

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LEXMARK INTERNATIONAL, INC.,

Petitioner,

v.

FLEXIWORLD TECHNOLOGIES, INC.,

Patent Owner.

PTAB Case No. IPR2023-00845

Patent No. 7,609,402

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 7,609,402**

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EXHIBIT LIST

EX[No.]	<u>Description of the Exhibit Document</u>
EX1001	U.S. Patent No. 7,609,402 (“’402 Patent”)
EX1002	Prosecution File History of the ’402 Patent
EX1003	Declaration of Majid Rabbani
EX1004	U.S. Patent Publication No. 2002/0083121 A1 (“Chang-121”)
EX1005	U.S. Patent No. 7,941,541 B2 (“Chang ’541 Patent”)
EX1006	U.S. Patent No. 7,355,732 B2 (“Yamaguchi”)
EX1007	U.S. Patent No. 6,950,645 B1 (“Kammer”)
EX1008	U.S. Patent No. 6,952,831 B1 (“Moore”)
EX1009	U.S. Patent Publication No. 2002/0078160 A1 (“Kemp”)
EX1010	Reserved
EX1011	U.S. Provisional Patent Application No. 60/262,764 (“’764 Provisional”)
EX1012	U.S. Patent Application No. 10/053,651 (“’651 Application”)
EX1013	Comparison of ’402 Patent Detailed Description and ’764 Provisional
EX1014	Reserved
EX1015	U.S. Patent No. 6,469,805 B1 (“Behlok”)
EX1016	PCT Publication No. WO 97/39553 (“Davis”)

I. INTRODUCTION

U.S. Patent No. 7,609,402 (“’402 Patent” (EX1001)) combines well-known techniques of wireless communications, print processing, and a rudimentary authentication procedure to formulate two types of claims.

5 The first claim set (1, 9, 23, 28 and dependents) applies the well-worn notion of “division of labor” to printing a document by performing some of the print processing operations at the device that initiates the print job, while completing the remaining tasks at the printer that wirelessly receives the partially-processed data.

10 In the second flavor of the claims (13, 33 and dependents), the division-of-labor idea fades away by instead focusing on performing a check to determine if a user is authorized to use the printer—akin to checking a guest’s name against an invitee list at a party.

15 None of these ideas were new. Prior to the ’402 Patent’s filing date, wireless printing, distribution of processing operations and authentication techniques were matured well beyond what is described and claimed in the ’402 Patent. In fact, the references identified by Lexmark in this Petition illustrate that the ’402 Patent claims are nothing more than a rehash of prior techniques.

II. MANDATORY NOTICES

A. Real party-in-interest

Lexmark International, Inc. (“Petitioner”) is the real party-in-interest, and there are no other real parties in interest to the best knowledge of Patent Owner.

5 Lexmark International Inc. is affiliated with other companies, including its 100% owner Apex Swiss Holdings SARL, and Ninestar Corporation which is an indirect owner of 61.84% of Apex Swiss Holdings SARL.

B. Related matters

The ’402 Patent is being asserted in the following patent infringement lawsuits
10 brought by Patent Owner:

Flexiworld Technologies, Inc. v. Epson America, Inc., No. 8-21-cv-00807 (C.D. Cal.) (complaint filed April 29, 2021, settled/voluntarily dismissed February 1, 2022);

Flexiworld Technologies, Inc. v. Brother Industries (USA), Inc., No. 2-22-cv-
15 02237 (W.D. Tenn.) (complaint filed April 15, 2022, settled/voluntarily dismissed March 13, 2023);

Flexiworld Technologies, Inc. v. Lexmark International, Inc., No. 5:22-cv-00098 (E.D. Ky.) (complaint filed April 15, 2022, served on April 21, 2022);

Flexiworld Technologies, Inc. v. Hisense Co., Ltd., No. 2-22-cv-00227 (E.D.
20 Tex.) (complaint filed June 24, 2022), transferred to 1-22-cv-04338 (N.D. Ga.).

A petition for *Inter Partes* Review will also be filed by Petitioner for U.S. Patent No. 9,965,233.

C. Counsel and service information

Lead counsel: Babak Tehrani (Reg. No. 55,937).

5 Back-up counsel: Amy Simpson (Reg. No. 54,688), Fareid Asphahani (Reg. No. 72,217).

These attorneys can be reached by mail at Perkins Coie LLP, 11452 El Camino Real, Suite 300, San Diego, CA 92130; by phone at (858) 720-5700; and by fax at (858) 720-5799.

10 Petitioner consents to electronic service. All services and communications to the attorneys listed above may be sent to:

Lexmark-FlexiworldIPR@perkinscoie.com

A Power of Attorney is being filed concurrently.

III. REQUIREMENTS FOR *INTER PARTES* REVIEW

15 **A. Grounds for standing**

The '402 Patent is available for IPR and Petitioner is not barred or estopped from challenging it on the presented grounds.

B. Overview of challenge and relief requested

20 Petitioner requests cancellation of Claims 1-21 and 23-37 under pre-AIA 35 U.S.C. §§102 and 103.

1. Prior art

Petitioner relies upon the references in the Table of Exhibits, including:

Prior Art	Exhibit No.
U.S. Patent No. 7,355,732 (“Yamaguchi”)	1006
U.S. Patent No. 6,950,645 (“Kammer”)	1007
U.S. Patent No. 6,952,831 (“Moore”)	1008
U.S. Pub. No. 2002/0078160A1 (“Kemp”)	1009
U.S. Patent No. 6,469,805 (“Behlok”)	1015
PCT Publication No. WO 97/39553 (“Davis”)	1016

Davis is prior art under pre-AIA 35 U.S.C. §102(b); all other references are
5 prior art under pre-AIA 35 U.S.C. §102(e). This Petition also relies on the
declaration of Dr. Majid Rabbani (“Rabbani” (EX1003)).

2. Grounds for challenge and challenged claims

Ground	Claims Challenged	35 U.S.C. §	References
1	13-21, 33-37	103	Yamaguchi, Kammer, Moore
2	21	103	Yamaguchi, Kammer, Moore, Davis
3	1-7, 9-21, 23-37	103	Yamaguchi, Kammer, Kemp
4	8	103	Yamaguchi, Kammer, Kemp, Behlok

IV. TECHNOLOGY DESCRIPTION

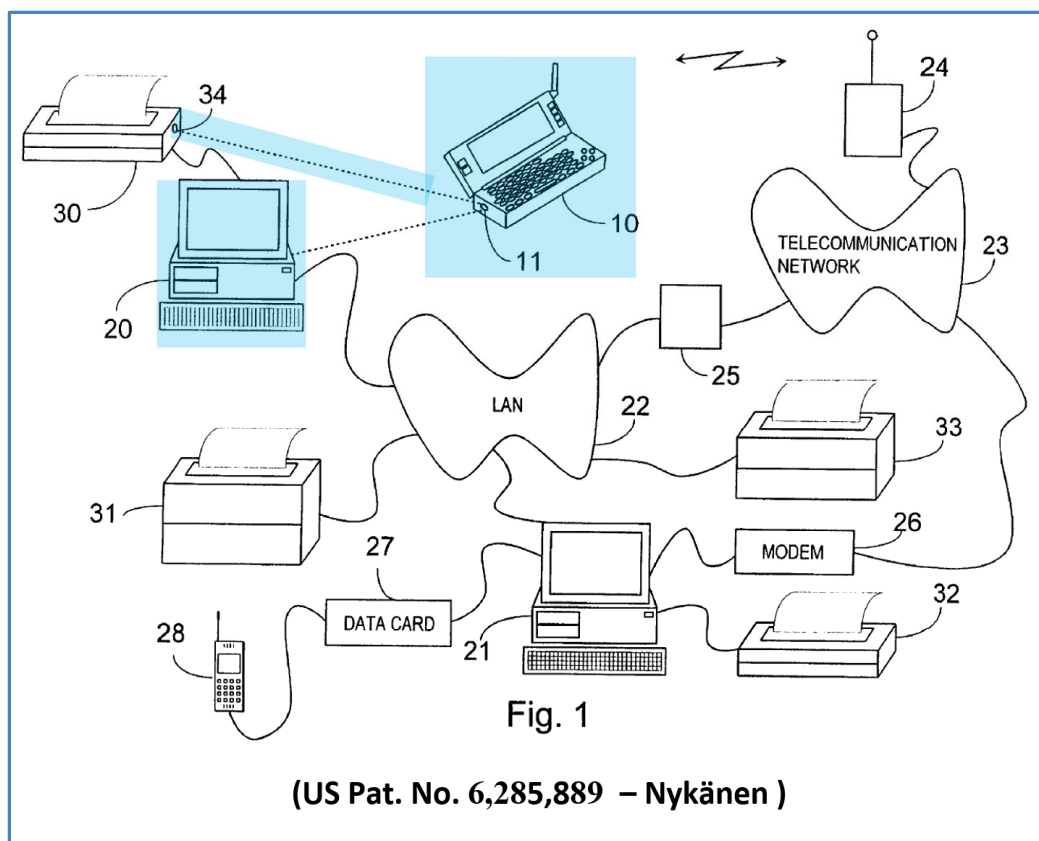
A. Wireless Printing

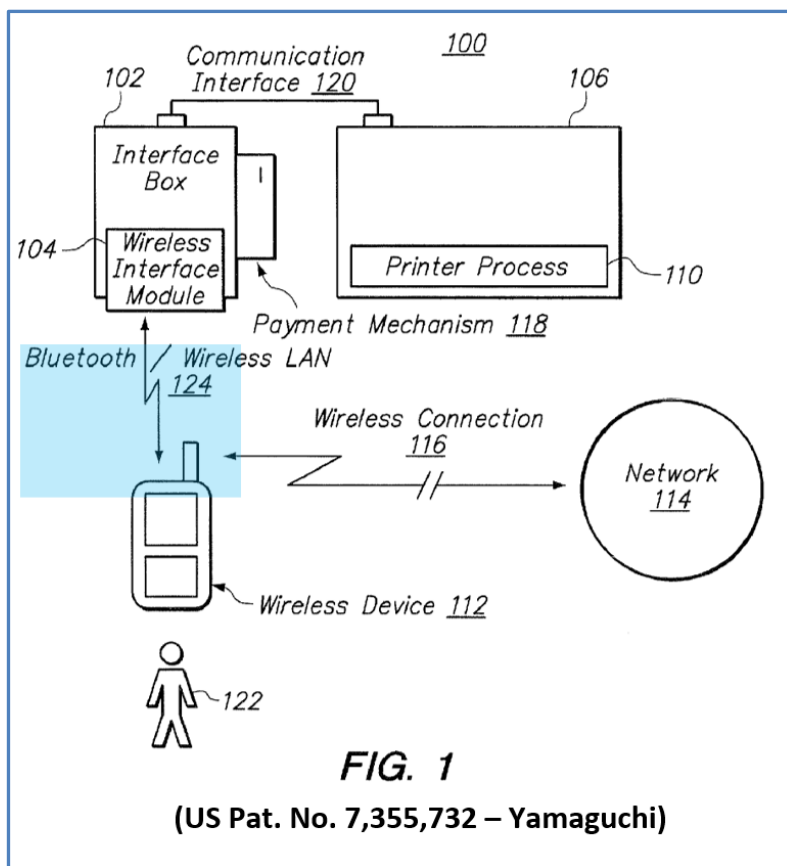
10 By around year 2000, wireless mobile devices and phones had been
commercially deployed for several years, and the ability to wirelessly print digital

content directly from a mobile device to a printer was known. Rabbani, ¶¶54-64.

For example, both Nokia and Ericsson were selling mobile phones that could make point-to-point connections to another device via Bluetooth and Infrared protocols (*id.*, ¶¶57-59), and photos/documents could be sent wirelessly from a camera or a

5 mobile device to a printer. *Id.*, ¶¶60-64. For example, U.S. Patents 6,285,889, 6,940,541, 7,024,051, 7,355,732 (Yamaguchi (EX1006)) and 7,212,229 all described wirelessly printing from a camera or a phone.





B. Authentication

Authentication refers to verifying credentials of a person (or a device) before allowing the use of digital resources or communication links by that person or device.

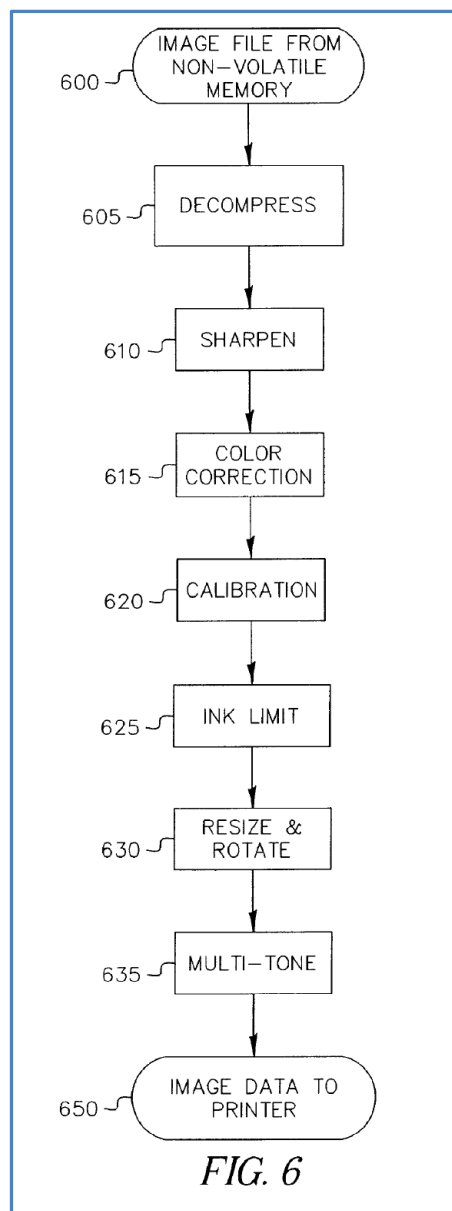
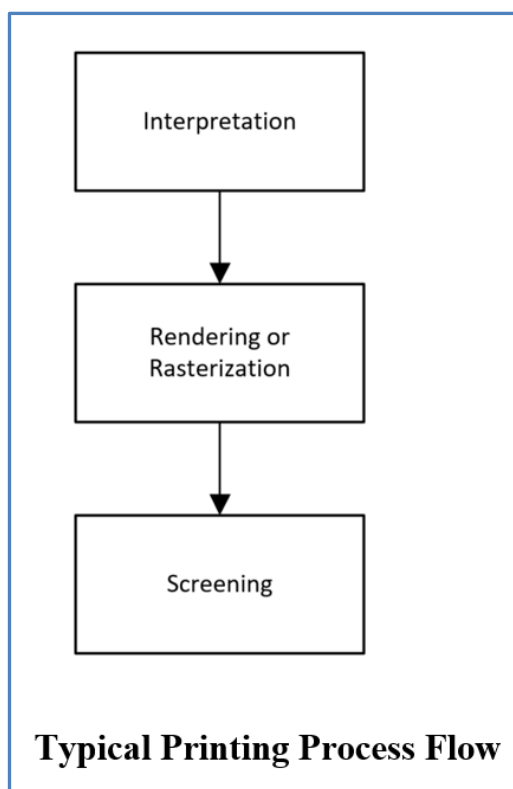
5 Rabbani, ¶70. By late 1990's, authentication protocols had reached considerable levels of sophistication, including many proprietary techniques and several standardized protocols, such as X.509 certificates, IPsec and WTLS industry standards. Rabbani, ¶¶72-74.

The use of passwords, PIN-codes or other forms of identification to verify a
10 user's authorization (what is essentially being described and claimed in the '402

Patent) dates back to the 1960s and the introduction of Automatic Teller Machines (ATMs). Rabbani, ¶71. This rudimentary means for access control had been described in many publications and patents, including U.S. Patent No. 5,280,527 (1992), which involved comparing a biometric input from a user to a template for determining if the person is authorized (*id.*, ¶72), and in U.S. Patent No. 7,028,102 (2000), where a user's PIN-code was used to verify the user had access authorization to a printing system. *Id.* ¶¶75-76.

