertisement" message has been received by wireless LAN adapter 64 from wireless network adapter 20. Alternatively, and less preferably since mobile terminal 14 is typically powered by a limited life battery, the determination illustrated at block 106 can represent WLAN interface 96 detecting whether an "advertisement" message transmitted by wireless LAN adapter 64 has received a response from WLAN interface 96." (Ex. 1003 (Jawanda) at 4:61-5:9; fig. 4 at label 106.)
26. The method of claim 23, further comprising: detecting the IEEE 802.11 wireless local area network; and communicating with the IEEE 802.11 wireless local area network in response to detecting the IEEE 802.11 wireless local area network.	

Pet. at 42

Pet. at 42.

Obviousness of Dependent Claims

Jawanda: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
28. The method of claim 26, wherein detecting the IEEE 802.11 wireless local area network comprises receiving a beacon frame or a probe response frame from the IEEE 802.11 wireless local area network.	"As depicted at block 106, a determination can be made at any time following block 102 whether or not a higher bandwidth data connection is available. The determination illustrated at block 106 can be made by WLAN interface 96, for example, which may periodically poll to determine whether a connection can be obtained directly with WLAN 12 via wireless network adapter 20. This polling behavior may entail WLAN interface 96 periodically determining whether an "advertisement" message has been received by wireless LAN adapter 64 from wireless network adapter 20. Alternatively, and less preferably since mobile terminal 14 is typically powered by a limited life battery, the determination illustrated at block 106 can represent WLAN interface 96 detecting whether an "advertisement" message transmitted by wireless LAN adapter 64 has received a response from WLAN interface 96." (Ex. 1003 (Jawanda) at 4:61-5:9; fig. 4 at label 106.)
38. The method of claim 23, further comprising: detecting whether the IEEE 802.11 wireless local area network is available; and automatically communicating packet data with the IEEE 802.11 wireless local area network upon detection of the IEEE 802.11 wireless local area network being available.	

Pet. at 42-44

Pet. at 42-44.

Obviousness of Dependent Claims

IEEE 802.11 Standard: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
4. The subscriber unit of claim 1, further comprising: a detector configured to detect the IEEE 802.11 wireless local area network; a circuit configured to select the IEEE 802.11 transceiver in response to the detector detecting the IEEE 802.11 wireless local area network.	"*11.1.3.2 Active scanning*. Active scanning involves the generation of Probe frames and the subsequent processing of received Probe Response frames. The details of the active scanning procedures are as specified in the following subclauses. *11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules."
6. The subscriber unit of claim 4, wherein the detector is configured to detect a beacon frame or a probe response frame received by the IEEE 802.11 transceiver from the IEEE 802.11 wireless local area network.	*11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules." (Ex. 1019 (IEEE 802.11 Standard) at § 11.1.3.2.

Pet. at 42-43.

Pet. at 42-43

Obviousness of Dependent Claims

IEEE 802.11 Standard: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
16. The subscriber unit of claim 1, further comprising: a detector configured to detect whether the IEEE 802.11 wireless local area network is available, wherein packet data is automatically communicated to the IEEE 802.11 wireless local area network when the IEEE 802.11 wireless local area network is available.	"*11.1.3.2 Active scanning*. Active scanning involves the generation of Probe frames and the subsequent processing of received Probe Response frames. The details of the active scanning procedures are as specified in the following subclauses. *11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules."
26. The method of claim 23, further comprising: detecting the IEEE 802.11 wireless local area network; and communicating with the IEEE 802.11 wireless local area network in response to detecting the IEEE 802.11 wireless local area network.	*11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules." (Ex. 1019 (IEEE 802.11 Standard) at § 11.1.3.2.

Pet. at 42-43.

Pet. at 42-43

Obviousness of Dependent Claims

IEEE 802.11 Standard: Claims 4, 6, 16, 26, 28, 38

Claims 4, 6, 16, 26, 28, 38	Disclosure of Jawanda and IEEE 802.11
28. The method of claim 26, wherein detecting the IEEE 802.11 wireless local area network comprises receiving a beacon frame or a probe response frame from the IEEE 802.11 wireless local area network.	"*11.1.3.2 Active scanning*. Active scanning involves the generation of Probe frames and the subsequent processing of received Probe Response frames. The details of the active scanning procedures are as specified in the following subclauses. *11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules."
38. The method of claim 23, further comprising: detecting whether the IEEE 802.11 wireless local area network is available; and automatically communicating packet data with the IEEE 802.11 wireless local area network upon detection of the IEEE 802.11 wireless local area network being available.	*11.1.3.2.1 Sending a probe response*. STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the broadcast SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules." (Ex. 1019 (IEEE 802.11 Standard) at § 11.1.3.2.

