

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. IPR2023-00846

Patent No. 9,965,233

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,965,233**

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Exhibits

Exhibit No.	Description
Ex. 1001	U.S. Patent No. 9,965,233 ('233 patent)
Ex. 1002	Declaration of Dr. Majid Rabbani
Ex. 1003	File History for U.S. Patent No. 9,965,233
Ex. 1004	U.S. Patent No. 6,748,471 (“Keeney”)
Ex. 1005	U.S. Patent No. 6,091,507 (“Vatland”)
Ex. 1006	Docket for <i>Flexiworld Technologies, Inc. v Lexmark International Inc.</i> , 22-cv-110, Eastern District of Kentucky
Ex. 1007	'233 Patent Claim Limitation Matrix
Ex. 1008	“Application Software,” IEEE 100: The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition (2000)
Ex. 1009	RFC - 2406 (IPSec), 1998

I. INTRODUCTION

U.S. Patent No. 9,965,233 (“’233 Patent” (Ex. 1001)) combines well-known techniques of wireless and network communications, print processing, and fundamental digital image encoding technologies. The claims apply the well-worn notion of “division of labor” to printing a document by performing some of the print processing operations at the remote server with more computational abilities while using well-known encryption and rudimentary authentication techniques to protect the data that was communicated between the networked devices.

None of these ideas were new. Prior to the ’233 Patent’s filing date, wireless printing, distribution of processing operations and various encoding and encryption technologies were matured well beyond what is described and claimed in the ’233 Patent. In fact, the references identified by Lexmark in this Petition illustrate that the ’233 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.

Lexmark International, Inc. is affiliated with other companies, including 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 '233 Patent is being asserted in the following patent infringement lawsuits brought by Patent Owner:

1. *Flexiworld Technologies, Inc. v. Lexmark International, Inc.*, No. 5:22-cv-00110 (E.D. Ky.) (complaint filed April 29, 2022);
2. *Flexiworld Technologies, Inc. v. Roku, Inc.*, No. 6:21-cv-00680-ADA (W.D. Tex.) (complaint filed June 28, 2021, settled/voluntarily dismissed October 28, 2022);
3. *Flexiworld Technologies, Inc. v. Brother Industries (USA), Inc.*, No. 2:22-cv-02251 (W.D. Tenn.) (complaint filed April 21, 2022, settled/voluntarily dismissed March 13, 2023);
4. *Flexiworld Technologies, Inc. v. Lexmark International, Inc.*, No. 5:22-cv-00110 (E.D. Ky.) (complaint filed April 29, 2022);
5. *Flexiworld Technologies, Inc. v. Hisense Co., Ltd.*, No. 2-22-cv-00225 (E.D. Tex.) (complaint filed June 24, 2022), transferred to 1-22-cv-04337 (N.D. Ga.); and
6. *Flexiworld Technologies, Inc. v. Hisense Co., Ltd.*, No. 1:22-cv-04337 (N.D. Ga.) (complaint filed October 31, 2022, settled/voluntarily dismissed April 7, 2023).

In addition, the '233 Patent was the subject of *Roku, Inc. v. Flexiworld Technologies, Inc.*, No. IPR2022-01114, (P.T.A.B, June 30, 2022) (settled/voluntarily dismissed prior to institution on November 28, 2022).

Petitioner has also challenged Flexiworld's U.S. Pat. No. 7,609,402 in an IPR
5 (PTAB Case No. IPR2023-00845).

C. Counsel and service information

Lead counsel: Amy Simpson (Reg. No. 54,688).

Back-up counsel: Babak Tehranchi (Reg No. 55,937), Kristen Schunter (Reg
No. 76,519).

10 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. 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.

15 **III. REQUIREMENTS FOR *INTER PARTES* REVIEW**

A. Grounds for standing

Petitioner certifies that the '233 patent is available for IPR and that Petitioner
is not barred or estopped from requesting IPR challenging claims of the '233 patent
on the grounds presented here. This Petition has been filed less than one year after
20 Flexiworld filed its April 29, 2022, complaint (5:22-cv-00110 E.D. Ky.) alleging
infringement of the '223 patent. A summons also issued on April 29, 2022, however

there is no record that the complaint and summons were ever served on Petitioner Lexmark. (Ex. 1006).

B. Overview of challenge and relief requested

Pursuant to Rules 42.22(a)(1) and 42.104(b)(1)-(2), Petitioner requests
5 cancellation of claims 1, 2, 4-7, 9, 11, 12, 13, 17-21, 27, 29, 30, 35, 36, 47, 48, 50, 52, 57, and 61 of the '233 patent under pre-AIA 35 U.S.C. § 103.

1. Identification of prior art

Petitioner relies on the patents listed in the Table of Exhibits, including:

Exhibit No.	Prior Art Basis
Ex. 1004 (Keeney) U.S. 6,748,471	Keeney was filed October 16, 2000, and issued June 8, 2004, and is therefore prior art under pre-AIA 35 U.S.C. § 102(e).
Ex. 1005 (Vatland) U.S. 6,091,507	Vatland was filed July 1, 1994 and issued July 18, 2000, and is therefore prior art under pre-AIA 35 U.S.C. § 102(a).

10 Neither Keeney nor Vatland was before the Board during the 18-year long examination of the '233 patent.

2. Grounds for challenge

The table below summarizes the grounds challenging the independent and dependent claims.

Statutory Ground for Challenge		
Ground 1	Ind. Claims: 1, 18, 27, 37, 42, 47 and 50 Dep. Claims: 2, 4-7, 9, 11-13, 17-21, 29, 30, 35-36, 50, 52, 57, and 61	Obvious over Keeney in view of the general knowledge of a POSITA
Ground 2	Ind. Claim 47 Dep. Claims 48 and 61	Obvious over Keeney in view of Vatland

This Petition is supported by the declaration of Dr. Majid Rabbani (“Rabbani”) which is attached as Ex. 1002 and demonstrates a reasonable likelihood that Petitioner will prevail with respect to cancellation of at least one challenged claim. *See* 35 U.S.C. § 314(a).

5 IV. The ’233 Patent

A. State of the Art

The explosive growth of the Internet was partly fueled by advancements in storage, compression, transmission, and data security of digital data, as well as computational capabilities of electronic devices, which had reached a level of
10 maturity to allow proliferation of Internet-based applications. Encoding data for transmission over a network has long been an enabling technology for communicating digital data. (Rabbani, ¶¶26-27).

As Dr. Rabbani explains, the term “encoding” broadly refers to changing the representation of data from one form to another. There are many forms of encoding
15 depending on what is being encoded. (Rabbani, ¶¶28-33). Compression is one form

of encoding image and print data because it changes the data representation by taking advantage of redundancies to reduce the size of the data or file. The goal of data compression is to find ways to represent information using as few bits as possible for more efficient storage and transmission. (Rabbani, ¶34). In the late 1990s, as storage capability and transmission bandwidth increased due to technological developments, so did the amount of data to be stored and transmitted. Geographically distributed databases and new applications involving digitized speech, audio, image, and video required increasing amounts of storage and bandwidth. Compression was a fundamental technology for digital data transmission. (Rabbani, ¶¶35-39, 44-62).

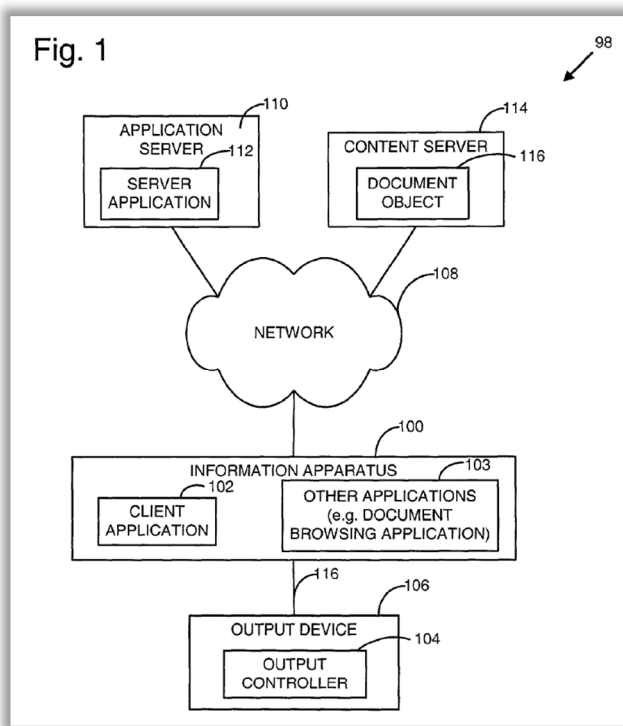
Indeed, by 2000, image compression schemes were well-known. One of the most recognizable and prominent examples of an international image compression standard was JPEG (“Joint Photographic Experts Group”). JPEG was developed under the joint auspices of the three major international standards organizations, ISO, ITU, and IEC, and was approved in September 1992 as ITU-T Recommendation T.81 and titled “Digital Compression and Coding of Continuous-Tone Still Images - Requirements and Guidelines.” (Rabbani, ¶¶40-43).

B. Overview of the Alleged Invention

The '233 Patent's supposed invention relates to "providing digital content to an output device" from an "information apparatus," especially in a context where the information apparatus may have limited "memory space, processing capacity and power" and "limited display screens." ('233 Patent, 1:11-16, 3:38-57). The patent
5 alleges that, as of the priority date, there was an "ever-increasing" usage of wireless mobile devices and "pervasive computing devices," like "personal digital assistants (PDAs), Internet enabled mobile phones, smart phones," "e-books," and others (*id.*, 1:21-31, 1:45-50). The patent alleges that this created a need "to allow users to easily
10 output content and information from their pervasive computing devices to any output device," and in particular to do so without requiring the pervasive computing device to first sync with a stationary computer, like a desktop computer. (*Id.*, 1:50-56).

The '233 Patent explains this need, and its alleged solution, almost exclusively in the context of a user needing to print a document from a mobile device. (*Id.*, 1:57-
15 2:40). Printing from mobile devices was disadvantageous because of the need to install printer drivers for any given printer (*id.*, 3:10-37), because of the limited memory space, capacity, and power of such devices (*id.*, 3:38-55), and because mobile devices tended to have small screens, making them inconvenient for viewing many types of digital content. (*Id.*, 3:56-4:7).

The '233 Patent's solution to these problems is to move the data formatting functionality of the device driver off the mobile device and onto a server, such as an application server or content server. (*Id.*, 16:49-54, 18:6-10, Fig. 1).



5 **'233 Patent, Figure 1**

For example, instead of having a printer driver on the information apparatus, a user may send the document to the application server in order for the server to process the document into a suitable output format. (*Id.*, 21:60-64). In other embodiments, the document may reside on the content server, and the user may
10 either obtain the document at the information apparatus from the content server or direct the content server to send a document to a separate output device. (*Id.*, 24:35-25:2; Fig. 7).