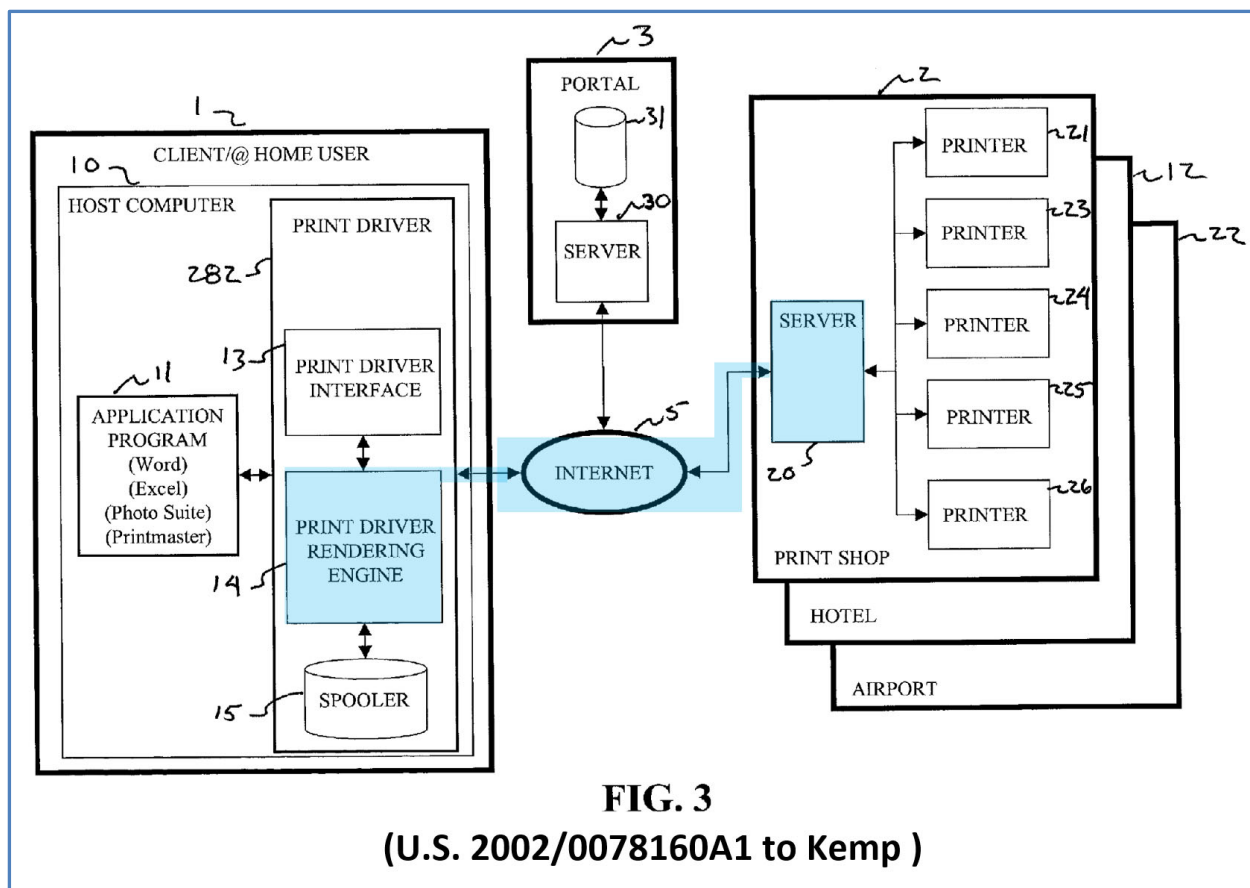
C. Printing Workflow and Division of Labor

The steps contained in preparing digital documents for printing were well-known for many years leading up to the year 2000, as different types of printing technologies—inkjet, laser, thermal, and others—had been in commercial use. Rabbani, ¶¶77-83. While the basic print flow operations included three basic steps of interpretation, rasterization and screening (see figure below), it was known that these steps involved additional sub-steps or tasks, as exemplified by Figure 6 (below) of U.S. Pat. No 7,212,229, illustrating the steps for preparing an image for inkjet printing. *Id.*



Distributing image preparation operations to different devices was also nothing new (Rabbani, ¶¶84-89), as explained by Nykänen's Patent (Figure 1 below), where print data was converted at mobile device (10) into a data transfer format, was

5 wirelessly sent to another terminal (20), which converted the data into a form suitable for an output device (30), such as —a printer or a monitor. Rabbani, ¶88.



V. THE '402 PATENT

The '402 Patent concerns a data output method for rendering (printing) content at an output device (printer) sent from an information apparatus (computer, cellphone, etc.). EX1001, Abstract. Rabbani, ¶107. It claims variations of similar methods for generating intermediate print data at the information apparatus for further processing at the output device, establishing wireless communications between the two devices, and/or user authentication to access the printer, and ultimately sending the print data to a rendering engine. EX1001, claims 1, 9, 13, 7:15-17. Rabbani, ¶108.

The '402 Patent describes the intermediate output data, which appears in only some of the claims, as “an output file or data generated by an information apparatus, or a client application or device driver included in the information apparatus[,]” offering an incredibly broad array of examples thereof. EX1001, 10:66-11:11.

5 Figures 13A and 13B exemplify the processing steps after the intermediate data is transmitted, notably, processing and conversion into a form suitable for sending to a printer engine. EX1001, 37:18-41:32. Rabbani, ¶109.

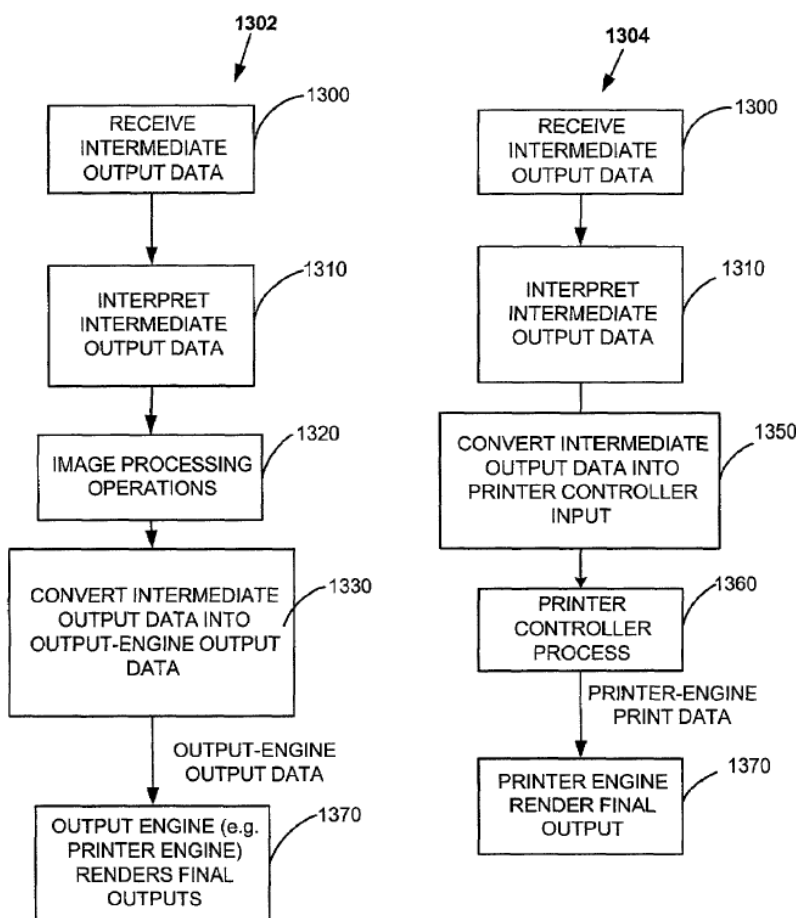


FIG 13 A

FIG 13 B

Ultimately, the '402 Patent is simply directed to a method to “provide[] a more balanced distribution of the raster image processing computational load between the information apparatus and the output device” (EX1001, 6:40-42, 5:29-32), in also attempting to “eliminate[] the need to install a plurality of device-dependent
5 dedicated drivers or applications in the information apparatus in order to output to a plurality of output devices.” EX1001, 5:32-35. Rabbani, ¶110.

As demonstrated below, *all of these ideas were already described* in the prior art. Notably, the self-proclaimed “Methods for Universal Data Output” in the title of the '402 Patent, and not having to install a device driver specific to a printer in
10 Claim 1, were precisely what was already described in Moore (titled “Driverless Printing”) and Kemp (¶[0068]: “using a neutral printer definition language (NPDL) that is not specific to any type of printer”). As shown in the below Grounds, all of the challenged claims were obvious.

A. Priority

15 Priority date of the claims in the '402 Patent is no earlier than *January 18, 2002*, the filing date of U.S. Patent Application No. 10/053,651 (“’651 Application,” EX1012), and the challenged claims are not supported under 35 U.S.C. §112 by the

Provisional Application No. 60/262,764 (“’764 Provisional”), which appears in the ’402 Patent’s priority chain.¹ Rabbani, ¶118.

Specifically, the ’651 Application includes 14 new figures (FIGS. 1A-1B, 2B, 3A-3B, 4A-4B, 5A-5B, 6A-6C, 7A, 7B, 7F) and significant new matter (*see* EX1013
5 comparison), with claims that recite new limitations and terminology not supported by the ’764 Provisional. Rabbani, ¶120. *See PowerOasis, Inc. v. T-Mobile* (Fed. Cir. 2008) citing *Martin v. Mayer* that “the written description requirement is “not a question of whether one skilled in the art *might* be able to construct the patentee’s device from the teachings of the disclosure.... Rather, it is a question whether the
10 application necessarily discloses that particular device.” This requires that the written description actually or inherently disclose the claim element. (emphasis in original).” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (2008).

’402 Claims	Lack of 112 Support Explanation
13, 33 and all their dependents claims	Terms “security key,” “security code,” and operations 13[e]-[h] and 33[e]-[h] for obtaining a security key, transmitting a security code, and receiving an authentication response are neither recited, nor explained in the ’764 Provisional. The only references

¹ All references in this Petition pre-date even the filing date of the ’764 Provisional.

	to authentication are generalized explanations (EX1011, 9:24, 19:17-21, repeated at 20:33-21:2, and 36:33-37:2), which at best, indicate an access control list specifying a list of devices/users that can access the service, but includes no explanation about the claimed sequence of authentication procedures, the security key and/or the security code. Dependent claims 14-22 and 34-37 are not entitled to the early priority date for at least the same reasons.
9, 13, 28, 33, and all their dependent claims; Claims 3, 25:	These claims recite an “<i>output device profile</i>”² (“device profile” in claims 3 and 25), the scope and meaning of which have been significantly expanded compared to how they would have been construed based on the ’764 Provisional. Specifically, what constitutes the “output device profile” in the ’651 Application (which issued as the ’402 Patent) additionally includes: • “<i>communication protocols</i>,” • “<i>rendering intents</i>,” and • “<i>Another profile which contain parameters and information about the output device and its service (e.g. color profiles, halftoning profiles, communication profiles, rasterization profiles, quality of service etc.).</i>”

² All bold and italic emphases are added by Petitioner unless otherwise specified.

	<i>Compare</i> EX1001, 9:7-10:36 to Ex1011, 9:7-10:6. These additional elements find no explicit or inherent support in the '764 Provisional, and are not explained or discussed in any way. Therefore, a POSITA reading the '651 Application would have come away with a different (and expanded) interpretation of the output device profile compared to what was conveyed by the '764 Provisional. Accordingly, this term lacks 112 support in the '764 Provisional. <i>See PowerOasis, Inc. v. T-Mobile</i> (Fed. Cir. 2008), explaining that the original application did not provide written description for the term “customer interface” in the claims of the subsequent continuation-in-part (CIP) application because the CIP additionally explained a customer interface that could be located remotely from the vending machine, which was not in the original application; <i>see also Tronzo v. Biomet, Inc.</i>, 156 F.3d 1154 (1998) and <i>Anascape, Ltd. v. Nintendo of America Inc.</i>, 601 F.3d 1333 (2010).
1-37	All independent claims (and thus all claims) recite “conforming” operations (1) at the information device (e.g., Elements 1[f] , 9[e], 13[j] and others), and (2) at the output device (in Element 1[k]). This term (or any of its variations) is not recited in the '764 Provisional. Further, there is no explanation, either explicitly or inherently, in the '764 Provisional to

inform a POSITA as to what the claimed conforming operations at the information device or at the output device mean. At best, the '764 Provisional describes performing a ***rasterization*** operation at the information apparatus to produce “intermediate print data.” EX1011, 10:8-11:24, 25:5-28. In contrast, the '651 Application a coined new terminology—“***conforming***”—and expanded on the operations that fell under the umbrella of “conforming” well-beyond rasterization.

Specifically, claim 5 of the '402 Patent recites that the new conforming operation “includes one or more of a rasterization operation, a scaling operation, an interpolation operation, ***a decoding operation, an encoding operation, a filtering operation*** and a ***compression operation.***” While the '764 Provisional describes scaling and interpolation as part of rasterization (and not as separate operations as recited in Claim 5) (EX1011, 25:7-13), ***encoding, decoding and compression*** are only described as part of another operation called “creating metafile” (*id.*, 25:31-26:8), and ***a filtering operation*** is neither described as part of rasterization, nor in any other context.

Accordingly, this new claim term lacks sufficient support in the '764 Provisional. *See PowerOasis Inc. v. T-Mobile* (Fed. Cir. 2008).

2, 10, 19, 24, 29, 37	Providing a <i>password or security code, address, signatures, a physical or digital security key, biometrics, a fingerprints, and a voice</i> , as part of authentication, is neither recited nor explained in the '764 Provisional.
3, 11, 25, 30	Receiving a <i>security code</i> as an attribute at the information apparatus is not recited or explained in the '764 Provisional. <i>See</i> explanation for Claim 13.
5, 26	A <i>filtering operation</i> as part of the “conforming” step (or otherwise) is not recited or explained in the '764 Provisional.

See also Rabbani ¶¶121, table on pg, 54-58.

B. File History

The claims of the '402 Patent were initially allowed after Applicant responded to a restriction requirement by canceling all claims, adding new claims (EX1002, 234-243), and subsequently making minor claim amendments. EX1002, 212-221, 184. After receiving a notice of allowance, Applicant filed two requests for continued examination while adding fifteen new claims and filing information disclosure statements (*id.*, 154-178, 88-107), which led to the allowance of all claims. *Id.*, 29-39.

The examiner's reasons for allowance pointed to Yoshida (U.S. 7,366,468)—the only reference discussed—and stated that Yoshida described wireless printing, a

printer's response to an inquiry by an information device that indicated the printer is a pre-registered printer and is operating in a printing process, but did not disclose the remaining claim limitations. EX1002, 33-38. *See also* Rabbani ¶¶112-115.

VI. LEVEL OF ORDINARY SKILL IN THE ART

5 A POSITA in November 2000 would have had at least a B.S. in computer science, computer engineering, or electrical engineering (or equivalent experience) and at least two years of practical experience with printer technologies. *See also* Rabbani ¶¶48-53.

VII. CLAIM CONSTRUCTION

10 In an IPR proceeding, the challenged claims are construed “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. §42.100(b). At this time, Petitioner does not believe construction of any term is necessary to resolve the invalidity challenges set forth in this Petition. *See also*
15 Rabbani ¶¶46-47.

VIII. INVALIDITY GROUNDS

A. Ground-1: Claims 13-21, 33-37 Are Obvious Over Yamaguchi, Kammer, and Moore

1. Prior Art

5 **Yamaguchi**: Yamaguchi described a wireless printing method for users to remotely print “hard copies of electronic documents” from a laptop/hand-held device to a printer. EX1006, Abstract, 1:56-2:3, 1:27-35, 3:19-22. Yamaguchi disclosed a printer “interface box” (**blue**) connected to the printing apparatus (**red**) that wirelessly communicated with the user’s “wireless device” (**green**) to receive the
10 electronic document over a wireless connection (using Bluetooth) and cause the printer to generate the hard copy of the document. EX1006, FIG. 1, 3:55-4:10. Rabbani ¶90.