Pet. at 42-44.

Pet. at 42-44

Obviousness of Dependent Claims

Jawanda: Claims 5, 21, 27, 43

Claims 5, 21, 27, 43	Disclosure of Jawanda
5. The subscriber unit of claim 4, wherein the processor is further configured to release the plurality of assigned physical channels.	"Seamlessly handoff transfer of datagrams from WWAN connection to WLAN connection while optionally maintaining WWAN connection" (Ex. 1003 (Jawanda) at Fig. 4, label 122.) "[T]he process passes to block 108, which illustrates a determination of whether or not the session has been terminated by the user or by application 90. If not, the process simply returns to block 104, which has been described. If, however, a determination is made at block 108 that the session has been terminated, the process passes to block 110, which illustrates network access arbitrator 92 terminating all active wireless data connections. The process then ends at block 150." (Ex. 1003 (Jawanda) at 5:11-19.)
21. The subscriber unit of claim 1, wherein the processor is configured to release the plurality of assigned physical channels in response to a low utilization of the plurality of assigned physical channels or in response to a detection of the IEEE 802.11 wireless local area network.	

Pet. at 44

Pet. at 44.

Obviousness of Dependent Claims

Jawanda: Claims 5, 21, 27, 43

Claims 5, 21, 27, 43	Disclosure of Jawanda
27. The method of claim 26, further comprising: releasing all assigned physical channels associated with the first cellular wireless network.	"Seamlessly handoff transfer of datagrams from WWAN connection to WLAN connection while optionally maintaining WWAN connection" (Ex. 1003 (Jawanda) at Fig. 4, label 122.) "[T]he process passes to block 108, which illustrates a determination of whether or not the session has been terminated by the user or by application 90. If not, the process simply returns to block 104, which has been described. If, however, a determination is made at block 108 that the session has been terminated, the process passes to block 110, which illustrates network access arbitrator 92 terminating all active wireless data connections. The process then ends at block 150." (Ex. 1003 (Jawanda) at 5:11-19.)
43. The method of claim 23, further comprising: releasing all assigned physical channels in response to a low utilization of the assigned physical channels or in response to a detection of the IEEE 802.11 wireless local area network.	

Pet. at 44-45

Pet. at 44-45.

Obviousness of Dependent Claims

Jawanda: Claims 14, 36

Claims 14, 36	Disclosure of Jawanda
14. The subscriber unit of claim 1, wherein the packet data is communicated to the Internet via the IEEE 802.11 wireless local area network, and not via the cellular wireless network.	"Thus, following block 122, datagrams are routed between application 90 and application 91 utilizing the higher bandwidth data path between WLAN interfaces 96 rather than between CAIs 94, as shown at block 124." (Ex. 1003 (Jawanda) at 5:39-42.)
36. The method of claim 23, wherein the packet data is communicated to the Internet via the IEEE 802.11 wireless local area network, and not via the cellular wireless network.	"As discussed further herein below, datagrams are preferably communicated between WWAN 10 and WLAN 12 across external network 13 utilizing the mobile internet protocol (IP) described in detail in Perkins, C., "IP Mobility Standard," RFC 2002, October 1996 available from the Internet Engineering Task Force (IETF) and incorporated herein by reference." (Ex. 1003 (Jawanda) at 6:1-20.)

Pet. at 45-46

Pet. at 45-46.

Obviousness of Dependent Claims

Jawanda: Claims 15, 37

Claims 15, 37	Disclosure of Jawanda and GPRS
15. The subscriber unit of claim 1, wherein the processor is further configured to allocate and deallocate at least one of the plurality of assigned physical channels.	"If so, network access arbitrator 94 closes all active wireless data connections at block 110, and the process ends at block 150. If, on the other hand, a determination is made at block 128 that the session has not been terminated, the process returns to block 124, which has been described. Returning to block 126, in response to a determination by network access arbitrator 92 that the transfer of datagrams should be handed off, the process passes to block 130. Block 130 illustrates network access arbitrator 92 causing a wireless data connection to be reestablished with WWAN 10 in the manner described above with respect to block 102, if such a connection is not already active." (Ex. 1003 (Jawanda) at 5:56-6:1.) "For data connections, such wireless signals can be transmitted according to any currently available or future wireless data protocol, such as code division multiple access (CDMA), CDPD, or GPRS." (Ex. 1003 (Jawanda) at 3:6-9.)
37. The method of claim 23, further comprising: allocating and deallocating at least one physical channel associated with the cellular wireless network.	