The challenged claims are *much* broader. The challenged claims generically refer to accessing “digital content” or “output data.” They generically recite a client-server arrangement in which the client provides authenticating information, payment or subscription information, and “pointers or references” to content on the server, and the server provides that content, sometimes encoded and encrypted. As demonstrated by this Petition, none of these features were new.

C. Prosecution History

The prosecution history of the '233 patent spanned eighteen years. (Rabbani, ¶¶81-82). It was uneventful and has no substantive impact on this Petition.

D. Alleged Priority Date

The '233 Patent claims priority to Provisional Application No. 60/252,682, filed on November 20, 2000. For the purposes of this proceeding only, Petitioner assumes the '233 patent is entitled to the November 20, 2000, priority date. Nevertheless, all prior art references discussed herein have earlier effective prior art dates.

V. CLAIM CONSTRUCTION

Petitioners interpret the claim terms according to their plain and ordinary meaning as understood by a POSITA at the time of the invention in view the specification and the prosecution history. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1302, 1312-13 (Fed. Cir. 2005). At this time Petitioner does not believe construction of any term is necessary to resolve the invalidity challenges set

forth in this Petition but reserves the right to construe terms in the litigation and/or to respond to any constructions that Patent Owner presents in this proceeding.

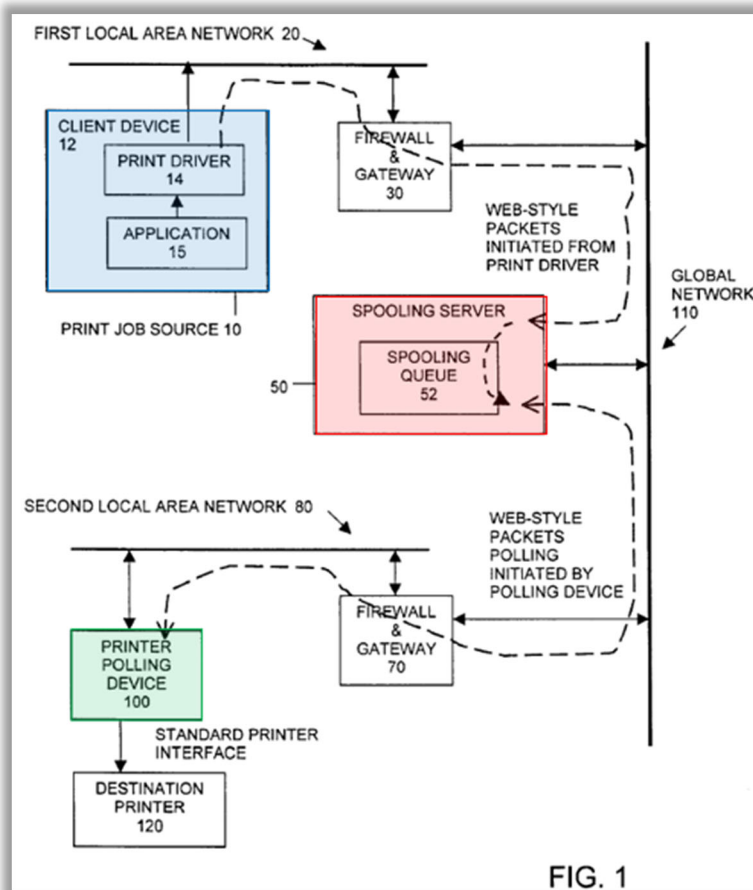
VI. LEVEL OF ORDINARY SKILL IN THE ART

As of the '233 patent's alleged November 20, 2000, priority date, a POSITA
5 would have had a bachelor's degree in computer science, computer engineering, or electrical engineering (or equivalent experience) and at least two years of practical experience with printer technology. (Rabbani, ¶¶21-25).

VII. DESCRIPTION OF THE PRIOR ART

A. U.S. Patent No. 6,748,471 (Keeney)

10 Like the '233 Patent, Keeney described "requesting and receiving print jobs over a communications network." (Keeney, 1:9-10). Figure 1 of Keeney illustrated an embodiment of the system, annotated below:



Keeney, Figure 1 (Annotated)

In Keeney's system, a spooling server (red in annotated Figure 1 above) provided "compatibility with virtually all printers that may be connected to [a global communication network]...so that a document can be printed anywhere regardless of a specific printer's requirements." (*Id.*, 6:29; 6:34-37). The spooling server would receive print jobs from a print job source (blue), also referred to in Figure 1 as a client device. (*Id.*, 6:43-44). A printer polling device (green) would "poll[] the spooling server 50 via the network 110 to identify a print job associated with the printer polling device." (*Id.*, 6:45-47). If the spooling server identified a print job for the

printer polling device, “[t]he identified print job [would] be transmitted from the spooling server 50, to the printer polling device 100 and printed at a printer 120 coupled to the printer polling device 100.” (*Id.*, 6:66-7:2).

5 The printer polling device would request print jobs from the spooling server by transmitting a “polling query” to the spooling server. (*Id.*, 12:1-10). Each polling query included an identification of a job to be printed at the printer associated with the polling device (*id.*, 12:8-10), as well as an identification of the associated printer (*id.*, 13:65-14:3).

10 The spooling server maintained a queue of print jobs, referenced by a user’s personal identification number (PIN) or by a unique job number. (*Id.*, 9:20-22; 9:42-45). When a polling query identifying the PIN or the unique job number was received, the spooling server converted the print job identified by the PIN or the job number into “a form that [could] be understood by the printer.” (*Id.*, 13:62-64). Once formatted according to printer-specific information, the spooling server “place[d] the
15 print job 11 into a printer specific data file 805 for delivery to the printer polling device 100 to be printed at the target printer 120.” (*Id.*, 14:19-22). (Rabbani, ¶¶83-86).

B. U.S. Patent No. 6,091,507 (Vatland)

20 Vatland was directed to “a method and apparatus for printing a document over a network.” (Vatland, 1:5-6). Vatland explained that network printing suffered

from a slow data transfer rate over the network, which resulted in “raster data [not being] transferred to [a] printer fast enough to feed a moderately fast print engine.” (*Id.*, 1:62-64). To solve this problem, Vatland provided several techniques for increasing the speed of raster data transfers over a network (*id.*, 11:8-30), including that printer data “may be compressed and decompressed to obtain additional network bandwidth.” (*Id.*, 11:25-26). (Rabbani, ¶87).

VIII. OBVIOUSNESS OF THE CHALLENGED CLAIMS

A. Ground 1: Claims 1, 2, 4, 5, 7, 9, 11, 12, 13, 17-21, 27, 29, 30, 35, 36, 47, 48, 50, 52, 57, and 61 are obvious over Keeney

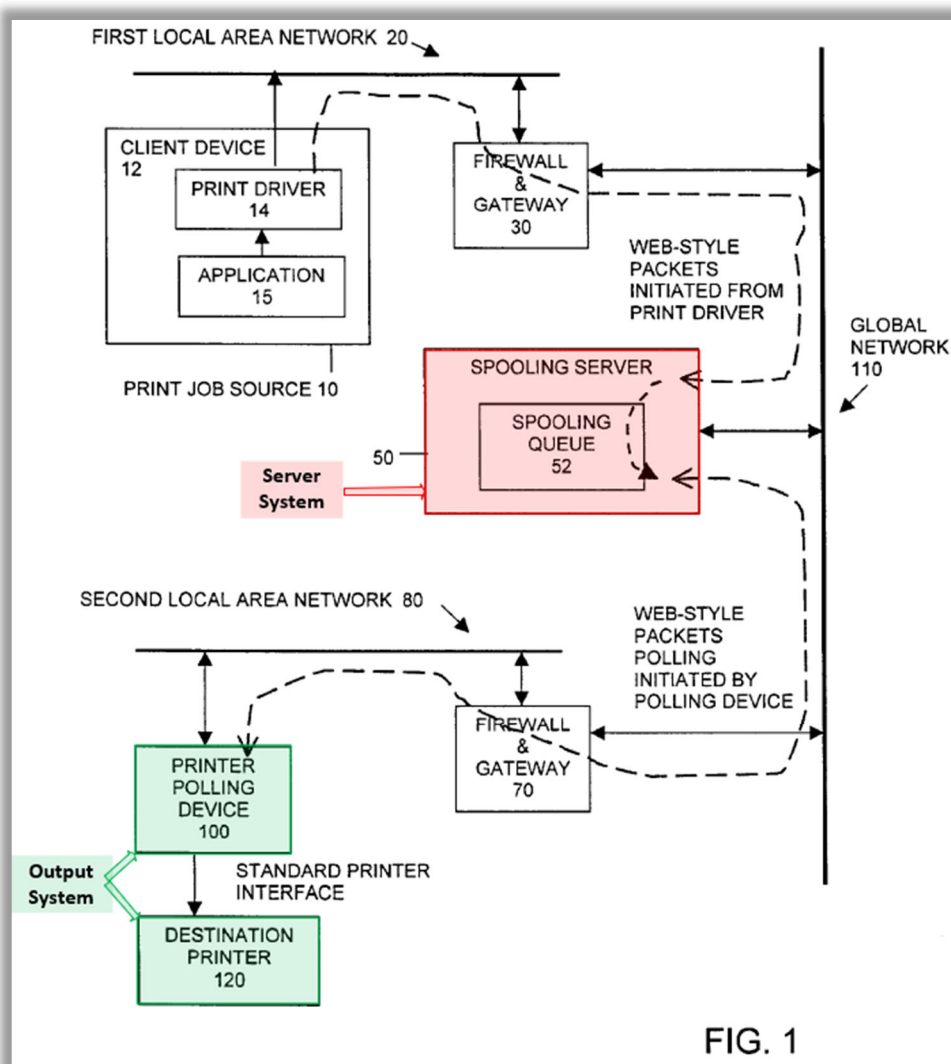
While the corresponding Eastern District of Kentucky litigation is still in its infancy, in its Complaint, Patent Owners allege that Petitioner infringes claims 47, 48, and 61. Petitioner presents these claims first in this Petition. Additionally, given the numerous claims challenged and the lengthy limitations incorporated by reference to independent claim 47, Petitioner provides a claim matrix as an organizational aid for the Board. (Ex. 1007).

