PATENT OWNER'S HEARING DEMONSTRATIVES

Maxell, Ltd. v. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.

IPR Nos. 2024-00906, 2024-00907

September 25, 2025

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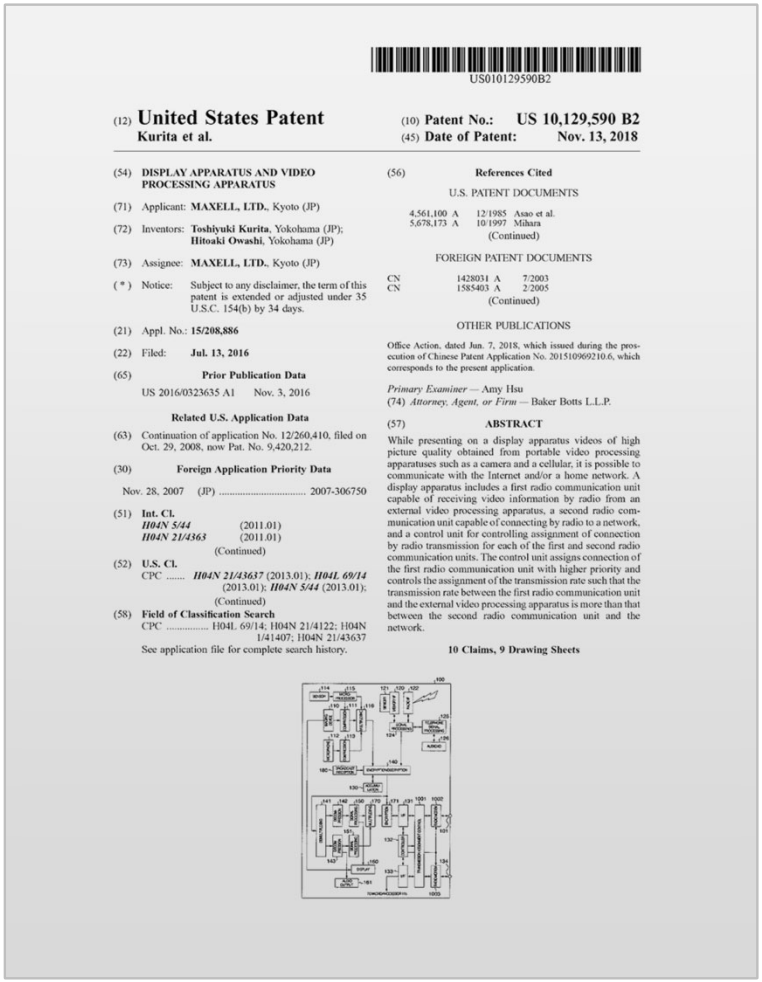
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DISPLAY APPARATUS AND VIDEO PROCESSING APPARATUS

U.S. PATENT NO. 10,129,590

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US010129590B2

(12) **United States Patent**
Kurita et al.

(10) **Patent No.: US 10,129,590 B2**
(45) **Date of Patent: Nov. 13, 2018**

(54) **DISPLAY APPARATUS AND VIDEO PROCESSING APPARATUS**

(71) Applicant: **MAXELL, LTD.**, Kyoto (JP)

(72) Inventors: **Toshiyuki Kurita**, Yokohama (JP); **Hitoaki Owashi**, Yokohama (JP)

(73) Assignee: **MAXELL, LTD.**, Kyoto (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 34 days.

(21) Appl. No.: **15/208,886**

(22) Filed: **Jul. 13, 2016**

(65) **Prior Publication Data**

US 2016/0323635 A1 Nov. 3, 2016

Related U.S. Application Data

(63) Continuation of application No. 12/260,410, filed on Oct. 29, 2008, now Pat. No. 9,420,212.

(30) **Foreign Application Priority Data**

Nov. 28, 2007 (JP) 2007-306750

(51) **Int. Cl.**
H04N 5/44 (2011.01)
H04N 21/4363 (2011.01)
(Continued)

(52) **U.S. Cl.**
CPC ***H04N 21/43637*** (2013.01); ***H04L 69/14*** (2013.01); ***H04N 5/44*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC H04L 69/14; H04N 21/4122; H04N 1/41407; H04N 21/43637
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,561,100 A 12/1985 Asao et al.
5,678,173 A 10/1997 Mihara
(Continued)

FOREIGN PATENT DOCUMENTS

CN 1428031 A 7/2003
CN 1585403 A 2/2005
(Continued)

OTHER PUBLICATIONS

Office Action, dated Jun. 7, 2018, which issued during the prosecution of Chinese Patent Application No. 201510969210.6, which corresponds to the present application.

Primary Examiner — Amy Hsu
(74) *Attorney, Agent, or Firm* — Baker Botts L.L.P.

(57) **ABSTRACT**

While presenting on a display apparatus videos of high picture quality obtained from portable video processing apparatuses such as a camera and a cellular, it is possible to communicate with the Internet and/or a home network. A display apparatus includes a first radio communication unit capable of receiving video information by radio from an external video processing apparatus, a second radio communication unit capable of connecting by radio to a network, and a control unit for controlling assignment of connection by radio transmission for each of the first and second radio communication units. The control unit assigns connection of the first radio communication unit with higher priority and controls the assignment of the transmission rate such that the transmission rate between the first radio communication unit and the external video processing apparatus is more than that between the second radio communication unit and the network.

10 Claims, 9 Drawing Sheets

EX1004

(10) **Patent No.: US 10,129,590 B2**

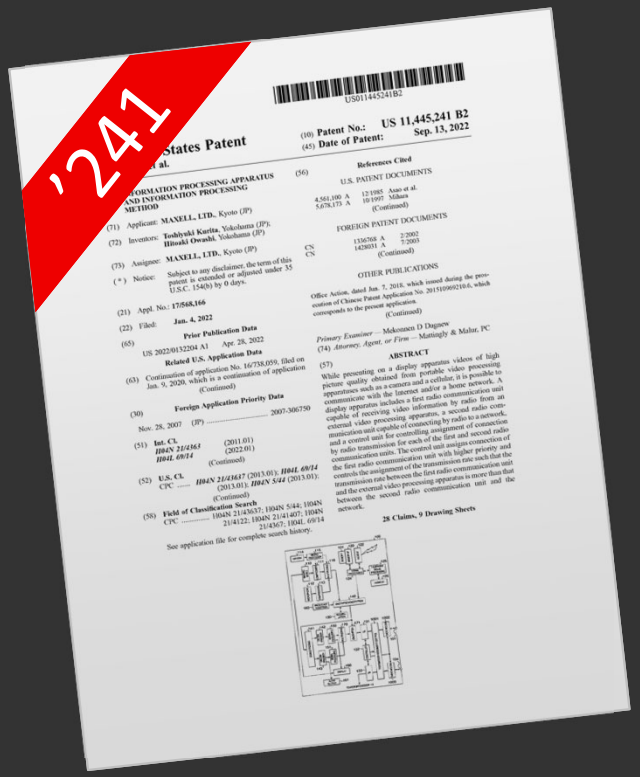
(45) **Date of Patent: Nov. 13, 2018**

(30) **Foreign Application Priority Data**

Nov. 28, 2007 (JP) 2007-306750

DISPLAY APPARATUS AND VIDEO PROCESSING APPARATUS

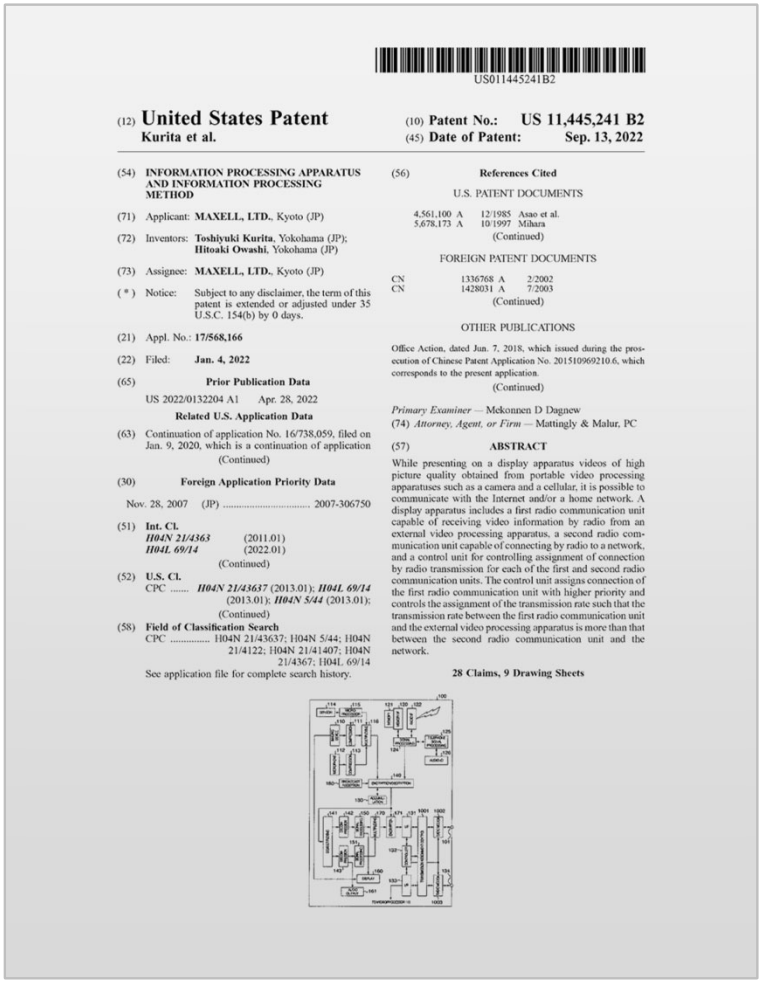
IPR2024-00907 ('590): EX1004 at 1; POR at 1
IPR2024-00906 ('241): EX1004 at 1



INFORMATION PROCESSING APPARATUS AND INFORMATION PROCESSING METHOD

U.S. PATENT NO. 11,445,241

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US011445241B2

(12) **United States Patent**
Kurita et al.

(10) **Patent No.: US 11,445,241 B2**
(45) **Date of Patent: Sep. 13, 2022**

(54) **INFORMATION PROCESSING APPARATUS AND INFORMATION PROCESSING METHOD**

(71) Applicant: **MAXELL, LTD.**, Kyoto (JP)

(72) Inventors: **Toshiyuki Kurita**, Yokohama (JP); **Hitoaki Owashi**, Yokohama (JP)

(73) Assignee: **MAXELL, LTD.**, Kyoto (JP)

(*) 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.: **17/568,166**

(22) Filed: **Jan. 4, 2022**

(65) **Prior Publication Data**

US 2022/0132204 A1 Apr. 28, 2022

Related U.S. Application Data

(63) Continuation of application No. 16/738,059, filed on Jan. 9, 2020, which is a continuation of application
(Continued)

(30) **Foreign Application Priority Data**

Nov. 28, 2007 (JP) 2007-306750

(51) **Int. Cl.**
H04N 21/4363 (2011.01)
H04L 69/14 (2022.01)
(Continued)

(52) **U.S. Cl.**
CPC ***H04N 21/43637*** (2013.01); ***H04L 69/14*** (2013.01); ***H04N 5/44*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC H04N 21/43637; H04N 5/44; H04N 21/4122; H04N 21/41407; H04N 21/4367; H04L 69/14
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,561,100 A 12/1985 Asao et al.
5,678,173 A 10/1997 Mihara
(Continued)

FOREIGN PATENT DOCUMENTS

CN 1336768 A 2/2002
CN 1428031 A 7/2003
(Continued)

OTHER PUBLICATIONS

Office Action, dated Jun. 7, 2018, which issued during the prosecution of Chinese Patent Application No. 201510969210.6, which corresponds to the present application.
(Continued)

Primary Examiner — Mekonnen D Dagnew
(74) *Attorney, Agent, or Firm* — Mattingly & Malur, PC

(57) **ABSTRACT**

While presenting on a display apparatus videos of high picture quality obtained from portable video processing apparatuses such as a camera and a cellular, it is possible to communicate with the Internet and/or a home network. A display apparatus includes a first radio communication unit capable of receiving video information by radio from an external video processing apparatus, a second radio communication unit capable of connecting by radio to a network, and a control unit for controlling assignment of connection by radio transmission for each of the first and second radio communication units. The control unit assigns connection of the first radio communication unit with higher priority and controls the assignment of the transmission rate such that the transmission rate between the first radio communication unit and the external video processing apparatus is more than that between the second radio communication unit and the network.

28 Claims, 9 Drawing Sheets

EX1004

Patent No.: US 11,445,241 B2
Date of Patent: Sep. 13, 2022

Foreign Application Priority Data

Nov. 28, 2007 (JP) 2007-306750

INFORMATION PROCESSING APPARATUS AND INFORMATION PROCESSING METHOD

IPR2024-00906 ('241): EX1001 at 1; POR at 1

Technical Background of U.S. Patent Nos. 10,129,590 and 11,445,241

PROBLEM **Difficulty with current display apparatuses with obtaining video for display while communicating with the internet**

> According to the HDMI, which is developed on assumption of uses for connections between apparatuses installed in a house of a family, consideration has not been given to connections with the internet and a network in the family or a home network while viewing high-quality videos. It is therefore an object of the present invention, devised to overcome the difficulty, to provide a technique wherein while presenting on a display apparatus videos of high picture quality obtained from portable video processing apparatuses such as a camera and a cellular phone, it is possible to communicate with the internet and/or a home network.

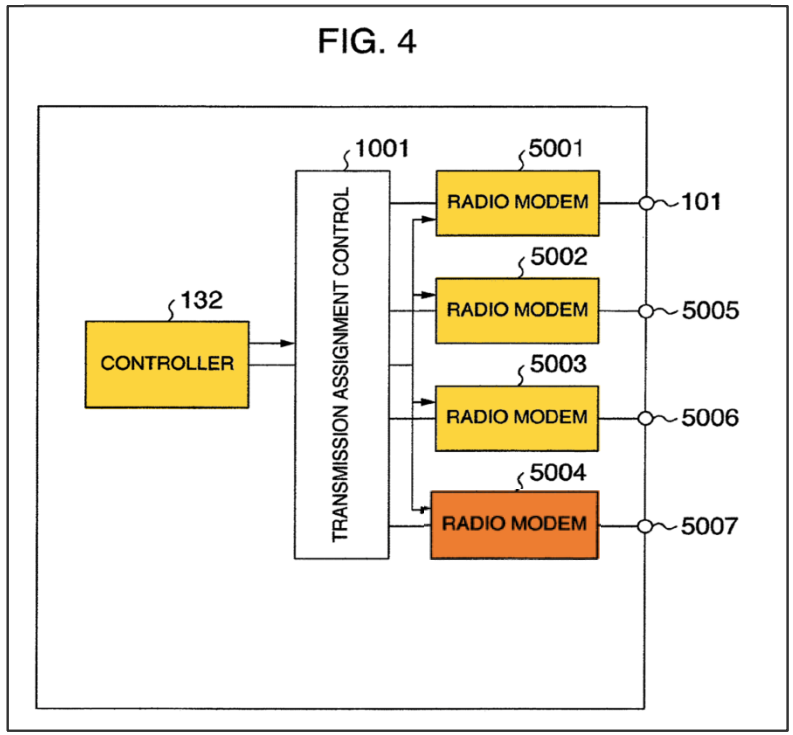
IPR2024-00907 ('590): EX1004 at 1:41-52; POR at 2-3
IPR2024-00906 ('241): EX1004 at 1:41-52; POR at 1-2

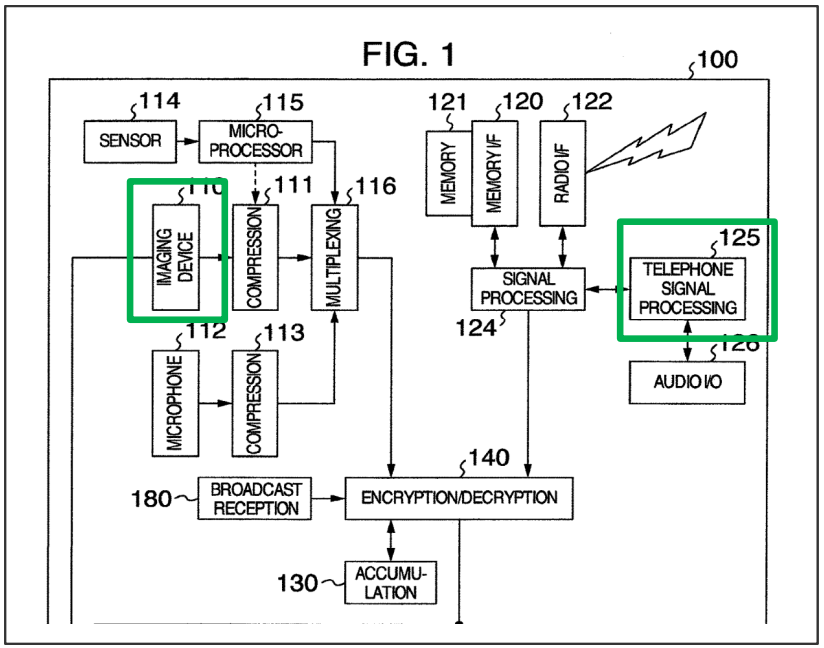
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Technical Background of U.S. Patent No. 10,129,590

SOLUTION

Video processing apparatus establishes multiple wireless connections by using a controller that assigns connections to four radio circuits. Also includes video processing and display capabilities along with phone capabilities.





IPR2024-00907 ('590): EX1001 at Figs. 1, 4; POR at 2-3
IPR2024-00906 ('241): EX1001 at Figs. 1, 4; POR at 1-2

IPR2024-00907 (’590) Obviousness Grounds

Ground	Claims	Stat. Basis	References
1	1, 4-5, 8-12, 14-25	35 U.S.C. § 103	N93, Dua, Herle
2	1, 4-5, 8-12, 14-25	35 U.S.C. § 103	N93, Dua, Herle, Rooyen, Desai, BT-Spec, 3GPP-Spec, Kao
3	1, 4-5, 8-12, 14-25	35 U.S.C. § 103	Dua, Herle
4	1, 4-5, 8-12, 14-25	35 U.S.C. § 103	Dua, Herle, N93
5	1, 4-5, 8-12, 14-25	35 U.S.C. § 103	Dua, Herle, N93, Rooyen, Desai, BT-Spec, 3GPP-Spec, Kao

IPR2024-00907 (’590): Pet. at 1

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IPR2024-00906 (’241) Obviousness Grounds

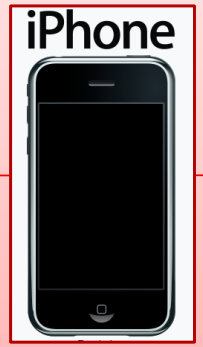
Ground	Claims	Stat. Basis	References
1	1, 4-6, 8-27	35 U.S.C. § 103	N93, Dua, Herle
2	1, 4-6, 8-27	35 U.S.C. § 103	N93, Dua, Herle, Rooyen, Desai, BT-Spec, 3GPP-Spec, Kao
3	1, 4-6, 8-27	35 U.S.C. § 103	Dua, Herle
4	1, 4-6, 8-27	35 U.S.C. § 103	Dua, Herle, N93
5	1, 4-6, 8-27	35 U.S.C. § 103	Dua, Herle, N93, Rooyen, Desai, BT-Spec, 3GPP-Spec, Kao

IPR2024-00906 (’241): Pet. at 1

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State of the Art

First iPhone Released



June 29, 2007

- **No video camera**
- **No four circuits with NFC**

IPR2024-00907 ('590): EX2017 ¶92; EX2019 at 1; POR at 13
IPR2024-00906 ('241): EX2017 ¶90, EX2019 at 1; POR at 13.

Invention of the '590/241 Patent



US008982086B2

(12) **United States Patent**
Yamada

(10) **Patent No.: US 8,982,086 B2**
(45) **Date of Patent: Mar. 17, 2015**

(54) **INFORMATION PROCESSING APPARATUS**

(71) Applicant: **Hitachi Consumer Electronics Co., Ltd.**, Tokyo (JP)

(72) Inventor: **Masaaki Yamada**, Yokohama (JP)

(73) Assignee: **Hitachi Maxell, Ltd.**, Osaka (JP)

(*) 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.: **14/154,993**

(22) Filed: **Jan. 14, 2014**

(65) **Prior Publication Data**

US 2014/0125621 A1 May 8, 2014

Related U.S. Application Data

(63) Continuation of application No. 13/366,983, filed on Feb. 6, 2012, now Pat. No. 8,654,093.