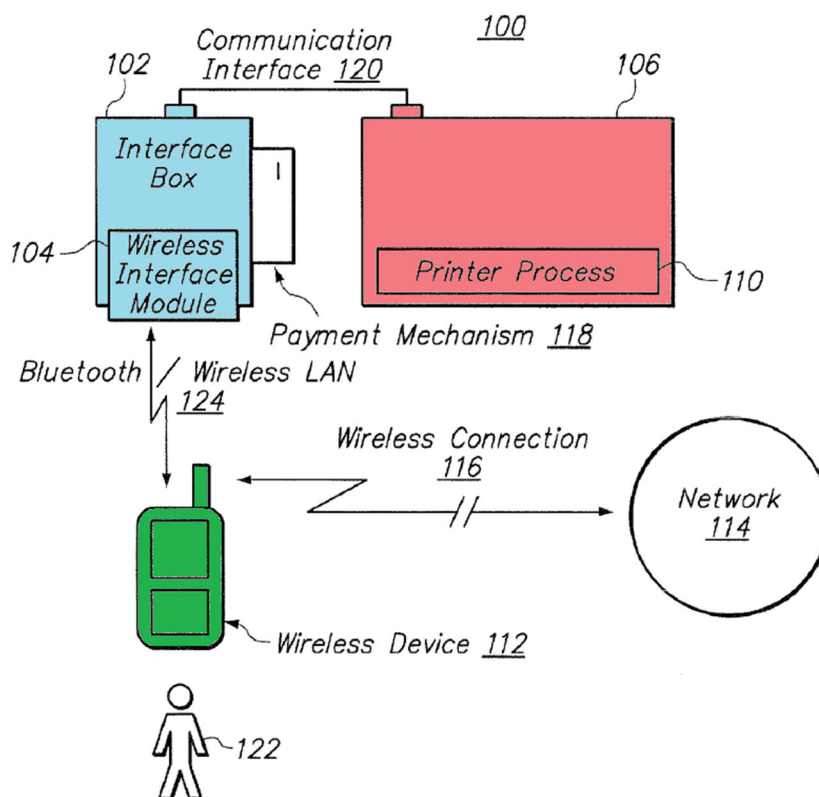


FIG. 1

Yamaguchi described processing the electronic document print requests at the wireless device to produce “a print ready file ... in a format that can be read and processed by a printing device.” EX1006, 7:5-19, FIG. 3A. Rabbani ¶¶91.

- 5 Yamaguchi’s wireless printing method also included an authentication procedure based on an ID number communicated between the wireless device and the printer interface box for establishing the wireless connection between the devices. EX1006, 7:5-49, FIG. 5. Rabbani ¶¶92. *See also id.* ¶¶93-94.

Kammer disclosed a method for managing a wireless device (having a
10 transceiver for wireless communication) when operating in discovery mode in a

wireless network of devices, such as a Bluetooth network. EX1007, Abstract, 1:7-

11. In particular, Kammer explained that Bluetooth connections can be used to connect a laptop or a cell phone to a printer. EX1007, 1:27-36. Kammer discussed, in detail, conventional Bluetooth protocol steps to discover and connect with another Bluetooth-enabled device (EX1007, 1:15-2:58). Kammer additionally described a power optimization approach for the discovery process (EX1007, 4:15-22), which are not relied upon in this Petition. Rabbani ¶¶95-96.

Moore disclosed a “driverless printing” method based on a universal driver that could learn a printer’s options and commands, and to thus create a driver for the printer. EX1008, Abstract. Moore’s method used a Generic Printer Description (GPD) file resident on the printer that conveyed information about the printer (e.g., type, name, supported functions) to a universal printer driver (“unidriver”) resident on a computer to implement the common printer driver functions to the particular printer. EX1008, 1:5-7, 2:59-3:14, 6:3-12; FIG. 3. Rabbani ¶¶97. *See also id.* ¶¶98-

99.

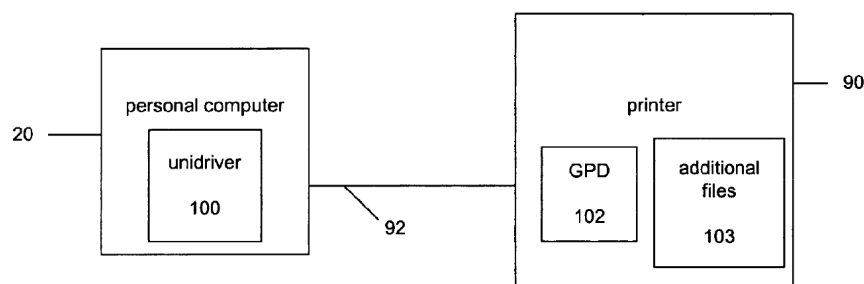


Figure 3

2. Motivation to Combine

The Yamaguchi-Kammer-Moore combination would have been obvious for multiple reasons. Yamaguchi described wirelessly communicating with a printer via Bluetooth protocol, which was part of an industry standard. EX1006, 1:5-10; 4:3-9.

5 Thus, a POSITA would have looked for a reference like Kammer to learn about the standardized steps of the Bluetooth “Discovery” protocol³ (EX1007, 1:23-27) that were not explicitly described in Yamaguchi. Rabbani, ¶¶125, 127-128.

Yamaguchi and Moore both related to improving a user’s experience by having the ability to wirelessly print to a remote printer (EX1006, 1:5-10, 1:56-2:9)

10 and by allowing a user device that included a “universal driver” (unidriver) to obtain the needed printer characteristics from the printer itself. Ex1008, 1:5-7, 2:50-54. A

POSITA would have been motivated to augment Yamaguchi’s wireless printing capability with Moore’s unidriver because it would have simplified the printing process, conserved device memory, and avoided having to download particular

15 printer drivers not already resident on the user’s device—which both Moore and Yamaguchi suggested. *See* EX1008, 1:56-2:16; EX1006, 5:34-40. Rabbani, ¶¶146-153.

³ The Yamaguchi-Kammer combination only focuses on the basic Bluetooth discovery process in its background and not on Kammer’s power-conserving method.

Additional motivations to combine these references with a reasonable expectation of success are provided in individual claim limitations below.

3. Claims 13 and 33

5 **13[pre]/33[pre]: A method of mobile wireless data output**
 from an information apparatus with access to at least
 part of a content to a wireless output device by short
 range wireless communication, wherein the
10 **information apparatus includes at least one wireless**
 communication unit and is a distinct device from the
 output device, the method comprising:

Yamaguchi taught a method of mobile wireless data output for printing, at a printing device (“output device”); electronic document information (“content”) wirelessly was sent from a wireless device (“information apparatus”) to a wireless/printer interface component “locally connected [to the] printing device.”

15 EX1006, 1:6-9, 1:63-2:3, 2:55-67. The “printing device ... generate[d] a hard copy document based on the electronic document information” wirelessly communicated to the wireless/printer interface component. EX1006, 2:56-67. Rabbani, ¶123.

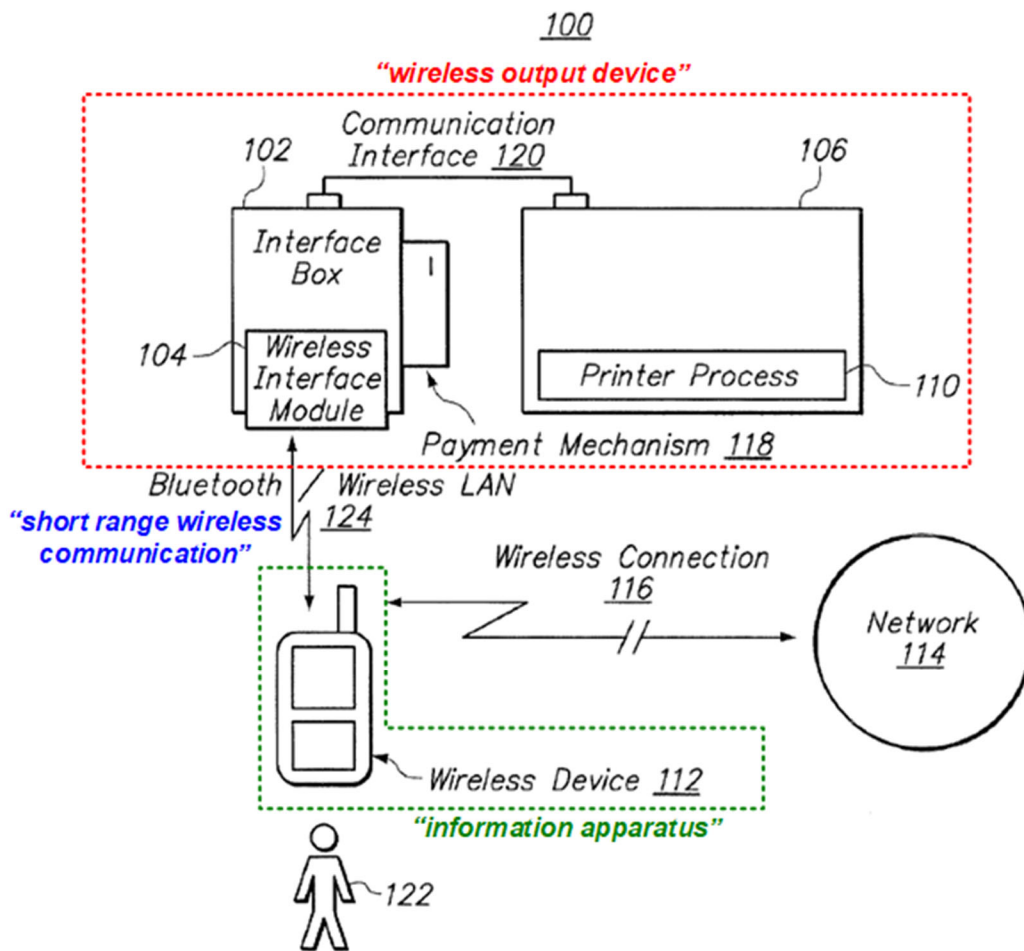


FIG. 1

Yamaguchi's FIG. 1 illustrated wireless device 112 (information apparatus) could be "a lap-top, cellular phone, Palm Pilot, or other wireless device" (EX1006, 3:19-20, 3:62-65) and was distinct from the printing device 106 and its "locally connected" interface box 102 that together formed the claimed wireless output device. This configuration is analogous to the '402 Patent's configurations of the "output controller" being either an external component (FIGS. 7A, 7D, 7F) or an internal-but-separate component (FIGS. 7B, 7E) of the printer. EX1001, FIG. 7A-7F. Rabbani, ¶124.

Yamaguchi's wireless connection 124 used communication protocols such as
“*Bluetooth*, 802.11 or other similar protocols ... *typically used for communicating
over a short distance.*” EX1006, 3:65-4:6. It would have been both inherent and
obvious that Yamaguchi's wireless devices had a wireless communication unit so
5 that is could communicate through wireless connection 124. Rabbani, ¶¶125-126.

13[a]/33[a]: opening a wireless communication channel;

Yamaguchi taught opening a wireless communication channel in its FIG. 5's
method “to establish a wireless connection between the interface box 102 and a
wireless device 112” (EX1006, FIG. 5, 7:5-10) through Bluetooth communication
10 (EX1006, 4:3-6), which Kammer described with more detail. Specifically, Kammer
disclosed that a laptop or cell phone could communicate with a printer via Bluetooth
(EX1007, 1:27-36), and explained the standard Bluetooth communications that
included broadcasting “a general inquiry message” for discovering another
Bluetooth device. EX1007, 1:61-67. While Kammer is used to illustrate the
15 knowledge of a POSITA about the then-standardized Bluetooth communications, it
would have also been obvious to combine Yamaguchi with Kammer because
Kammer provided additional details about opening a wireless communication
channel with another Bluetooth device, which were not explicit in Yamaguchi.
Rabbani, ¶¶127-128.

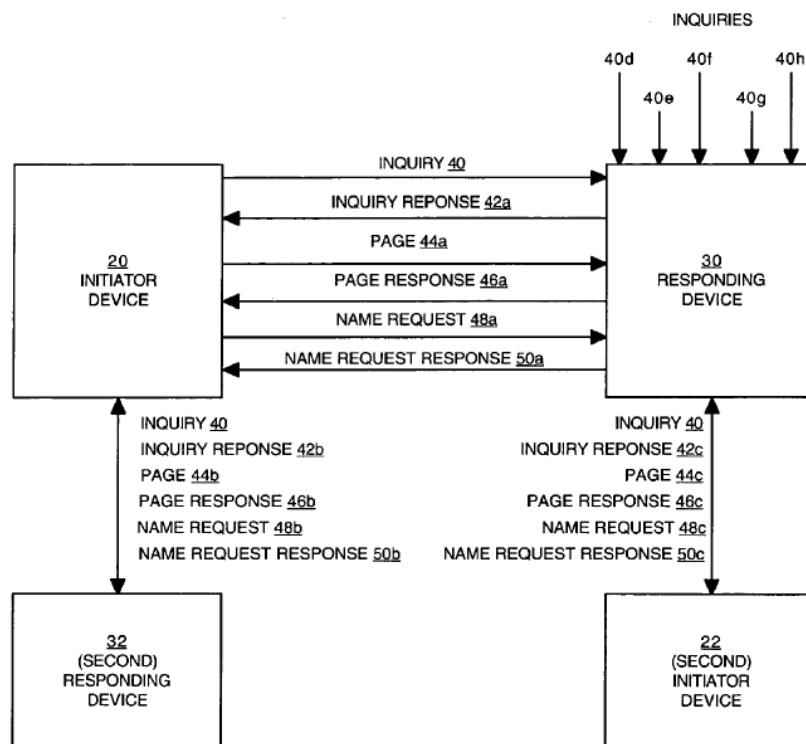
13[b]/33[b]: discovering wirelessly one or more wireless devices that are available for wireless connection;

Kammer taught discovering available wireless devices in a Bluetooth environment (EX1007, Title, 1:42-60) by explaining that “Bluetooth technology
5 allow[ed] Bluetooth devices to “discover” other Bluetooth devices that are within range and then connect with those devices.” EX1007, 1:42-60, 7:39-41. *See also* EX1007, FIG. 1, 1:61-2:11 (initiator device 20 discovering another Bluetooth device, responder device 30). Rabbani, ¶129.

A POSITA would have recognized implementing Kammer’s standard
10 Bluetooth discovery protocol can be part of Yamaguchi’s procedure to establish a wireless connection between interface box 102 and wireless device 112 for the same reasons as in 13[a]. EX1006, 7:5-10, 3:19-22, 4:3-6. Rabbani, ¶130.

**13[c]/33[c]: receiving over the wireless communication channel an attribute corresponding to each discovered
15 wireless device, the attribute including one or more of a name, a device type, a device address, and an indication of a supported output device profile;**

Kammer disclosed “[t]he device discovery process has two primary steps: an inquiry step ... and a name discovery[,]” where the wireless devices “exchange[d]
20 attributes (e.g., [device] addresses)” in the inquiry step and exchanged “user-friendly names” in the name discovery step. EX1007, 1:42-60; FIG. 1. Rabbani, ¶131.



Particularly, inquiry responses to initiator device 20 “provide[d] the Bluetooth *device addresses (a numerical address or a device access code)* for responder devices 30 and 32” during the inquiry step. EX1007, 1:61-2:3, 2:11-18, 2:23-26.

5 Additionally, during the name discovery stage, responder devices 30 and 32 “provide[d] the *user-friendly name*” (EX1007, 2:32-58), which “c[ould] be used to identify each printer’s location and features, allowing the user to make a selection of one over the other.” EX1007, 2:29-34. Hence, Kammer taught receiving attributes (device address, user-friendly name) of each discovered device (printer)

10 over the wireless Bluetooth communication channel in the Yamaguchi-Kammer

combination. EX1006, 7:5-10, 3:19-22, 4:3-6. This combination was obvious for the same reasons as in 13[a] and 13[b]. Rabbani, ¶132.

While not needed for this limitation, Moore also taught receiving printer attributes during establishing communications between a printer and a computer, where the computer requested and received a “Generic Printer Description (GPD) ... file ...contain[ing] information such as the *type and name of the device*” to convey capabilities of the printer. EX1008, 2:59-3:4. Moore’s Figure 4 illustrated a printer device profile that included printer capabilities and parameters such as “Print Quality: 600 dpi [resolution].” EX1008, FIG. 4. Rabbani, ¶133.