1. Claim 47

a. [47.PRE]: In a computer memory or storage device at a server system, containing one or more server applications executable by one or more processors at one or more servers in the server system for transmitting device dependent output data acceptable for rendering at an output system, the output system including one or more devices, and the server system including one or more servers that are accessible by the one or more devices over a network that includes the Internet, the server system being distinct and separate from the one or more devices of the output system, the one or more server

applications in the computer memory or storage device, when executed by the one or more processors at the one or more servers, configures the server system to:

To the extent the preamble is limiting, Keeney taught it. Keeney disclosed a
5 server system in the form of a “spooling server” and an output system in the form of a “printer polling device” and “destination printer.” See annotated Figure 1 of Keeney below.



Keeney, Figure 1 (Annotated)

Computer memory or storage device at a server system: The spooling server according to Keeney's disclosure included a "print job storage 52," also referred to as a "spooling queue 52" or "memory 52." (Keeney, Fig. 1; 8:9; 14:54). Additionally, spooling server 50 is described as storing received print jobs "in memory 52, which
5 may comprise random access memory (RAM), magnetic or optical storage media, or any other read/write memory device." (Keeney, Fig. 9; 14:53-57).

Additionally, Keeney's print job source 10 is described as "a computer, a telephone, a personal digital assistant, an Internet appliance or the like" (Keeney, 3:26-28), each of which a POSITA would understand to include a memory or storage
10 devices.

Server applications executable by a processor in the server system:

Keeney disclosed that the spooling server included a processor that "enable[d] the spooling server to search for, retrieve, and/or reformat the print job for delivery to the printer polling device." (Keeney, 14:64-67). The spooling server was also con-
15 figured to encrypt the reformatted print job before transmitting it to the printer polling device. (*Id.*, 8:54-58). The '233 patent broadly defines server applications as "application software to implement the functionalities of the application server and to provide services to its clients." ('233 patent, 16:62-66; 17:1-18:5). Based at least on this description and a POSITA's general knowledge, a POSITA would have
20 found it obvious for the spooling server disclosed by Keeney to include one or more

server applications executable by a processor in the spooling server, since it was well known for computing devices to use application software to perform specific functions¹ and such application software would have enabled the spooling server to perform the functions Keeney described it as performing.

5 ***Transmitting device-dependent output data acceptable for rendering at an output system:*** When a print job was available for printing, Keeney’s spooling server “reformatted [the print job] in a form suitable for the identified printer.” (*Id.*, 9:57-59).

10 ***Output system including one or more devices:*** Keeney’s disclosure of the printer polling device and the destination printer – which were both devices – together form an “output system.”

15 ***Server system including a server accessible by the device(s) over a network that includes the Internet:*** The spooling server taught by Keeney is the claimed server system. The printer polling device disclosed by Keeney (a device that was part of the output system) was “capable of polling the spooling server 50 via the network 110.” (*Id.*, 6:45-46). Keeney’s network 110 was described as the Internet. (*Id.*, 3:34-39, 7:11-12).

¹ “Application Software” is either “software designed to fulfill specific needs of a user,” or “software that is specific to an application and is composed of programs, data, and documentation.” (Ex. 1008 - IEEE 100: The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition (2000)).

Sever system distinct and separate from the output system device(s): As depicted in Keeney's Figure 1 above, the spooling server (the server system) was distinct and separate from the printer polling device and destination printer (the output system devices) because the output devices are remote from and receive content over
5 a network from the connected spooling server. (Rabbani, ¶¶90-97).

b. [47.A]: receive, by the server system from the output system, one or more content objects, the one or more content objects including one or more pointers or references to digital content corresponding to one or more selection by a user at the output system, the one or more pointers or references to digital content are related to available digital content at the server system, and the available digital content are provided, at least in part, to the output system by the server system:
10

Keeney disclosed this feature.

In Keeney's system, the spooling server maintained a queue of print jobs, referenced by a user's personal identification number (PIN) or by a unique job number.
15 (Keeney, 9:20-22 ("each print job may be stored on the spooling server 50 according to a personal identification number (PIN)"), 9:38-40 ("A plurality of print jobs may be stored on the spooling server 50 according to the PIN 400 (e.g., in spooling queue 52)"), 9:42-45 ("Each print job may additionally be assigned a unique job number... Thereafter, the job number may be used to access the data files associated with
20 that job unambiguously"))).

To request any documents available for printing at an associated printer, the printer polling device would send a "polling query" to the spooling server. (Keeney,

12:1-10). The polling query included either a PIN or a job number to identify the print job to be printed. (*Id.*, 12:8-10). The object in the polling query identifying the PIN or job number was therefore a *content object including a pointer or reference to digital content* available at the spooling server (server system) based on the spooling server's maintenance of a queue of print jobs referenced by PIN and/or job number. (Rabbani, ¶¶98-99).

A user of Keeney's system could request a print job to be printed by interacting with a user interface at the printer polling device. (*Id.*, 9:28-33 (“a small terminal may be provided at each printer polling device 100 to allow a user to interact with the spooling server 50 and request that the user's print jobs be sent to the printer 120 at the user's location”)). The user requests print job by inputting the PIN used by the spooling server to index print jobs. (*Id.*, 9:34-38). Accordingly, Keeney disclosed that the PIN or job number in the polling query (a content object containing a pointer or reference to digital content) corresponded to a selection by the user at the printer polling device (the output system).

Keeney also described another embodiment of requests to the spooling server that rendered obvious the claimed “content objects.” In this alternate embodiment, “an agent program 200 [on a client device] provide[d] a directory of documents 204 to the spooling server 50.” (*Id.*, 12:18-20). The agent program made “the contents of some or all of the directories 204 on the client device 12 available to the spooling

server 50.” (*Id.*, 12:34-36). The directory was communicated to and displayed by the printer polling device, such that “[s]election of a print job 11 from the directory [could] be made (e.g., via a user interface).” (*Id.*, 12:45-48). When the user selected a document in the directory for printing, the spooling server sent the agent program
5 document information, “such as the name of the document that is requested.” (*Id.*, 13:6-8). When a user used the printer polling device to select a print job from the directory (a selection by the user at the output system), a POSITA would have understood that the printer polling device would have sent the spooling server (server system) a content object including pointer or reference to the selected print job in
10 order to enable the spooling server to identify the document information that was sent to the agent program. (Rabbani, ¶100-101).

Regardless of how the printer polling device requested a print job, the spooling server described by Keeney (server system) would send the requested print job (digital content) to the printer polling device for printing by the associated printer
15 (output system). (*Id.*, 4:42-45 (“The print job may be printed at the desired print location when the printer polling device at the desired print location polls the spooling server and identifies the print job”)); *see also* 9:56-60, 13:14-15; Rabbani, ¶102).

c. [47.B]: receive, by the server system from the output system, one or more objects, the one or more objects having information related

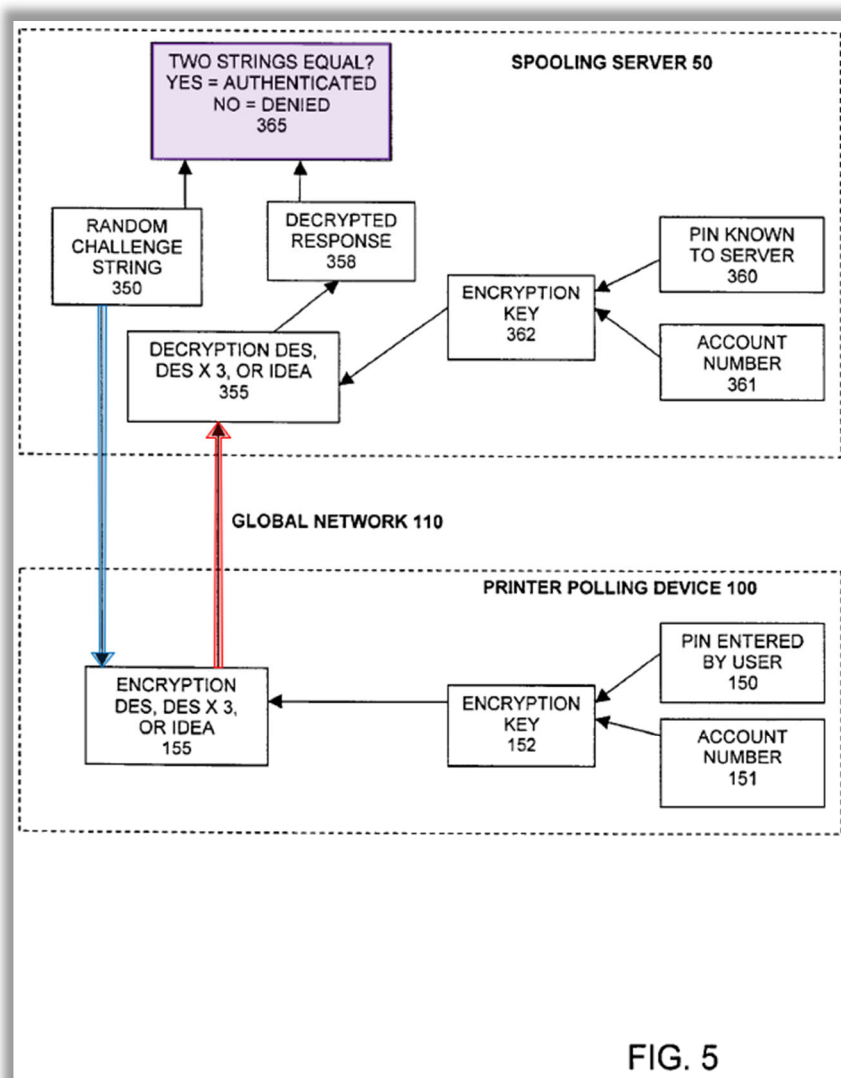
to the output system that includes the one or more devices:

The '233 patent explains that the term “object” can include “[a]ny entity containing information, descriptions, attributes, data, instructions etc. in any computer-readable form or medium such as hardware, software, files based on or including
5 voice, text, graphics, image, or video information.” ('233 patent, 5:21-25). In Keeney’s disclosure, the polling query generated by the printer polling device include an “object having information related to the output system,” consistent with the '233 patent’s explanation, in the form of an identification of the printer at which a document is to be printed. (Keeney, 13:65-14:3 (“Target printer identifica-
10 tion...can be provided by the printer polling device 100 as part of the polling query”); Rabbani, ¶103).

d. [47.C]: receive, by the server system and from the output system, security or authentication information associated with a user operating the output system for authentication of the user:

15 Keeney explained that when a user desires to print documents over a non-secure channel, it was important for the spooling server to “verify that it is indeed talking to the actual user.” (Keeney, 10:9-11). To this end, Keeney disclosed an authentication process in which the spooling server would send a random string of bits to the printer polling device (see step indicated by blue in annotated Figure 5 below).
20 (*Id.*, 10:11-16). The printer polling device would in turn encrypt the string using an encryption key generated based on a user’s personal identification number (PIN) and

return the encrypted string to the spooling server (see step annotated in red). (*Id.*, 10:11-16). The spooling server would decrypt the string using an encryption key generated from a previously received user PIN and “accept[] the user as authenticated” if the decrypted string matched the original string (see step annotated in purple). (*Id.*, 10:16-21).