(30) **Foreign Application Priority Data**

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,844,547 A 12/1998 Minakuchi et al.
2005/0162407 A1 * 7/2005 Sakurai et al. 345/173
2007/0279786 A1 10/2007 Jeon et al.

FOREIGN PATENT DOCUMENTS

JP 5-100809 A 4/1993
JP 2005-202527 A 7/2005
TW 201011330 A1 1/2011

OTHER PUBLICATIONS

Entire Prosecution of U.S. Appl. No. 13/366,983 to Yamada entitled "Information Processing Apparatus", filed Feb. 6, 2012

Office Action Chinese Serial No. 201406270406410 dated Jul. 2, 2014.

* cited by examiner

Primary Examiner — Michael Faragalla
(74) *Attorney, Agent, or Firm* — McDermott Will & Emery LLP

Nov 28, 2007

IPR2024-00907 ('590): EX1004 at 1; POR at 1
IPR2024-00906 ('241): EX1004 at 1; POR at 1

First Android Phone with NFC Announced

Google unveils first Android NFC phone — but Nexus S is limited to tag reading only for now

By Sarah Clark • 7 December 2010

December 7, 2010

IPR2024-00907 ('590): EX1017 ¶¶92, 328; EX2021 at 1; POR at 13, 47-48
IPR2024-00906 ('241): EX1017 ¶¶92, 301; EX2021 at 1; POR at 13,42-43

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Level of Skill in the Art

POSITA =



B.S. in electrical engineering
(or equivalent)

+



1 year of experience in wireless communications

"A person of ordinary skill in the art ("POSITA") . . . would have had **a bachelor's degree** in electrical engineering or equivalent **with at least one year of experience** in the field of wireless communications. Additional education or experience might substitute for the above requirements."

IPR2024-00907 ('590): Pet. at 3; EX1002 ¶28
IPR2024-00906 ('241): Pet. at 2; EX1002 ¶28

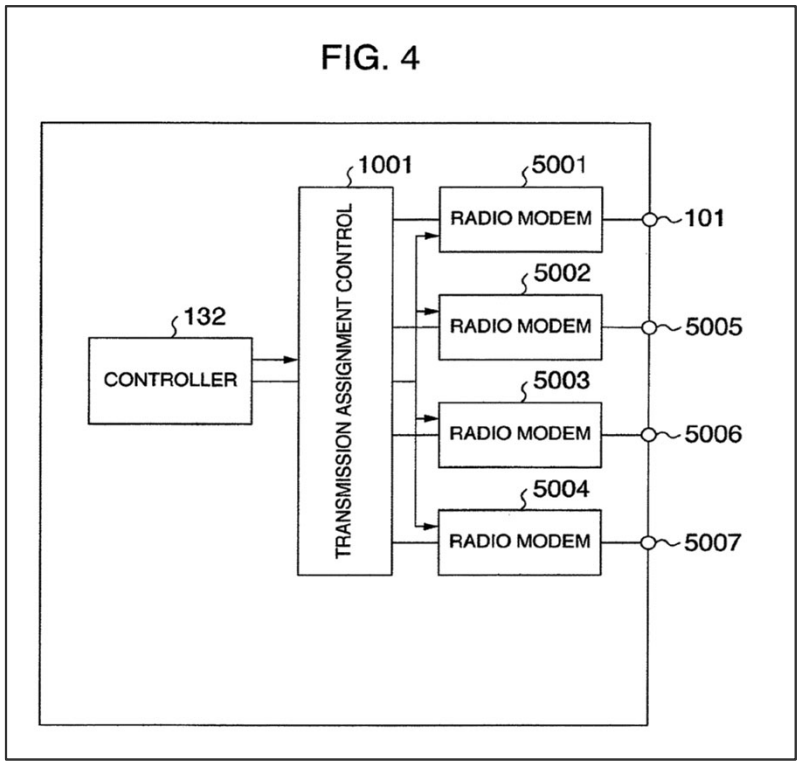
"A POSITA would have at least **a Bachelor's degree** in Electrical Engineering, Computer Engineering, Computer Networking, or a related technical field, **with at least one year of experience** in the field of wireless communications."

IPR2024-00907 ('590): POR at 3; EX2017 ¶60
IPR2024-00906 ('241): POR at 3; EX2017 ¶60

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Petitioner's Mappings For All Grounds ('590 & '241 Patents)

'590/'241 Patent



IPR2024-00906 ('241): EX1001 at Fig. 4; POR at 2
IPR2024-00907 ('590): EX1004 at Fig. 4; POR at 2

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

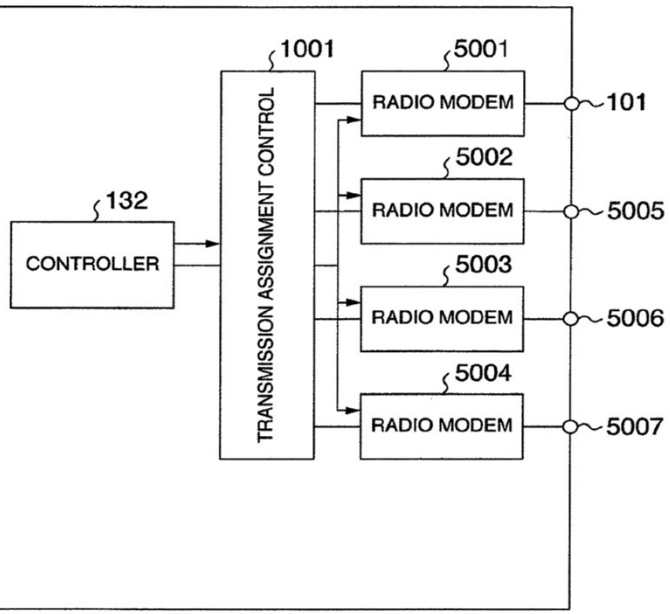
IPR2024-00906 ('241): Pet. at 9
IPR2024-00907 ('590): Pet. at 8

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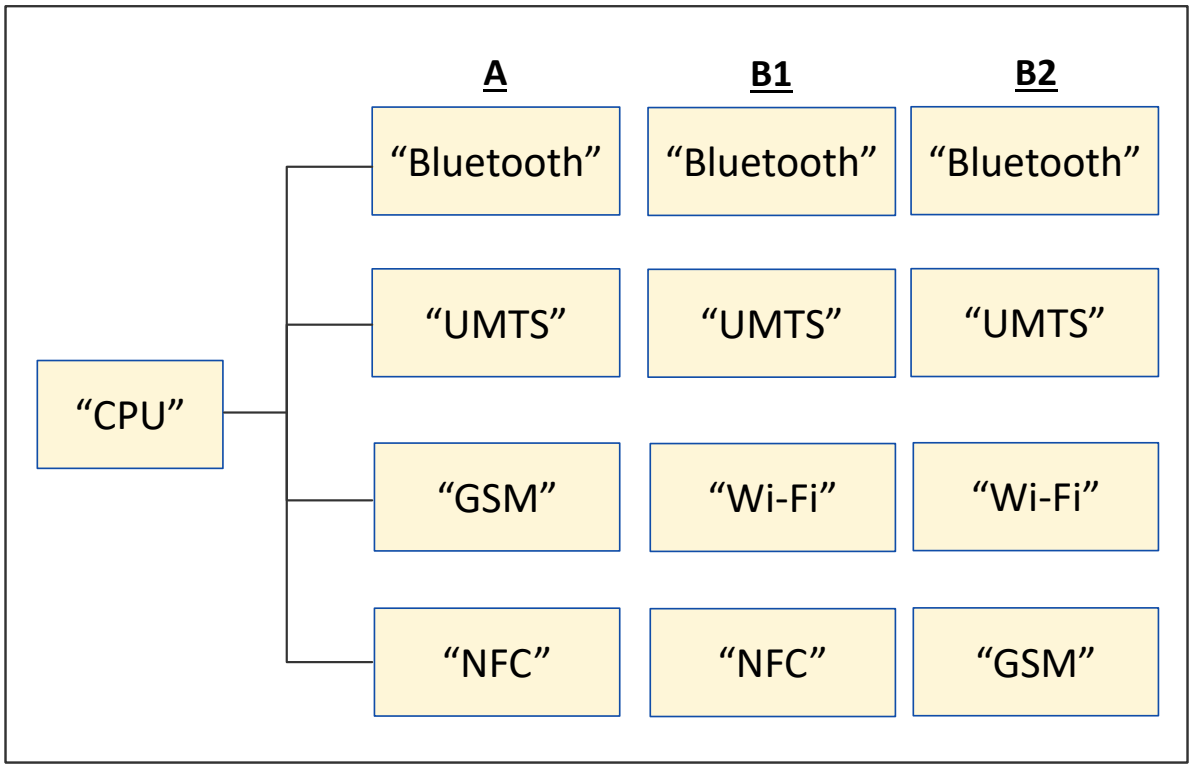
Without Identifying Any Circuitry Petitioner's Alleges a CPU Will Control Assignment For All These Circuits

'590/'241 Patent

FIG. 4



IPR2024-00906 ('241): EX1001 at Fig. 4; POR at 2
IPR2024-00907 ('590): EX1004 at Fig. 4; POR at 2



IPR2024-00906 ('241): Pet. at 9
IPR2024-00907 ('590): Pet. at 8

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N93 Repeatedly Teaches Away Against Alleged Modifications That Are Pervasive In Petitioners' Obviousness Analysis

Warning: Use only batteries, chargers, and enhancements approved by Nokia for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

IPR2024-00907 ('590): EX1010 at 9; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 9; POR at 11-13, ; EX2017 ¶¶110-117-119

- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

IPR2024-00907 ('590): EX1010 at 125; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 125; POR at 11-13, ; EX2017 ¶¶110-117-119



ENHANCEMENTS AND BATTERIES Use only approved enhancements and batteries. Do not connect incompatible products.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119



INTERFERENCE All wireless devices may be susceptible to interference, which could affect performance.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

N93 Repeatedly Teaches Away Against Alleged Modifications That Are Pervasive In Petitioners’ Obviousness Analysis

- Other applications and software suitable for the Symbian operating system ( ). The installation files have the .sis extension. Only install software specifically designed for your Nokia device. Software providers will often refer to the official model number of this product.

IPR2024-00907 (’590): EX1010 at 114; POR at 36
IPR2024-00906 (’241): EX1010 at 114; POR at 34

Important: Even if the use of certificates makes the risks involved in remote connections and software installation considerably smaller, they must be used correctly in order to benefit from increased security. The existence of a certificate does not offer any protection by itself; the certificate manager must contain correct, authentic, or trusted certificates for increased security to be available. Certificates have a restricted lifetime. If **Expired certificate** or **Certificate not valid yet** is shown even if the certificate should be valid, check that the current date and time in your device are correct.

IPR2024-00907 (’590): EX1010 at 11; POR at 36
IPR2024-00906 (’241): EX1010 at 111; POR at 34

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GROUND NOS. 1-5: N93-DUA-HERLE FAIL TO RENDER OBVIOUS [1A]-[1C]

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’590/’241 [1a] and [1b]

a **first radio communication circuit** implementing a first transmission scheme **having a first modulation** scheme;

[1b] a **second radio communication circuit** implementing a second transmission scheme having **a second modulation scheme** different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band . . . connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;

Petitioner’s identify Bluetooth and UMTS for all Grounds based on teachings of N93 and Dua

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00906 (’241): Pet. at 9
IPR2024-00907 (’590): Pet. at 8

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’590/’241 [1a] and [1b]

a **first radio communication circuit** implementing a first transmission scheme **having a first modulation scheme**;
[1b] a **second radio communication circuit** implementing a second transmission scheme having **a second modulation scheme different from the first modulation scheme** and a second transmission frequency band different from the first transmission frequency band . . . connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;

Petitioner Rely on Inherency to Overcome Deficiencies of First and Second Modulation Schemes for Dua and N93

> N93 and Dua’s disclosure of Bluetooth inherently discloses to a POSITA the modulation scheme (GFSK/$\frac{\pi}{4}$-DQPSK/8DPSK) and frequencies (2402-2480 MHz) required by the Bluetooth standard. EX1014, 198-200, 195; EX1017, 4. In the alternative, the Bluetooth modulation schemes and frequencies would have been

IPR2024-00906 (’241): Pet. at 21
IPR2024-00907 (’590): Pet. at 20

> Dua’s disclosure of a radio to support “all worldwide 3GPP and 3GPP2 standards” (EX1008, [0069]) inherently discloses to a POSITA a UMTS radio using UMTS modulation schemes (QPSK, 16QAM, and 64QAM) and frequency (2100 MHz), as required by those standards. EX1015, 2, 21-23, 15; EX1010, 8;

IPR2024-00906 (’241): Pet. at 23
IPR2024-00907 (’590): Pet. at 22

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Inherency Requires Necessity

- "A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present." *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192 (Fed. Cir. 2003); IPR2024-00906 ('241) POR at 10; IPR2024-00907 (''590) POR at 10.

IPR2024-00906 ('241): POR at 10-13
IPR2024-00907 ('590): POR at 10-13

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No Evidence of Necessity of Specific Modulation Schemes Based on Preliminary Working Document

’590/’241 [1a] and [1b]

a **first radio communication circuit** implementing a first transmission scheme **having a first modulation** scheme;

[1b] a **second radio communication circuit** implementing a second transmission scheme having **a second modulation scheme different from the first modulation scheme** and a second transmission frequency band different from the first transmission frequency band . . . connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;

Radio	Modulation Scheme	Frequency Band
Bluetooth	GFSK/$\frac{\pi}{4}$-DQPSK/8DPSK	2402-2480 MHz
UMTS	QAM/QPSK	2100 MHz

IPR2024-00906 (’241): Pet. at 9-10
IPR2024-00907 (’590): Pet. at 8-9

3GPP TS 36.211 V0.2.1 (2006-11)

Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Radio Access Network;
Physical Channels and Modulation
(Release 8)

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document describes the physical channels for evolved UTRA.

IPR2024-00906 (’241): POR at 7-8; EX1015 at 1, 5
IPR2024-00907 (’590): POR at 8-9; EX1015 at 1, 5

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GROUND NOS. 1-5: N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [1H], '241 [1G], '590 [11], '241 [5]

’590 [1h] / ’241 [1g]
a **controller** controlling **assignment of connection** of each of the first, second, and third radio communication circuits,

’590 [11] / ’241 [5]
The video processing apparatus of claim 1, further comprising a **fourth radio communication circuit** capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the **controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.**

Petitioner Relies on General Teaching of a CPU for Specific Action of “Controlling Assigning of Connection”

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00906 (’241): Pet. at 9
IPR2024-00907 (’590): Pet. at 8

- Petitioner relies on Dua’s CPU 109 to be all encompassing controller that controls assignment of connection to 3-4 radio communication circuits based on general CPU functions

IPR2024-00906 (’241): Pet. at 29
IPR2024-00907 (’590): Pet. at 31

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’590 [1h] / ’241 [1g]
a **controller** controlling **assignment of connection** of each of the first, second, and third radio communication circuits,

’590 [11] / ’241 [5]
The video processing apparatus of claim 1, further comprising a **fourth radio communication circuit** capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the **controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.**

Dua and N93 Do Not Teach Four Circuit Implementation

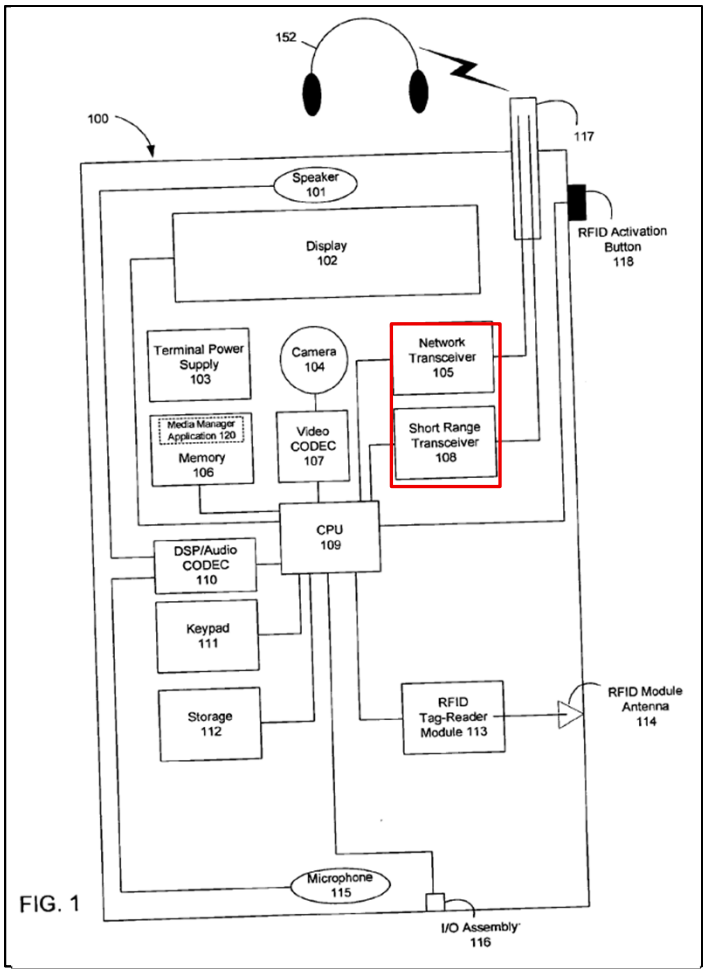


FIG. 1

EX1008 at Fig. 1

Petitioner relied on Dua’s implementation details as they were missing from N93

No evidence of specific architecture for implementation of four circuits in N93 or Dua

What is controlling actual “assignment of connection?

IPR2024-00906 (’241): EX1008 at Fig. 1; POR at 18-21, 41-43
IPR2024-00907 (’590): EX1008 at Fig. 1; POR at 20-22, 47-48

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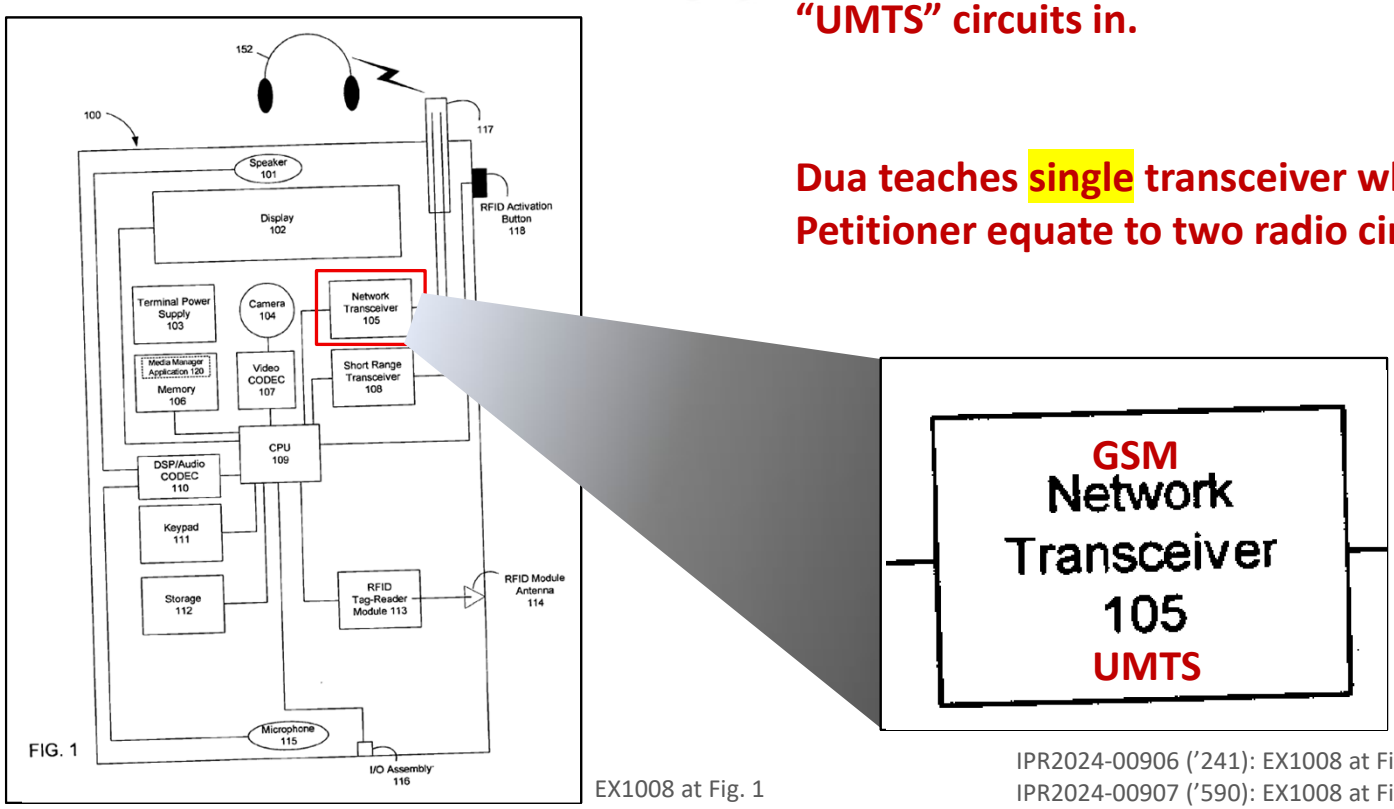
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Dua and N93 Do Not Teach GSM + UMTS Implementation

No evidence of specific architecture or implementation of “GSM” and “UMTS” circuits in.