Pet. at 46

Pet. at 46.

Obviousness of Dependent Claims

GPRS: Claims 15, 37

Claims 15, 37	Disclosure of Jawanda and GPRS
15. The subscriber unit of claim 1, wherein the processor is further configured to allocate and deallocate at least one of the plurality of assigned physical channels.	<u>In combination with GPRS Standards</u>: "Multislot configurations for packet switched connections are defined as multiple (1 up to 8) PDTCH/Us and one PACCH for one mobile originated communication, or multiple (1 up to 8) PDTCH/Ds and one PACCH for one mobile
37. The method of claim 23, further comprising: allocating and deallocating at least one physical channel associated with the cellular wireless network.	terminated communication respectively, allocated to the same MS. In this context allocation refers to the list of PDCH that may dynamically carry the PDTCHs for that specific MS. The PACCH shall be mapped onto one PDCH carrying one PDTCH/U or PDTCH/D. That PDCH shall be indicated in the resource allocation message (see GSM 04.60)." (Ex. 1005.09 (GPRS Standard, 3GPP TS 05.01 V6.1.1 R97), at § 2 Set of channels.)

Pet. at 46-47

Pet. at 46-47.

Obviousness of Dependent Claims

GPRS: Claims 15, 37

Claims 15, 37	Disclosure of Jawanda and GPRS
15. The subscriber unit of claim 1, wherein the processor is further configured to allocate and deallocate at least one of the plurality of assigned physical channels.	"The GPRS does not require permanently allocated PDCHs. The allocation of capacity for GPRS can be based on the needs for actual packet transfers which is here referred to as the "capacity on demand" principle." (Ex. 1005.10 [(GSM 03.64 v. 6.1.0] at §6.1.1.2.) "When selecting a new cell, mobile station leaves the packet transfer mode, enters the packet idle mode where it switches to the new cell, read the system information and may then resume to packet transfer mode in the new cell." (Ex. 1005.10 [(GSM 03.64 v. 6.1.0] at §6.2.2.)
37. The method of claim 23, further comprising: allocating and deallocating at least one physical channel associated with the cellular wireless network.	

Pet. at 46-47

Pet. at 46-47.

Obviousness of Dependent Claims

Jawanda: Claims 19, 20, 41, 42

Claims 19, 20, 41, 42	Disclosure of Jawanda
19. The subscriber unit of claim 1, wherein the processor is further configured to automatically communicate with the cellular wireless network on a condition that the IEEE 802.11 wireless local area network is unavailable.	"Next, as illustrated at block 126, network access arbitrator 92 determines whether or not the transfer of datagrams should be handed off to the connection with WWAN 10, for example, in response to mobile terminal14 being moved out of range of WLAN 12 due to the user leaving the business premises housing WLAN 12. The determination made at block 126 can be based on one or more factors, including the number of transmission errors detected by WLAN interface 96 and the received signal strength (RSS) of signals received by wireless LAN adapter 64. In response to a determination
20. The subscriber unit of claim 19, wherein the processor is configured to automatically communicate	at block 126 that the transfer of datagrams should
with the cellular wireless network by utilizing the communication session with the cellular wireless network.	not be handed off, the process passes to block 128, which illustrates a determination of whether or not the user or application 90 has terminated the session with application 91. If so, network access arbitrator 94 closes all active wireless data connections at block 110, and the process ends at block 150. If, on the other hand, a determination is made at block 128 that the session has not been terminated, the process returns to block 124, which has been described." (Ex. 1003 (Jawanda) at 5:43-61.)

Pet. at 47-48.

Obviousness of Dependent Claims

Jawanda: Claims 19, 20, 41, 42

Claims 19, 20, 41, 42	Disclosure of Jawanda
41. The method of claim 23, further comprising: automatically communicating with the cellular wireless network on a condition that the IEEE 802.11 wireless local area network is unavailable.	"Next, as illustrated at block 126, network access arbitrator 92 determines whether or not the transfer of datagrams should be handed off to the connection with WWAN 10, for example, in response to mobile terminal14 being moved out of range of WLAN 12 due to the user leaving the business premises housing WLAN 12. The determination made at block 126 can be based on one or more factors, including the number of transmission errors detected by WLAN interface 96 and the received signal strength (RSS) of signals received by wireless LAN adapter 64. In response to a determination at block 126 that the transfer of datagrams should not be handed off, the process passes to block 128, which illustrates a determination of whether or not the user or application 90 has terminated the session with application 91. If so, network access arbitrator 94 closes all active wireless data connections at block 110, and the process ends at block 150. If, on the other hand, a determination is made at block 128 that the session has not been terminated, the process returns to block 124, which has been described." (Ex. 1003 (Jawanda) at 5:43-61.)
42. The method of claim 41, wherein automatically communicating with the cellular wireless network includes utilizing the communication session with the cellular wireless network.	