Keeney, Figure 5 (Annotated)

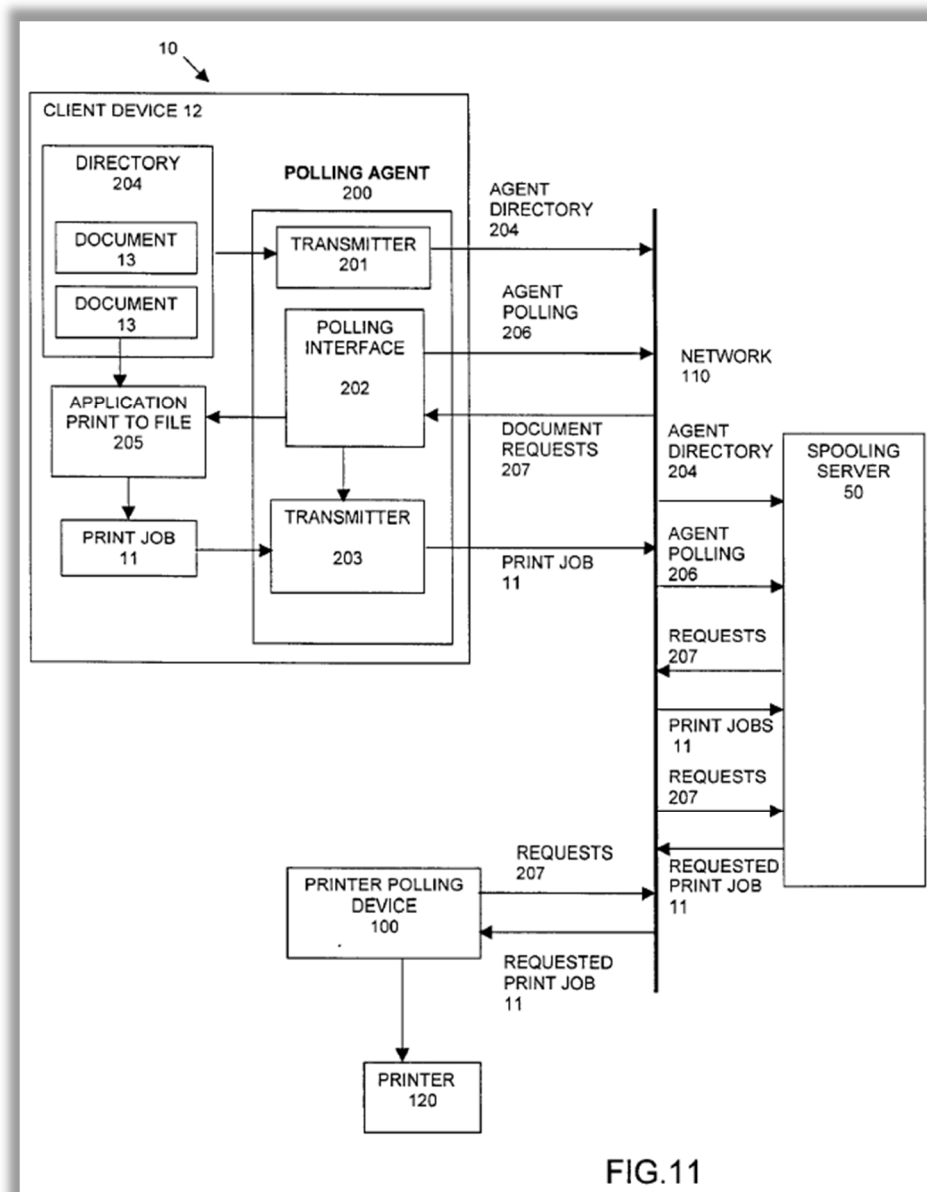
Thus, Keeney disclosed “security or authentication information associated with a user” in the form of the string of bits encrypted based on the user PIN, which enabled the spooling server to authenticate the user. (Rabbani, ¶¶104-105).

- 5 e. **[47.D]: retrieve, by the server system, at least part of the digital content from a content server employing, at least in part, the one or more pointers or references to the digital content included in the one or more content objects received from the output system:**

As described with respect to [47.A], Keeney disclosed a content object including pointers or references to digital content in the form of either a PIN or job number
10 identifying a print job stored in a queue at the spooling server. (Keeney, 8:8-9). Keeney also disclosed using these pointers or references to retrieve digital content from a content server such as a file system on the spooling server.² For example, the spooling server would use the PIN or job number to access a requested print job. (*Id.*,
9:20-22 (“each print job may be stored on the spooling server 50 according
15 to...PIN”), 9:44-45 (“the job number may be used to access the data files associated with that job unambiguously”)). Once the spooling server identified the print job to be printed, “the data for that print job is retrieved from the file system” (that is, retrieved from a content server). (*Id.*, 9:55-57).

² The ’233 patent explains that an application server and a content server “may be implemented with different applications executed in a single network node or server.” (’233 patent, 18:27-31). Keeney’s disclosure of a spooling server and spooling server file system, implemented on the same network node or server, is consistent with this explanation in the ’233 patent.

Keeney also disclosed that print jobs could be stored in a directory on a client device (also referred to as a “print job source 10”), where the client device is remote from the spooling server and printer polling device and the directory functions as a content server. (*Id.*, 12:32-38; Figure 11).



Keeney, Figure 11

In this embodiment, the spooling server would retrieve a print job from the client device by sending “document information, such as the name of the document that is requested,” to the agent program on the client device. (*Id.*, 13:6-8). The agent program would “open[] the document 13 using the application it was created in and
5 print[] it to a temporary file 205 to create a print job,” which is returned to the spooling server for transmission to the destination printer. (*Id.*, 13:9-15; Rabbani, ¶¶106-108).

f. [47.E]: generate, by the server system, output data associated with at least part of the digital content, the output data having a relationship, at least in part, to the information included in the one or more objects received by the server system:
10

The spooling server in Keeney’s disclosure generated output data for a selected print job by converting the print job into “a form that [could] be understood by the printer.” (Keeney, 13:62-64). As described with respect to 47[B], the spooling
15 server received an object that included an identification of a target printer (“information related to the output system”) for printing a print job (e.g., the polling query object identifying the destination printer). (*Id.*, 14:1-3). The spooling server used the target printer identification to “retrieve[] printer specific information 805 for the target printer 120” (*id.*, 14:4-5) and, “[b]ased on the printer specific information 805
20 (such as data type, page dimensions, color capabilities, margins, and other print characteristics) the spooling server 50 [would] make printer specific adjustments 810 to the print job 11 at the page description language level prior to rasterization.” (*Id.*,

14:6-10). Once formatted according to the printer-specific adjustments, the spooling server “place[d] the print job 11 into a printer specific data file 805 for delivery to the printer polling device 100 to be printed at the target printer 120.” (*Id.*, 14:19-22; *see also* annotated Figure 7 below).

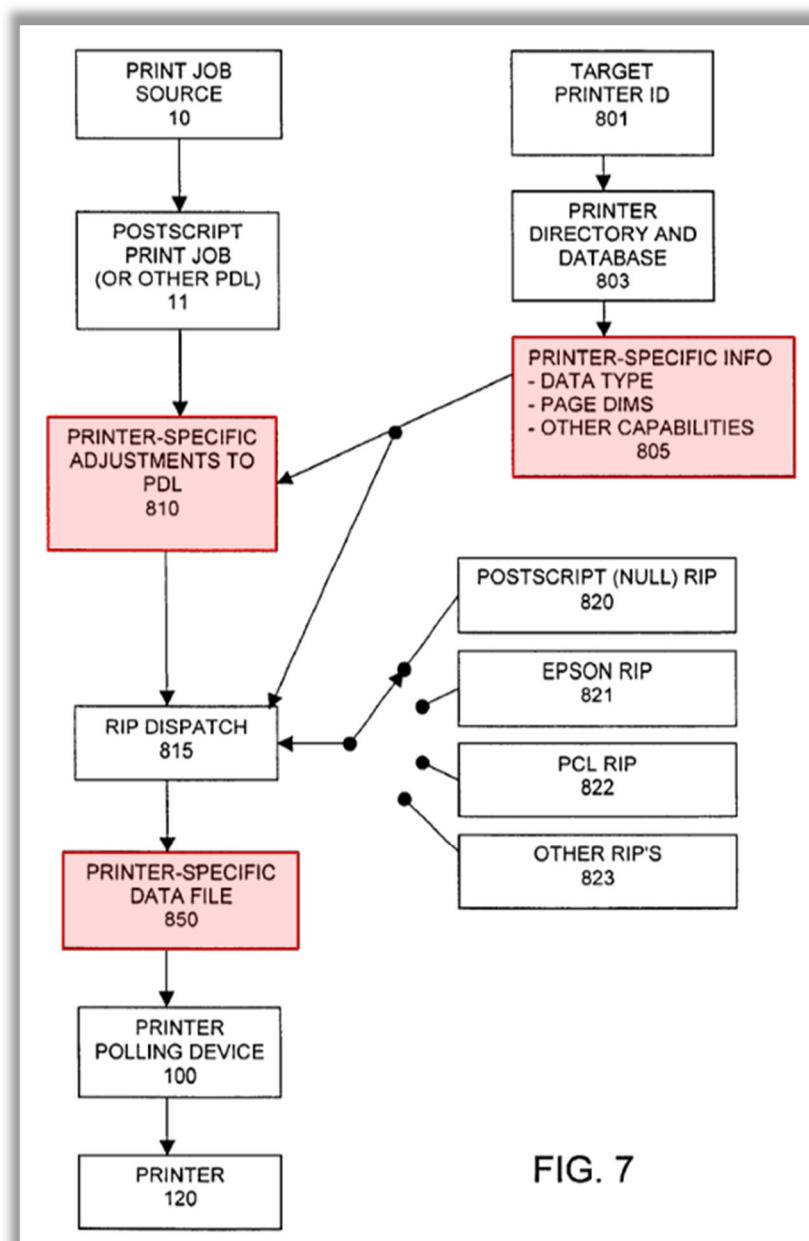


FIG. 7

Keeney, Figure 7 (Annotated)

The “printer specific data file” constituted the claimed “output data associated with at least part of the digital content,” and it would have been obvious that this data file had a relationship to the information included in the object received by the server system because it was generated according to the specific characteristics of the target printer. (Rabbani, ¶¶109-110).

g. [47.F]: apply, by the server system, an encoding operation on at least part of the digital content for transmitting the output data that is associated with at least part of the digital content:

Keeney in combination with the general knowledge of a POSITA renders limitation 47.F obvious in two ways. First, when “encoding . . . the digital content” is viewed as a traditional print flow process where an encoding operation is performed on the digital document itself, Keeney teaches this.