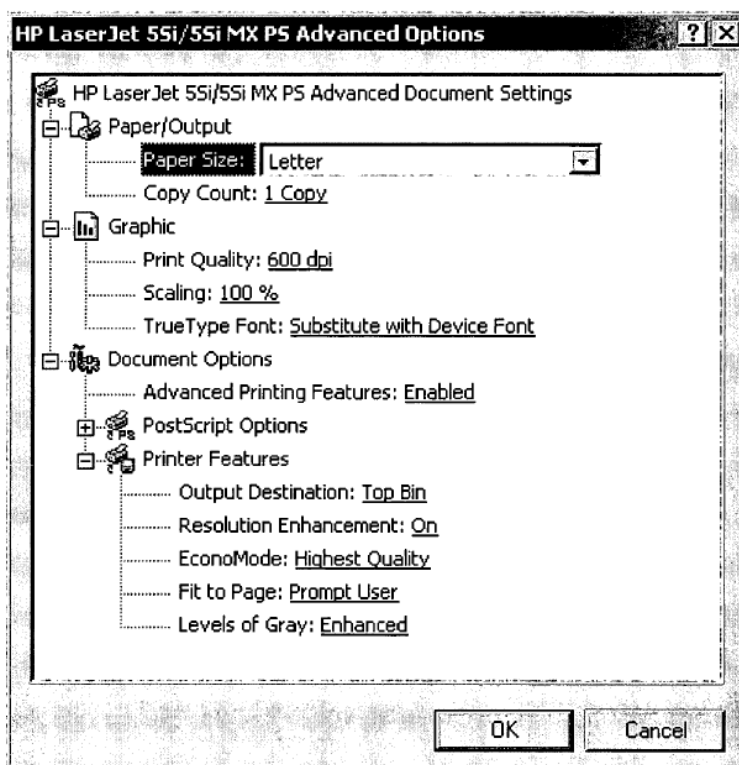


Figure 4

**13[d]/33[d]: selecting a wireless output device from among
the one or more discovered wireless devices based at
least in part on the received attribute;**

Kammer disclosed the user of the wireless device could “*select* the appropriate
5 device with which to connect” based on the received “user-friendly name for each
of the devices that responded” in the name discovery step. EX1007, 2:34-38. *See*
also EX1007, FIG. 1, 2:39-58, describing name discovery step. As Kammer
discussed, multiple discoverable wireless devices could respond to the initiator’s
broadcast inquiry. EX1007, FIG. 1, 1:61-2:11. In the Yamaguchi-Kammer
10 combination, a user of Yamaguchi’s wireless device wanting to print a document
(EX1006, 2:55-66, 3:55-4:6) would select the desired printer based on the received
attribute, such as the user-friendly name, as described in Kammer. This combination,
which uses the standardized Bluetooth discovery procedure to allow selection of
another Bluetooth-enabled device, was obvious for the same reasons as in 13[a]-[c].
15 Rabbani, ¶134.

**13[e]/33[e]: obtaining a security key at the information
apparatus, the security key enabling wireless data
transfer to the selected output device;**

Yamaguchi disclosed this limitation as part of security steps that established
20 authentication of the user, which included the following operations:

- Interface box 102 generated a random number (504) to start
authenticating the user and establish wireless connectivity;

- The random number was displayed to the user (506);
- The user entered the random number (ID number) on the wireless device 112 (516).

EX1006, FIG. 5, 7:16-41; FIG. 5. Rabbani, ¶135.

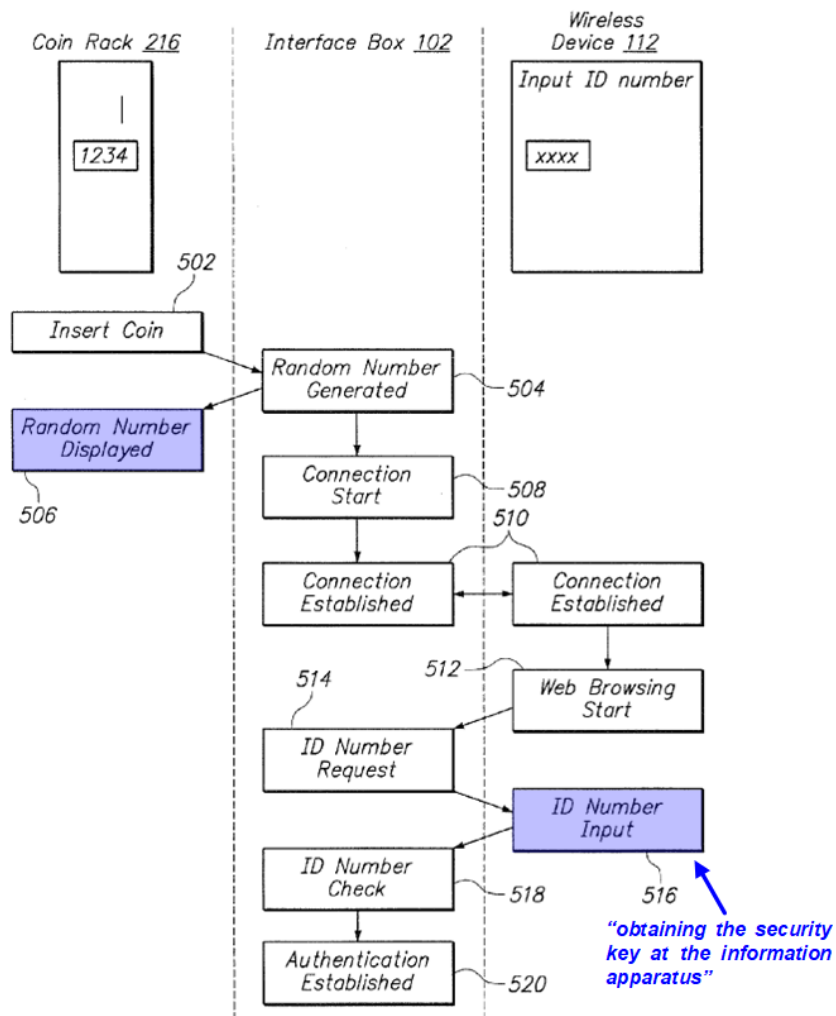


FIG. 5

Yamaguchi disclosed obtaining a security key at the information device as a result of the user entering the ID number (at 516), which is consistent with the '402

Patent's description that the security key can be obtained when a user manually enters identification information. EX1001, 35:38-39; 45:5-6. Rabbani, ¶136.

5 **13[f]: sending a security code related at least partly to the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer;**

10 **33[f]: sending at least part of the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer**

33[f] is similar to 33[f] but does not require a security “code.”

Yamaguchi disclosed the user entered, at the wireless device, the random number that the interface box had previously generated 102. *See* FIG. 5, block 516.

“At block 518, the interface box compare[d] the value of the number that was entered

15 by the user with the value of the previously generated random number.” EX1006,

FIG. 5, 7:41-44. It would have been both inherent and obvious that, between blocks

516 and 518, the user-inputted number was collected and processed by the wireless

device 112 in order to convert the user-inputted information into the proper format

(e.g., digitize or encode) so that it could be wirelessly sent to the interface box 102.

20 In doing so, the processed version of the security key (“security code”) was sent over

the wireless channel. Rabbani, ¶¶137-138.

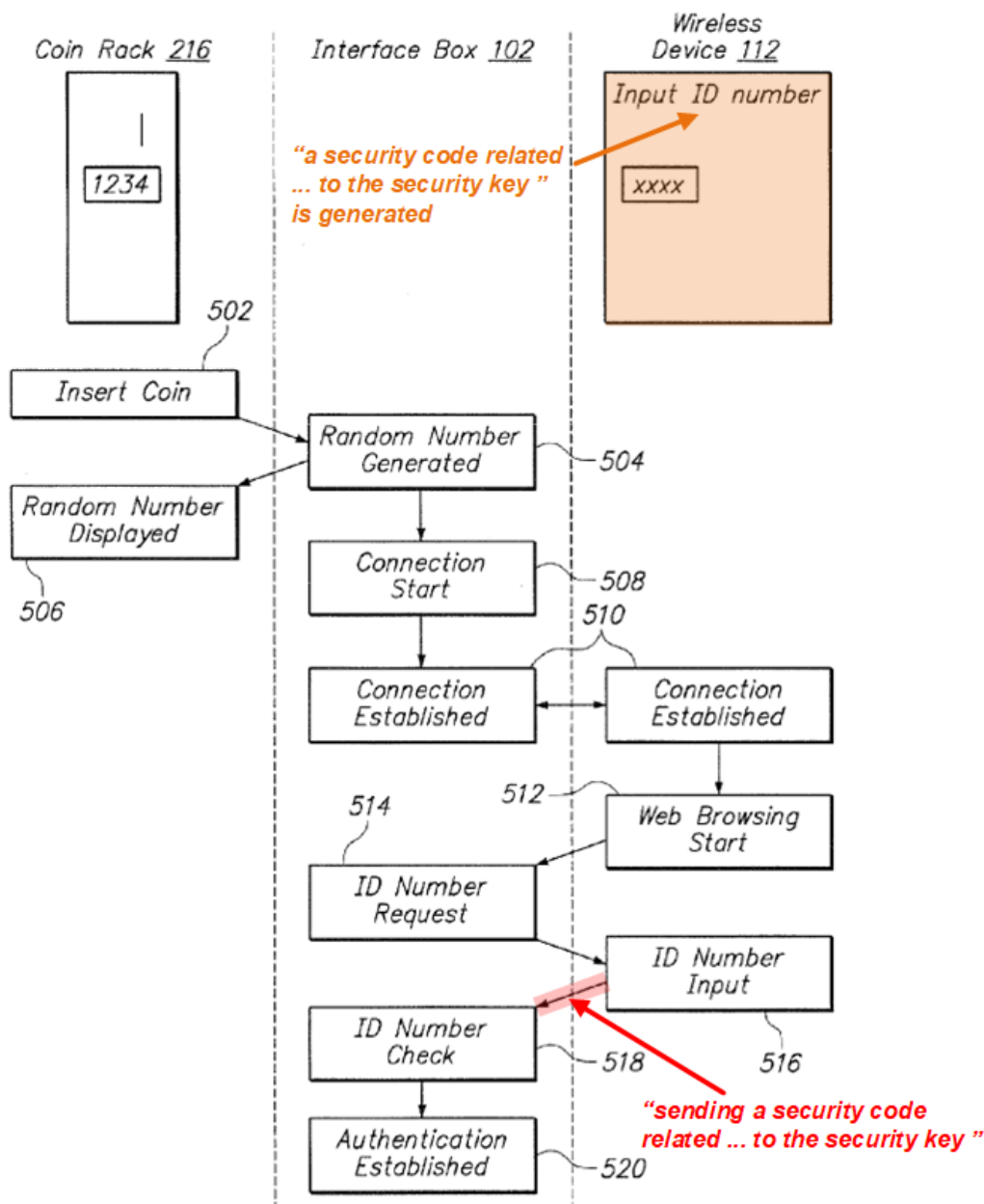


FIG. 5

Yamaguchi taught requesting the selected wireless printer to open a “wireless connection channel” because the steps taken by the user to input the ID number, and transmission of the entered ID to the interface box were “*performed by a user to*

5 *establish a wireless connection* between an interface box and a wireless device.”

EX1006, 2:35-37, 7:6-10, FIG. 5. Per Yamaguchi’s description, a POSITA would have understood that, having already provided the payment information (EX1006, 7:13-15), the provision of the ID number (assuming it was correctly entered), would have “allowed [the user] to proceed to generate a printed copy of an electronic
5 document that is of interest to them” *through a wireless connection*. EX1006, 7:45-49, FIG. 5. Therefore, a POSITA would have understood, and found it obvious, that sending the ID number to the output device also served as a request for opening a “wireless connection.” Rabbani, ¶¶139-140. In addition, or alternatively, a POSITA would have found it obvious that a separate request could be sent since the user
10 needed to “establish a wireless connection between an interface box and a wireless device.” EX1006, 2:35-37.

Regarding 33[f], as explained above, Yamaguchi sent a “digital” security code that corresponded to the user’s manual entry (at least part of the security key) over the wireless communication channel that was also a request for a wireless connection.
15 Rabbani, ¶189.

13[g]/33[g]: receiving over the wireless communication channel a response related to an authentication; and

13[h]/33[h]: if the received response is positive,

Yamaguchi taught or suggested 13[g] and 13[h] by disclosing “the user *is*
20 authorized and thus allowed to proceed to generate a printed copy” at block 520. EX1006, 7:45-49, FIG. 5. Yamaguchi’s statement that “*the user is authorized*” can

be construed to mean the user is informed of his/her authorization. A POSITA would have found it obvious to provide such a response (i.e., a positive response if the ID number correctly matched). Notably, such a response would have informed the user to initiate the printing process, and/or would have allowed the information device to transmit print data to the selected printer. In addition, providing a confirmation of successful verification would have been a routine and well-known operation. Rabbani, ¶¶141-143.

**13[i]/33[i]: establishing a wireless connection channel
between the information apparatus and the selected
wireless output device,**

Yamaguchi taught establishing a wireless connection channel between the wireless device 112 and interface box 102 of the selected printer as a result of establishing authentication (block 520), upon completion of the method of FIG. 5. EX1006, 7:5-10 (section heading: “Establishing a Wireless Connection”), 2:35-37, 7:45-49, FIG. 5. Rabbani, ¶144.

**13[j]/33[j]: conforming, at the information apparatus, at
least part of the content into an output data encoded
with at least one format, the conforming relating at
least in part to the attribute received over the wireless
communication channel, and**

Yamaguchi and Moore taught this limitation.

Yamaguchi disclosed conforming, at wireless device (“information apparatus”), the electronic document information (“content”) into output data

encoded with a format by disclosing “printer driver ... generate[ed] a print ready file for delivery to interface box 304[, for example] formatted in a page description language (“PDL”), such as a PostScript file or a file formatted in the Printer Control Language (“PCL”) defined by Hewlett-Packard Company.” EX1006, 5:24-31.

5 Yamaguchi expressly described “a print ready file [as] a file that is in a format that can be read and processed by a printing device[, e.g.,], a Postscript file that has been generated based on an electronic document” (EX1006, 5:15-19) but was not explicit about a format *related to an attribute of the printer*. Rabbani, ¶¶145-148.

Moore described “a method for characterizing and customizing printer drivers”
10 using a GPD file resident on the printer and a universal printer driver (“unidriver”) that “tailor[ed] the common printer driver functions to the particular printer.” EX1008, 1:5-7, 6:3-12, FIG. 3. By receiving the GPD file at the user device (computer/information apparatus), Moore’s invention allowed for any computer (information apparatus) to “obtain the necessary information to utilize a particular
15 peripheral [printer] from the [printer] itself[,]” thereby making the computer’s printer driver “universal” to effectively create “driverless printing,” the title of Moore’s patent. EX1008, Title, 1:48-54, 7:50-54, FIG. 3. Rabbani, ¶149.

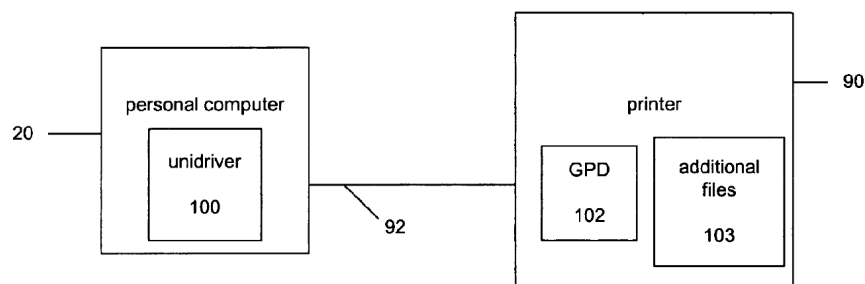


Figure 3

In Yamaguchi-Kammer-Moore combination, Yamaguchi’s wireless device (information apparatus) would receive a GDP file (attributes or printer profile) from the printer/interface box (output device) informing the information device of the capabilities of the printer, and allowing the user to select the desired printing option(s). Rabbani, ¶150.

Moore disclosed its unidriver “tailor[ed] common printer driver functions to the particular printer” based on the printer’s attribute(s) contained in the GPD file 102. EX1008, 6:3-18. Moore described an example illustrating this feature:

[A] specific printer 70 may be able to support duplex printing, or printing on both sides of a sheet of paper simultaneously. However, the unidriver 100 does not initially know how to instruct the printer to perform this task. *The GPD file 102 can contain the appropriate option name and value or code so that the unidriver 100 can instruct the printer 70 to perform duplex printing. The unidriver 100 learns these codes by reading the GPD file 102.* The user interface, also obtained from the GPD file 102, can then present the option of duplex printing to the user. If the user selects duplex

printing through this user interface, the unidriver 100 sends the command to the printer 90, and the printer performs duplex printing.

EX1008, 6:43-56. Moore's FIG. 4 illustrates other printer-specific parameters, such as print quality, truetype font, etc., which could tailor Yamaguchi's printer driver to

5 the content. Rabbani, ¶151.