Dua teaches single transceiver which Petitioner equate to two radio circuits



EX1008 at Fig. 1

IPR2024-00906 (’241): EX1008 at Fig. 1; POR at 13, 18-21
IPR2024-00907 (’590): EX1008 at Fig. 1; POR at 14, 20-22

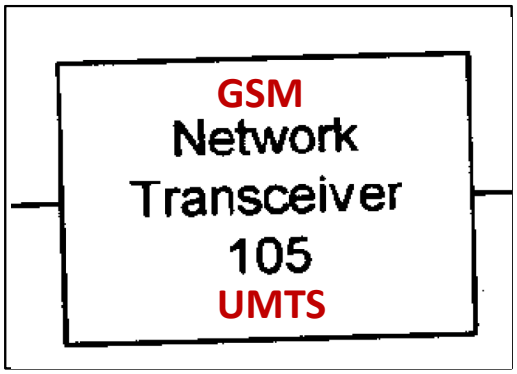
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'590 [1h] / '241 [1g]
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Evidence of Single Transceiver Is Unrebutted

Dua teaches single transceiver.



EX1008 at Fig. 1



the handset can "fall back" to a 2G mode of operation. Early 3G handsets contained two discrete radio chipsets – one for 2G and another for 3G, which was one factor in the high cost of early 3G handsets. Contemporary 3G handsets contain a radio chipset that supports both 3G and 2G, and, at the time of writing, chipsets additionally supporting LTE are now entering the market.

Ex. 2026 at 99

IPR2024-00906 ('241): POR at 13, 18-21
IPR2024-00907 ('590): POR at 14, 20-22

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Dua and N93 Do Not Teach GSM + UMTS Implementation

Petitioner relied on Dua’s implementation details as they were missing from N93 but Dua teaches single transceiver.

No evidence of specific architecture or implementation of “GSM” and “UMTS” circuits in.

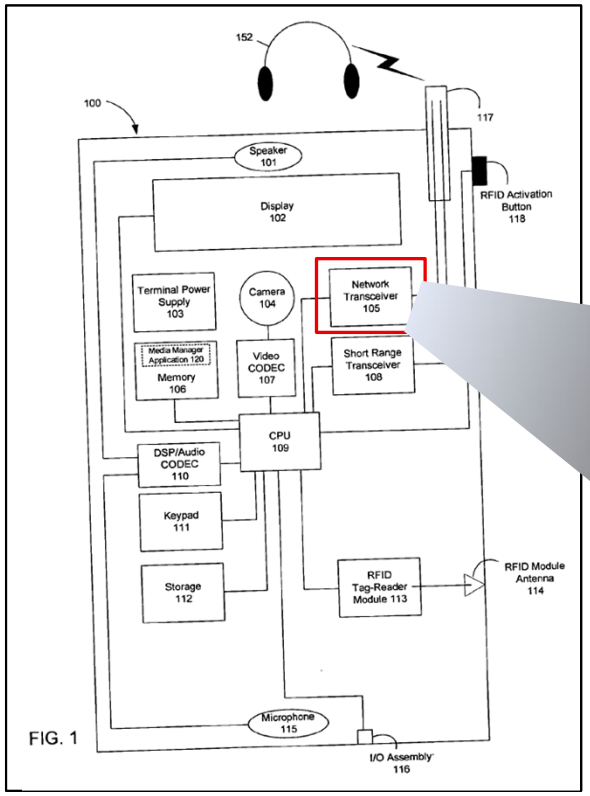
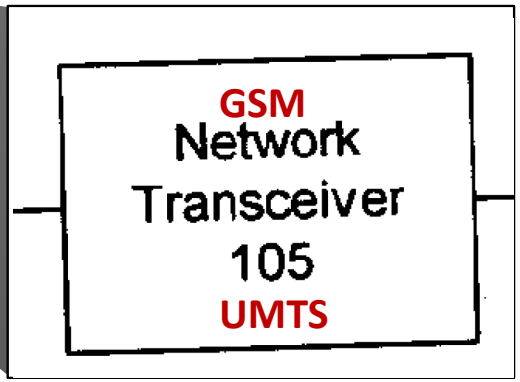


FIG. 1

EX1008 at Fig. 1



IPR2024-00906 (’241): EX1008 at Fig. 1; POR at 13, 18-21
IPR2024-00907 (’590):EX1008 at Fig. 1; POR at 14, 20-22

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Petitioner’s Expert Did Not Identify “Point of Assignment”

Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?

I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it

IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6

What performs the function, when expert did not even analyze when it is performed

Fatal flaw because Petitioner relies on conclusory statements from expert, yet he never determined exact point of assignment, then how can he determine it is done by CPU 109.

IPR2024-00907 (’590): Pet. at 29-32; Paper 25 at 7-10; POR at 25; Paper 31 at 9-12
IPR2024-00906 (’241): Pet. at 33-35; Paper 25 at 10-11; POR at 22; Paper 31 at 10-12

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’590 [1h] / ’241 [1g]
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Petitioner’s Expert’s Speculation Confirms Lack of Evidence of CPU 109 Assigning Connection

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IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6

- No evidence of CPU 109 “determining rate” or “allocating radio and then allocating radio frequency” for each of **two radios (UMTS/GSM)** within single transceiver

IPR2024-00907 (’590): Pet. at 29-32; Paper 25 at 7-10; Paper 31 at 9-12
IPR2024-00906 (’241): Pet. at 33-35; Paper 25 at 10-11; Paper 31 at 10-12

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IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6

- No evidence in Dua or N93 of CPU 109 determining “rate”, “allocating radio and then allocating radio frequency” for each of **four radio** communication circuits
- No evidence of CPU 109 “determining rate” or “allocating radio and then allocating radio frequency” for each of **two radios (UMTS/GSM)** within single transceiver

IPR2024-00907 (’590): Pet. at 29-32; Paper 25 at 7-10; Paper 31 at 9-12
IPR2024-00906 (’241): Pet. at 33-35; Paper 25 at 10-11; Paper 31 at 10-12

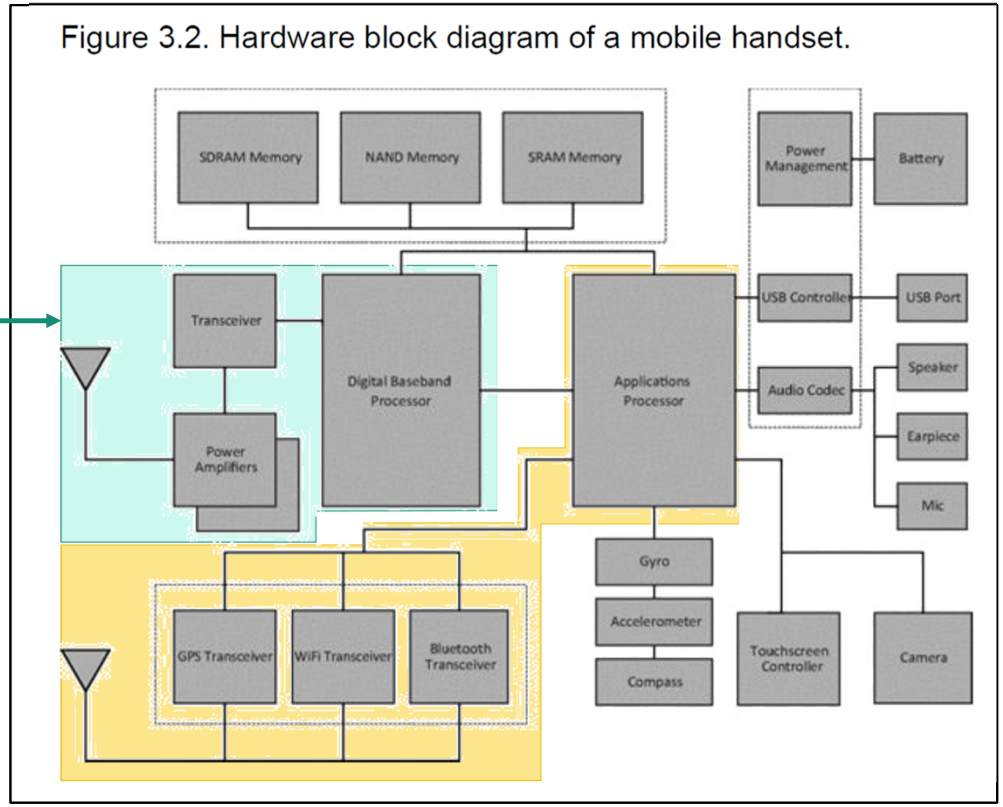
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Petitioner Failed to Rebut Evidence of Digital Baseband Processor or Radio Circuits, Rather Than CPU, Controls Assignment in Single Transceiver

Baseband processor controls cellular transceiver



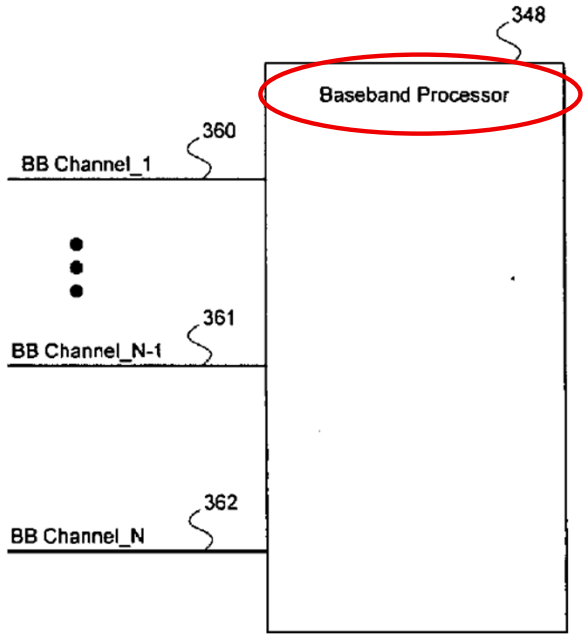
IPR2024-00906 (’241): POR at 20-21; EX2017 ¶¶218-19; EX2026 at 95
IPR2024-00907 (’590): POR at 21-22; EX2017 ¶¶105-10, 221-22; EX2026 at 95

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Petitioner’s Other References Confirm a “Baseband Processor” Is Used to Control a Cellular Transceiver



IPR2024-00906 (’241): EX1011 Fig. 3d; POR at 20-21; EX2017 ¶¶218-19
IPR2024-00907 (’590): EX1011 Fig. 3d; POR at 21-22; EX2017 ¶¶105-10, 221-22

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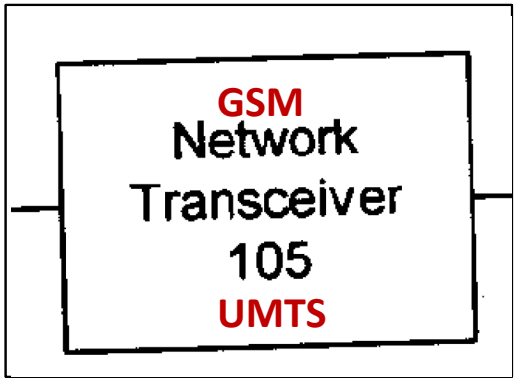
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Without Evidence That Baseband Processor Is Determining Rate or Allocating Radio Frequency, No Evidence That It is Done By CPU 109, Not Baseband Processor

Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?

I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it

IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6



EX1008 at Fig. 1

IPR2024-00907 (’590): Pet. at 29-32; Paper 25 at 7-10; Paper 31 at 9-12
IPR2024-00906 (’241): Pet. at 33-35; Paper 25 at 10-11; Paper 31 at 10-12

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GROUND NOS. 1-5: N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [1J] OR '241 [1I]

’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

Controller Is Required to Assign Connection in Response to User Indication

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00906 (’241): Pet. at 9
IPR2024-00907 (’590): Pet. at 8

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Petitioner's Expert Did Not Identify "Point of Assignment"

'590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

'241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?

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IPR2024-00907 ('590): EX2030 at 28:6-29:6
IPR2024-00906 ('241): EX2030 at 28:6-29:6

What performs the function, when he did not even analyze when it is performed

So how is it performed "in response to" and "when"

IPR2024-00907 ('590): Pet. at 29-32; Paper 25 at 7-10; POR at 25; Paper 31 at 9-12
IPR2024-00906 ('241): Pet. at 33-35; Paper 25 at 10-11; POR at 22; Paper 31 at 10-12

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

No Evidence That CPU Determines Rate, Allocates Radio and Radio Frequency in Response to User Indication for either Bluetooth or UMTS Alleged Share Functions

Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?

I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it

IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6

Is the CPU performing these allocations in response to user indication or the radio (BT and cellular) circuitry performs the allocations in response to user indication?

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

But Petitioner Requires That Instant of “Exact Assignment” for Bluetooth File Share Be Determined to Meet [1.j]

So he didn't actually parse to look at the code to figure out when the exact assignment occurs. In his expert report, he says: Even if there are additional steps, you're capable of at least using Bluetooth.

Dr. Buehrer actually looked at the code, and he found that when the -- they wait to figure out what it will assign for the purpose of transmitting video. It's not just any assignment, Your Honor. It uses the Bluetooth

IPR2024-00907 (’590): EX2037 at 157; Paper 37 at 8-9
IPR2024-00906 (’241): EX2037 at 157; Paper 37 at 8-9

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

Assignment Is Shown “Only” in the Source Code of Software Executed by the Controller

> Maxell then incorrectly argues the subset of tests related to the S22 and other devices are not “rebutted.” MFR at 5. Not so. As shown Samsung’s Reply brief, all the tests simply confirm the undisputed fact that it is possible for the controller to assign the Bluetooth radio to transmit the video information—but none of the tests show when the controller assigns the Bluetooth radio to transmit the video information relative to the controller receiving the Accept message. Reply at 3-4. That timing and causal relationship is shown only in the source code of the software executed by the controller, and Dr. Buehrer’s opinion that the source code shows the S22 always waits for

IPR2024-00907 (’590): EX2038 at 13; EX2037 at 157; Paper 37 at 8-10
IPR2024-00906 (’241): EX2038 at 13; EX2037 at 157; Paper 37 at 8-10

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Claim Element Is Not Met Even if Bluetooth Is "Eventually Assigned"—No Intervening Events Need to Be Proved

'590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

'241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

> Regardless, even if this attorney argument were true and the test conditions made it inevitable that the controller would eventually assign the Bluetooth radio to transmit the video information, that still would not raise a genuine dispute of material fact because, as Dr. Buehrer's uncontradicted source code analysis shows, the controller never assigns a radio to transmit video information until after receipt of the Accept message. Docket No. 120-3 (Buehrer Rpt.) at ¶¶ 78-79 ("always").

IPR2024-00907 ('590): EX2038 at 13; Paper 37 at 8-10
IPR2024-00906 ('241): EX2038 at 13; Paper 37 at 8-10

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

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wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

Dr. Creusere Contends the Exact Opposite

> Regardless, even if this attorney argument were true and the test conditions made it inevitable that the controller would eventually assign the Bluetooth radio to transmit the video information, that still would not raise a genuine dispute of material fact because, as Dr. Buehrer’s uncontradicted

IPR2024-00907 (’590): EX2038 at 13
IPR2024-00906 (’241): EX2038 at 13

> Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?
>
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> I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it

> could be defined via -- at different -- at different points. But the bottom line is is the pro- -- the way the process will work is the controller will make a decision to assign the radio. In the case of [1j], the decision is made at the indication of a user. And once that indication is received by the controller, the controller assigns and then internally the system will go through whatever steps it needs in order to set up that connection and ultimately allow for the transmission of video, which is a further part of the limitation [1j].

IPR2024-00907 (’590): EX2030 at 28:6-29:6
IPR2024-00906 (’241): EX2030 at 28:6-29:6

IPR2024-00907 (’590): Paper 37 at 8-10
IPR2024-00906 (’241): Paper 37 at 8-10

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

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wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

In N93, Petitioner Relies on User Indication to Share Video via UMTS

> For UMTS, *see* [1h], discussing how the controller controls assignment of the UMTS radio in response to receiving an indication from a user during a voice call, e.g., “Options>Share video>Live” and send MMS. EX1010, 61-62, 64; EX1002, ¶126.

IPR2024-00907 (’590): Pet. at 33

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Petitioner's Expert Did Not Identify "Point of Assignment"

'590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

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wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?

I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it could be defined via -- at different -- at different points. But the bottom line is is the pro- -- the way

IPR2024-00907 ('590): EX2030 at 28:6-29:6
IPR2024-00906 ('241): EX2030 at 28:6-29:6

What performs the function, when he did not even analyze when it is performed

So how is it performed "in response to" and "when"

IPR2024-00907 ('590): Pet. at 29-32; Paper 25 at 7-10; POR at 25; Paper 31 at 9-12
IPR2024-00906 ('241): Pet. at 33-35; Paper 25 at 10-11; POR at 22; Paper 31 at 10-12

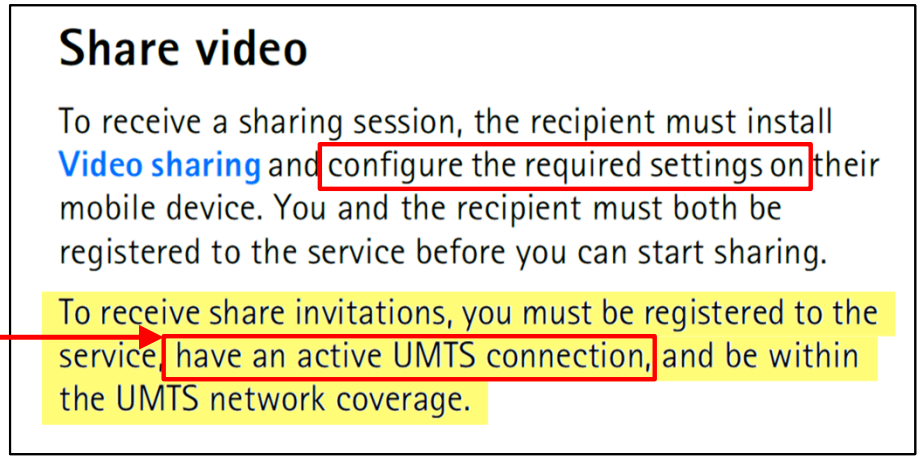
Maxell, Ltd.
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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein **when an indication from a user indicates** to transmit video information using the first radio communication circuit, **the controller assigns** a connection to the first radio communication circuit for transmitting the video,

But Connection Is Already Assigned At Time Of Alleged User Indication in N93 Because You Must Have “Active” UMTS Connection

Need **active UMTS connection** established before video sharing



Share video

To receive a sharing session, the recipient must install Video sharing and configure the required settings on their mobile device. You and the recipient must both be registered to the service before you can start sharing.