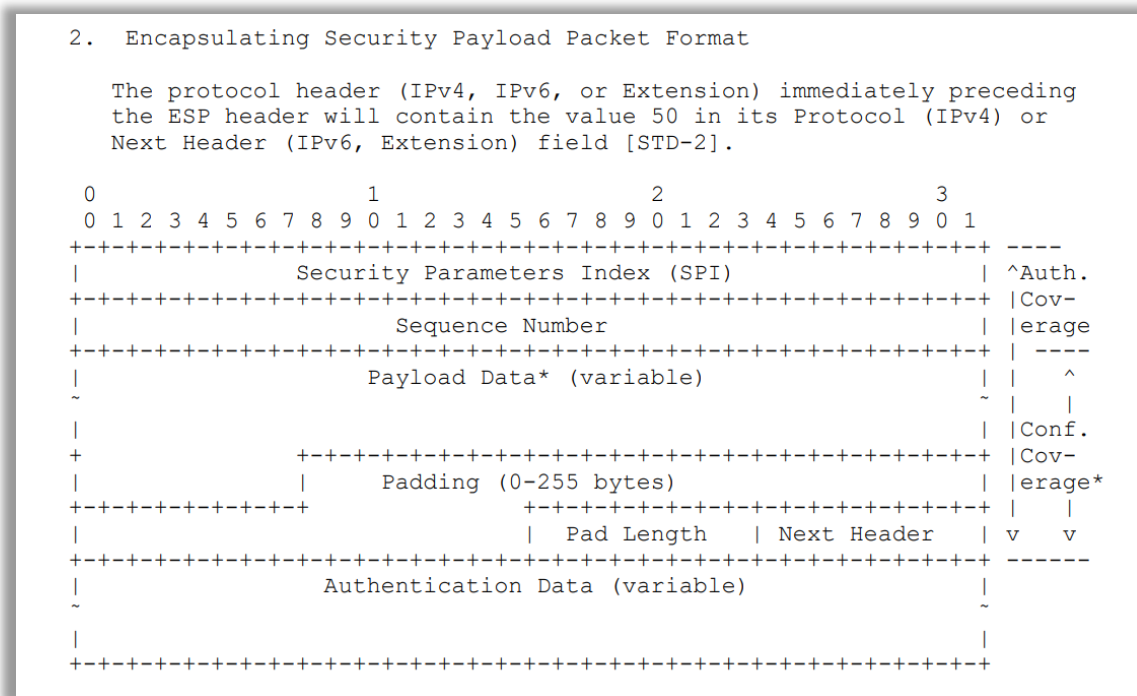
Keeney’s disclosure, the spooling server (e.g., server system) transmitted a print job (digital content) to the printer polling device for output to a destination printer. (Keeney, 8:53-57). The printer polling device received the print job from the spooling server via the “network 110” (*id.*, 14:40-42), which was described as including the Internet (*id.*, 7:11-12).

The ’233 patent does not define “encode,” “encoding,” or “encoding operation.” Instead, it generally describes that the digital content may comprise “any format, language, encoding data or combination.” (’233 patent, 8:37-41). As Dr. Rabbani explains, a POSITA would understand that “encoding” is any function or

operation that changes the representation of data and that compression is an example of an “encoding operation.” (Rabbani, ¶¶111-116). Additionally, by 2000, compression techniques including JPEG were well-known in the state of the art and applied to digital documents and content to reduce its size for more efficient transmission and storage. (Rabbani, ¶¶114-115, *see also* ¶¶ 26-49).

Alternatively, Keeney taught applying an encoding operation on at least part of the digital content based on processing the digital content for transport via the Internet Protocol Security (IPSec) protocol. (Ex. 1009). Notably, Keeney described that its devices could use a virtual private network (VPN) that implemented IPSec for communicating with other network nodes. (Keeney, 11:30-45). IPSec is a secure network protocol suite that authenticates and encrypts packets of data to provide secure communication between two computers over an IP network. (Rabbani, ¶¶117-118). It was both inherent and obvious to a POSITA that in producing data packets for transport in conformance with IPSec, the content data would be encoded (by packetizing, adding headers and other fields) to transform the content data into a packetized format suitable for transport over the network. (Rabbani, ¶¶118-120, 28-33; limitation 47, *supra*). For example, as explained by Dr. Rabbani, the below Figure from the Standardization Committee’s RFC 2406 (Ex. 1009) illustrated the IPSec’s encoding operation that included adding various headers and fields to the

payload (content) data as part of the IPSec protocol. (Ex. 1009, 3; Rabbani, ¶¶117-120).



RFC 2406, Figure on p. 3

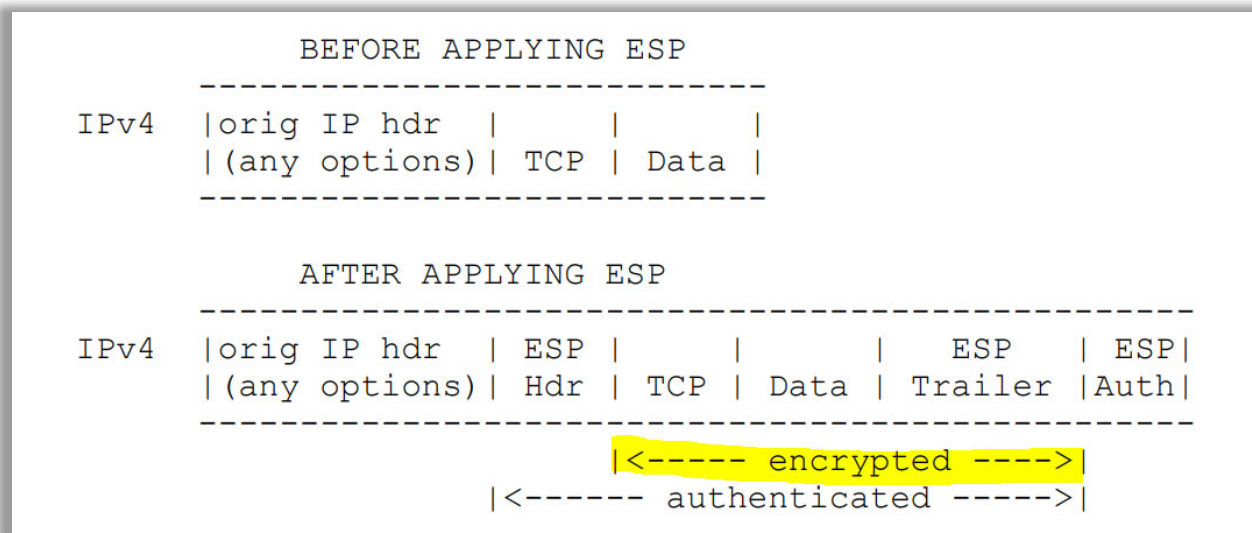
5 In sum, limitation 47.F is rendered obvious under both these scenarios.

h. [47.G]: apply, by the server system, an encryption scheme on at least part of the digital content for ensuring security of at least part of the digital content for rendering at the output system:

10 Kenney discloses limitation 47.G in two ways. First, as with limitation 47.F, when applying encryption to the digital content is view as part of the traditional print process, Keeney described that a print job (digital content) would be encrypted by the print job source, decrypted by the spooling server to facilitate reformatting, and re-encrypted by the spooling server (an encryption scheme applied by the server

system) before the encrypted print job was sent to the printer polling device. (Keeney, FIG. 2; 8:31-34, 8:51-55; 8:62-63; Rabbani, ¶¶111-120). Encryption algorithms including the International Data Encryption Algorithm (IDEA), the Data Encryption Standard (DES), or triple-DES could be used to encrypt the digital print job. (*Id.*, 5 8:34-38). Keeney explained that this encryption scheme would help ensure security of the print job by providing limits on the person who could request the print job to be printed (i.e., rendered at the output system). (*Id.*, 8:22-24 (encryption of a print job provides that the print job “can only be printed by a person with the correct decryption key”); Rabbani, ¶121).

10 In the alternate obviousness position, where the “encoding” limitation is performed by producing IPSec compatible packets, it would have been both inherent and obvious that at least part of the digital content was encrypted because IPSec protocol packets were encrypted. (Rabbani, ¶122). For example, the below Figure from RFC 2406 illustrated encrypted data (payload), as well as numerous other de-
15 scriptions in RFC 2406 that described encrypting the payload data. (Ex. 1009, 8; *see also, id.*, 5-6, 9-10). (Rabbani, ¶122-124).



RFC 2406, Figure on p. 8 (Annotated)

In sum, limitation 47.G is rendered obvious under both these scenarios.

- 5 **i. [47.H.i]: transmit, by the server system to the output system over the network that includes the Internet, at least part of the output data that is associated with at least part of the digital content, and the at least part of the output data includes the encryption scheme applied to at least part of the digital content:**

Keeney described how the spooling server (e.g., server system) transmitted a
10 print job formatted for a destination printer (output data associated with digital content) to the destination printer (output system). (Keeney, 8:53-57 (the spooling server “reformatt[ed] [a print job] for the destination printer,” re-encrypted the reformatted print job, and “transmitted [the encrypted, reformatted print job] from the spooling server 50 to the printer polling device 100”). The printer polling device received the
15 print job from the spooling server via the “network 110” (*id.*, 14:40-42), which was described as including the Internet (*id.*, 7:11-12). (Rabbani, ¶125).

j. [47.H.ii]: wherein the transmitting of at least part of the output data is after the server system receives, from the output system, at least (i) the security or authentication information, (ii) the one or more content objects, and (iii) the one or more objects from the output system:

5 Keeney disclosed that the spooling server (server system) would transmit the encrypted, reformatted print job (output data) to the printer polling device after receiving the string of bits encrypted based on the user PIN ((i) security or authentication data; see [47.C]). (Keeney, 10:8-11 (“When a user desires to access their account or documents over a non-secure channel, *first*, the spooling server needs to
10 verify that it is indeed talking to the actual user;” emphasis added). Likewise, the output data was transmitted to the printer polling device after the spooling server received the polling query from the printer polling device containing a PIN, job number, or document information ((ii) content object; see [47.A]), as well as the identification of the destination printer ((iii) object; see [47.B]). (*Id.*, 9:45-48 (“*Once a
15 print job has been selected* to be printed to a destination printer 120, the job number for the print job may be entered into a queue associated with the destination printer;” emphasis added), 13:66-67 (“a target printer 120 *must be identified before* the spooling server 50 can forward the print job 11 to be printed;” emphasis added)). (Rabbani, ¶126).