Moore FIG. 3

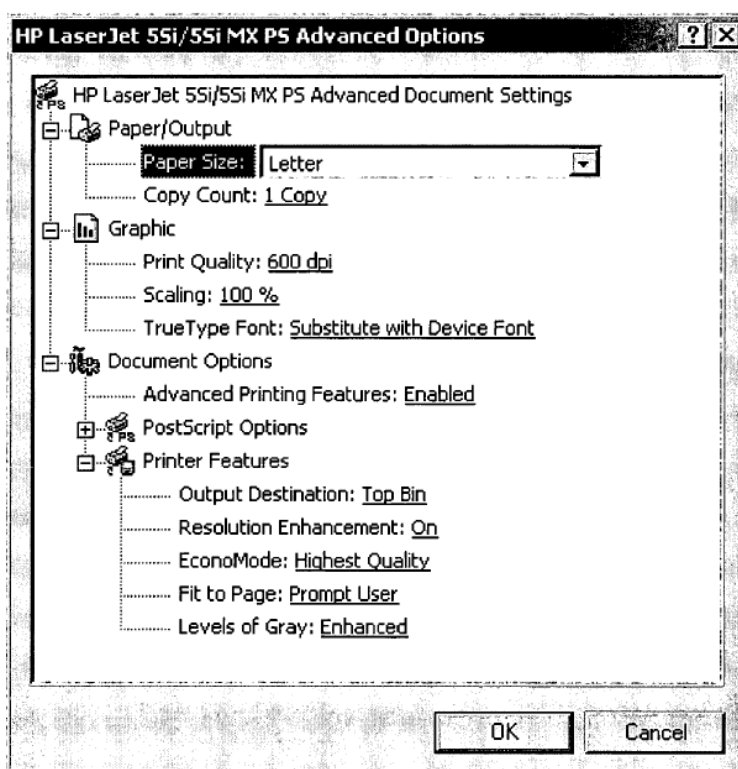


Figure 4

A POSITA would have found it obvious to incorporate Moore's unidriver feature into Yamaguchi to produce a print ready file ("output data") that is encoded with a format *related to an attribute of the printer* for several reasons. First, inclusion of Moore's solution in the combination would have improved

10

Yamaguchi's printing process and improved the user experience because the user would not have needed to "download the correct printer driver for [a particular printer] MFP 306" "if wireless device 302 [lacked] the appropriate printer driver."

See EX1006, 5:34-38. Second, and relatedly, Moore's technique would have
5 circumvented installing "a setup file" at the information device for each missing driver. See EX1006, 5:34-40. Rabbani, ¶152.

Moreover, the POSITA would have had a reasonable expectation of success because Yamaguchi's wireless device already had wireless communication capabilities, and included software that performed image- and print-processing
10 operations "for generating a print ready file." EX1006, 5:14-17. And, Moore's undriver and the associated operations were additional software-implementable features that could have been readily added to the existing capabilities of Yamaguchi's device. Rabbani, ¶153.

Notably, combination of these known elements from Yamaguchi, Kammer
15 and Moore to arrive at Element 13[j] would not have changed their respective functions while predictably yielding a successful result of conforming a print ready file formatted for the selected printer determined by an attribute of the printer. Importantly, the proposed combination is consistent with the respective principle of operations and purposes of Yamaguchi, Kammer and Moore. See EX1006 1:59-42
20 and EX1008 2:37-54. Rabbani, ¶¶154-155.

**13[k]/33[k]: transferring the output data from the
information apparatus to the selected output device
over said wireless connection channel for rendering**

Yamaguchi taught “[o]nce generated, the print ready file is transmitted from
5 wireless device 302 to interface box 304 via wireless interface 312.” EX1006, 5:9-
12, 5:31-33. Rabbani, ¶156. In the combination, the output data produced by the
Yamaguchi-Kammer-Moore combination as described in 13[j] is transmitted as
described in Yamaguchi.

Claim 33 ends with 33[k], while claim 13 recites additional limitations.

13[l]: receiving at the selected output device the output data,

Yamaguchi taught receiving the print ready file by disclosing “[u]pon
receiving the print ready file at wireless interface 314, the file is forwarded to
spooler 316 for transmitting the file to a multifunctional peripheral (MFP) device
306.” EX1006, 5:41-45. Rabbani, ¶157.

**13[m]: performing at the selected output device at least one
decoding operations on said output data, and**

Yamaguchi did not expressly disclose a decoding operation on the print ready
file, but this was an obvious operation in view of Kammer’s disclosure. Kammer
taught wireless communications, per Bluetooth protocol, required encoding on the
20 transmit side and decoding on the receive side, such as “baseband processing” that
a POSITA would recognize involves encoding/decoding of the data suitable for

transmission, as well as “Quality-of-Service, asynchronous transfers, synchronous transfers, audio coding, and encryption.” EX1007, 7:25-8:19. Thus, a POSITA would have found it obvious that Yamaguchi’s wireless interface 314, which was capable of Bluetooth communications, performed a decoding operation, such as baseband processing as part of Bluetooth communication, once it received the print ready file via a Bluetooth connection. Rabbani, ¶¶158-160.

13[n]: converting the output data into an output engine data acceptable for rendering by an output engine included in the selected output device.

Yamaguchi disclosed that once generated, the “print ready” file was wirelessly transmitted from the wireless device to the interface box (EX1006, 5:31-33), and “a hard copy document [was]... generated based on the print ready file *information.*” EX1006 5:45-46. Yamaguchi further explained that “*a print ready file is a file that is in a format that can be read and processed by a printing device.*”

EX1006, 5:15-17. Rabbani, ¶161.

Based on the above disclosures of Yamaguchi, it would have been obvious to a POSITA that a “print ready” file would be converted (processed) by the printer device into the proper format to drive the print engine for producing printouts. Notably, a POSITA would have recognized from the teachings of Moore that “a print engine [can be]... ink jet printing, laser printing, dot matrix printing, [and others]” (EX1008, 5:49-52) and would have understood that certain conversion and

processing steps at the printer would be necessary to produce the prints for such potentially diverse types of printing technologies. Rabbani, ¶¶162-163.

4. Claims 14-21, 34-37

Claim 14: ...the information apparatus is one of a mobile phone, a digital camera, a laptop, and a PDA.

Claims 34: ...the information apparatus is one of a personal computer, a mobile phone, a smart phone, a digital camera, a laptop, and a PDA.

Yamaguchi taught the information apparatus can be a laptop, cell phone or PDA. EX1006, 1:29-35; 3:19-20. Rabbani, ¶164.

Claims 15/35: ...the output device is one of a printer, a projection, a copier, a speaker, an audio output device, a display screen, and a TV.

Yamaguchi taught the output device includes “a standard printer device or ... a multifunctional peripheral (MFP) device.” EX1006, 3:40-54. Rabbani, ¶165.

Claim 16: ...discovering one or more output devices includes one or more output devices posting their availability as discoverable and the information apparatus finding one or more output devices.

Kammer taught “[i]n the inquiry step [of the Bluetooth discovery process] Bluetooth devices make their presence known to each other[,]” where after initiator device 20 broadcasts inquiry message 40, responder device 30 “send[s] inquiry response[] 42a ... to initiator device 20 in response to inquiry 40” providing its address, access code, and/or optional information, which initiator device 20

“receive[s,]” thereby finding the responder device 30. EX1007, 1:53-56, 2:12-18, 2:23-26. Rabbani, ¶166.

A POSITA would have found it obvious that Yamaguchi’s wireless interface module 104 (part of interface box 102 connected to printing device 106), which operated with Bluetooth protocol, could post its availability as discoverable by an inquiry response to the wireless device 112’s broadcasted inquiry message because this operation in Kammer’s description was part of the well-known and *standardized Bluetooth communication protocol* and Yamaguchi’s system used Bluetooth as a means for wireless communication. Rabbani, ¶¶167-168.

Claim 17: ... further comprising:

obtaining a payment information at the information apparatus, the payment information enabling data rendering service by the selected output device; sending the payment information over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for enabling data rendering service.

Yamaguchi taught a payment component for “control[ing] the printing of documents by requiring the user to provide monetary payment prior to the hard copy documents being generated.” EX1006, Abstract, 2:3-6. The payment mechanism was a hardware and/or software component of Yamaguchi’s interface box which accepted “monetary payment information” (such as “Smartcard, credit card or bank card (ATM) information, Cyber-Cash”) provided by a user over the wireless

communication channel. EX1006, FIG. 1, 2:67-3:2; 3:60-62; 4:10-23, 10:6-9, 9:24-29, 8:17-22. Rabbani, ¶169.

Yamaguchi's reception of electronic payment information (e.g., ATM or Cybercash information) over the wireless channel was also obvious to a POSITA
5 because Yamaguchi's device already (and perhaps exclusively) communicated with the interface box through a wireless connection. Further, it would have been obvious that such a transmission and/or an accompanying request would have provided a request to begin (enable) a printing process (rendering service) because providing a payment was a known and common way to request a service, such as a printing
10 service through a wireless connection as taught by Yamaguchi. Rabbani, ¶¶170-172.

Claims 18/36: ...the conforming, at the information apparatus, related at least in part to the supported output device profile of the selected output device and included in said attribute received over the wireless communication channel.
15

See 13[j], demonstrating the combination of Yamaguchi and Moore taught conforming the content into output data encoded with a format *related to an attribute of the printer* from the GPD file, such as "type and name of the device," to convey capabilities of the printer. EX1008, 2:59-3:4, 6:28-31. Moore taught such
20 conforming can be in accordance with a printer device profile based on "options of the printer," such as "Print Quality: 600 dpi." EX1008, 6:57-7:8, FIG. 4. Rabbani, ¶173.

See also 13[c], discussing reception of “said attribute.” The ’402 Patent’s explanation of an attribute is consistent with Moore’s characterization above. EX1001, 9:31-34. Rabbani, ¶¶174-175.

A POSITA would have found this combination obvious for the same reasons
5 as in 13[j]. Rabbani, ¶176.

Claims 19/37: ...said security key comprises at least one of a user name, password, ID number, signature, physical or digital security key, biometric, fingerprint, and a voice.

10 See 13[e] and 13[f], demonstrating Yamaguchi taught the security key is a generated random number viewed as “ID number” and inputted on the wireless device. EX1006, FIG. 5, 7:40-44. Rabbani, ¶177.

Claim 20: ...the step of obtaining said security key comprises inputting by a user or retrieving a key that was previously stored in the information apparatus.
15

See 13[e], demonstrating Yamaguchi disclosed an ID number inputted by the user on wireless device. EX1006, FIG. 5, 7:40-41. Rabbani, ¶178.

Claim 21: ...further comprising:

receiving at the output device and over the wireless communication channel established a security key for authentication;

comparing the received security key with an access control list stored in the output device or input by a user; and

if the step of comparing the received security key with an access control list is successful, granting the information apparatus a secured wireless connection channel access to the output device.

Claim 21 recites “receiving ... a security key for authentication.” It is unclear whether “a security key” received is the same “security key” obtained in claim 13 or a new “security key,” particularly since claim 21 recites the method is “further comprising” of this feature. Rabbani, ¶179.

Nevertheless, a POSITA would have understood that Yamaguchi taught or suggested both interpretations. EX1006, 7:5-49, FIG. 5. Yamaguchi discussed an “ID number” was received at interface box (block 518) having been sent by the wireless device (block 516); the ID number was “*compare[d to]* the previously generated random number” (block 518), and the wireless device 112 was “authorized” to complete the method establishing the wireless connection. See discussion above for 13[e]-13[i]. Rabbani, ¶180.

While Yamaguchi did not expressly disclose comparing a security key to “an access control list,” the information (“value”) of the random number previously generated was stored at the interface box so that it can be compared to the “value”

of the ID number entered by the user (EX1006, 7:41-44); a POSITA would have found it obvious to store the value(s) of the generated random numbers in a type of a list or a record (“access control list”) so it could do the “comparison” as described in Yamaguchi. Rabbani, ¶181. And in scenarios where multiple print jobs by the same user or by different users were requested, a POSITA would have found it obvious for the interface box to keep track of multiple generated random numbers (i.e., as an access control list with multiple entries), so it could be used for authorizing different print jobs if the comparison results were affirmative. *Id.* See also *id.* ¶182.

B. Ground-2: Claim 21 is Obvious Over Yamaguchi, Kammer, Moore, and Davis

Davis taught a wireless authentication method for authorizing use of a “node,” such as a computer or printer (EX1016, 7:13-19)⁴, involving a two-step process using (1) a password (see annotated FIG. 5), followed by (2) challenge/response message protocol. EX1016, FIG. 5, 11:8-12:9; FIG. 5. Rabbani, ¶199. See also *id.*, ¶¶100-101.

⁴ Petitioner has added line numbers to Davis’ description in EX1016.

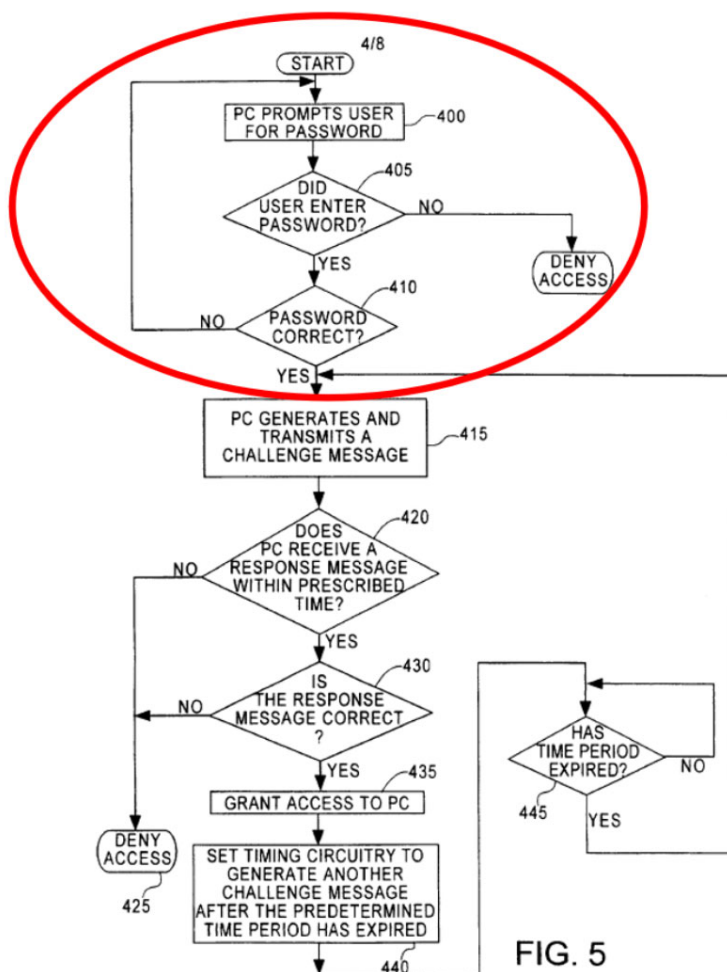


FIG. 5

Claim 21: ...further comprising:

receiving at the output device and over the wireless communication channel established a security key for authentication;

comparing the received security key with an access control list stored in the output device or input by a user; and

if the step of comparing the received security key with an access control list is successful, granting the information apparatus a secured wireless connection channel access to the output device.

In the Yamaguchi-Kammer-Moore-Davis combination, a POSITA would have incorporated Davis' password-checking operations into Yamaguchi's authentication protocol by first asking a user to enter a password to confirm the user's identity prior to Yamaguchi's further authentication that involved generating
5 a random number. Rabbani, ¶200.

A POSITA would have found this combination obvious because Yamaguchi described making electronic payments via "Smartcard, credit card or bank card (ATM) information, Cyber-Cash." (EX1006, 4:18-19), and having an added password check would have prevented fraudulent transactions. This was consistent
10 with Yamaguchi's concern to avoid "hacking" by adding physical shielding (EX1006, 6:32-61), and would have additionally thwarted the use of stolen credit cards or bank account information for purchasing printing services. Rabbani, ¶¶201-202.

In the combination, claim 21's "receiving" step is obvious per Davis' teaching
15 that a user entered his/her password on Yamaguchi's wireless device that would be sent to Yamaguchi's wireless interface box to determine whether the password was correct. EX1016, 11:8-20, FIG. 5. Notably, the '402 Patent describes a password as a security key. EX1001, Claim 19. Rabbani, ¶203. A POSITA would have found the "comparing" of the password to an access control list obvious in view of Davis'
20 disclosure that "the node determine[d] whether the password [wa]s correct (Step

410).” EX1016, 11:14-15. Comparing a password to an authorized list of password information would have been a common way of confirming that the password was still valid, had not expired or had not been revoked. Rabbani, ¶204. A POSITA would have also found the “granting” step obvious over Yamaguchi-Davis’ combined teachings because upon successful password check, the user would have needed to submit credit card or bank information, which would have been advantageously conducted over a secure wireless connection with Yamaguchi’s interface box. Rabbani, ¶205.