To receive share invitations, you must be registered to the service, have an active UMTS connection, and be within the UMTS network coverage.

IPR2024-00907 (’590): EX1010 at 62; POR at 23
IPR2024-00906 (’241): EX1010 at 62; Paper 31 at 11-12

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein when an indication from a user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video,

Petitioner’s Expert Concedes Lack of Causation in Response to User Indication

- “Whatever steps” and “ultimately” lack causation of “in response to” and “when”

> steps involved. So it could -- it could occur -- it could be defined via -- at different -- at different points. But the bottom line is is the pro- -- the way the process will work is the controller will make a decision to assign the radio. In the case of [1j], the decision is made at the indication of a user. And once that indication is received by the controller, the controller assigns and then internally the system will go through whatever steps it needs in order to set up that connection and ultimately allow for the transmission of video, which is a further part of the limitation [1j].

IPR2024-00907 (’590): EX2030 at 28:6-29:6; POR at 23; Paper 31 at 8-12
IPR2024-00906 (’241): EX2030 at 28:6-29:6; POR at 22; Paper 31 at 11-12

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’590 [1j]
wherein the controller controls assignment of connection for **each of the first and second radio communication circuit in response to receiving an indication** from a user such that **when** an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,

’241 [1i]
wherein when an indication from a user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video,

Dua Teaches Away From Relying on User Indications for “Communication Settings”

[0009] However, one issue with wireless device-to-device connectivity is that some form of user configuration is typically required. For example, communication settings, software settings, security settings, and other information is typically required to be exchanged between and among the devices which are to communicate. In most cases, user configuration in this manner makes data exchange between the media devices insecure and time consuming. Known over-the-air techniques for configuration between two devices have also proven to be generally insecure.

IPR2024-00907 (’590): EX1008 ¶[0009]; POR at 63
IPR2024-00906 (’241): EX1008 ¶[0009]; POR at 22-23

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N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [1K] OR '241 [1J]

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Petitioner Admitted That [1k] Is “Just Not There” in N93

Now, the second to last limitation of Claim 1 requires that the simultaneous use of two radios, one to transmit video and one to connect to the Internet, specific video, video and the Internet, that is not shown in the user manual. The way that this was shown by our expert in

* * *

Now, if we look at the evidence that counsel pointed to for this claim limitation, which is on Slide 27, the one thing I will ask you to note, Your Honor, if you look back at it after the hearing is you will not see the word "video" in that paragraph at all because there is no evidence that's cited here with respect to the use of video.

It's talking about the N93 teaching simultaneous data packet connections, but what's being referenced here doesn't show video. They haven't cited anything in the user manual that says that you could transmit video at the same time as connecting to the Internet. It's just not there. If it were there, presumably, they would have showed it to you, but they did not.

IPR2024-00907 (’590): EX2037 at 27-28; Paper 37 at 5-7
IPR2024-00906 (’241): EX2037 at 27-28; Paper 37 at 5-7

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

No Evidence Connecting Controller to Actual Simultaneous/While Operations

> Q. And do you determine assignment at the moment when a device establishes a connection with a specific network?
>
> I think assignment could simply be the point at which the processer -- it could be a number of different points and I haven't identified the exact point of assignment, but it could be the point at which the processer determines which rate it's going to assign, but before it's actually carried that out. It could be in -- in allocating the radio and then allocating the radio frequency, there could be multiple steps involved. So it could -- it could occur -- it

IPR2024-00907 (’590): EX2030 at 28:6-29:6; POR at 31; Pet. at 36-38; Paper 31 at 9-12
IPR2024-00906 (’241): EX2030 at 28:6-29:6; POR at 29; Pet. at 35-38; Paper 31 at 10-12

How is the CPU controlling first and second radio communication circuits to facilitate “simultaneous” functions?

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

In Its Reply Petitioner Is Seeking to Read Out “Simultaneous” and Proposing a Construction

> PO’s “simultaneous” arguments (POR, 25-35) are not commensurate with the scope of the claims. The claims require a first ongoing processes (transmission of video) occur “simultaneously” with a second ongoing process (connecting to a home network or internet). Each of those processes consists of many, many packets separated over time. EX1058, ¶34. Because the claims only require the overall process occur “simultaneously” with the other process, the claims do not require instantaneous “simultaneous” transmission of individual packets or “full duplex” operation as asserted by PO. *See* EX1012(Desai), [0051], [0063]; EX1075, 1:38-43.

IPR2024-00907 (’590): Paper 25 at 11
IPR2024-00906 (’241): Paper 25 at 11

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Petitioner Relies on N93 Functioning as a Modem, but Disclosure of Modem Does Not Support Two Specific Functions With Specific Radio Communication Circuits

PC connections

You need to connect your device to a compatible PC to do the following:

- Transfer information between Nokia PC Suite applications and your device. For example, to synchronize calendar appointments or transfer images.
- Use your device as a modem to connect to network services such as the internet.

You can connect your device and a compatible PC via a compatible USB or serial cable, Infrared, or Bluetooth wireless technology.

IPR2024-00907 (’590): EX1010 at 83; POR at 25
IPR2024-00906 (’241): EX1010 at 83; POR at 23-24

No mention of transferring video over Bluetooth + modem during the same time

No detail whatsoever on modem operation

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

N93 Fails to Show ’590 [1k] or ’241 [1j]

connection to the Internet. EX1010, 83. N93 explicitly teaches there can be a UMTS or GSM data packet connection and a simultaneous Wi-Fi connection. *Id.*, 18. N93 does state that the UI does not support certain options during a “voice call.” *Id.*, 24. N93, however, does not disclose any similar limitation related to simultaneous video transfers over Bluetooth and data connections over UMTS.

No mention of transferring video over Bluetooth

Uses absence of active restriction to allege disclosure

IPR2024-00907 (’590): Pet. at 12; POR at 25, 28-30
IPR2024-00906 (’241): Pet. at 13-14; POR at 23-24, 26-28

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Petitioner Argued in the District Court Litigation That N93 [User Guide] Does Not Disclose This Limitation

> Now, if we look at the evidence that counsel pointed to for this claim limitation, which is on Slide 27, the one thing I will ask you to note, Your Honor, if you look back at it after the hearing is you will not see the word "video" in that paragraph at all because there is no evidence that's cited here with respect to the use of video.
>
> It's talking about the N93 teaching simultaneous data packet connections, but what's being referenced here doesn't show video. They haven't cited anything in the user manual that says that you could transmit video at the same time as connecting to the Internet. It's just not there. If it were there, presumably, they would have showed it to you, but they did not.

IPR2024-00907 (’590): April 24, 2025, Hearing Transcript (EX2037) 27:22-28:10; Paper 37 at 5-7
IPR2024-00906 (’241): April 24, 2025, Hearing Transcript (EX2037) 27:22-28:10; Paper 37 at 5-7

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua Fails to Show ’590 [1k] or ’241 [1j]

Petitioner relies on Fig. 10 of Dua

EX1008, Fig. 10, [0190]-[0197]. Dua teaches receiving video over the short-range transceiver while simultaneously transmitting it over the network transceiver to a remote device. *Id.*, Fig. 1 (network transceiver 105, short-range transceiver 108, antenna 117), Fig. 10, [0190]-[0197]. A POSITA would have been motivated to

IPR2024-00907 (’590): Pet. at 13
IPR2024-00906 (’241): Pet. at 14

As noted by Petitioner, this scenario from Dua requires video **streaming**

the combination. A POSITA would have known Bluetooth could stream video. EX1014, 103, 1005; EX1022, 8, 11-12; EX1023, [0008] [0014], [0108]. While the

IPR2024-00907 (’590): Pet. at 13
IPR2024-00906 (’241): Pet. at 14

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua Fails to Show ’590 [1k] or ’241 [1j]

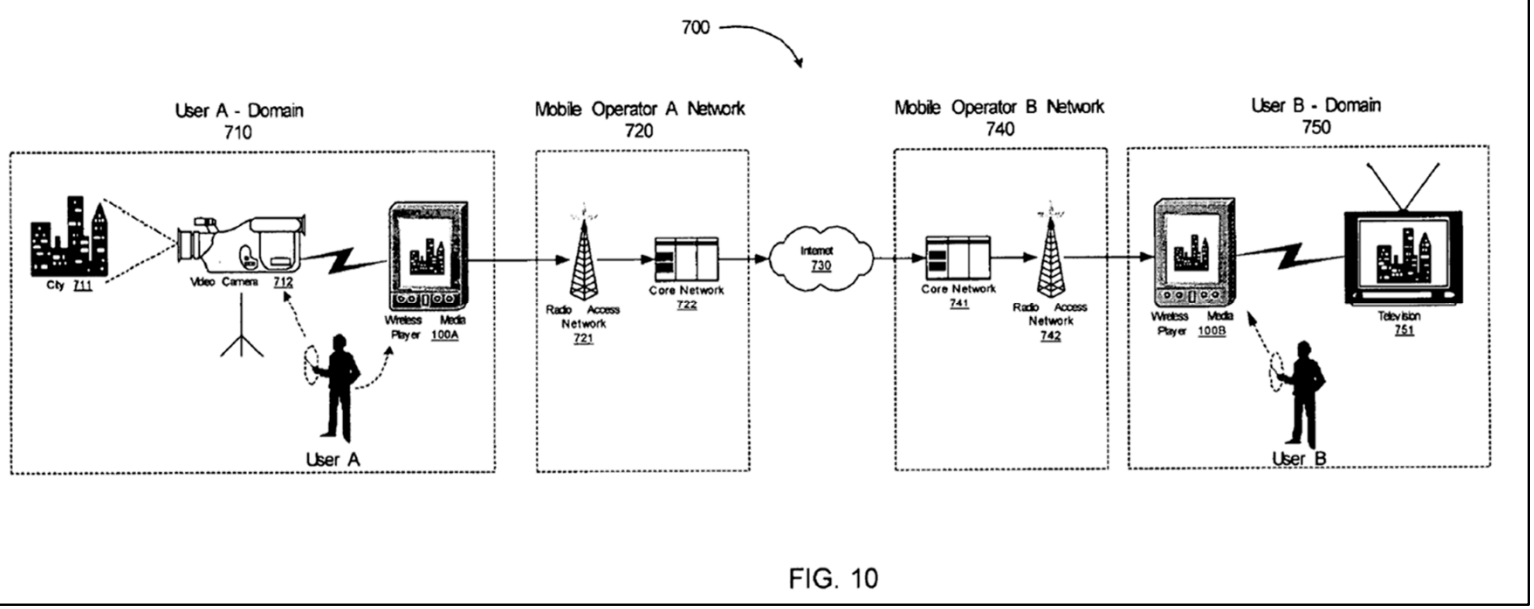


FIG. 10

[0190] **FIG. 10** is a functional diagram of a media player **100**A wirelessly capturing a video feed from an external video recording device **712**, and transmitting the same video content via a cellular network **720** and the Internet **730** to another media player **100**B, which further transmits the content to a television **751**, in accordance with one embodiment of the present invention.

No mention of using Bluetooth here or simultaneous

IPR2024-00907 (’590): EX1008 at Fig. 10, ¶[0190]; POR at 31-35
IPR2024-00906 (’241): EX1008 at Fig. 10, ¶[0190]; POR at 29-33

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua Fails to Show ’590 [1k] or ’241 [1j]

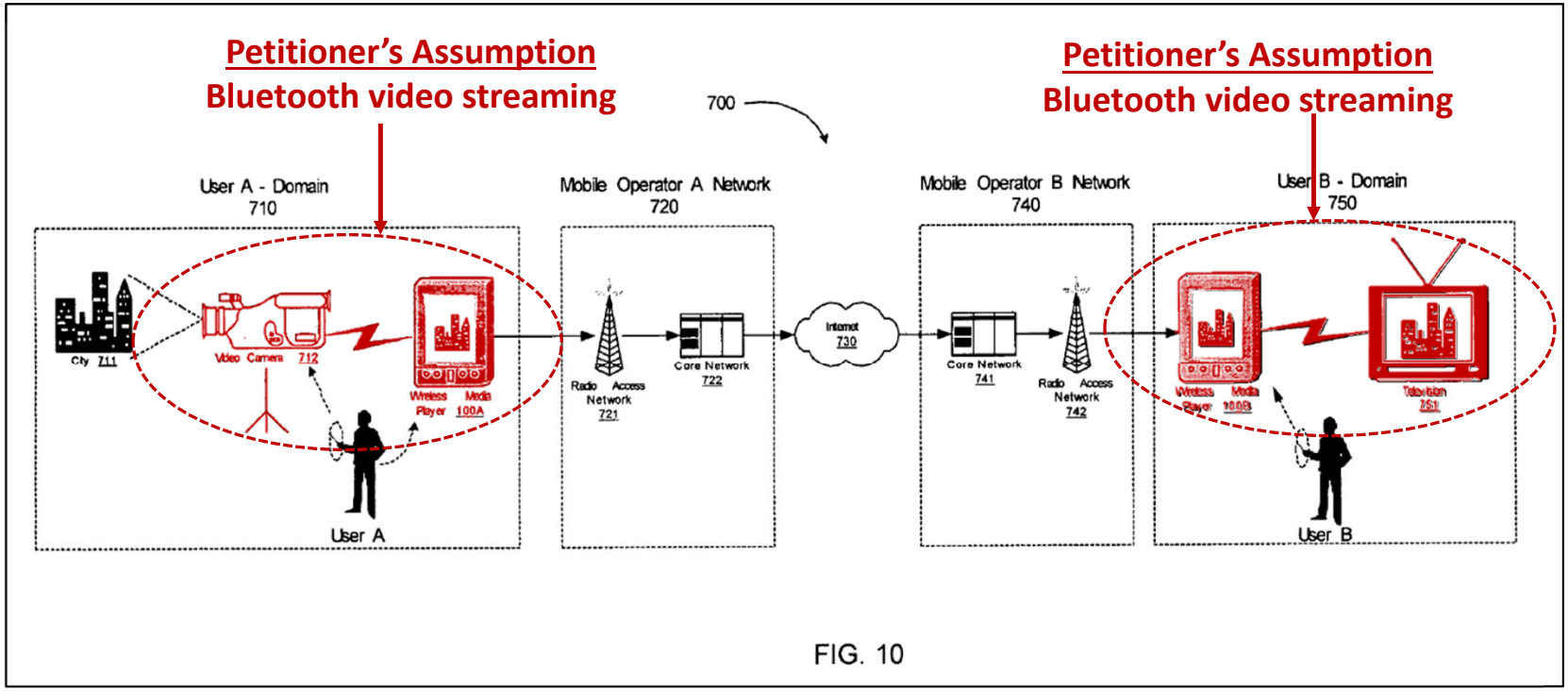


FIG. 10

IPR2024-00907 (’590): EX1008 at Fig. 10, ¶[0190]; POR at 31-35
IPR2024-00906 (’241): EX1008 at Fig. 10, ¶[0190]; POR at 29-33

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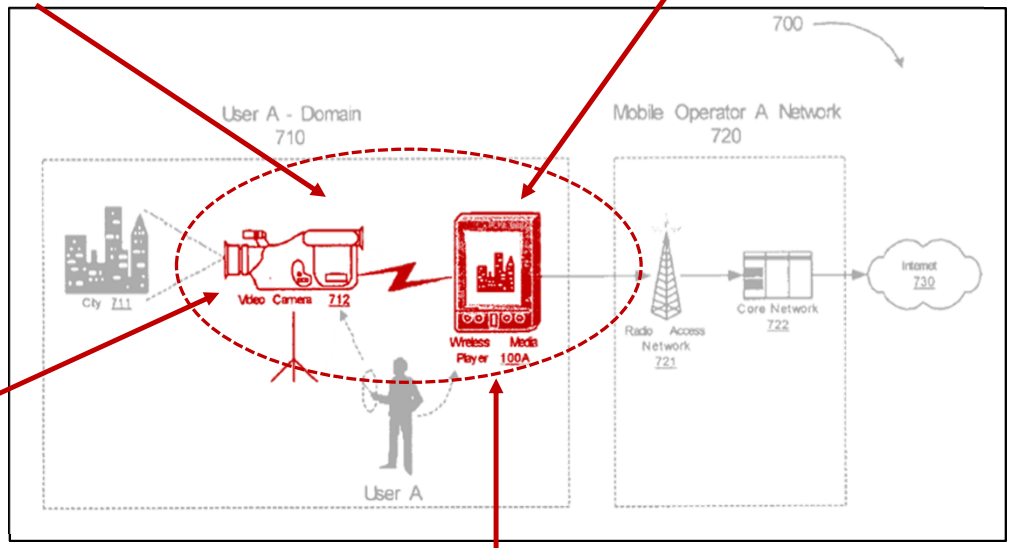
’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua Fails to Show ’590 [1k] or ’241 [1j]

Petitioner’s Assumption: video streaming occurs over Bluetooth when Dua fails to identify Bluetooth in relation to this example

Petitioner’s Assumption: wireless media player 100A has Bluetooth video streaming capabilities



Petitioner’s Assumption: video camera 112 has Bluetooth video streaming capabilities

Receipt of video stream, **not transmission** of video stream

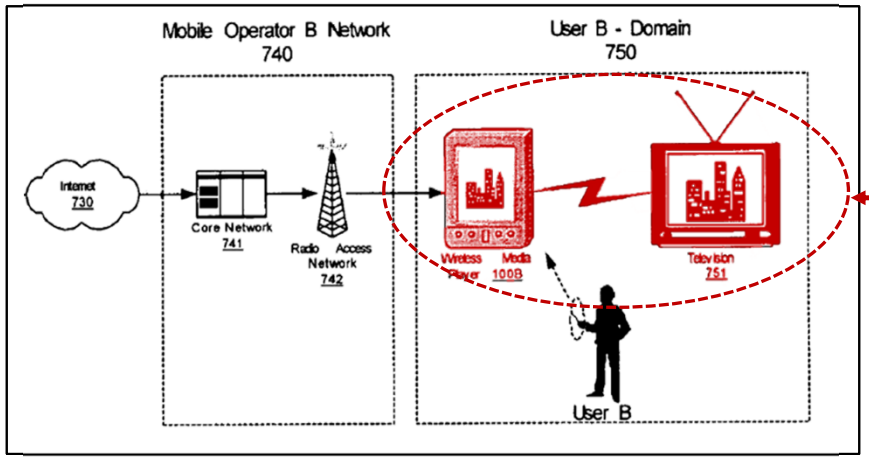
IPR2024-00907 (’590): EX1008 at Fig. 10, ¶[0190]; POR at 31-35
IPR2024-00906 (’241): EX1008 at Fig. 10, ¶[0190]; POR at 29-33

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua Fails to Show ’590 [1k] or ’241 [1j]



Petitioner’s assumption of Bluetooth video streaming goes against Dua’s actual disclosure of broadcast technology and replaces with theory that television 751 has Bluetooth streaming capabilities

[0198] In accordance with the invention, the media player **100**B in **FIG. 10** has an integrated short-range broadcast antenna and transceiver that supports UHF, VHF, FM, and AM broadcast and reception. The media player **100** also

[0199] Returning to **FIG. 10**, the television **751** in one embodiment automatically displays the broadcast content from the media player **100**B, as the RFID exchange may have triggered the television to automatically change channels to one used specifically for receiving broadcast signals from devices in the proximity.

the world. In accordance with the invention, the media player **100** may also have the ability to dynamically convert broadcast signals (e.g., UHF, VHF, FM, or AM) that it receives into a digital format that can be streamed or otherwise transferred to one or more devices over a packet network, such as an Internet Protocol (IP) network using the steps described above. In accordance with the invention, the

IPR2024-00907 (’590): EX1008 at Fig. 10, ¶¶[0198]-[0199]]; POR at 31-35
IPR2024-00906 (’241): EX1008 at Fig. 10, ¶¶[0198]-[0199]]; POR at 29-33

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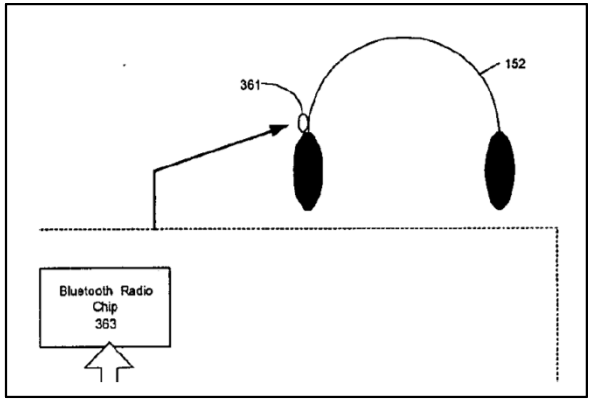
’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Dua’s Only Descriptions of Bluetooth Streaming Are Audio Related

His friend also possesses a media player **100**B and a wireless headphone **152**B that have already established wireless connectivity via Bluetooth.