20 k. [47.I]: wherein the one or more devices of the output system include at least an information apparatus, and at least part of the transmitted output data being device dependent for rendering at least part of the

digital content at the output system that includes the one or more devices:

With respect to an “information apparatus,” the ’233 Patent states that this term refers generally to “computing devices, which include both stationary computers and mobile computing devices.” (’233 Patent, 1:21-23). An output device, such as a printer, can then be “connected to [the] information apparatus via a wired connection such as a cable line.” (*Id.*, 2:19-21). Similarly, Keeney explained that the printer polling device could be, *inter alia*, “a stand-alone device connected to one or more printers via a standard printer port.” (Keeney, 3:59-61). The output system taught by Keeney – including the printer polling device and a printer, as described with respect to [47.PRE] – therefore included an information apparatus in the form of the printer polling device.

As described with respect to [47.E], the spooling server (server system) generated output data that was device dependent for rendering at the output system (the printer) because the output data was generated according to the specific characteristics of the target printer. (*See e.g.*, Keeney, 13:62-64 (the print job would be converted “a form that [could] be understood by the printer”)). (Rabbani, ¶¶127-128).

2. Dependent claim 48: ...in which the encryption scheme includes security keys for ensuring security of the digital content.

As described with respect to [47.G], Keeney disclosed an encryption scheme. This scheme included a security key for ensuring security of the digital content. (Keeney, 8:41-44 (“The key 500 used for encryption 501 may be derived from an

account number 510, a user's secret PIN (personal identification number) 520, and/or optionally some additional encryption key digits 530 supplied by the user”); *see also* annotated Figure 2 below). (Rabbani, ¶129).

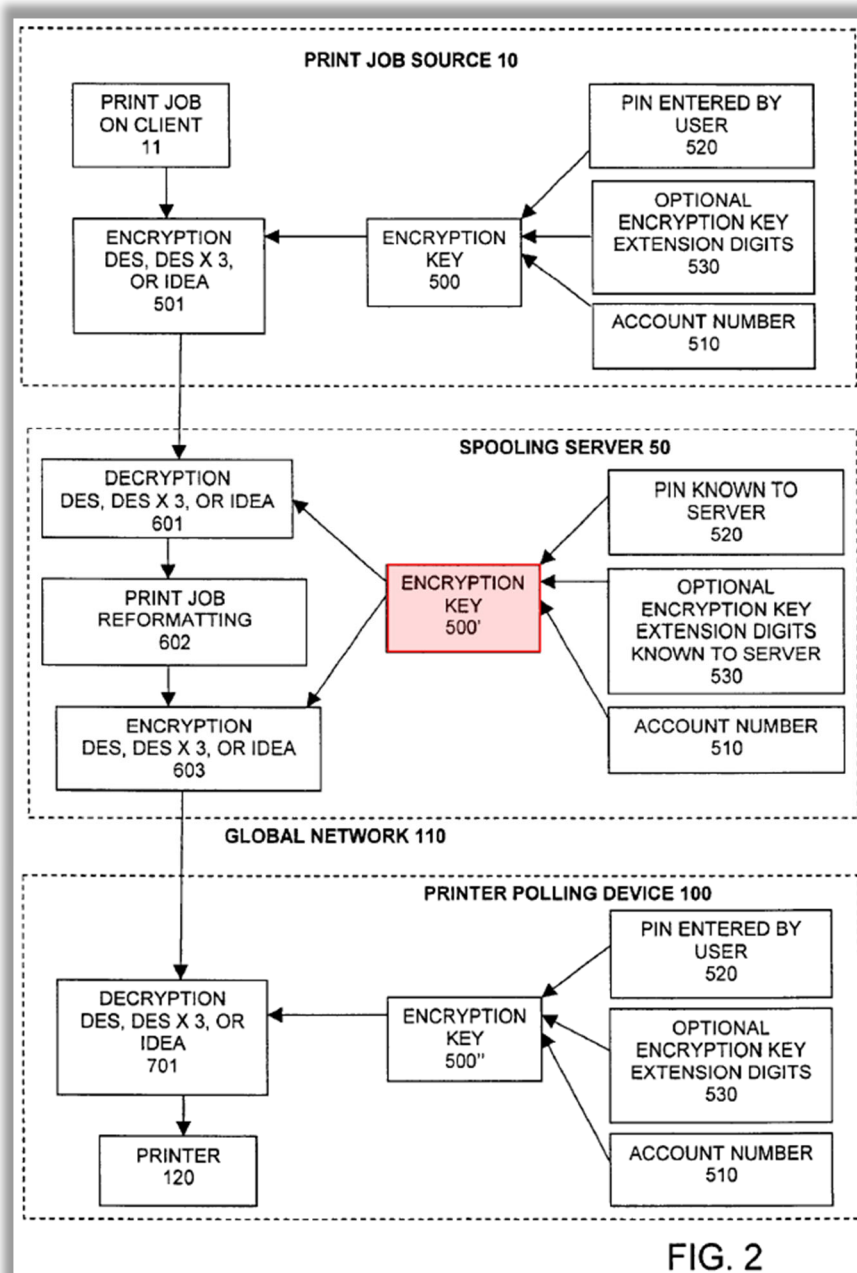


FIG. 2

3. Dependent Claim 61: ...in which the one or more objects include device identification information, the device identification information including one or more of a device brand, a model, an identification number, a name, an address, a device capability, a path, a registration, or an IP address, individually or in any combination, and the device identification information is related to the output system or to the one or more devices of the output system.

As described with respect to 47[B], Keeney disclosed an object (e.g., a printer identification in the polling query) that included device identification information (e.g., “target printer identification 801”). (Keeney, 14:1-3). The spooling server taught by Keeney used the printer identification to “retrieve[] printer specific information 805 for the target printer 120 from a printer database 803...such as data type, page dimensions, color capabilities, margins, and other print characteristics.” (*Id.*, 14:4-8). A POSITA would have understood that the “target printer identification” would have included a device brand, a model, an identification number, a name, an address, a device capability, a path, a registration, or an IP address, since such information would have enabled the spooling server to use the target printer identification to retrieve the printer information as disclosed.

Finally, since the printer was part of the output system as described with respect to [47.PRE], the identification of the printer related to the output system or to the one or more devices of the output system. (Rabbani, ¶¶130-131).

4. Independent Claim 1:

a. [1.PRE]: A method of operating a digital content service for providing digital content over a network that includes the Internet to an information apparatus or a device for rendering, the digital content service

including:

As described with respect to [47.PRE], Keeney disclosed a method of operating a digital content service (e.g., a service provided by the spooling server) for providing digital content over a network that includes the Internet. As described
5 with respect to [47.I], the service disclosed by Keeney included providing digital content to an information apparatus or device (e.g., printer polling device) for rendering (e.g., printing). (Rabbani, ¶132).

b. [1.A]: one or more servers for providing the digital content to the information apparatus or to the device, the one or more servers being distinct and separate from the information apparatus or the device:
10

See [47.PRE].

c. [1.B]: one or more server applications executable at the one or more servers for managing at least part of the digital content service, the digital content service method comprising:

15 See [47.PRE].

d. [1.C]: receiving, from the information apparatus or the device and by the one or more servers, security or authentication information associated with a user operating the information apparatus or the device for authentication of the user, and in dependence of successful authentication of the user, enabling the user access to the digital content service:
20

As described with respect to [47.C], Keeney disclosed security or authentication information associated with a user of the printer polling device (information apparatus or device) for authentication of the user. Keeney also disclosed that successful authorization enabled the user to access the digital content service provided
25 by the spooling server by its disclosure that the spooling server used this security

or authentication information to “verify that it is indeed talking to the actual user” before the user could access accounts or document for printing via the service provided by the spooling server. (Keeney, 10:9-12). (Rabbani, ¶135).

- 5 e. **[1.D]: receiving, from the information apparatus or the device and by the one or more servers, payment or subscription information associated with the user for accessing one or more digital content that are available at the one or more servers operated, at least in part, by the digital content service:**

Keeney suggested receiving payment information by its disclosure of a
10 “fee...charged to access the spooling server.” (Keeney, 7:60-61). Keeney explained that the fee was received from the information apparatus or device (printer polling device) by the one or more servers operated by the digital content service (spooling server). (*Id.*, 8:2-6 (“The fee can be paid via...the printer polling device 100, or any other suitable device capable of communicating with the spooling
15 server”)). The fee enabled the user to access digital content. (*Id.*, 7:67-8:2 (“The fee may be charged for...retrieving a print job from the spooling server”)). A POSITA would have found it obvious for payment information to be transmitted to the spooling server to enable this fee to be paid. Finally, Keeney also disclosed that the payment could itself be associated with subscription information of the user,
20 such as a “lifetime membership or monthly membership.” (*Id.*, 7:64). (Rabbani, ¶136).

- f. **[1.E]: receiving, at the one or more servers, a device object from the information apparatus or the device over the network that**

includes the Internet, the device object including device information related to one or more devices, and the device information corresponding to at least one of device identification information, device address information, device capability information, model information, brand information, or registration information, individually or in any combination, and the one or more devices include the information apparatus or the device:

See [47.B] for receiving a device object, [47.PRE] for communications between the printer polling device (information apparatus or device) and spooling server (one or more servers) over a network that included the Internet, and [61] for the device object including the enumerated types of device information.

g. [1.F]: providing, to the information apparatus or the device and by the one or more servers, one or more pointers or references to at least part of the one or more digital content available at the one or more servers for selection by the user at the information apparatus or the device:

As explained with respect to [47.A], Keeney described the spooling server (the one or more servers) communicating a directory of documents to the printer polling device (information apparatus or device). (*See* Keeney, 12:18-20; 12:45).

Communicating the directory caused the printer polling device to display a list of documents – that is, pointers or references to digital content – such that “[s]election of a print job 11 from the directory [could] be made (e.g., via a user interface).” (*Id.*, 12:45-55). (Rabbani, ¶138).

h. [1.G]: receiving, at the one or more servers and from the information apparatus or the device, at least a pointer or reference to selected digital content from among the one or more pointers or references provided, by the one or more servers, to the information apparatus or the device:

See [47.A].

i. [1.H]: retrieving, by the one or more server applications, at least part of the selected digital content from the one or more servers employing, at least in part, the pointer or reference to the selected digital content received from the information apparatus or the device:

5 See [47.D].

j. [1.I]: generating output data, at the one or more servers using the one or more server applications, the output data being related to at least part of the selected digital content, and the generating of the output data including:

10 See [47.E].

k. [1.J]: applying, by the one or more server applications, an encoding operation on at least part of the selected digital content:

Keeney disclosed an encoding operation by its disclosure of generating a “printer specific data file” for a print job. (Keeney, 14:21). To generate this file, the
15 spooling server (the one or more servers) would make “printer specific adjustments
810 to the print job 11 at the page description language level prior to rasterization.”
(*Id.*, 14:8-10). For some types of printers, the spooling server would rasterize “page
description language...into a bitmap form...[and] format[] [the bitmap data] into the
form understood by the printer.” (*Id.*, 14:13-16). By these disclosures, Keeney de-
20 scribed a transformation of a print job into a different format that was suitable for
printing by a target printer – and thus taught the spooling server applied an encoding
operation on the selected digital content (print job). (Rabbani, ¶28). Additionally,
since as described with respect to [47.PRE] it would have been obvious for the spool-
ing server to execute a server application to perform its disclosed functionality, it

likewise would have been obvious for this server application to perform the encoding operation taught by Keeney. (Rabbani, ¶142).