C. Ground-3: Claims 1-7, 9-21, 23-37 Are Obvious Over Yamaguchi, Kammer, and Kemp

1. Prior Art

Kemp disclosed a printing method over a network using a print driver “generic to all printer types” to print from a user device remotely to a printer. EX1009, Abstract, ¶[0012]; FIG. 3. Kemp’s print driver rendered print data “into a generic printer definition language not related to any specific printer type” to be packaged with a protocol for transmission over the network. EX1009, ¶¶[0013]-[0015]. Rabbani, ¶¶102-104.

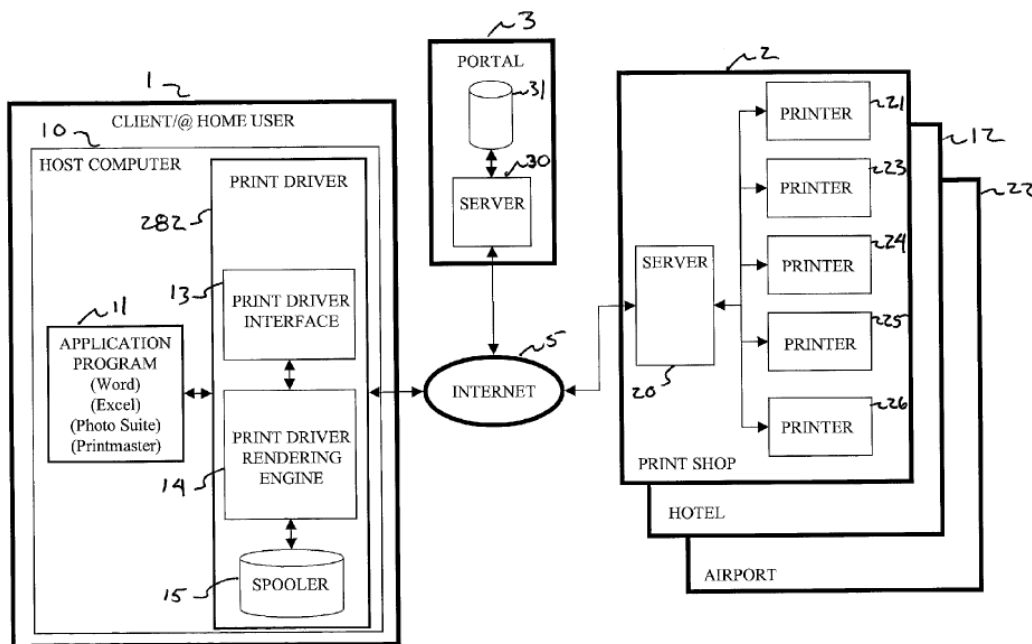


FIG. 3

2. Motivation to Combine

Combination of Yamaguchi with Kammer is obvious for at least the same reasons articulated in Ground-1.

5 As further explained below in connection with Elements 1[f] and 1[g], in the proposed combination, Yamaguchi's wireless device would be augmented to include Kemp's NPDL rendering capability. The wireless device would communicate with printer(s) via Bluetooth (per teachings of Yamaguchi and Kammer), to receive attributes and information from the printer(s), and to encapsulate and send the
10 NPDL-rendered data to be processed and printed at the printer.

This combination would have been obvious. Yamaguchi and Kemp both concerned allowing a user device to print to a remote printer (EX1006, 1:5-10;

EX1009, ¶[0002]), each seeking to improve the user's experience through wireless printing (EX1006, 1:5-10; 1:56-2:9) or by using a generic printer language that allowed printing without having to install separate print drivers for each printer type.

EX1009, ¶[0017]. Therefore, augmenting the print processing operations at

5 Yamaguchi's user device with the ability to produce generic, NPDL-rendered data taught by Kemp would have enhanced and expanded the printing capabilities available to the user. Rabbani, ¶¶216-223. *See also id.* ¶213.

Additional motivations to combine, obviousness rationale and reasonable expectations of success are discussed in individual claim limitations.

3. Claims 1 and 23

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15
20
25
1[pre]: A pervasive mobile data output method for rendering at an output device content at least partly accessible with an information apparatus, the information apparatus including at least one wireless communication unit, the pervasive mobile output method comprising:

23[pre]: A pervasive mobile data output method for rendering at an output device content that is at least partly accessible with an information apparatus, the information apparatus being a distinct device from the output device and including a wireless communication unit, the output device including a wireless communication unit for wireless communication, a controller for decoding intermediate output data received at the output device, and a rendering engine, the pervasive mobile output method comprising:

See 13[pre] (Ground-1).

23[pre] differs from 1[pre] by reciting the underlined limitations related to the output device having “a controller for decoding,” and a “rendering engine.” Rabbani, ¶283.

Notably, Kemp disclosed an output controller in the form of a “service provider server.” See 1[i] below for detailed explanations as to how the “service provider server” is integrated into the Yamaguchi-Kammer-Kemp combination and why it forms the claimed “output controller.” Rabbani, ¶284.

Regarding the “decoding” and “rendering engine” limitations of 23[pre], Kemp disclosed “the *service provider server* [output controller] convert[ed] the NPD L print data into a printer specific format based on the printer selected by the operator and submit[ted] the print data to the printer for printing.” EX1009, ¶[0087], FIG. 10, S125; *see also* ¶¶[0056], [0068]. Thus Kemp’s service provider server (output controller) decoded the NPD L data (intermediate output data) so it would be in a printer-specific format and provided it to the printer, which included a rendering engine. Rabbani, ¶285.

1[a]/23[a]: accessing at the information apparatus at least part of said content;

Yamaguchi’s wireless device included software applications to generate and store electronic documents that were retrieved and accessed to be printed. EX1006, 3:27-39, 2:55-67. Rabbani, ¶207.

1[b]/23[b]: opening at the information apparatus a wireless communication channel;

See 13[a] (Ground-1).

5 **1[c]/23[c]: searching wirelessly at the information apparatus for wireless output devices available for wireless communication;**

See 13[b] (Ground-1), explaining that Kammer’s standard Bluetooth discovery protocol included a name discovery step which allowed searching and selecting the wireless devices. EX1007, 1:50-60, 2:28-37. Rabbani, ¶209.

10 **1[d]/23[d]: receiving at the information apparatus and over the wireless communication channel at least one attribute corresponding to each wireless output device found in the search;**

See 13[c] (Ground-1).

15 **1[e]: selecting at the information apparatus a wireless output device found in the search based at least in part on a received attribute;**

20 **23[e]: selecting at the information apparatus a selected wireless output device found in the search based at least in part on a received attribute, the selected wireless output device having an associated output controller.**

See 13[d] (Ground-1) regarding selecting based on an attribute.

25 Regarding 23[e]’s “output controller,” Kemp, as noted in 23[pre], disclosed an output controller in the form of a “service provider server.” Rabbani, ¶284. See 1[i] below for detailed explanations.

1[f]/23[f]: conforming at the information apparatus at least part of the content into one or more output images;

1[g]/23[g]: generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforming at least partly based on [being at least partly compatible with in 23[g]] said received attribute of the selected output device;

Yamaguchi did not expressly disclose [f] and [g] limitations, but Kemp did.

In Kemp's remote printing method, a user of the computing device printed documents to remote printers at, e.g., a printshop, hotel, kiosk etc. EX1009, ¶¶[0036], [0038]; FIG. 3. The computing device's print driver 282 (including its rendering engine 14) was invoked to "*prepare image data for printing*" on a remote printer at service provider 2. EX1009, ¶¶[0036], [0048], [0051], [0068]. Rabbani, ¶¶212-213.

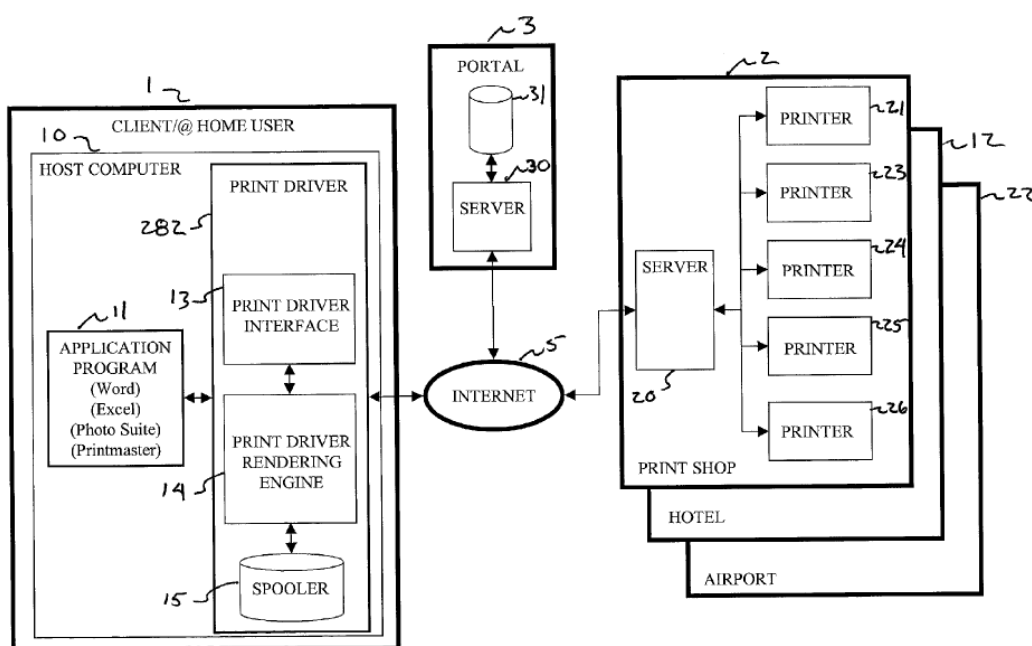


FIG. 3

Kemp disclosed the “conforming” step by describing that “[w]hen the user select[ed] print button 65, print driver rendering engine 14 ... *render[ed] the print job into a neutral printer definition language (NPDL)*[,]... a language that is not specific to any type of printer.” EX1009, ¶[0068]. Kemp also described the
5 “generating” step by explaining that the “rendered NPDL data *[wa]s packaged in a transport protocol for transport* ... and [wa]s transmitted from print driver 282 to service provider server 20.” EX1009, ¶[0072]; see also *id.*, ¶[0012] (encapsulate print data for transport), ¶[0013] (package rendered print data with a protocol for transmission), and ¶[0053] (a format suitable for transport across the Internet).
10 Rabbani, ¶214.

Notably, the packaged NPDL data was “intermediate output data” because NPDL rendering produced generic print data, which needed to be “convert[ed] ... into the appropriate printer definition language of the printer selected by the operator” at the printshop. EX1009, ¶[0068]. Kemp’s NPDL data included output images
15 because Kemp’s user could select to print an image (EX1009, ¶¶[0036]-[0037], [0075]), and “print driver 282 ... prepare[d] *image data* for printing.” EX1009, ¶[0048]. A POSITA would have understood that rendering an input image via NPDL rendering would produce an NPDL-rendered *image*. Rabbani, ¶215.

More Combination Details and Motivations to Combine:

In combination, Yamaguchi’s wireless device would be augmented to include Kemp’s NPD L rendering capability. The wireless device would communicate with printer(s) via Bluetooth (per Yamaguchi-Kammer), to receive attributes/information from the printer(s), and to encapsulate and send the NPD L-rendered data to be
5 processed and printed at the printer. Rabbani, ¶216.

Notably, encapsulating the NPD L-rendered data into a format suitable for transport would have been part of l[g]’s “generating” based on the printer’s address (attribute) received as part of Bluetooth discovery; this is consistent with the ’402 Patent’s explanation that an “IP address” is an example of an “attribute” (or an
10 “output device profile”) (EX1001, 9:47-53), and also consistent with Kemp’s use of the print service device’s Internet address to communicate with it. EX1009, ¶[0039], Claim 39. Accordingly, a POSITA would have found it obvious that preparation of NPD L-rendered data would include preparing the data for transport to the device address (attribute). Rabbani, ¶217.

15 Adding NPD L-rendering capability of Kemp was obvious because it would have expanded Yamaguchi’s printing capabilities so that print data “[wa]s not limited to a specific printer, but c[ould] be processed and printed by virtually any printer.” EX1009, ¶[0016]. Rabbani, ¶218.

A POSITA would have had a reasonable expectation of success because
20 Yamaguchi’s wireless device already included software and computational abilities

to perform image- and print-processing operations “for generating a print ready file” (EX1006, 5:14-17), which would have been augmented with the additional software code for Kemp’s NPD L rendering. Furthermore, while Kemp used the Internet as an example transmission channel, it reiterated that other networks or transport protocols could be used. EX1009, ¶¶[0044], [0072]. Therefore, a POSITA would have understood that Bluetooth protocols could be used consistent with Kemp’s teachings. Rabbani, ¶¶219-223.

1[h]/23[h]: establishing a wireless connection between the information apparatus and the selected wireless output device;

See 13[i] (Ground-1).

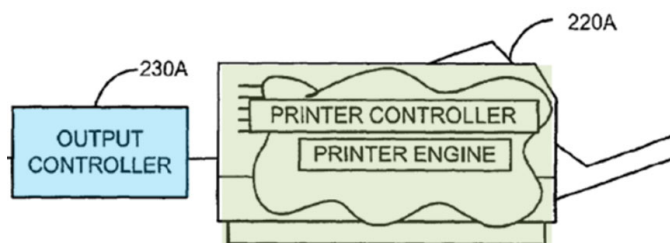
1[i]: transmitting the intermediate output data from the information apparatus to an output controller that is distinct from the information apparatus and associated with the selected output device, the output controller including at least one wireless communication unit;

23[i]: wirelessly transmitting the intermediate output data from the information apparatus to the selected wireless output device where the intermediate output data are decoded for rendering at the output device.

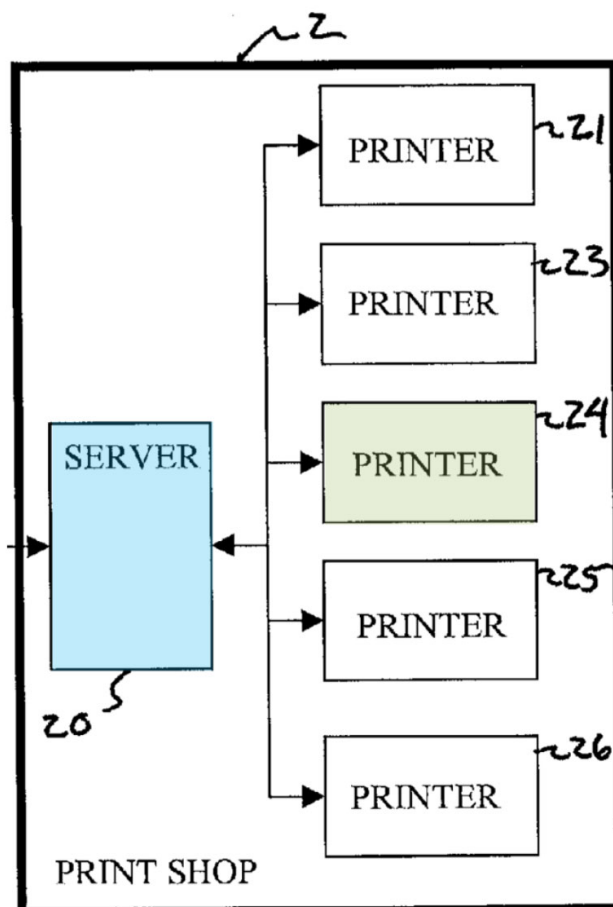
Claim 23 ends with 23[i], which includes the added “decoding” limitation.

In the combination, Yamaguchi’s wireless device transmitted the NPD L-rendered data via the established Bluetooth connection to the print site, as explained in 1[f]-[g]. Rabbani, ¶225.

Yamaguchi did not expressly disclose “an output controller,” but Kemp described transmitting NPDL-rendered data to a “service provider server 20,” which constituted the claimed “output controller. Notably, Kemp’s “service provider server 20” received and processed NPDL data, before providing it to the printer(s) (EX1009, ¶¶[0053], [0056], [0068]), consistent with the ’402 Patent’s depiction and explanation of the output controller: “*output controller 230 is sometimes referred to as a print server or output server.*” EX1001, 17:50-51; FIGS. 7A, 7D, 7F. Rabbani, ¶226. See e.g., comparison of the ’402 Patent’s FIG. 7A with Kemp’s FIG. 3 in the annotated drawings below.