[0128] After the media player’s **100**A RFID tag-reader module **113** receives the communication settings, media processing capabilities, and other parameters, the data is transferred to CPU **109**. Media player **100**A instantly sends a Bluetooth paging message using the received information via its short range transceiver **108**. In response to the page, the target media player **100**B performs a connection setup with the media player **100**A using normal Bluetooth session set-up procedure. Upon completion, media player **100**A automatically transmits the music content that is playing at the time the connection is established. The media content is transmitted via wireless signal **412** to the target media player **100**B. Audio content that is transmitted from media player **100**A to the target media player **100**B, can be listened to on the headphone unit **152**B which is wirelessly connected to media player **100**B via wireless signal **414**.



- RF configuration settings
- Standardized communication profiles (e.g., Bluetooth - handsfree, headset, etc.)

setup. The stereo is Bluetooth-enabled and allows connectivity to compatible Bluetooth devices such as the media player **100** for exchanging media content. For illustrative purposes, both the media player **100** and stereo are Bluetooth-enabled. For purposes of this invention, the devices could communicate via any other known wireless protocol.

IPR2024-00907 (’590): EX1008 at Figs. 5, 7, ¶¶[0126], [0128; POR at 32
IPR2024-00906 (’241): EX1008 at Figs. 5, 7, ¶¶[0126], [0128]; POR at 30

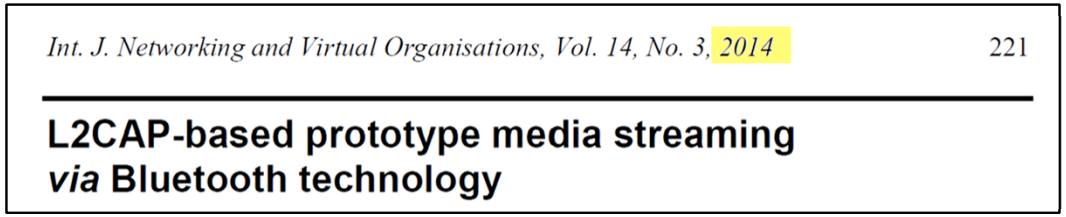
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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Bluetooth Video Streaming Was Beyond the Level of Ordinary Skill

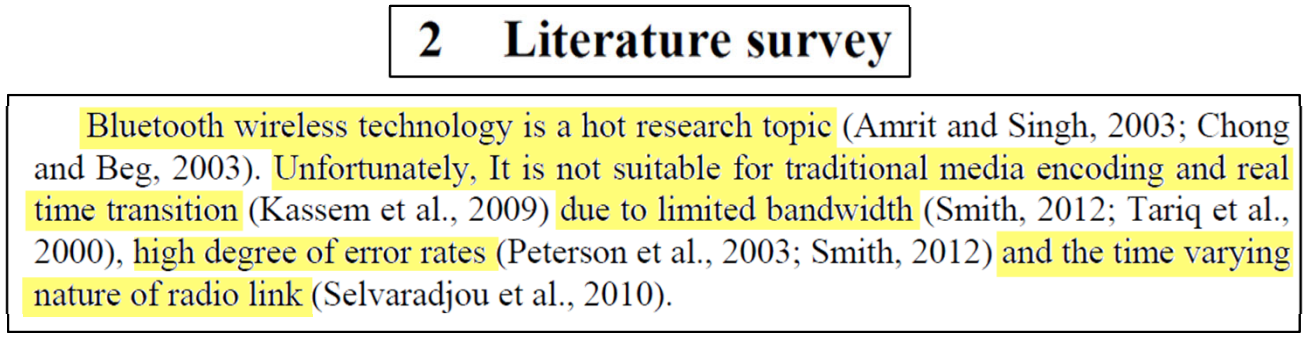
- A **2014** paper notes that Bluetooth is still **not** suitable for video streaming



Int. J. Networking and Virtual Organisations, Vol. 14, No. 3, 2014 221

L2CAP-based prototype media streaming *via* Bluetooth technology

- Reviews past papers and highlights that there are **still** many issues with implementing Bluetooth video streaming



2 Literature survey

Bluetooth wireless technology is a hot research topic (Amrit and Singh, 2003; Chong and Beg, 2003). Unfortunately, It is not suitable for traditional media encoding and real time transition (Kassem et al., 2009) due to limited bandwidth (Smith, 2012; Tariq et al., 2000), high degree of error rates (Peterson et al., 2003; Smith, 2012) and the time varying nature of radio link (Selvaradjou et al., 2010).

IPR2024-00907 (’590): EX2010 at 2, 6; POR at 32-35; Paper 31 at 13-14
IPR2024-00906 (’241): EX2010 at 2, 6; POR at 30-33; Paper 31 at 14-15

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’590 [1k]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network **simultaneously**, and

’241 [1j]
wherein **the controller controls each of the first and second radio communication circuit** so that the first radio communication circuit transmits video information **while** the second radio communication circuit connects to the internet or the home network,

Petitioner fails to address how Bluetooth video streaming in these research articles would be within the level of skill of a POSITA

While Petitioners cite several references to state that Bluetooth streaming was known, Petitioners fail to address how implementation of the technology in these research articles would be within the level of skill of a POSITA. Reply, 12-13.

Biographical notes: Ebaa Fayyoumi received his BSc degree from The Hashemite University, Jordan in 2000, MSc degree from the University of Jordan, Jordan in 2002, and PhD degree from Carleton University, Canada, in 2008. She has been with the Faculty of Prince Hussein Bin Abdalla II for

Izzeddin Matar is a Lecturer in the Software Engineering Department at Faculty of Information Technology at University of Petra. He received his MSc in Software Engineering from Colorado Technical University, USA in 2004. In particular, his research interest includes software engineering, Bluetooth technology, and application of computing as a scientific paradigm.

IPR2024-00907 (’590): EX2010 at 3; POR at 32-35; Paper 25 at 12-13; Paper 31 at 13-14
IPR2024-00906 (’241): EX2010 at 3; POR at 32-35; Paper 25 at 12-14; Paper 31 at 14-15

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Level of Skill in the Art

POSITA =



B.S. in electrical engineering
(or equivalent)

+



1 year of experience in wireless communications

"A person of ordinary skill in the art ("POSITA") . . . would have had **a bachelor's degree** in electrical engineering or equivalent **with at least one year of experience** in the field of wireless communications. Additional education or experience might substitute for the above requirements."

IPR2024-00907 ('590): Pet. at 3; EX1002 ¶28
IPR2024-00906 ('241): Pet. at 2; EX1002 ¶28

"A POSITA would have at least **a Bachelor's degree** in Electrical Engineering, Computer Engineering, Computer Networking, or a related technical field, **with at least one year of experience** in the field of wireless communications."

IPR2024-00907 ('590): POR at 3; EX2017 ¶60
IPR2024-00906 ('241): POR at 3; EX2017 ¶60

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GROUND NOS. 1-5: N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [1L] OR '241 [1K]

’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Petitioner Admitted That N93 “Never” Discloses Downloading OS

> You will note, Your Honor, that on Slide 29 of the Plaintiff's deck, what they cite is the downloading of applications, not the downloading of the operating system, because the user manual never talks about downloading the operating system. It only talks about downloading applications.

IPR2024-00907 (’590): EX2037 at 29 ; Paper 37 at 7-8
IPR2024-00906 (’241): EX2037 at 29; Paper 37 at 7-8

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’590 [1l]

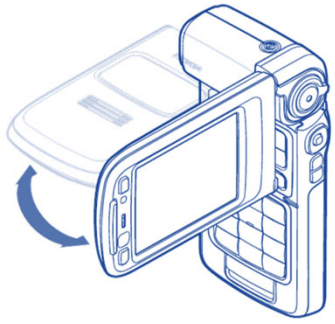
wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

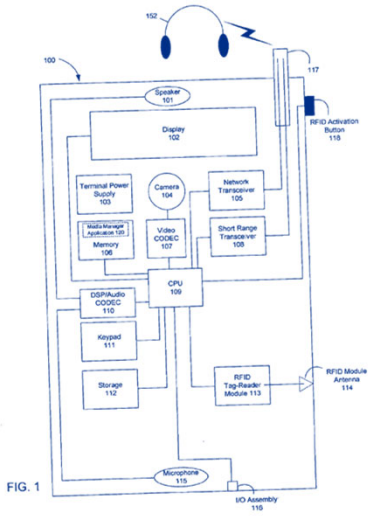
’241 [1k]

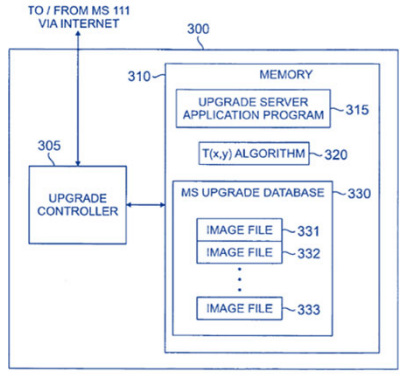
wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Petitioner’s Combination Is Incorporating Herle’s Update Process Into a Specialized Cellular Device Like N93’s or Dua’s

> Herle provides the express motivation to incorporate its OTA update process into cellular phones like N93’s and Dua’s to provide upgraded software, bug fixes, and newer versions. EX1009, 1:39-45. Herle explains OTA is an “important







IPR2024-00907 (’590): Pet. at 16-17, 40; POR at 41-43
IPR2024-00906 (’241): Pet. at 17-18, 40; POR at 39-41

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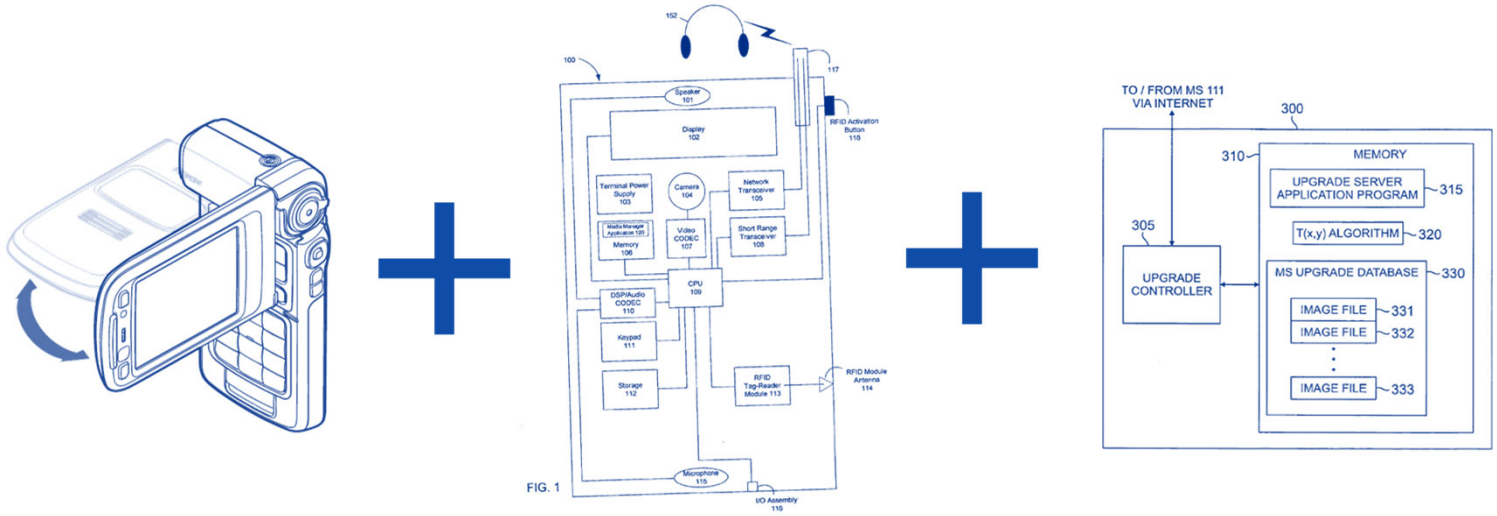
’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Petitioner’s Device Is a Specialized, Hypothetical Device



- **Bluetooth** + **UMTS** capability
- **GSM/Wi-Fi/NFC** capability
- Capability to stream video over Bluetooth while connecting to Internet
- Process specific user indications to “**assign**” connection of Bluetooth, UMTS, GSM, Wi-Fi, NFC
- CPU that controls assignment of all of Bluetooth, UMTS, GSM, Wi-Fi, NFC “radios”
- **Update operating system over-the-air**

IPR2024-00907 (’590): Pet. at 16-17, 40; POR at 41-43
IPR2024-00906 (’241): Pet. at 17-18, 40; POR at 39-41

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Level of Skill in the Art

POSITA =



B.S. in electrical engineering
(or equivalent)

+



1 year of experience in wireless communications

"A person of ordinary skill in the art ("POSITA") . . . would have had **a bachelor's degree** in electrical engineering or equivalent **with at least one year of experience** in the field of wireless communications. Additional education or experience might substitute for the above requirements."

IPR2024-00907 ('590): Pet. at 3; EX1002 ¶28
IPR2024-00906 ('241): Pet. at 2; EX1002 ¶28

"A POSITA would have at least **a Bachelor's degree** in Electrical Engineering, Computer Engineering, Computer Networking, or a related technical field, **with at least one year of experience** in the field of wireless communications."

IPR2024-00907 ('590): POR at 3; EX2017 ¶60
IPR2024-00906 ('241): POR at 3; EX2017 ¶60

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Hindsight Bias

205. It is hindsight bias to consider mobile devices as powerful as they are now. While we are used to the improved computing power of mobile devices today, mobile devices in 2007 were resource limited devices, and it was not obvious to provide all the functionalities in mobile devices, and it was beyond the level of ordinary skill to do so as well.

IPR2024-00907 (’590): EX2017 ¶205; POR at 40, 42-43
IPR2024-00906 (’241): EX2017 ¶202; POR at 38, 40-41

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Petitioner Makes Conclusory Remarks That N93’s or Dua’s Device Is a “Known Device Ready for Improvement”

> Adding Herle’s update process would simply involve applying a known technique (OTA updates for cellular phones as taught by Herle) to a known device ready for improvement (cellular phone) to yield predictable results (cellular phone with OTA update capability). *KSR*, 550 U.S. at 416; EX1002, ¶82.

IPR2024-00907 (’590): Pet. at 16-17, 40
IPR2024-00906 (’241): Pet. at 17-18, 40

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N93 Teaches Away From Modifications

Warning: Use only batteries, chargers, and enhancements approved by Nokia for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

IPR2024-00907 ('590): EX1010 at 9; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 9; POR at 11-13, ; EX2017 ¶¶110-117-119

- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

IPR2024-00907 ('590): EX1010 at 125; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 125; POR at 11-13, ; EX2017 ¶¶110-117-119



ENHANCEMENTS AND BATTERIES Use only approved enhancements and batteries. Do not connect incompatible products.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119



INTERFERENCE All wireless devices may be susceptible to interference, which could affect performance.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119

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N93 Teaches Away From Modifications

’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

- Other applications and software suitable for the Symbian operating system ( ). The installation files have the .sis extension. Only install software specifically designed for your Nokia device. Software providers will often refer to the official model number of this product.

IPR2024-00907 (’590): EX1010 at 114; POR at 36
IPR2024-00906 (’241): EX1010 at 114; POR at 34

Important: Even if the use of certificates makes the risks involved in remote connections and software installation considerably smaller, they must be used correctly in order to benefit from increased security. The existence of a certificate does not offer any protection by itself; the certificate manager must contain correct, authentic, or trusted certificates for increased security to be available. Certificates have a restricted lifetime. If **Expired certificate** or **Certificate not valid yet** is shown even if the certificate should be valid, check that the current date and time in your device are correct.

IPR2024-00907 (’590): EX1010 at 11; POR at 36
IPR2024-00906 (’241): EX1010 at 111; POR at 34

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Dua Echoes Security Concerns

[0009] However, one issue with wireless device-to-device connectivity is that some form of user configuration is typically required. For example, communication settings, software settings, security settings, and other information is typically required to be exchanged between and among the devices which are to communicate. In most cases, user configuration in this manner makes data exchange between the media devices insecure and time consuming. Known over-the-air techniques for configuration between two devices have also proven to be generally insecure.

IPR2024-00907 (’590): EX1008 ¶[0009]; POR at 38, 41-42
IPR2024-00906 (’241): EX1008 ¶[0009]; POR at 36, 39-41

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

N93 Was Not “Ready for Improvement;” the State of the Art Shows It Was Not Trivial to Even Implement Tethered Updates

> Nokia has at last pushed out updates for its N73 and N93 handsets after users grew increasingly frustrated at its self service software program.

> The inherent instability of the N93 handset led to the suspension of updates last November, a situation only rectified by today's release, though anyone visiting a Nokia Service Centre could get an update.

IPR2024-00907 (’590): POR at 37; EX2035* at 1
IPR2024-00906 (’241): POR at 35; EX2035* at 1

*incorrectly identified as EX2036 in the POR

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Ota Updates Would Be Disadvantageous Versus N93’s Explicit Method for Using Tethered Methods to Implement Updates, Such as Application Updates

You can use Nokia Application Installer in Nokia PC Suite to install an application to your device. If you use Microsoft Windows Explorer to transfer a file, save the file to a memory card (local disk).

278. In addition, N93 specifically discloses a system that involves the use of tethering to a computer and using “Nokia PC Suite” to install files. EX1010 at 115. Tethered updates provided many advantages versus OTA updates during the time of the invention. For example, tethered updates allowed for greater control, reliability and offline capability. EX2034 at 2. This was particularly advantageous during the time of the invention of the ’590 Patent, because cellular networks were not as reliable as they are known to be today:

> In the early 2000s the term “3G” was used to create perception in the mind of the consumer that they would be able to browse the Internet from their mobile phone using a high-speed data connection, much as they would from their desktop PC. Although this was technically possible, the user experience was pretty poor, and **much work was still required to understand how to deliver Internet-based services and content to a mobile successfully**.

EX2026 at 32. If there were issues with wireless connectivity with the network (and there were many during the time of the invention of the ’590 Patent), it would interrupt the update and possibly render the device inoperable, weighing against implementation of OTA operating system updates. EX2034 at 2.

IPR2024-00907 (’590): EX1010 at 115; EX2017 ¶ 278; POR at 36-37
IPR2024-00906 (’241): EX1010 at 115; EX2017 ¶ 270; POR at 34-35

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Petitioner’s Expert Failed to Consider the Advantages and Disadvantages of Implementing Herle’s System for Updates

Q. Are you aware of any disadvantages of delta-based update processes?

A. I haven't evaluated the relative strengths and weaknesses specifically of using a delta-based update process versus using some other non-delta-based update process.

IPR2024-00907 (’590): EX2030 at 63:21-64:1; POR at 37
IPR2024-00906 (’241): EX2030 at 63:21-64:1; POR at 35

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

But with respect to motivation to combine, the “‘**benefits, both lost and gained, should be weighed against one another**.” That is consistent with the longstanding principle that the **prior art must be considered for all its teachings, not selectively**.” *Henny Penny Corporation v. Frymaster LLC*, 938 F.3d 1324, 1331-32 (Fed. Cir. 2019) (citations omitted).