Pet. at 47-48.

Secondary Considerations

Simultaneous invention by others indicates obviousness

The volume of similar prior art published or otherwise disclosed around the same time as the purported invention, including the art discussed here, evidences simultaneous development by others of the specific features of the alleged invention (*e.g.*, dual-mode devices that maintain communication sessions) and is a secondary consideration that weighs in favor of obviousness. *See Geo M. Martin Co. v. Alliance Mach. Sys.*, 618 F.3d 1294, 1305-06 (Fed. Cir. 2010) ("Independently made, simultaneous inventions, made 'within a comparatively short space of time,' are persuasive evidence that the claimed apparatus 'was the product only of ordinary mechanical or engineering skill.'")

Pet. at 37

Pet. at 37.

Secondary Considerations

Patent Owner's alleged secondary considerations lack nexus

Q In this declaration you don't identify any specific portion or amount of ZTE's success that is allegedly due to the claimed features of the '244 patent, do you?

A No.

Q And you provide no citations to any analysis in your declaration showing that ZTE's position in the marketplace is due to the '244 patent?

A Correct.

Ex. 1025 (Stark. Tr.) at 9:2-10

Reply at 14-15 (replying to PO Resp. at 44-46).

Secondary Considerations

Patent Owner's alleged secondary considerations lack nexus

Q Sure. You agree that in order for ZTE's commercial success to be attributed to the '244 patent, ZTE's success would have to be due to its sales of dual-mode phones, correct?

A Yes. There would be dual-mode phones, yes.

Q Okay. You'd agree that if the success was due to a single-mode phone, that the success would not be related to the '244 patent, correct?

A Right, the '244 is about dual-mode phones.

Q And you provide no indication of what percentage of ZTE's cell phone sales are dual-mode phones, do you?

A No.

Ex. 1025 (Stark. Tr.) at 9:16 - 10:3

Reply at 14-15 (replying to PO Resp. at 44-46).

Secondary Considerations

Patent Owner's alleged secondary considerations lack nexus

Q And you agree that even for ZTE's dual-mode cell phones sales, to the extent they exist, other factors might have contributed to the success of ZTE's sales?

A Yes, there's a lot of factors that contribute to the success of sales, including advertising and marketing related things.

Q And you didn't account for those advertising and marketing things in your declaration here, did you?

A No.

Q And in your declaration in this IPR you provided no analysis that would isolate which particular factors might have been more influential or less influential in deriving success for ZTE's phones, do you?

A I think that's very hard to do, and it might be necessary for a marketing guy to do that.

Q Nonetheless, you did not do that?

A I did not do that.

Ex. 1025 (Stark. Tr.) at 10:4-20

Reply at 14-15 (replying to PO Resp. at 44-46).

Secondary Considerations

Patent Owner's alleged secondary considerations lack nexus

Q But you cite no licensing negotiations that featured the '244 patent family, correct?
A I didn't cite any, that's correct.
Q And you cite no licenses that actually include the '244 patent, do you?
A I didn't cite any, no.
Q And you cite no evidence that any company licensed InterDigital's patent family because of the '244 patent, correct?
A I didn't cite any, that's correct.

Ex. 1025 (Stark. Tr.) at 11:3-12

Reply at 14-15 (replying to PO Resp. at 44-46).

Secondary Considerations

Patent Owner's alleged secondary considerations lack nexus

Q So moving on to skepticism and failure of others in paragraph 30 -- 136 to 134, you provide your opinions regarding skepticism, failures of others, and long-felt need, correct?

A Yes.

Q And yet you cite no evidence in your declaration to support your statement that the cellular operators were concerned with centrally allocated channels?

A I didn't provide any citations there.

* * *

Q You don't identify in your declaration any evidence about the perceived difficulties?

A I didn't have -- I don't have any cites in that section.

Ex. 1025 (Stark. Tr.) at 11:1-21, 12:4-7

Reply at 14-15 (replying to PO Resp. at 44-46).