(FIG. 7A – ‘402 Patent)



(FIG. 3 - Kemp)

A POSITA would have understood the service provider server (output controller) would wirelessly (via Bluetooth) receive and process the NPD L data, and would provide print data to at least one printer (e.g., at a kiosk EX1009, ¶¶[0038],
5 [0056]). The inclusion of NPD L processing at the output controller would have been obvious because it would have provided expanded printing capabilities as described in 1[f]-[g]. Rabbani, ¶227.

A POSITA would have had a reasonable expectation of success because Kemp's service provider server (output controller) needed some communication and

processing capabilities and “need not be a server per se.” EX1009, ¶[0039].

Therefore, it need not be an expensive or a bulky device. A POSITA would have

further understood that, in the combination, the output controller did not need full-

Internet capability and a Bluetooth transceiver would have sufficed to perform the

5 claimed operations. Therefore, providing a service provider server (output controller)

would not have been an expensive or difficult task. Rabbani, ¶¶228-229.

Regarding 23[i]’s decoding operation, see 23[pre]’s explanation. See also, 1[j]

below for further explanation of the output controller’s operations. Rabbani, ¶285.

10 **1[j]: converting at the output controller the intermediate
output data into an output data acceptable for
rendering at the output device, and delivering the
output data to the output device for rendering;**

Kemp disclosed “the *service provider server* [output controller] *convert[ed]*
the NPD L print data into a printer specific format based on the printer selected by
15 the operator and *submit[ted]* *the print data to the printer for printing.*” EX1009,
¶[0087], FIG. 10, S125; *see also* ¶¶[0056], [0068]. Rabbani, ¶230.

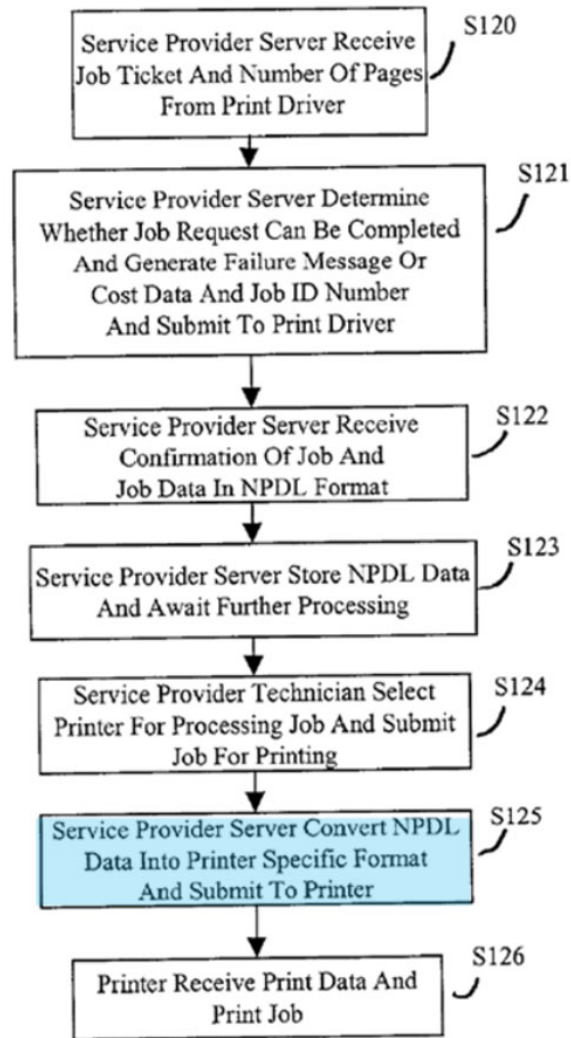


FIG. 10

1[k]: conforming at the output device the output data into a data format that is acceptable for rendering by a rendering engine in the output device, and delivering the data format to the rendering engine for output,

5 Kemp disclosed that upon conversion of NPDL data to a specific format and delivery to the printer, “*the printer processe[d]* and print[ed] the print job” (step S126). EX1009, ¶[0087], FIG. 10. Rabbani, ¶231.

It would have been obvious to a POSITA that Kemp’s *processing* of the data at the printer was “conforming” the output data because such processing was needed
10 to produce data/signals to drive the printer’s marking engine for generating physical printouts. Notably, Kemp’s service provider could accommodate different types of printers/printing technologies (e.g., color printer, black-and-white printer, color plotter and/or black-and-white plotter) (EX1009, ¶[0040]), making its processing operations, such a signal conversions, an obvious task for driving the appropriate
15 marking engine. Rabbani, ¶232.

Furthermore, the conformed or processed data was sent to the rendering engine because Kemp described that printer printed the print job. EX1009, ¶[0087]. Rabbani, ¶233.

5 **1[l]: whereby, the information apparatus is able to output, in a mobile pervasive manner, one or more images representative of said content to an output device without the need to install an output device driver specific to that output device.**

The Yamaguchi-Kammer-Kemp combination taught this limitation because in the combination, the wireless device (information apparatus) would wirelessly transmit intermediate output data using Kemp’s generic/neutral NPDL rendering, which was “a language that is not specific to any type of printer.” EX1009, ¶[0068].

10 The NPDL-rendered data could include images (*see* 1[f]), and allowed a “single print driver ... to submit print data ... without having to install separate print drivers for each printer type.” EX1009, ¶[0017]. Rabbani, ¶234.

4. **Claim 9 and 28**

15 **9[pre]/28[pre]: A pervasive mobile data output method for rendering content to an output device from a mobile wireless information apparatus, the content being at least partly accessible with the information apparatus, the output device being a distinct device from the information apparatus and including a wireless communication unit, the method comprising:**

20

See 1[pre] and 1[i].

9[pre] and 28[pre] differ from 1[pre] by reciting the “information apparatus” is “a mobile wireless information apparatus” and “the output device being a distinct device from the information apparatus and including a wireless communication unit.”

25 These features are explained in 1[pre] and 1[i], respectively. Rabbani, ¶245.

**9[a]/28[a]: opening a wireless communication channel at the
information apparatus;**

See 1[b].

**9[b]/28[b]: searching wirelessly at the information
apparatus for wireless output devices available for
wireless communication;**

See 1[c].

**9[c]/28[c]: receiving over the wireless communication
channel at least one device attribute associated with at
least one available wireless output device, the device
attribute including at least an indication of a supported
output device profile;**

See 1[d]. Furthermore, as explained in 1[g], the '402 Patent explains that any
single attribute can form the “output device profile.” EX1001, 9:47-53.

Accordingly, the user friendly name and/or the device address discussed in 1[d] and
1[g] constitute the claimed indication of a supported output device profile. Rabbani,
¶248.

See also claim 4 below, describing Kemp’s user interface with selection of
options including a user-friendly name (“attribute”) such as HP C Laserjet 4500-HP
allowed the document to be rendered for that printer. EX1009, FIGS. 6A-6B, 7,
¶¶[0052]-[0058]. Rabbani, ¶249.

9[d]/28[d]: selecting a wireless output device found in the search based at least in part on the received device attribute;

See 1[e].

5 **9[e]/28[e]: conforming at the information apparatus at least part of the content into one or more device independent output images with at least one predefined or standard parameter;**

10 **9[f]-28[f]: generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforming at least partly to said supported output device profile of a selected output that is included in said device attribute of the selected wireless output device and received over the wireless communication channel;**

15

See 1[e]-1[f].

Regarding 9[e]’s conforming “with at least one predefined or standard parameter,” this limitation would have been obvious because Kemp disclosed that

20 “driver rendering engine 14 ... *render[ed] the print job into a neutral printer definition language (NPDL)*[,]... a language that is not specific to any type of printer.” EX1009, ¶[0068]. The generation of this type of generic data would have entailed conformance with predefined or standard parameters based on its generation of a standard or predefined language and evident from the name “neutral *printer*

25 *definition language*.” Rabbani, ¶251.

9[g]/28[g]: establishing a point to point wireless connection between the information apparatus and the selected output device;

See 1[h]. Kammer disclosed Bluetooth systems support *point-to-point*

5 connections. EX1007, [7:3-4]. Rabbani, ¶252.

9[h]/28[h]: delivering the intermediate output data over the wireless connection for rendering at the selected wireless output device [for rendering in 28[h]];

See 1[i]. This is the last limitation of claim 28.

10 **9[i]: decoding at the output device the intermediate output data;**

See 13[m] (Ground-1), demonstrating Kammer’s “baseband processing” that a POSITA understood involved encoding/decoding. EX1007, 7:25-8:19. Rabbani, ¶254.

15 **9[j]: converting at said output device the intermediate output data into an output data format acceptable for rendering by an output engine included in said output device, and**

See 1[j] and 1[k].

20 **9[l]: whereby the wireless information apparatus is able to pervasively output one or more images representative of said content to an output device without need to install an output device driver specific to that output device.**

25 See 1[l].

5. Claims 13 and 33

13[pre]/33[pre]: A method of mobile wireless data output from an information apparatus with access to at least part of a content to a wireless output device by short range wireless communication, wherein the information apparatus includes at least one wireless communication unit and is a distinct device from the output device, the method comprising:

See 13[pre] (Ground-1).

13[a]/33[a]: opening a wireless communication channel;

See 13[a] (Ground-1).

13[b]/33[b]: discovering wirelessly one or more wireless devices that are available for wireless connection;

See 13[b] (Ground-1).

13[c]/33[c]: receiving over the wireless communication channel an attribute corresponding to each discovered wireless device, the attribute including one or more of a name, a device type, a device address, and an indication of a supported output device profile;

See 13[c] (Ground-1) discussing the combination of Yamaguchi and Kammer.

13[d]/33[d]: selecting a wireless output device from among the one or more discovered wireless devices based at least in part on the received attribute;

See 13[d] (Ground-1).

13[e]/33[e]: obtaining a security key at the information apparatus, the security key enabling wireless data transfer to the selected output device;

See 13[e] (Ground-1).

5 **13[f]: sending a security code related at least partly to the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer;**

10 **33[f]: sending at least part of the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer**

See 13[f]/33[f] (Ground-1).

15 **13[g]/33[g]: receiving over the wireless communication channel a response related to an authentication; and**

13[h]/33[h]: if the received response is positive,

See 13[g]-13[h] (Ground-1).

20 **13[i]/33[i]: establishing a wireless connection channel between the information apparatus and the selected wireless output device,**

See 13[i] (Ground-1).

25 **13[j]/33[j]: conforming, at the information apparatus, at least part of the content into an output data encoded with at least one format, the conforming relating at least in part to the attribute received over the wireless communication channel, and**

See 1[f]-1[g] (Ground-3). Yamaguchi and Kemp taught this limitation.

**13[k]/33[k]: transferring the output data from the
information apparatus to the selected output device
over said wireless connection channel for rendering**

See 1[i]/23[i] and 9[h]/28[h] (Ground-3).

5 This is the last limitation of claim 33.

13[l]: receiving at the selected output device the output data,

In the combination, the NPDL-rendered data was transmitted by the wireless device and received by the output controller (service provider server). Notably, Kemp disclosed “print driver rendering engine 14 ... render[ed] the print job into a
10 neutral printer definition language (NPDL),” (EX1009, ¶[0068]) and that the “rendered NPDL data *[wa]s packaged in a transport protocol for transport ... and [was] transmitted from print driver 282 to service provider server 20.*” EX1009, ¶[0072]. It would have been obvious that the transmitted content would be received at the output device, which performed additional processing as described below.
15 Rabbani, ¶271.

**13[m]: performing at the selected output device at least one
decoding operations on said output data, and**

See 13[m] (Ground-1) and 9[i] (Ground-3), demonstrating Kammer’s “baseband processing” that a POSITA understood involved encoding/decoding.
20 EX1007, 7:25-8:19. Rabbani, ¶272.

13[n]: converting the output data into an output engine data acceptable for rendering by an output engine included in the selected output device.

See 1[j] (Ground-3).

5 **6. Claims 2-7, 10-12, 14-21, 24-27, 29-32, 34-37**

10 **Claims 2/10/24/29: ...establishing a wireless connection with the selected wireless output device comprises authenticating wireless access to the output device by sending over the wireless communication channel one or more of a name, a password or security code, an ID number or address, a signatures, a physical or digital security key biometrics, a fingerprints, and a voice.**

See 13[e]-13[i] (Ground-1).

15 **Claims 3/11/25/30: ...the receiving at least one attribute over the wireless communication channel comprises receiving one or more of a device name, a device type, an address or ID number, an indication of a supported device profile, a device profile, and a security code.**

See 13[c] (Ground-1).

20 **Claim 4: ... further comprising obtaining at the information apparatus one or more rasterization parameters corresponding to the output device and related at least in part to the received attribute from the output device or from user input.**

25 Kemp taught obtaining “rasterization parameters” as print options corresponding to printer(s). Kemp described “print driver interface 13 provided a graphical user interface... when print driver 282 [wa]s activated [for] selecting a print option[,]” as in FIGS. 6A-6B. EX1009, FIGS. 6A-6B, ¶[0052]. The document

was rendered based on the selected printer, which had a “user-friendly name” (attribute) such as HP C Laserjet 4500-HP; and upon selection of “Properties” button 62 a Page Setup tab 71 provided rendering parameters. EX1009, FIGS. 6B-7, ¶[0058]. Rabbani, ¶237.

5

Kemp FIG. 7 (annotated)

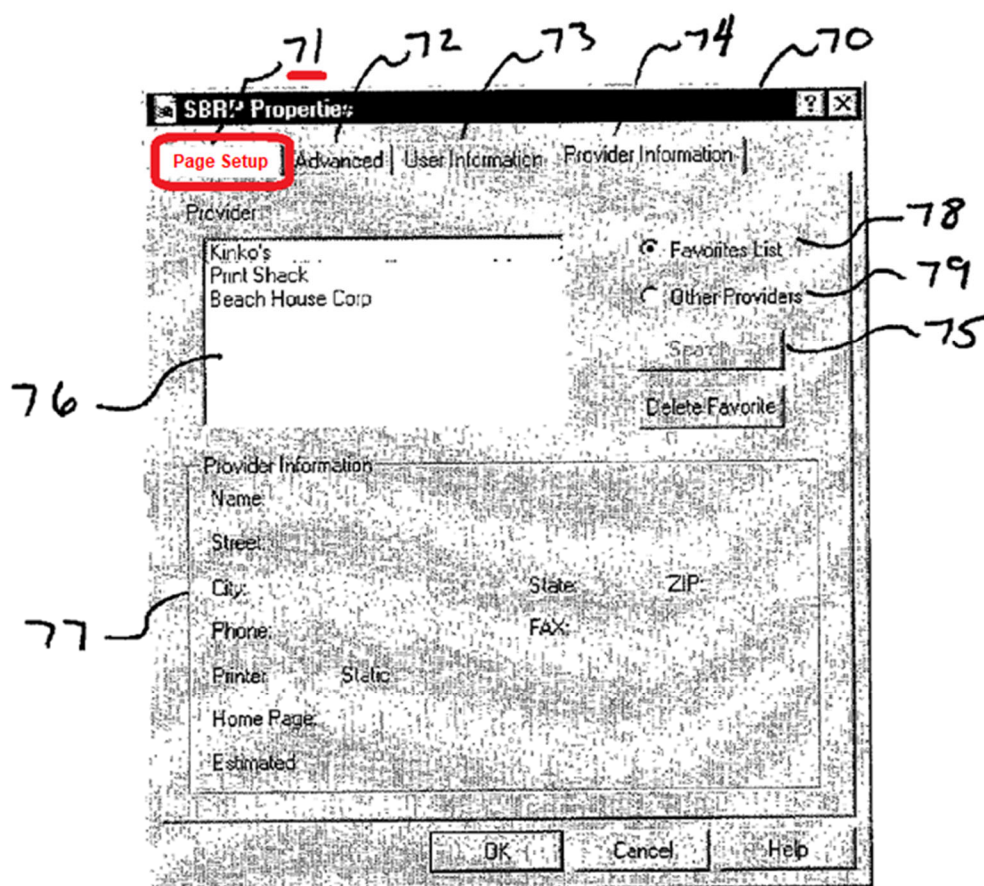


FIG. 7

A POSITA would have found it obvious that Page Setup included parameters/options for how the printouts appeared, such as their resolution, (and thus quality), page size, color vs. black-and-white, single-sided vs. duplex, etc., because

these were commonly known options for setting up and printing a page at the time of the alleged invention.⁵ Rabbani, ¶ XX.

Claims 5/26: ...the conforming at the information apparatus at least part of the content into one or more output images includes one or more of a rasterization operation, a scaling operation, an interpolation operation, a decoding operation, an encoding operation, a filtering operation and a compression operation.