IPR2024-00907 (’590): POR 37
IPR2024-00906 (’241): POR 35

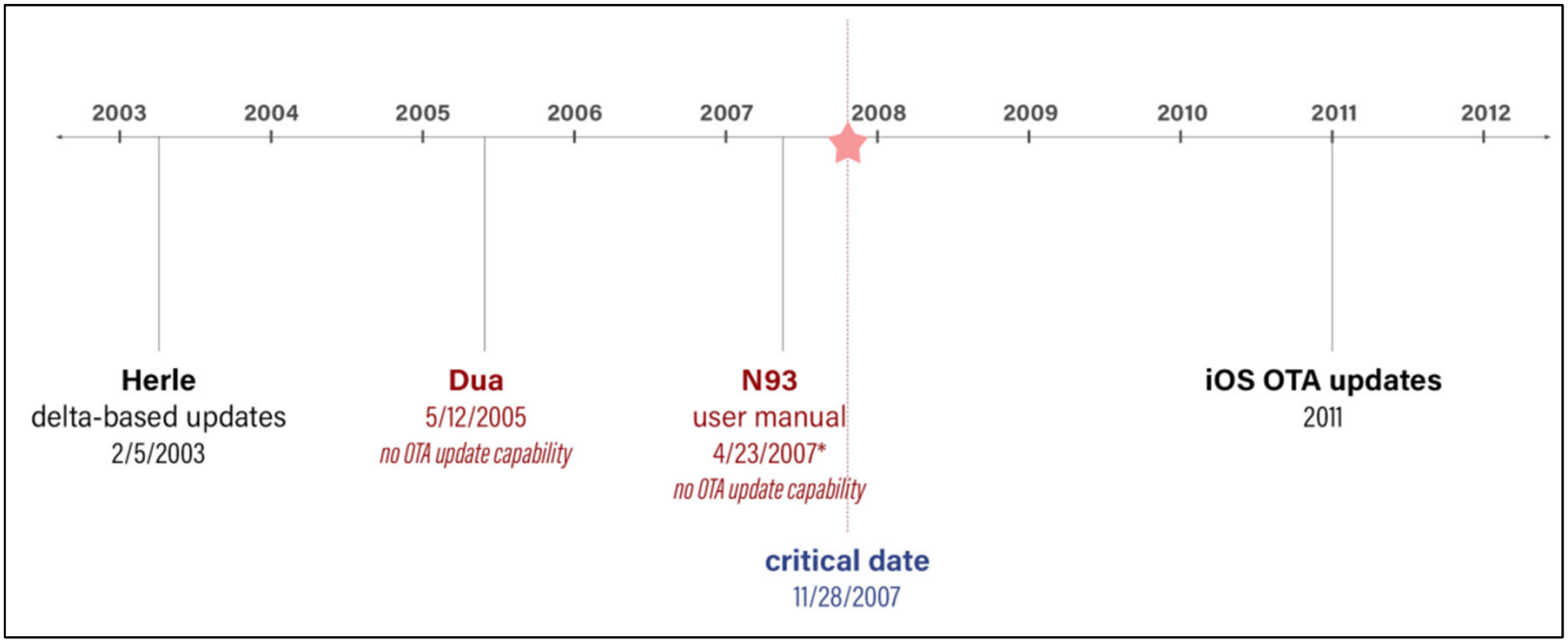
’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

Development History Shows Ota Updates Excluded From Specialized Devices Based on Petitioner’s Mapping



IPR2024-00907 (’590): POR 41-43
IPR2024-00906 (’241): POR 39-41

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’590 [1l]

wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

’241 [1k]

wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process

No Reasonable Expectation of Success in Implementing Herle’s System in N93 or Dua

A POSITA would have had a reasonable expectation of success in making the combination. The smartphone described by N93 and Dua is precisely the type of cellular phone Herle teaches should be improved by its upgrade process. EX1009, Fig. 2; EX1008, Fig. 1. Dua discloses the hardware components Herle discloses as being required for its update process (e.g., radios, processor, memory). EX1008, Fig. 1. N93 and Dua disclose the phones already have the capability of responding to OTA inquiries to provide their current software version information. EX1010, 115; EX1008, Fig. 7, [0141]. A POSITA would have just needed to implement the upgrade in the manner taught by Herle. EX1009, Fig. 2 (262, 263, 264), Fig. 4. The modifications taught by Herle would have involved only routine skill. EX1002, ¶83.

IPR2024-00907 (’590): Pet. at 17
IPR2024-00906 (’241): Pet. at 18

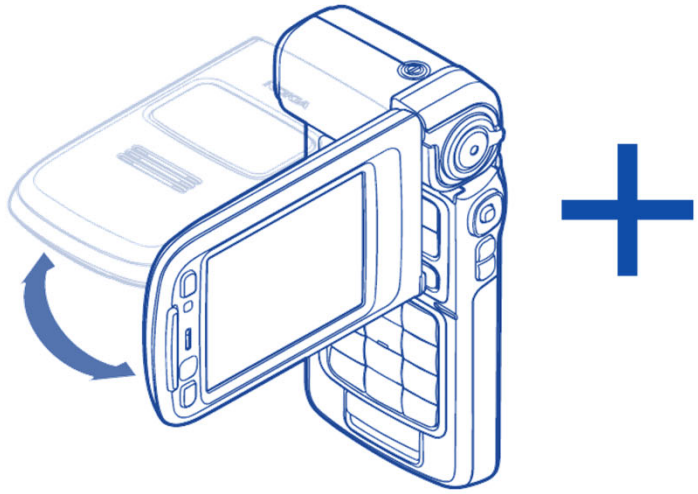
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N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [11] OR '241 [5]

’590 [11] / ’241 [5]
The video processing apparatus of claim 1, further comprising a **fourth radio communication circuit** capable of transmitting information and using a fourth transmission frequency band that is **different** from the first, second, and third transmission frequency bands, **wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.**

Petitioner’s Combination Comprises Modifying a Specialized Device With Another Radio Communication Circuit



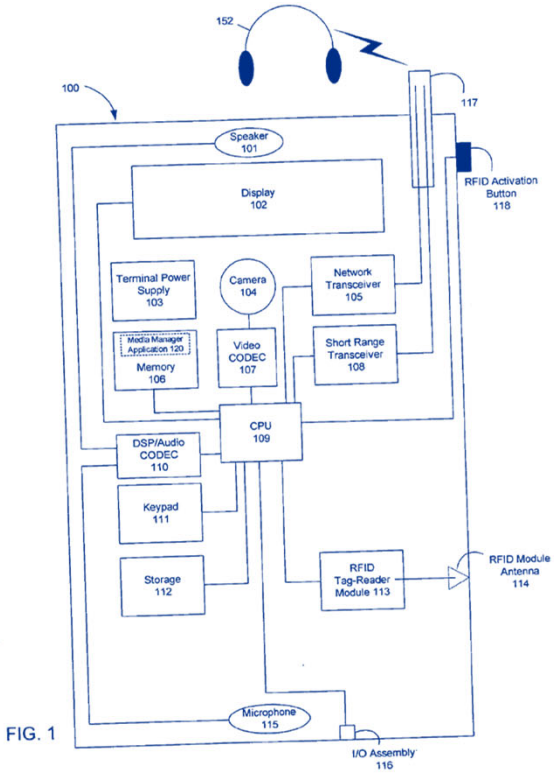


FIG. 1

IPR2024-00907 (’590): Pet. at 48; POR at 47-48
IPR2024-00906 (’241): Pet. at 42-43; POR at 41-43

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Level of Skill in the Art

POSITA =



B.S. in electrical engineering
(or equivalent)

+



1 year of experience in wireless communications

"A person of ordinary skill in the art ("POSITA") . . . would have had **a bachelor's degree** in electrical engineering or equivalent **with at least one year of experience** in the field of wireless communications. Additional education or experience might substitute for the above requirements."

IPR2024-00907 ('590): Pet. at 3; EX1002 ¶28
IPR2024-00906 ('241): Pet. at 2; EX1002 ¶28

"A POSITA would have at least **a Bachelor's degree** in Electrical Engineering, Computer Engineering, Computer Networking, or a related technical field, **with at least one year of experience** in the field of wireless communications."

IPR2024-00907 ('590): POR at 3; EX2017 ¶60
IPR2024-00906 ('241): POR at 3; EX2017 ¶60

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Adding Fourth Circuit Is Beyond Level of Skill in the Art/Not Routine

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00906 ('241): Pet. at 9
IPR2024-00907 ('590): Pet. at 8

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N93 Teaches Away From Modification (e.g., Adding Antenna)

Warning: Use only batteries, chargers, and enhancements approved by Nokia for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

IPR2024-00907 ('590): EX1010 at 9; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 9; POR at 11-13, ; EX2017 ¶¶110-117-119

- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

IPR2024-00907 ('590): EX1010 at 125; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 125; POR at 11-13, ; EX2017 ¶¶110-117-119



ENHANCEMENTS AND BATTERIES Use only approved enhancements and batteries. Do not connect incompatible products.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119



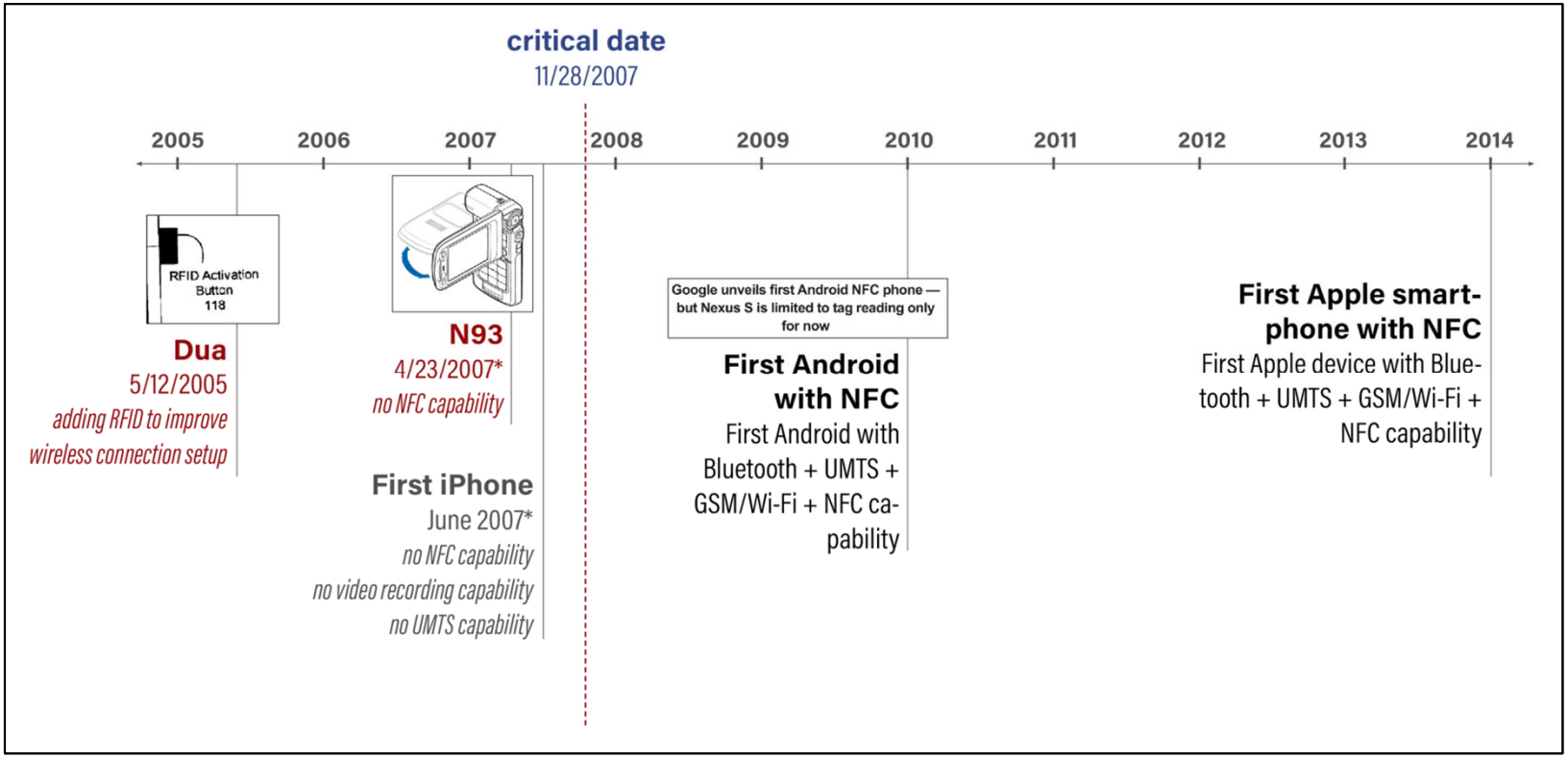
INTERFERENCE All wireless devices may be susceptible to interference, which could affect performance.

IPR2024-00907 ('590): EX1010 at 7; POR at 11-13, EX2017 ¶¶112, 119-121
IPR2024-00906 ('241): EX1010 at 7; POR at 11-13, ; EX2017 ¶¶110-117-119

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’590 [11] / ’241 [5]
The video processing apparatus of claim 1, further comprising a **fourth radio communication circuit** capable of transmitting information and using a fourth transmission frequency band that is **different** from the first, second, and third transmission frequency bands, **wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.**

State of the Art Shows Petitioner’s Alleged Combination Was Not Obvious Prior to November 28, 2007



IPR2024-00907 (’590): POR. at 47; EX2017 ¶92
IPR2024-00906 (’241): POR at 41-43; EX2017 ¶90

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’590 [11] / ’241 [5]
The video processing apparatus of claim 1, further comprising a **fourth radio communication circuit** capable of transmitting information and using a fourth transmission frequency band that is **different** from the first, second, and third transmission frequency bands, **wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.**

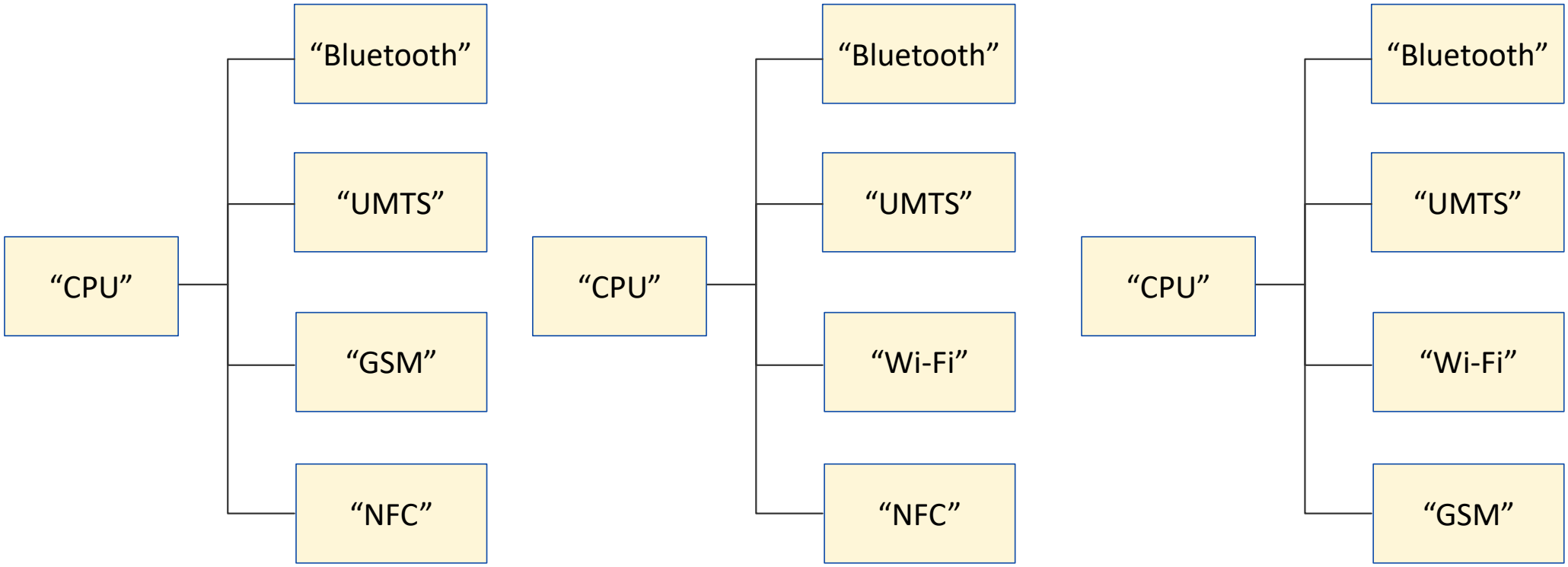
But with respect to motivation to combine, the “‘**benefits, both lost and gained, should be weighed against one another**.” That is consistent with the longstanding principle that the **prior art must be considered for all its teachings, not selectively**.” *Henny Penny Corporation v. Frymaster LLC*, 938 F.3d 1324, 1331-32 (Fed. Cir. 2019) (citations omitted).

No such analysis performed as to how adding a fourth circuit would impact the device as a whole

IPR2024-00907 (’590): POR at 37, 47
IPR2024-00906 (’241): POR at 35, 41-43

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Also Requires Controller Controlling All Four Circuits



IPR2024-00906 ('241): Pet. at 9
IPR2024-00907 ('590): Pet. at 8

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GROUND NOS 1-5: N93-DUA-HERLE FAIL TO RENDER OBVIOUS '590 [21] OR '241 [15]

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Claim Language



'590 [21] and '241 [15]

The video processing apparatus of claim 1, wherein the second **[UMTS]** and third radio **[Wi-Fi]** communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner Accused UMTS in the Petition

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-6, 8-14, 17-23, 25-27	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-27	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00906 (’241): Pet. at 9

Mappings	1st circuit	2nd circuit	3rd circuit	4th circuit*
A: Claims 1, 4-5, 8-12, 14-20, 23-25	Bluetooth	UMTS	GSM	NFC
B: Claims 1, 4-5, 8-11, 14-25	Bluetooth	UMTS	Wi-Fi	NFC or GSM

IPR2024-00907 (’590): Pet. at 8

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner Repeatedly Identified UMTS Modulation Schemes

Radio	Modulation Scheme	Frequency Band
Bluetooth	GFSK/$\frac{\pi}{4}$-DQPSK/8DPSK	2402-2480 MHz
UMTS	QAM/QPSK	2100 MHz
GSM	GMSK	800/1900 MHz

OFDM

IPR2024-00906 (’241): Pet. at 9

Radio	Modulation Scheme	Frequency Band
Bluetooth	GFSK/$\frac{\pi}{4}$-DQPSK/8DPSK	2402-2480 MHz
UMTS	QAM/QPSK	2100 MHz
GSM	GMSK	800/1900 MHz

OFDM

IPR2024-00906 (’241): Pet. at 9-10

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner Repeatedly Identified UMTS Modulation Schemes

Dua’s disclosure of a radio to support “all worldwide 3GPP and 3GPP2 standards” (EX1008, [0069]) inherently discloses to a POSITA a UMTS radio using UMTS modulation schemes (QPSK, 16QAM, and 64QAM) and frequency (2100 MHz), as required by those standards. EX1015, 2, 21-23, 15; EX1010, 8; EX1011, [0010], [0019]. Dua’s disclosure of “fully compliant” radio also inherently discloses UMTS with TDD, such that information is transmitted and received on the same frequencies. EX1015, 7. In the alternative, the UMTS modulation schemes and frequencies would have been obvious based on the knowledge of a POSITA, as evidenced by those same references. EX1002, ¶93.



OFDM

IPR2024-00907 (’590): Pet. at 22 (listing only QPSK, 16QAM, and 64QAM as modulation schemes); POR at 55

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

The Petition Failed to Identify “OFDM” as a UMTS Modulation Scheme

Dua’s disclosure of a radio to support “all worldwide 3GPP and 3GPP2 standards” (EX1008, [0069]) inherently discloses to a POSITA a UMTS radio using the UMTS modulation schemes (QPSK, 16QAM, and 64QAM) and the frequency (2100 MHz), as required by those standards. EX1015, 2 (UMTS), 21 (QPSK), 21-22 (16QAM), 22-23 (64QAM), 15 (OFDM); EX1010, 8 (UMTS 2100 MHz); EX1011, [0010], [0019] (UMTS uses WCDMA at 2100 MHz). Dua’s

IPR2024-00906 (’241): Pet. at 23 (listing only QPSK, 16QAM, and 64QAM as modulation schemes); POR at 49

✗ OFDM

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

This Deficiency Is Not Cured in Claims 15 and 21. Petitioner’s Entire Discussion of “Ofdm” Is in [1b]

> **Q. Claim 21**
>
> *See* [1b], [1c] (Mapping B: UMTS and Wi-Fi (802.11a and 802.11g) use OFDM demodulation); EX1002, ¶198.

IPR2024-00907 (’590): Pet. at 50

> **M. Claim 15**
>
> *See* [1b], [1c] (Mapping B: UMTS and Wi-Fi (802.11a and 802.11g) use OFDM demodulation); EX1002, ¶155.

IPR2024-00906 (’241): Pet. at 45

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner’s Only Evidence (Ex. 1015) Is E-UTRA Document, Which Is LTE, Not UMTS

[2] 3GPP TS 36.201: "LTE Physical Layer – General Description ".

IPR2024-00906 (’241): EX1015 at 5
IPR2024-00907 (’590): EX1015 at 5

1 Scope

The present document describes the physical channels for evolved UTRA.

IPR2024-00906 (’241): EX1015 at 5
IPR2024-00907 (’590): EX1015 at 5

IPR2024-00907 (’590): EX1015 at 5; POR at 55-57
IPR2024-00906 (’241): EX1015 at 5; POR at 49-52

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

UMTS Is Not LTE

communication technology in combination with other claimed features. OFDM was also associated with LTE rather than UMTS and LTE is considered to be a different generation of cellular network than UMTS. EX2026 at 53.

IPR2024-00907 (’590): EX2017 ¶194; POR at 55-57
IPR2024-00906 (’241): EX2017 ¶191; POR at 49-52

The two 4G standards are known as LTE and WiMax. Both are distinguished from previous 3G standards by two key advances. The first is an all IP (Internet Protocol) network from end to end. All traces of legacy circuit-switched capability have been removed, even for voice calls, meaning that voice is carried as a series of data packets at all points through the network, just as all other types of data are. The second key difference is that both LTE and WiMax use OFDMA (Orthogonal Frequency-Division Multiplexing Access) as their channel access technology, which permits much higher data rates to be supported.

IPR2024-00907 (’590): EX2026 at 53; POR at 55-57
IPR2024-00906 (’241): EX2026 at 53; POR at 49-52

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner’s Stated Motivation Is to Support Relevant Modulation Schemes That Are Required by the UMTS Standard

Dua’s disclosure of a radio to support “all worldwide 3GPP and 3GPP2 standards” (EX1008, [0069]) inherently discloses to a POSITA a UMTS radio using UMTS modulation schemes (QPSK, 16QAM, and 64QAM) and frequency (2100 MHz), as required by those standards. EX1015, 2, 21-23, 15; EX1010, 8; EX1011, [0010], [0019]. Dua’s disclosure of “fully compliant” radio also

IPR2024-00907 (’590): Pet. at 22

B. Overview and Incorporation from Ground 1

Ground 2 relies on the disclosures in BT-Spec, 3GPP-Spec, and Kao as secondary references for the relevant modulations and frequencies. The relevant

IPR2024-00907 (’590): Pet. at 56

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

But POSITA Would Not Look At LTE Working Document for UMTS Modulation Schemes

[2] 3GPP TS 36.201: "LTE Physical Layer – General Description ".

IPR2024-00906 (’241): EX1015 at 5
IPR2024-00907 (’590): EX1015 at 5

1 Scope

The present document describes the physical channels for evolved UTRA.

IPR2024-00906 (’241): EX1015 at 5
IPR2024-00907 (’590): EX1015 at 5

IPR2024-00906 (’590): POR at 8, 60-61
IPR2024-00907 (’241): POR at 8, 56

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Further, Petitioner’s Only Evidence (Ex. 1015) Is “Working Document”

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented.
This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification.
Specifications and reports for implementation of the 3GPP™ system should be obtained via the 3GPP Organizational Partners' Publications Offices.

IPR2024-00906 (’241): EX1015 at 1
IPR2024-00907 (’590): EX1015 at 1

has not been subject to any approval process

shall not be implemented.

IPR2024-00906 (’241): EX1015 at 1
IPR2024-00907 (’590): EX1015 at 1

IPR2024-00906 (’590): POR at 8, 60-61
IPR2024-00907 (’241): POR at 8, 56

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’590 [21]
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’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner’s Only Evidence (Ex. 1015) Is “Working Document” That Fails to Show Implementation in UMTS Network of OFDM

a **“version 0”** document

3GPP TS 36.211 V0.2.1 (2006-11)

Version 0 means document is **not** approved

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

IPR2024-00906 (’590): POR at 8, 60-61
IPR2024-00907 (’241): POR at 8, 56

IPR2024-00906 (’241): EX1015 at 5
IPR2024-00907 (’590): EX1015 at 5

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

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UMTS Is NOT LTE

communication technology in combination with other claimed features. OFDM was also associated with LTE rather than UMTS and LTE is considered to be a different generation of cellular network than UMTS. EX2026 at 53.

IPR2024-00907 (’590): EX2017 ¶194; POR at 55-57
IPR2024-00906 (’241): EX2017 ¶191; POR at 49-52

The two 4G standards are known as LTE and WiMax. Both are distinguished from previous 3G standards by two key advances. The first is an all IP (Internet Protocol) network from end to end. All traces of legacy circuit-switched capability have been removed, even for voice calls, meaning that voice is carried as a series of data packets at all points through the network, just as all other types of data are. The second key difference is that both LTE and WiMax use OFDMA (Orthogonal Frequency-Division Multiplexing Access) as their channel access technology, which permits much higher data rates to be supported.

IPR2024-00907 (’590): EX2026 at 53; POR at 55-57
IPR2024-00906 (’241): EX2026 at 53; POR at 49-52

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No Motivation to Incorporate OFDM modulation Into a “UMTS radio”

> “There was no motivation to create mobile devices for a standard that was not yet finalized and only based on modulation schemes disclosed in a very preliminary working document during the time of the invention.”

IPR2024-00907 (’590): EX2017 ¶363; POR at 55
IPR2024-00906 (’241): EX2017 ¶337; POR at 49-50

> Adding LTE functionality would require hardware and would not be obvious and require more than ordinary skill to implement. For example, this would include adding additional components to support the OFDM modulation scheme to the N93 device or device in Dua, only to be **unable** to actually use the functionality, since there were no base stations and LTE networks launched that would support communication on the OFDM modulation scheme.

IPR2024-00907 (’590): EX2017 ¶363; POR at 55-57
IPR2024-00906 (’241): EX2017 ¶337; POR at 50

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’590 [21]
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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

It Was Non-Obvious to Add OFDM Into an Alleged “UMTS” Radio

365. UMTS and LTE are completely different radio access technologies (*e.g.*, OFDM in downlink + SC-FDMA in uplink for LTE versus DS-CDMA for UMTS/W-CDMA), with different frame structures, slot structures, and signal processing. Based on the references cited by the Petitioners and Dr. Creusere, it would be non-obvious to add OFDM mapper and/or OFDM signal generation from LTE into a UMTS device, *e.g.*, a device that complies with TS 25.211. There is no

IPR2024-00907 (’590): EX2017 ¶365; POR at 56
IPR2024-00906 (’241): EX2017 ¶339; POR at 51

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’590 [21]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Non-Obvious to Add OFDM Into an alleged “UMTS” Radio

366. A POSITA would have no expectation of success of combining the UMTS system of N93 with the OFDM modulation scheme disclosed in TS 36.211. The following diagrams show the different frame structures, slot structures, and signal processing needed for UMTS and other systems versus LTE. A POSITA would have no expectation of success of combining the UMTS system of N93 with the OFDM modulation scheme disclosed in TS 36.211. The following diagrams show the different frame structures, slot structures, and signal processing needed for UMTS and other systems versus LTE:

IPR2024-00907 (’590): EX2017 ¶366; POR at 56-57
IPR2024-00906 (’241): EX2017 ¶340; POR at 51-52

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’590 [21]
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’241 [15]
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Summary

- Petitioner’s **only** evidence of OFDM as a modulation scheme for the alleged UMTS radio communication circuit is EX1015.
- EX1015 is Directed to LTE, not UMTS.
- **EX1015 is not** implemented as part of ***any*** standard.
- Petitioners fail to establish that EX1015 shows modulation schemes for the ***UMTS*** “standard.”

IPR2024-00907 (’590): POR at 8, 54-57, 60-61
IPR2024-00906 (’241): POR at 8, 49-52, 56-57

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’590 [21]
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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

Petitioner Is Improperly Trying to Change Theories

Petitioner’s Reply fails to rebut any of McNair’s evidence and instead improperly tries to change theory by establishing false equivalencies.

False equivalency A:

UMTS = 3GPP **3GPP = UMTS+LTE/E-UTRA**

UMTS = UMTS + LTE/E-UTRA

False equivalency B:

UMTS = 3G **3G = UMTS + LTE/E-UTRA**

UMTS = UMTS + LTE/E-UTRA

IPR2024-00907 (’590): Reply at 22-24
IPR2024-00906 (’241): Reply at 22-24

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’241 [15]
The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

False Equivalency Should Be Rejected. UMTS ≠ 3GPP

3GPP encompasses an entire family of standards across 2G, 3G, and 4G technologies (*e.g.*, **GSM**, **UMTS**, **LTE**, etc.)



3GPP TS 36.201: "LTE Physical Layer – General Description ".

IPR2024-00906 (’241): EX1015 at 5 (3GPP encompasses LTE documents)
IPR2024-00907 (’590): EX1015 at 5 (3GPP encompasses LTE documents)

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

IPR2024-00906 (’241): EX1015 at 5 (3GPP encompasses GSM documents)
IPR2024-00907 (’590): EX1015 at 5 (3GPP encompasses GSM documents)

The term "***3GPP specification***" covers all **GSM** (including **GPRS** and **EDGE**) and **W-CDMA** specifications.

IPR2024-00907 (’590): EX1033 at 10
IPR2024-00906 (’241): EX1032 at 10

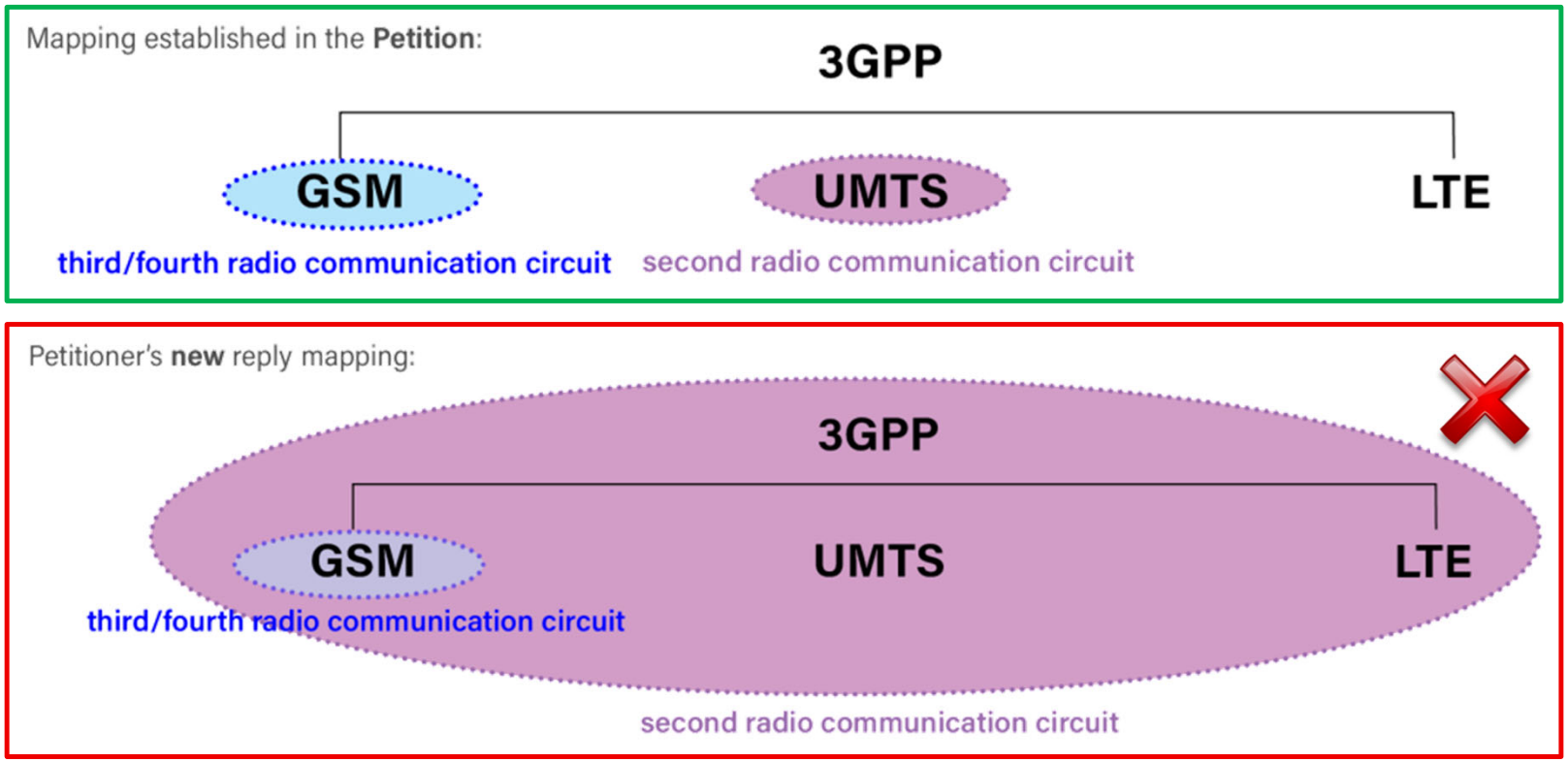
IPR2024-00907 (’590): Reply at 21-24
IPR2024-00906 (’241): Reply at 21-23

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False Equivalency A Improperly Tries to Change Original Petition Arguments



IPR2024-00906 (’241): Pet. at 9; Reply at 22-24
IPR2024-00907 (’590): Pet. at 8; Reply at 22-24

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False Equivalency B should Be rejected. UMTS ≠ 3G, 3G ≠ LTE

Petitioners’ expert, Dr. Creusere, rejected that UMTS is 3G:

> Q. When you refer to GSM and UMTS, you're referring to 2G and 3G capabilities respectively. Is that correct?
>
> A. That is approximately correct. There were many variations as the standard progressed from, say, GSM, which is often thought of as 2G to UMTS, which is thought of as 3G. There were -- there was EDGE, for example, which was an enhancement of GSM partway between, but -- but essentially I think that's a reasonable characterization.

IPR2024-00907 (’590): EX2030 at 13:7-16; POR at 12, 55
IPR2024-00906 (’241): EX2030 at 13:7-16; POR at 12, 50

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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

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False Equivalency B should Be rejected. UMTS ≠ 3G, 3G ≠ LTE

Mr. McNair rejected this equivalency:

> communication technology in combination with other claimed features. OFDM was also associated with LTE rather than UMTS and LTE is considered to be a different generation of cellular network than UMTS. EX2026 at 53.

IPR2024-00907 (’590): EX2017 ¶194; POR at 12
IPR2024-00906 (’241): EX2017 ¶191; POR at 12

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The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through **Orthogonal Frequency Division Multiplexing (OFDM).**

False Equivalency B should Be rejected. UMTS ≠ 3G, 3G ≠ LTE

Other sources reject these equivalencies:

> The two 4G standards are known as LTE and WiMax. Both are distinguished from previous 3G standards by two key advances. The first is an all IP (Internet Protocol) network from end to end. All traces of legacy circuit-switched capability have been removed, even for voice calls, meaning that voice is carried as a series of data packets at all points through the network, just as all other types of data are. The second key difference is that both LTE and WiMax use OFDMA (Orthogonal Frequency-Division Multiplexing Access) as their channel access technology, which permits much higher data rates to be supported.

IPR2024-00907 (’590): EX2026 at 53; POR at 12, 55-56; EX2017 ¶¶194, 364
IPR2024-00906 (’241): EX2026 at 53; POR at 12, 49-51; EX2017 ¶¶191, 338

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PUBLIC ACCESSIBILITY

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Petitioner Failed to Show Any Evidence That These Pages Were Disseminated to the Interested Public

C. EX1010 ("N93")

Nokia N93 User Guide ("N93") was publicly available on Nokia's website at least as of 4/23/2007 when it was archived. EX1007, 1-2. N93 is prior art under pre-AIA 35 U.S.C. §102(a), 102(b).

F. EX1014 ("BT-Spec")

The Specification of the Bluetooth System ("BT-Spec") was publicly available on the Bluetooth website at least as of 2/24/2006 when it was archived. EX1007, 1-2. BT-Spec is prior art under pre-AIA 35 U.S.C. §§102(a), 102(b).

G. EX1015 ("3GPP-Spec")

3GPP TS 36.211 Technical Specification Group Radio Access Network: Physical Channels and Modulation ("3GPP-Spec") was publicly available on the 3GPP website at least as of 1/7/2007 when it was archived. EX1007, 1-2. 3GPP-Spec is prior art under pre-AIA 35 U.S.C. §§102(a), 102(b).

IPR2024-00907 ('590): Pet. at 5; POR 4-6
IPR2024-00906 ('241): Pet. at 6; POR 4-6

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Level of Skill in the Art

POSITA =



B.S. in electrical engineering
(or equivalent)

+



1 year of experience in wireless communications

"A person of ordinary skill in the art ("POSITA") . . . would have had **a bachelor's degree** in electrical engineering or equivalent **with at least one year of experience** in the field of wireless communications. Additional education or experience might substitute for the above requirements."

IPR2024-00907 ('590): Pet. at 3; EX1002 ¶28
IPR2024-00906 ('241): Pet. at 2; EX1002 ¶28

"A POSITA would have at least **a Bachelor's degree** in Electrical Engineering, Computer Engineering, Computer Networking, or a related technical field, **with at least one year of experience** in the field of wireless communications."

IPR2024-00907 ('590): POR at 3; EX2017 ¶60
IPR2024-00906 ('241): POR at 3; EX2017 ¶60

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Public Accessibility

"[A] work is not publicly accessible if the only person who know how to find it are the ones who created it."

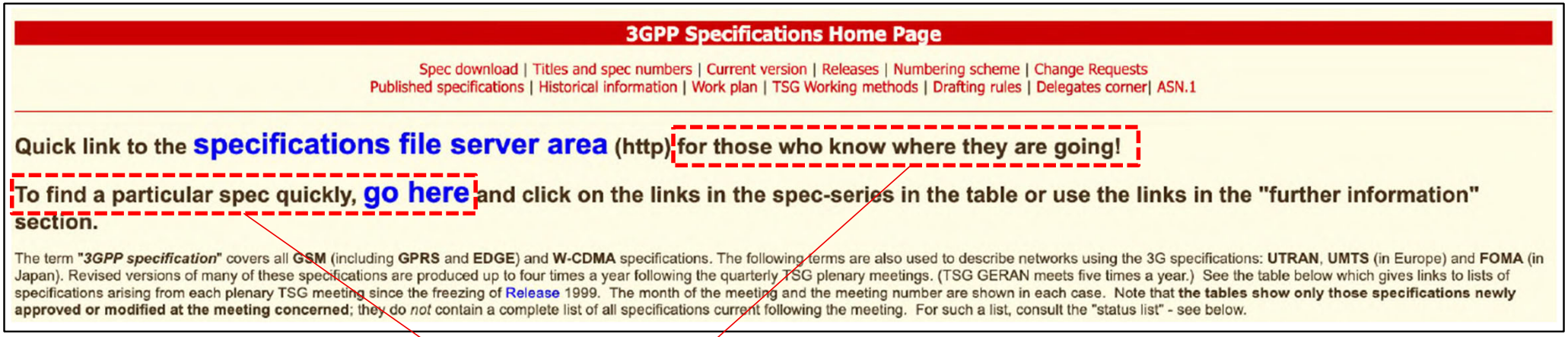
Samsung Elecs. Co. v. Infobridge Pte. Ltd., 929 F.3d 1363, 1372 (Fed. Cir. 2019)

- No evidence or discussion provided that this specific POSITA would be able to find Ex. 1015, N93 User manual, and Bluetooth specification.

IPR2024-00907 ('590): POR at 5
IPR2024-00906 ('241): POR at 5

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Need Prior Knowledge to Identify EX1015



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To find a particular spec quickly, go here and click on the links in the spec-series in the table or use the links in the "further information" section.