5
10 Kemp's print driver "*prepare[ed] image data for printing*" on a remote printer (EX1009, ¶[0048]), by producing NPD L data and encapsulating it for transmission to the printshop. *See* 1[f], 1[g]. NPD L data generation and/or encapsulation for transport constituted an "encoding operation." Notably, Kemp disclosed "the NPD L data is packaged in HTTP [or] *any other suitable transport*
15 *protocol*." EX1009, ¶[0072]. In the Yamaguchi-Kammer-Kemp combination, a POSITA would recognize the NPD L data *would be encoded for transport* via Bluetooth. Rabbani, ¶¶240-241.

⁵ Example "rasterization parameters" per '402 Patent include "resolution, scale factor, bit depth, output size, and color space." EX1001, 11:23-25, 12:24-47, 15:8-9.

Claim 6: ...the content includes one or more of a text, a graphics element data, a video data, an audio data, and an image data.

Yamaguchi taught the content could be text, graphic elements, and/or images.

5 EX1006, 1:22-25. Rabbani, ¶242.

Claim 7: ...the output controller is included in the output device.

Kemp did not expressly disclose its service provider server (output controller) was included in the output device, but this was obvious based on Kemp's disclosure.

10 As explained in 1[f], the output controller could be implemented as a small device with basic processing and Bluetooth communication capabilities. Therefore, a POSITA would have found it obvious to include the output controller as part of the printer, especially in a space-confined environment described in Kemp, such as "a kiosk in an airport or a mall." EX1009, ¶¶[0038], [0056]. Rabbani, ¶¶243-244.

15 **Claim 12: ...the intermediate output data conforms at least partly to said at least one device attribute received over the communication channel and relating to the selected output device.**

See 9[c] and 9[f] (Ground-3).

Claim 14: ...the information apparatus is one of a mobile phone, a digital camera, a laptop, and a PDA.

Claims 27/31/34: ...the information apparatus is one of a personal computer, a mobile phone, a smart phone, a digital camera, a laptop, and a PDA.

See claim 14 (Ground-1), explaining that Yamaguchi disclosed at least a mobile phone.

Claims 15/32/35: ...the output device is one of a printer, a projection, a copier, a speaker, an audio output device, a display screen, and a TV.

See claim 15 (Ground 1).

Claims 16-21 and 36-37: ...discovering one or more output devices includes one or more output devices posting their availability as discoverable and the information apparatus finding one or more output devices.

See claims 16-21 and 36-37 (Ground-1).

D. Ground-4: Claim 8 is Obvious Over Yamaguchi, Kammer, Kemp, and Behlok

As explained in Ground-4's 1[j], Kemp's "*service provider server* [output controller] convert[ed] the NPD L print data into a printer specific format based on the printer selected by the operator." EX1009, ¶[0087], FIG. 10, S125; *see also* ¶¶[0056], [0068]. Kemp, however, did not explicitly list the output controller's specific processing tasks, but Behlok did. Rabbani, ¶325.

Behlok titled, "Post Raster-Image Processing Controls for Digital Color Image Printing," described a "system and method [for] printing a digital color image."

EX1015, 1:8-10. *See also* Rabbani, ¶¶105-106. Behlok described typical print processing operations for producing a continuous tone image via raster image processing, and sending to a print engine containing *a half toner* ... [which] renders a raster image for each of the print colors cyan, magenta, yellow and black (CMYK).”

5 EX1015, 1:36-46. Behlok also explained that an image processing station (IPS) performed the “ripping” (EX1015, 5:18-22), and additional operations before sending image data to a print engine:

10 IPS... selectively performs *color-space conversion*, black page detection, background detection, segmentation... window tagging, rotation, filtering, *scaling*, background suppression, *color adjustment*, cropping and masking, annotation, and the like.

EX1015, 5:29-37, Rabbani, ¶¶326-327.

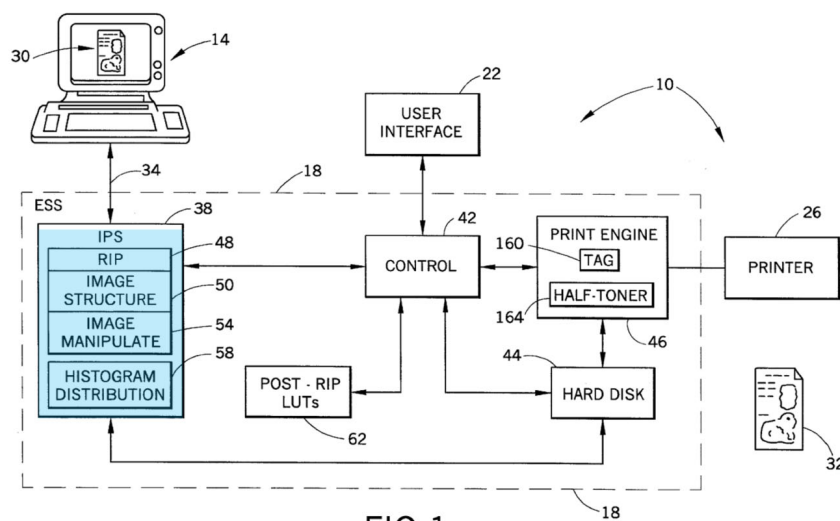


FIG.1

Behlok's commonly known processing included several of claim 8's operations. In the Yamaguchi-Kammer-Kemp-Behlok combination, it would have been obvious to a POSITA that Kemp's service provider server (output controller) would perform at least one of the above operations as part of operations that

5 “convert[ed] the NPD L print data into a printer specific format based on the printer selected by the operator.” EX1009, ¶[0087]. Operations such a color-space conversion, color adjustment and scaling were common image processing operations that were well-known to a POSITA and produced predicable results. Rabbani, ¶¶328-329.

10 **IX. SECTIONS 314(a) AND 325(d) ANALYSIS**

A. §314(a)

Consistent with the Director's June 21, 2022 guidance,⁶ Petitioner has filed or will file a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB in the parallel

15 district court litigation.

⁶ https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

B. §325(d)

The Board should not exercise its discretion under 35 U.S.C. §325(d) under the two-step framework established in *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). All references used in this Petition are entirely new references that were not cited or considered during the original examination. Additionally, this petition is neither cumulative, nor provides overlapping arguments with those in the original examination because it shows that all claim limitations, including those the examiner thought to be novel over Yoshida—the only reference mentioned in the notice of allowance) are obvious over a combination of references not previously considered.

X. ADDITIONAL CONSIDERATIONS FOR INSTITUTING THE IPR

When weighing IPR institution, Petitioner believes the PTAB should consider Flexiworld’s behavior and gamesmanship that included withholding material from the Office in order to avoid the impact of terminal disclaimers. This phenomenon directly impacts the ’402 Patent, and so it is relevant here.

The publication (Chang-121; EX1004) that ultimately issued as U.S. Patent No. 7,941,541 (EX1005) was filed on November 1, 2001, i.e., several months before the application for the ’402 Patent. It contained a strikingly similar disclosure to the ’402 application, had an earlier priority date, and produced claims that were

obvious variations of the '402 claims. *Compare* Claim 1 of EX1005 to Claim 1 of EX1001. In any normal prosecution, this would have triggered an obviousness-type double patenting rejection by the examiner, forcing Flexiworld to terminally disclaim the '402 Patent, or significantly amend the claims.

5 But the applicant never disclosed the Chang-121 Publication in the '402 Patent's prosecution. And that omission had real-world implications by extending the expiration date of the '402 Patent, giving the applicant extra time to monetize it and assert it in litigation.

10 Given its materiality to patentability, withholding the '541 Patent's publication (EX1004) has artificially extended the life of the '402 Patent beyond what the law allows or envisions. This additional problem with the '402 Patent is yet another reason to institute IPR and determine the proper status of the challenged claims.

XI. CONCLUSION

15 Petitioner requests institution of an IPR and cancellation of challenged claims.

Dated: April 21, 2023

Respectfully submitted,

/Babak Tehranchi/

Lead Counsel

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APPENDIX: CLAIMS LISTING OF INDEPENDENT CLAIMS

1[pre]	A pervasive mobile data output method for rendering at an output device content at least partly accessible with an information apparatus, the information apparatus including at least one wireless communication unit, the pervasive mobile output method comprising:
1[a]	accessing at the information apparatus at least part of said content;
1[b]	opening at the information apparatus a wireless communication channel;
1[c]	searching wirelessly at the information apparatus for wireless output devices available for wireless communication;
1[d]	receiving at the information apparatus and over the wireless communication channel at least one attribute corresponding to each wireless output device found in the search;
1[e]	selecting at the information apparatus a wireless output device found in the search based at least in part on a received attribute;
1[f]	conforming at the information apparatus at least part of the content into one or more output images;
1[g]	generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforming at least partly based on said received attribute of the selected output device;

1[h]	establishing a wireless connection between the information apparatus and the selected wireless output device;
1[i]	transmitting the intermediate output data from the information apparatus to an output controller that is distinct from the information apparatus and associated with the selected output device, the output controller including at least one wireless communication unit;
1[j]	converting at the output controller the intermediate output data into an output data acceptable for rendering at the output device, and delivering the output data to the output device for rendering;
1[k]	conforming at the output device the output data into a data format that is acceptable for rendering by a rendering engine in the output device, and delivering the data format to the rendering engine for output,
1[l]	whereby, the information apparatus is able to output, in a mobile pervasive manner, one or more images representative of said content to an output device without the need to install an output device driver specific to that output device.

9[pre]	A pervasive mobile data output method for rendering content to an output device from a mobile wireless information apparatus, the content being at least partly accessible with the information apparatus, the output device being a distinct device from the information apparatus and including a wireless communication unit, the method comprising:
9[a]	opening a wireless communication channel at the information apparatus;
9[b]	searching wirelessly at the information apparatus for wireless output devices available for wireless communication;
9[c]	receiving over the wireless communication channel at least one device attribute associated with at least one available wireless output device, the device attribute including at least an indication of a supported output device profile;
9[d]	selecting a wireless output device found in the search based at least in part on the received device attribute;
9[e]	conforming at the information apparatus at least part of the content into one or more device independent output images with at least one predefined or standard parameter;

9[f]	generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforming at least partly to said supported output device profile of a selected output that is included in said device attribute of the selected wireless output device and received over the wireless communication channel;
9[g]	establishing a point to point wireless connection between the information apparatus and the selected output device;
9[h]	delivering the intermediate output data over the wireless connection for rendering at the selected wireless output device;
9[i]	decoding at the output device the intermediate output data;
9[j]	converting at said output device the intermediate output data into an output data format acceptable for rendering by an output engine included in said output device, and
9[k]	sending the output data to the output engine for rendering,
9[l]	whereby the wireless information apparatus is able to pervasively output one or more images representative of said content to an output device without need to install an output device driver specific to that output device.

13[pre]	A method of mobile wireless data output from an information apparatus with access to at least part of a content to a wireless output device by short range wireless communication, wherein the information apparatus includes at least one wireless communication unit and is a distinct device from the output device, the method comprising:
13[a]	opening a wireless communication channel;
13[b]	discovering wirelessly one or more wireless devices that are available for wireless connection;
13[c]	receiving over the wireless communication channel an attribute corresponding to each discovered wireless device, the attribute including one or more of a name, a device type, a device address, and an indication of a supported output device profile;
13[d]	selecting a wireless output device from among the one or more discovered wireless devices based at least in part on the received attribute;
13[e]	obtaining a security key at the information apparatus, the security key enabling wireless data transfer to the selected output device;
13[f]	sending a security code related at least partly to the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer;

13[g]	receiving over the wireless communication channel a response related to an authentication; and
13[h]	if the received response is positive,
13[i]	establishing a wireless connection channel between the information apparatus and the selected wireless output device,
13[j]	conforming, at the information apparatus, at least part of the content into an output data encoded with at least one format, the conforming relating at least in part to the attribute received over the wireless communication channel, and
13[k]	transferring the output data from the information apparatus to the selected output device over said wireless connection channel for rendering,
13[l]	receiving at the selected output device the output data,
13[m]	performing at the selected output device at least one decoding operations on said output data, and
13[n]	converting the output data into an output engine data acceptable for rendering by an output engine included in the selected output device.

23[pre]	A pervasive mobile data output method for rendering at an output device content that is at least partly accessible with an information apparatus, the information apparatus being a distinct device from the output device and including a wireless communication unit, the output device including a wireless communication unit for wireless communication, a controller for decoding intermediate output data received at the output device, and a rendering engine, the pervasive mobile output method comprising:
23[a]	accessing at the information apparatus at least part of said content;
23[b]	opening at the information apparatus a wireless communication channel;
23[c]	searching wirelessly at the information apparatus for wireless output devices available for wireless communication;
23[d]	receiving at the information apparatus and over the wireless communication channel at least one attribute corresponding to each wireless output device found in the search;
23[e]	selecting at the information apparatus a selected wireless output device found in the search based at least in part on a received attribute, the selected wireless output device having an associated output controller;
23[f]	conforming at the information apparatus at least part of the content into one or more output images;

23[g]	generating at the information apparatus an intermediate output data that includes said one or more output images; the intermediate output data being at least partly compatible with said received attribute of the selected wireless output device;
23[h]	establishing a wireless connection between the information apparatus and the selected wireless output device;
23[i]	wirelessly transmitting the intermediate output data from the information apparatus to the selected wireless output device where the intermediate output data are decoded for rendering at the output device.

28[pre]	A pervasive mobile data output method for rendering content to an output device from a mobile wireless information apparatus, the content being at least partly accessible with the information apparatus, the output device being a distinct device from the information apparatus and including a wireless communication unit, the method comprising:
28[a]	opening a wireless communication channel at the information apparatus;
28[b]	searching wirelessly at the information apparatus for wireless output devices available for wireless communication;

28[c]	receiving over the wireless communication channel at least one device attribute associated with at least one available wireless output device, the device attribute including at least an indication of a supported output device profile;
28[d]	selecting a wireless output device found in the search based at least in part on the received device attribute;
28[e]	conforming at the information apparatus at least part of the content into one or more device independent output images with at least one predefined or standard parameter;
28[f]	generating at the information apparatus an intermediate output data that includes said one or more output images, the intermediate output data conforming at least partly to said supported output device profile of a selected output that is included in said device attribute of the selected wireless output device and received over the wireless communication channel;
28[g]	establishing a point to point wireless connection between the information apparatus and the selected output device; and;
28[h]	delivering the intermediate output data over the wireless connection for rendering at the selected wireless output device for rendering.

33[pre]	A method of mobile wireless data output from an information apparatus with access to at least part of a content to a wireless output device by short range wireless communication, wherein the information apparatus includes at least one wireless communication unit and is a distinct device from the output device, the method comprising:
33[a]	opening a wireless communication channel at the information apparatus;
33[b]	discovering wirelessly one or more wireless devices that are available for wireless connection;
33[c]	receiving over the wireless communication channel an attribute corresponding to each discovered wireless device, the attribute including one or more of a name, a device type, a device address, and an indication of a supported output device profile;
33[d]	selecting a wireless output device from among the one or more discovered wireless devices based at least in part on the received attribute;
33[e]	obtaining a security key at the information apparatus, the security key enabling wireless data transfer to the selected output device;
33[f]	sending at least part of the security key over the wireless communication channel and requesting the selected wireless output device to open a wireless connection channel for data transfer;

33[g]	receiving over the wireless communication channel a response related to an authentication;
33[h]	if the received response is positive,
33[i]	establishing a wireless connection channel between the information apparatus and the selected wireless output device, and
33[j]	conforming, at the information apparatus, at least part of the content into an output data encoded with at least one format, the conforming relating at least in part to the attribute received over the wireless communication channel, and
33[k]	transferring the output data from the information apparatus to the selected output device over said wireless connection channel for rendering.

CERTIFICATION OF WORD COUNT UNDER 37 C.F.R. §42.24(d)

Pursuant to 37 C.F.R. §42.24(d), the undersigned hereby certifies that the word count for the foregoing *Petition for Inter Partes Review* of U.S. Patent No. 7,609,402 totals 12,110 words, excluding a table of contents, Mandatory Notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Accordingly, this Petition is under the word count limit of 14,000 words.

This word count was calculated by using the built-in word-count tool in Microsoft 365, the software used to prepare the document.

Dated: April 21, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true copy of the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,609,402 and supporting materials (Exhibits 1001-1009, 1011-1013, 1015-1016 and Power of Attorney) have been served this 21st day of April 2023, by FedEx® delivery service on Patent Owner at the correspondence address for the attorney of record for the '402 Patent shown in USPTO PAIR:

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