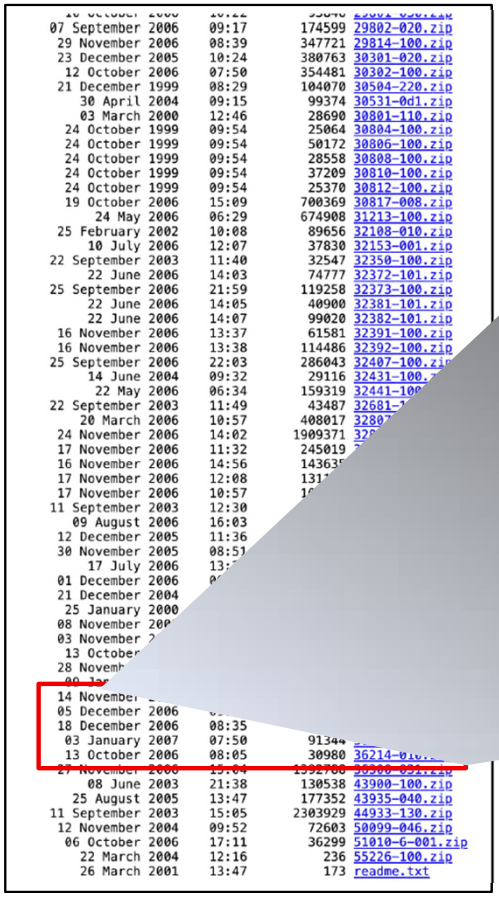
The term "*3GPP specification*" covers all **GSM** (including **GPRS** and **EDGE**) and **W-CDMA** specifications. The following terms are also used to describe networks using the 3G specifications: **UTRAN**, **UMTS** (in Europe) and **FOMA** (in Japan). Revised versions of many of these specifications are produced up to four times a year following the quarterly TSG plenary meetings. (TSG GERAN meets five times a year.) See the table below which gives links to lists of specifications arising from each plenary TSG meeting since the freezing of Release 1999. The month of the meeting and the meeting number are shown in each case. Note that **the tables show only those specifications newly approved or modified at the meeting concerned**; they do *not* contain a complete list of all specifications current following the meeting. For such a list, consult the "status list" - see below.

3GPP site also supports that prior knowledge of particular specification needed

IPR2024-00907 ('590): EX1033 at 18; POR at 8-9
IPR2024-00906 ('241): EX1032 at 18; POR at 8-9

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No Identifying Information to Locate EX1015 ("3GPP Spec")



IPR2024-00907 ('590): EX1033 at 18; POR at 8-9
IPR2024-00906 ('241): EX1032 at 18; POR at 8-9

Need Prior Knowledge to Identify EX1015

Since this was a preliminary document at the time, a POSITA would need to know by other means that it existed to go looking for it. I saw no evidence that a POSITA would know of this document. Unless I was already familiar that this document existed and was looking specifically for the document, I probably would not be able to locate where it exactly was.

Typically, those working on such documents were senior researchers, fully engaged in developments in 3GPP and other standards. However, a POSITA based on the definition set forth by Dr. Creusere, would not have the inclination or skill to do the digging to find such a document.

Without knowing of the document already, POSITA would not be able locate the 3GPP-Spec on the 3GPP FTP server. There is a zip file under the name of "36211-021.zip" which is not descriptive in a way that an interested party could find it. The 3GPP-Spec is located in a zip file that is neither catalogued nor indexed. Thus, without knowing of the document already, the document lacks any other identifiers that would allow a POSITA to locate the document.

IPR2024-00907 ('590): EX2017 ¶¶85-88; POR at 8-9
IPR2024-00906 ('241): EX2017 ¶¶83-85; POR at 8-9

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EX1015 (“3GPP-Spec”) Is an Unimplemented, Very Preliminary Working Document

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented.
This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification.
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EX1015 at 1

has not been subject to any approval process

shall not be implemented.

EX1015 at 1

IPR2024-00907 (’590): EX1015 at 1; POR at 8-9
IPR2024-00906 (’241): EX1015 at 1; POR at 8-9

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EX1015 ("3GPP-Spec") Is an Unimplemented, Very Preliminary Working Document

a **"version 0"** document

3GPP TS 36.211 V0.2.1 (2006-11)

Version 0 means document is **not** approved

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

IPR2024-00907 ('590): EX1015 at 5; POR at 8-9
IPR2024-00906 ('241): EX1015 at 5; POR at 8-9

Public Accessibility

"Petitioner's White Affidavit only indicates that the Wayback Machine **is searchable "by URL,"** . . . **not by a query of a search engine** before the critical date, using any combination of search words, that would have led to Wattsun appearing in the search results. . . . **Here, we question whether the record contains sufficient evidence that 'a person of ordinary skill could have reasonably found the website and then found the reference on that website.'"**

First Solar, Inc. v. Rovshan Sade, IPR2023-00881, Paper 13 at 18-19 (PTAB Nov. 16, 2023).

IPR2024-00907 ('590): POR at 5
IPR2024-00906 ('241): POR at 5

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CLAIM APPENDIX

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’590 Claim Language

CLAIM 1	
[1.pre]	A video processing apparatus, comprising:
[1.a]	a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;
[1.b]	a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;
[1.c]	a third radio communication circuit capable of transmitting information and using a third transmission frequency band;
[1.d]	an imaging circuit capable of receiving video information and still picture information via an optical system;
[1.e]	a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[1.f]	an input device capable of receiving a user indication;
[1.g]	an accumulation circuit capable of accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit; and
[1.h]	a controller controlling assignment of connection of each of the first, second, and third radio communication circuits,
[1.i]	wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio,
[1.j]	wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,
[1.k]	wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously, and
[1.l]	wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process.

’590 Claim Language

CLAIMS	
[4.pre]	The video processing apparatus according to claim 1, further comprising a radio interface capable of receiving video information by radio
[4.a]	wherein the accumulation circuit accumulates the video information received via the radio interface, and
[4.b]	the first radio communication circuit is further capable of transmitting the accumulated video information
[5.pre]	A display apparatus, comprising:
[5.a]	a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of receiving video information by radio or transmitting information by radio using the first transmission frequency band;
[5.b]	a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;
[5.c]	a third radio communication circuit capable of transmitting information and using a third transmission frequency band;
[5.d]	a compression circuit capable of implementing a plurality of compression schemes including a first compression scheme, the compression circuit compressing the video information received by the first radio communication circuit using the first compression scheme;
[5.e]	a display capable of displaying the information received by the first radio communication circuit or the second radio communication circuit; and
[5.f]	a controller controlling assignment of connection of each of the first, second, and third radio communication circuits,
[5.g]	wherein the controller controls assignment of connection for each of the first and second radio communication circuits in response to receiving an indication from a user such that when an indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information or transmitting the information by radio,
[5.h]	wherein the controller controls each of the first and second radio communication circuits so that the first radio communication circuit receives video information and the second radio communication circuit connects to the internet or the home network simultaneously, and
[5.i]	wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the display apparatus is available, and the display apparatus executes an update process such that an updated operating system of the display apparatus is stored in the display apparatus after execution of the update process.

’590 Claim Language

CLAIMS	
[8.pre]	The display apparatus according to claim 5, further comprising a radio interface capable of receiving video information by radio,
[8.a]	wherein the display device is further capable of displaying the video information received via the radio interface.
[9.pre]	A method for video processing, comprising:
[9.a]	receiving video information and still picture information via an optical system by an imaging circuit of a video processing apparatus;
[9.b]	compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[9.c]	accumulating video information received by the imaging circuit after the video information is compressed by the compression circuit;
[9.d]	implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band;
[9.e]	transmitting using the first transmission frequency band, the video information to an external device by radio, via a first radio communication circuit;
[9.f]	implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band;
[9.g]	connecting, by radio, to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit;
[9.h]	transmitting, via a third radio communication circuit, information using a third transmission frequency band;
[9.i]	controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits,
[9.j]	wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, a connection is assigned to the first radio communication circuit for transmitting the video information,
[9.k]	wherein the transmitting and connecting is controlled so that the first radio communication circuit is configured to transmit video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously;
[9.l]	receiving, via the second or third radio communication circuits a signal from the internet indicating that an update for an operating system is available; executing the update process; and storing an updated operating system after execution of the update process.

’590 Claim Language

CLAIMS	
[10.pre]	A method, comprising:
[10.a]	implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band;
[10.b]	implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band;
[10.c]	receiving video information by radio using the first transmission frequency band, via a first radio communication circuit and connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit;
[10.d]	compressing the video information received by the first radio communication circuit using a first compression scheme;
[10.e]	transmitting, via a third radio communication circuit, information using a third transmission frequency band;
[10.f]	displaying, via a display circuit, information received by the first radio communication circuit or the second radio communication circuit;
[10.g]	controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits,
[10.h]	wherein assignment of connection for each of the first and second radio communication circuit is controlled in response to receiving an indication from a user such that when an indication from the user indicates to use the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for receiving the video information,
[10.i]	wherein the receiving and connecting is controlled so that the first radio communication circuit is configured to receive video information and the second radio communication circuit is configured to connect to the internet or the home network simultaneously;
[11]	The video processing apparatus of claim 1, further comprising a fourth radio communication circuit capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.
[12]	The video processing apparatus of claim 1, wherein the third transmission frequency band is different from the first and second transmission frequency bands.
[14]	The video processing apparatus of claim 1, wherein transmitting of the information by the third radio communication circuit comprises connecting to the internet.
[15]	The video processing apparatus of claim 1, wherein the input device is capable of receiving a user's selection of content to be displayed on the video processing apparatus.
[16]	The video processing apparatus of claim 1, wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an application of the video processing apparatus is available, and the video processing apparatus executes an application update process such that an updated application of the video processing apparatus is stored in the video processing apparatus after execution of the application update process.

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’590 Claim Language

CLAIMS	
[17]	The video processing apparatus of claim 1, further comprising: a display for displaying a screen requesting user input, wherein the displayed screen prompts the user for a user input that indicates whether the user allows a connection between the first radio communication circuit and the external device to be established, wherein in response to receiving the user input indicating allowance of the connection, the first radio communication circuit transmits the accumulated video information to the external device.
[18]	The video processing apparatus of claim 1, wherein the second modulation scheme comprises quadrature amplitude modulation (QAM).
[19]	The video processing apparatus of claim 1, wherein the second radio communication circuit is controllable to change from the second modulation scheme to a different modulation scheme.
[20]	The video processing apparatus of claim 1, wherein the video processing apparatus comprises a cellular phone.
[21]	The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through Orthogonal Frequency Division Multiplexing (OFDM).
[22]	The video processing apparatus of claim 1, wherein at least the first radio communication circuit and the third radio communication circuit are implemented as a combined circuit.
[23.a]	a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;
[23.b]	a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;
[23.c]	a third radio communication circuit capable of transmitting information using a third transmission frequency band;
[23.d]	a fourth radio communication circuit capable of transmitting information using a fourth transmission frequency band; [23e] an imaging circuit capable of receiving video information and still picture information via an optical system;
[23.f]	a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[23.g]	a microphone receiving audio information corresponding to the video information received via the imaging circuit;
[23.h]	an accumulation circuit capable of accumulating video information received by the imaging circuit and audio information received by the microphone, wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio;
[23.i]	a display displaying the video information received by the first radio communication circuit and displaying information received by the second radio communication circuit via the internet or home network;
[23.j]	a controller controlling assignment of connection of each of the first, second, third, and fourth radio communication circuits,

’590 Claim Language

CLAIMS	
[23.k]	wherein the controller controls assignment of connection for each of the first and second radio communication circuit in response to receiving an indication from a user such that when an indication from the user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,
[23.l]	wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network simultaneously, and
[23.m]	wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an operating system of the cellular phone is available, and the cellular phone executes an update process such that an updated operating system of the cellular phone is stored in the cellular phone after execution of the update process.
[24]	The cellular phone of claim 23, wherein the second or third radio communication circuits receive a signal from the internet indicating that an update for an application of the cellular phone is available, and the cellular phone executes an application update process such that an updated application of the cellular phone is stored in the cellular phone after execution of the application update process.
[25]	The cellular phone of claim 23, wherein the first modulation scheme comprises shift keying modulation and the second modulation scheme comprises quadrature amplitude modulation (QAM).

’241 Claim Language

CLAIM 1	
1.pre	A video processing apparatus, comprising:
[1.a]	a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;
[1.b]	a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;
[1.c]	a third radio communication circuit capable of transmitting information and using a third transmission frequency band;
[1.d]	an imaging circuit capable of receiving video information and still picture information via an optical system;
[1.e]	a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[1.f]	an accumulation circuit capable of accumulating video information received by the imaging circuit;
[1.g]	and a controller controlling assignment of connection of each of the first, second, and third radio communication circuits,
[1.h]	wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio,
[1.i]	wherein when an indication from a user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video,
[1.j]	wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information while the second radio communication circuit connects to the internet or the home network, and
[1.k]	wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the video processing apparatus is available, and the video processing apparatus executes an update process such that an updated operating system of the video processing apparatus is stored in the video processing apparatus after execution of the update process.

’241 Claim Language

CLAIMS	
[4.pre]	The video processing apparatus according to claim 1, further comprising a radio interface capable of receiving video information by radio,
[4.a]	wherein the accumulation circuit accumulates the video information received via the radio interface, and
[4.b]	the first radio communication circuit is further capable of transmitting the accumulated video information.
[5]	The video processing apparatus of claim 1, further comprising a fourth radio communication circuit capable of transmitting information and using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands, wherein the controller controls assignment of connection of each of the first, second, third, and fourth radio communication circuits.
[6]	The video processing apparatus of claim 1, wherein the third transmission frequency band is different from the first and second transmission frequency bands.
[8]	The video processing apparatus of claim 1, wherein transmitting of the information by the third radio communication circuit comprises connecting to the internet.
[9]	The video processing apparatus of claim 1, further comprising an input device capable of receiving a user's selection of content to be displayed on the video processing apparatus.
[10]	The video processing apparatus of claim 1, wherein one of the first, second, or third radio communication circuits receive a signal from the internet indicating that an update for an application of the video processing apparatus is available, and the video processing apparatus executes an application update process such that an updated application of the video processing apparatus is stored in the video processing apparatus after execution of the application update process.
[11]	The video processing apparatus of claim 1, further comprising: a display for displaying a screen requesting user input, wherein the displayed screen prompts the user for a user input that indicates whether the user allows a connection between the first radio communication circuit and the external device to be established, wherein in response to receiving the user input indicating allowance of the connection, the first radio communication circuit transmits the accumulated video information to the external device.
[12]	The video processing apparatus of claim 1, wherein the second modulation scheme comprises quadrature amplitude modulation (QAM).
[13]	The video processing apparatus of claim 1, wherein the second radio communication circuit is controllable to change from the second modulation scheme to a different modulation scheme.
[14]	The video processing apparatus of claim 1, wherein the video processing apparatus comprises a cellular phone

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’241 Claim Language

CLAIMS	
[15]	The video processing apparatus of claim 1, wherein the second and third radio communication circuits conduct demodulation through Orthogonal Frequency Division Multiplexing (OFDM).
[16]	The video processing apparatus of claim 1, wherein at least the first radio communication circuit and the third radio communication circuit are implemented as a combined circuit.
[17.pre]	A method for video processing, comprising:
[17.a]	receiving video information and still picture information via an optical system by an imaging circuit of a video processing apparatus;
[17.b]	compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[17.c]	accumulating video information received by the imaging circuit;
[17.d]	implementing a first transmission scheme having a first modulation scheme and a first transmission frequency band;
[17.e]	transmitting, using the first transmission frequency band, the video information to an external device by radio, via a first radio communication circuit;
[17.f]	implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band;
[17.g]	connecting, by radio, to an internet or a home network to transmit and receive information using the second transmission frequency band, via a second radio communication circuit;
[17.h]	transmitting, via a third radio communication circuit, information using a third transmission frequency band;
[17.i]	controlling, via a controller, assignment of connection of each of the first, second, and third radio communication circuits,
[17.j]	wherein when an indication from a user indicates to transmit video information using the first radio communication circuit, a connection is assigned to the first radio communication circuit for transmitting the video,
[17.k]	wherein the transmitting and connecting is controlled so that the first radio communication circuit transmits video information while the second radio communication circuit connects to the internet or the home network;
[17.l]	receiving, via one of the first, second, or third radio communication circuits a signal from the internet indicating that an update for an operating system is available; executing the update process;

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’241 Claim Language

CLAIMS	
[18]	The method of claim 17, further comprising transmitting, via a fourth radio communication circuit, information using a fourth transmission frequency band that is different from the first, second, and third transmission frequency bands.
[19]	The method of claim 17, wherein transmitting of the information by the third radio communication circuit comprises connecting to the internet.
[20]	The method of claim 17, further comprising: receiving, via one of the first, second, or third radio communication circuits a signal from the internet indicating that an update for an application is available; executing the application update process; and storing an updated application after execution of the application update process.
[21]	The method of claim 17, further comprising: displaying a screen requesting user input, the displayed screen prompting the user for a user input that indicates whether the user allows a connection between the first radio communication circuit and the external device to be established; receiving a user input indicating allowance of the connection; transmitting, via the first radio communication circuit, the accumulated video information to the external device in response to receiving the user input indicating allowance.
[22]	The method of claim 17, wherein the second modulation scheme comprises quadrature amplitude modulation (QAM).
[23]	The method of claim 17, further comprising controlling the second radio communication circuit to change modulation scheme from the second modulation scheme to a different modulation scheme.
[24]	The method of claim 17, further comprising conducting demodulation through Orthogonal Frequency Division Multiplexing (OFDM) via the second and third radio communication circuits.

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’241 Claim Language

CLAIMS	
[25.pre]	A cellular phone, comprising:
[25.a]	a first radio communication circuit implementing a first transmission scheme having a first modulation scheme and first transmission frequency band, the first radio communication circuit capable of transmitting video information by radio or receiving information by radio using the first transmission frequency band;
[25.b]	a second radio communication circuit implementing a second transmission scheme having a second modulation scheme different from the first modulation scheme and a second transmission frequency band different from the first transmission frequency band, the second radio communication circuit capable of connecting by radio to an internet or a home network to transmit and receive information using the second transmission frequency band;
[25.c]	a third radio communication circuit capable of transmitting information using a third transmission frequency band;
[25.d]	a fourth radio communication circuit capable of transmitting information using a fourth transmission frequency band;
[25.e]	an imaging circuit capable of receiving video information and still picture information via an optical system;
[25.f]	a compression circuit compressing the still picture information using a first type of compression method and the video information using a second type of compression method;
[25.g]	a microphone receiving audio information corresponding to the video information received via the imaging circuit;
[25.h]	an accumulation circuit capable of accumulating video information received by the imaging circuit and audio information received by the microphone, wherein the first radio communication circuit can transmit video information accumulated in the accumulation circuit to an external device by radio;
[25.i]	a display displaying the video information received by the first radio communication circuit and displaying information received by the second radio communication circuit via the internet or home network;
[25.j]	a controller controlling assignment of connection of each of the first, second, third, and fourth radio communication circuits,
[25.k]	wherein when an indication from a user indicates to transmit video information using the first radio communication circuit, the controller assigns a connection to the first radio communication circuit for transmitting the video information,
[25.l]	wherein the controller controls each of the first and second radio communication circuit so that the first radio communication circuit transmits video information and the second radio communication circuit connects to the internet or the home network, and
[25.m]	wherein one of the first, second, or third radio communication circuits receives a signal from the internet indicating that an update for an operating system of the cellular phone is available, and the cellular phone executes an stored in the cellular phone after execution of the update process.

’241 Claim Language

CLAIMS	
[26]	The cellular phone of claim 25, wherein one of the first, second, or third radio communication circuits receive a signal from the internet indicating that an update for an application of the cellular phone is available, and the cellular phone executes an application update process such that an updated application of the cellular phone is stored in the cellular phone after execution of the application update process.
[27]	The cellular phone of claim 25, wherein the first modulation scheme comprises shift keying modulation and the second modulation scheme comprises quadrature amplitude modulation (QAM).

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