5 **l. [1.K]: applying, by the one or more server applications, an encryption scheme on at least part of the selected digital content for ensuring security of at least part of the selected digital content, and wherein, subsequent to applying the encoding operation and the encryption scheme on at least part of the selected digital content, the selected digital content is, at least in part, device dependent for rendering at the one or more devices:**

 See [47.G] regarding an encryption scheme. With respect to “device depend-
10 ent” data, Keeney disclosed that the spooling server encrypted a print job that had been “reformat[ed] for the destination printer.” (Keeney, 8:54-55). As described with respect to [1.J], Keeney taught that print jobs were reformatted into a printer-specific data file for the destination printer by applying an encoding operation. Thus, the encrypted printer-specific data file was device dependent for rendering at the
15 target printer. (Rabbani, ¶143).

m. [1.L]: transmitting, by the one or more servers, at least part of the generated output data to the information apparatus or the device for rendering at least part of the selected digital content at the one or more devices:

20 See [47.H.i] and [47.I].

n. [1.M.i]: wherein the generated output data is, at least in part, device dependent to the one or more devices, and the generated output data having a relationship, at least in part, to the device information included in the device object and received by the one or more servers from the infor-
25 **mation apparatus or the device over the network that includes the Internet:**

 See [1.K] for generated output data that is device dependent, [47.E] for output data having a relationship to the device information included in the device object,

and [47.PRE] for the communications between the printer polling device (information apparatus or device) and spooling server (one or more servers) over a network that included the Internet.

5 o. **[1.M.ii]: wherein the transmitting of at least part of the generated output data by the one or more servers to the information apparatus or the device is subsequent to having received the security or authentication information associated with the user operating the information apparatus or the device, and the transmitting of at least part of the generated output data is based, at least in part, on having received, from the information apparatus or**
10 **the device, the payment or subscription information:**

See [47.H.ii] for transmitting output data subsequent to having received security or authentication information and [1.D] for payment or subscription information.

As described with respect to [1.D], Keeney described that a fee may be charged for “retrieving a print job from the spooling server.” (Keeney, 7:67-8:2). Thus, it would
15 have been obvious to a POSITA for the spooling server to transmit the output data on having received payment or subscription information in order to ensure that the fee for the print job was properly paid. (Rabbani, ¶145).

5. **Claim 2:**

20 a. **[2.A]: ...providing, by a client application at the information apparatus or the device and over a graphical user interface at a display screen of the information apparatus or the device, one or more pointers or references to the one or more digital content for selection:**

See [18.C] and [18.D] for an information apparatus that includes a graphical user interface and a display screen, [18.E] for a client application that displays

information over a graphical user interface, and [1.F] for providing pointers or references for selection.

5 a. **[2.B]: receiving, by the client application at the information apparatus or the device, the selected digital content over the graphical user interface from among the one or more pointers or references to the one or more digital content that are available at the one or more servers:**

See [18.J].

10 b. **[2.C]: obtaining, by the client application at the information apparatus or the device, a content object that includes a pointer or reference to the selected digital content from among the one or more pointers or references:**

See [18.J].

6. **Claim 4: ...in which the encryption scheme includes use of security keys for generating the output data.**

15 See claim 48.

7. **Claim 6:**

 a. **[6.A]: ...receiving, by the client application at the information apparatus or the device, at least part of the output data from the one or more servers:**

20 See [18.E] for a client application and [1.L] for the information apparatus receiving output data from a server.

25 b. **[6.B]: decoding, by the client application at the information apparatus or the device, at least part of the output data received from the one or more servers for rendering of at least part of the selected digital content:**

As described with respect to [47.F], a POSITA would have known that encoding operations were commonly performed to transmit data over the Internet.

Likewise, a POSITA would have known that a device receiving data transmitted over the Internet would have needed to decode the received data. For example, if a server encoded the data as part of an SSL protocol used to ensure security of the data as it was transmitted from the server to a receiving device, a POSITA would have known that the receiving device would have performed a corresponding decoding operation on the received data. Thus, in Keeney's disclosure of the spooling server transmitting a print job to the printer polling device over the Internet, a POSITA would have found it obvious for the printer polling device to use a client application to decode the received print job to prepare the print job for rendering (*i.e.*, printing).

(Rabbani, ¶152).

8. Claim 7: ...in which the information apparatus is a wireless information apparatus and includes at least one of an e-book, a smart phone, a screen phone, an Internet phone, an information pad, an Internet pad, an Internet appliance, and a digital camera, individually or in any combination.

According to Keeney's disclosure, the printer polling device (an information apparatus) "may be a portable device." (Keeney, 10:27). The printer polling device includes "a connection to the network 110," (*id.*, 9:8-9), such as a "polling transmitter 105...for transmitting polling requests to the spooling server 50 via the network 110." (*Id.*, 14:36-38). Thus, Keeney suggested that the printer polling device can be a wireless information apparatus including at least devices such as an information pad, an Internet pad, or an Internet appliance. (Rabbani, ¶153).

9. Claim 9:

a. [9.A]: ...in which the information apparatus or the device are part of an output system for receiving the output data for rendering at the one or more devices, the one or more devices include at least one of a television, a projector, a display screen, a printer, or an audio output device, individually or in any combination:

See [47.PRE].

b. [9.B]: wherein the one or more devices are either: (a) part of the output system for rendering or playing at least part of the selected digital content at the one or more devices; or (b) connectable, by one or more wire or wireless connections, to the information apparatus or the device for rendering or playing at least part of the selected digital content at the one or more devices:

See [47.PRE]; a printer in Keeney's disclosure is part of the output system for rendering (*i.e.*, printing) digital content. Additionally, a printer is connectable to the printer polling device for receiving print jobs from the printer polling device. (Keeney, 7:51-53 ("The printer polling device 100 may be: (i) a stand-alone device connected to the printer 120 via a standard printer port"), 14:44-45 ("A printer interface 112 enables the printer polling device 100 to forward the print job to a printer 120 for printing")). (Rabbani, ¶155).

10. Claim 11:

a. [11.PRE]: ...wherein the generated output data, corresponding to at least part of the selected digital content, is at least in part device dependent for rendering or output or playing at the one or more devices that include the information apparatus or the device, and at least part of the selected digital content includes an encryption scheme for ensuring security of the selected digital content:

See [1.K].

b. [11.A]: decoding, by the client application at the information apparatus or at the device, at least part of the selected digital content, using, at least in part, the output data received from the one or more servers:

See [6.B].

5 c. [11.B]: rendering, by the client application at the information apparatus or at the device, at least part of the selected digital content that has been decoded:

See [6.B].

10 11. Claim 12: ...in which at least one device of the one or more devices is an output device, and the output device includes at least one of a display device, a television, a printer, an audio output device, a speaker, or a music output device, individually or in any combination, and wherein the output device is wirelessly connected or connectable to the information apparatus or the device.

15 See claim 9.

20 12. Claim 13: ...wherein the one or more devices include one or more output devices, and subsequent to having received the device object by the one or more servers from the information apparatus or the device, the method further comprises receiving, from the information apparatus and by the one or more servers, a selected output device from among the one or more output devices; and the generated output data is device dependent for rendering at the selected output device; and wherein the selected output device includes an audio output device, a display device, a television, or a printer.

See claim 9.

25 13. Claim 17: ...in which generating at least part of the output data at the one or more servers includes one or more of invoking, launching, calling, utilizing, or involving one or more applications.

See [47.PRE].

14. Claim 18:

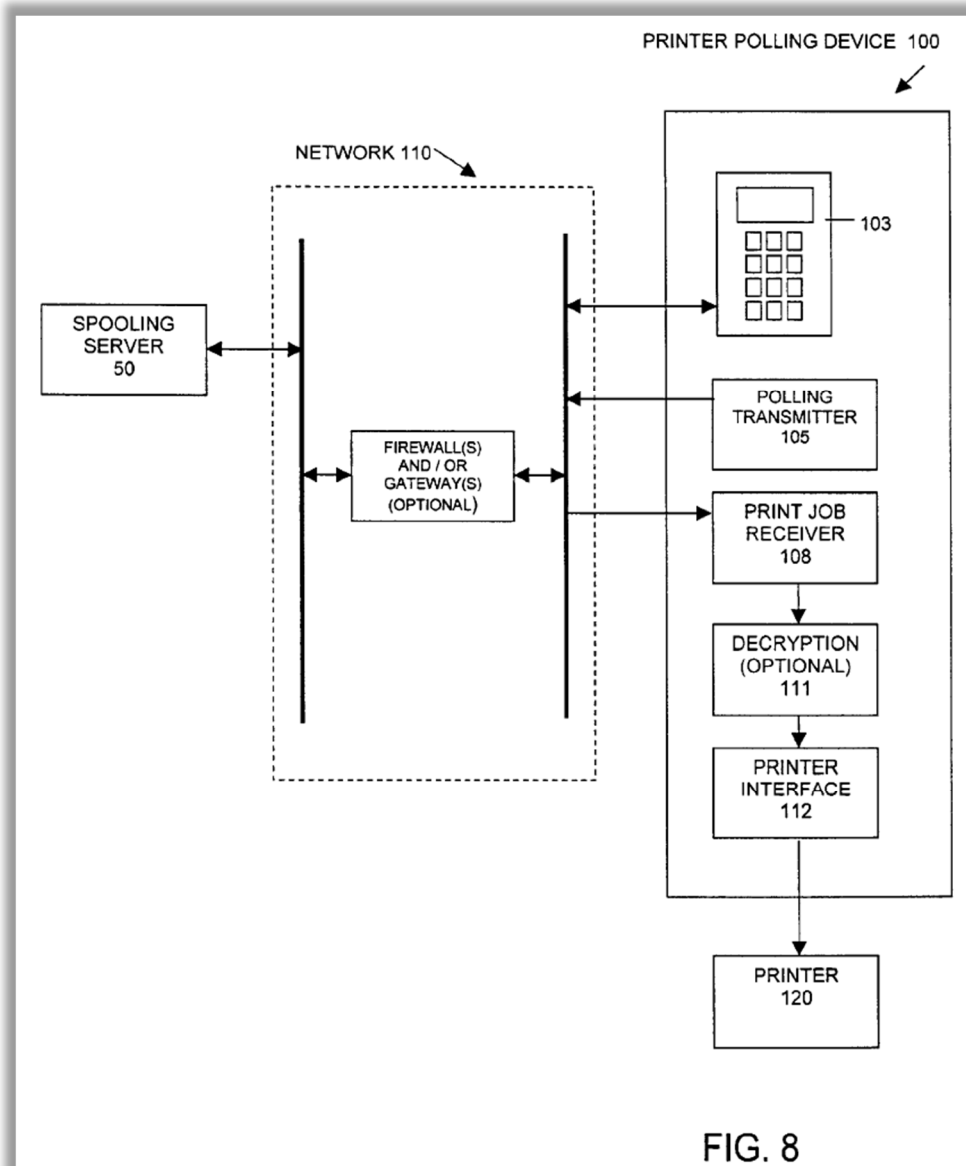
30 a. [18.PRE]: An information apparatus for obtaining

digital content from a digital content service provided by one or more servers over a network, the digital content accessible, at least partly, by the information apparatus, the information apparatus including:

As described with respect to [47.I], Keeney disclosed an information apparatus in the form of a printer polling device. As described with respect to [47.PRE], the printer polling devices was used to obtain digital content from a digital content service provided by one or more servers (e.g., the spooling server) over a network.

b. [18.A]: a processor:

It would have been obvious for the printer polling device to include a processor. For example, Keeney explained that the printer polling device had a connection to a network and a printer (Keeney, 9:8-10), and Figure 8 of Keeney depicted components of the printer polling device including a polling transmitter 105, a print job receiver 108, decryption 111, and a printer interface 112. (*Id.*, 14:31-45).



Keeney, Figure 8

A POSITA would have found it obvious for these components to include or to be executed by a processor, since it was well known before the '233 Patent's priority
5 date for computing devices to include a processor. (Rabbani, ¶163-164).

c. [18.B]: an operating system:

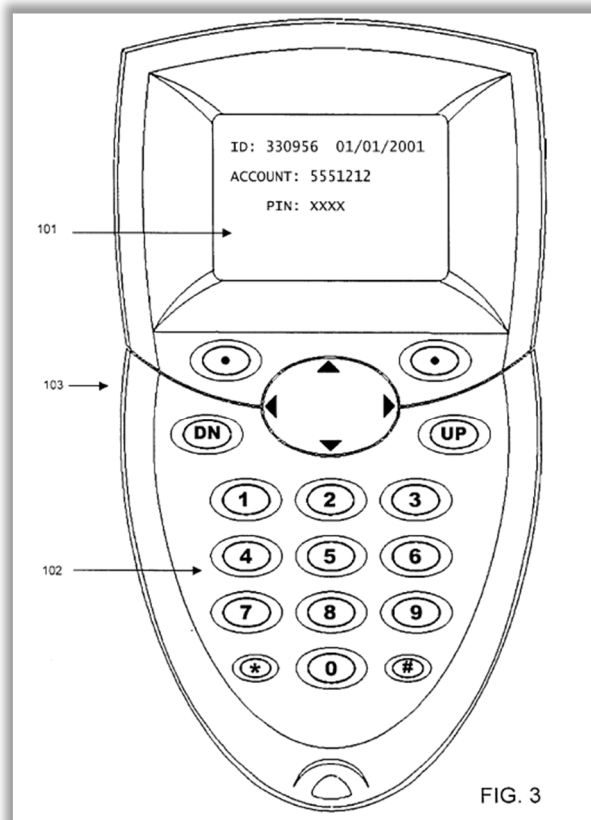
It was well known for computing devices to include operating systems, and thus it would have been obvious for Keeney's printer polling device to have an operating system. (Rabbani, ¶165).

5 **d. [18.C]: a touch sensitive screen:**

The printer polling device taught by Keeney had a display. (Keeney, 9:10-12). It would have been obvious for this display to take the form of a touch sensitive screen, since touch sensitive screens were well known before the '233 Patent's priority date. (Rabbani, ¶166).

10 **e. [18.D]: a graphical user interface over the touch sensitive screen for selecting an icon or function control, and for scrolling display:**

Figure 3 of Keeney depicted a graphical user interface on the display 101:



Keeney, Figure 3

The graphical user interface enabled icon selection or function control, such as a user “providing a PIN to the spooling server” (Keeney, 14:34-36) or the polling device
5 “display[ing]...files to the user...and allow[ing] one of the files to be selected, or allow[ing] additional navigation of directory 204 to take place.” (*Id.*, 13:19-24). It also would have been obvious for the user interface to scroll the display because scrolling would have enabled the user interface to display more information (e.g., identifiers of more files in an available directory) than would fit on a non-scrollable
10 display. (Rabbani, ¶167-168).

f. [18.E]: a client application for interacting with a user

via the graphical user interface over the touch sensitive screen of the information apparatus, the client application facilitated, at least partly, by the operating system, wherein execution of at least part of the client application by the processor at the information apparatus configures the information apparatus for:

As described with respect to [18.D], a user interacted with Keeney's printer polling device via the graphical user interface to, e.g., input a PIN or select a file to print. It would have been obvious for these interactions to be enabled by a client application facilitated by an operating system (e.g., software on the printer polling device) because a POSITA would have known that software applications were commonly used to perform functions of computing devices. (Rabbani, ¶169).

g. [18.F]: sending, from the information apparatus to one or more servers over a network, security or authentication information associated with the user of the information apparatus for authentication of the user, the one or more servers being distinct and separate from the information apparatus, and in dependence of successful authentication of the user, enabling the user access to the digital content service provided by the one or more servers:

See [1.C]. With respect to "the one or more servers being distinct and separate from the information apparatus," see [47.PRE].

h. [18.G]: sending, from the information apparatus to the one or more servers, payment or subscription information for accessing the digital content service provided by the one or more servers:

See [1.D].

i. [18.H]: delivering, from the information apparatus, one or more device objects to the one or more servers over a network, the one or more device objects related to one or more devices, the one or more devices for outputting or playing digital content that are received from the digital content service, and the one or more devices being distinct and separate devices from the one or more servers, and the one or more device objects including

information related to at least one of device identification information, device address information, device capability information, model information, brand information, registration information, or IP address information, individually or in any combination, related to the one or more devices:

5 See [1.E].

j. [18.I]: receiving, by the information apparatus and from the one or more servers over the network, one or more pointers or references to one or more digital content that are stored in the one or more servers:

 See [1.F].

10 **k. [18.J]: receiving, via the graphical user interface over the touch sensitive screen of the information apparatus, information associated with selected digital content from among the one or more pointers or references to the one or more digital content stored in the one or more servers:**

 Keeney disclosed the printer polling device receiving selected digital content
15 (e.g., a selected file) from among the pointers or references delivered to the printer polling device (a directory of documents). (Keeney, 12:18-20; 12:48-49 (“[s]election of a print job 11 from the directory [could] be made (e.g., via a user interface)”). (Rabbani, ¶174).

20 **l. [18.K]: delivering, from the information apparatus to the one or more servers, at least a pointer or reference to the selected digital content:**

 See [47.A] and [1.G].

25 **m. [18.L]: receiving, at the information apparatus and from the one or more servers, output data corresponding to at least part of the selected digital content, the output data is related, at least in part, to the information included in the one or more device objects delivered from the information apparatus to the one or more servers, and the output data, corresponding to at least part of the selected digital content, is at least in part device dependent with respect to the one or more devices for output or playing at least**

part of the selected digital content:

See [47.H.i] and [47.I].

n. [18.M]: wherein the receiving of the output data is subsequent to having sent, from the information apparatus to the one or more servers, the security or authentication information associated with the user, and the receiving of the output data is further subsequent to having sent, from the information apparatus to the one or more servers, the payment or subscription information:

See [1.M.ii].

15. Claim 19:

a. [19.PRE]: ...wherein the one or more devices include at least the information apparatus:

See [47.PRE].

b. [19.A]: the information apparatus is further operable for: decoding, at the information apparatus, at least part of the output data received from the one or more servers for rendering or outputting or playing of at least part of the selected digital content:

See [6.B].

c. [19.B]: rendering or outputting or playing at least part of the selected digital content corresponding to the decoded output data that is device dependent for rendering at the one or more devices:

See [6.B].

16. Claim 20: ...in which the network includes one or more of an Internet, a local area network, a cellular network, a wireless network, or a wide area network, individually or in any combination.

See [47.PRE]; the network disclosed by Keeney was the Internet.

17. Claim 21: ...further comprising transmitting at least part of the received output data or the decoded output data from the information apparatus to an output device for rendering, the output device including one or

more of a printing device, a display device, a projection device, a television device, an audio output device, a speaker, or an output controller wire connected to a television, individually or in any combination.

See claim 9.

5 **18. Claim 27:**

a. [27.PRE]: A method for accessing digital content, by an apparatus over a network that includes the Internet, the apparatus including a communication unit, one or more processors, an operating system, and one or more client applications facilitated by the operating system and executable
10 **by the one or more processors for providing one or more functionalities of the apparatus, the method comprising:**

 As described with respect to [18.PRE], [18.A], [18.B], and [18.E], Keeney disclosed an apparatus (e.g., the printer polling device) with the components recited in [27.PRE] that performed a method for accessing digital content. Keeney further
15 disclosed that the printer polling device included a communication unit, such as a polling transmitter or a printer interface. (Keeney, Fig. 8, 14:31-45). With respect to “a network that includes the Internet,” see [47.PRE]. (Rabbani, ¶183).

b. [27.A]: establishing, using the communication unit, a connection between the apparatus and one or more servers over a network that includes the Internet, the one or more servers being distinct and separate from the apparatus, and the one or more servers operated, at least partly, by a digital content service that is accessible, at least in part, by the apparatus over the Internet:
20

 Keeney disclosed the printer polling device using the polling transmitter to
25 establish a connection to a server (the spooling server) by its description of the printer polling device “polling” the spooling server. (Keeney, 6:16-18 (“The printer polling device uses ‘pull’ technology, which polls the spooling server so that the

spooling server does not have to initiate a connection into a printer”), 14:36-39 (“A polling transmitter 105 is provided for transmitting polling requests to the spooling server 50 via the network 110 to identify a print job stored at the spooling server 50”). Keeney also disclosed that the spooling server was operated by a digital content service accessible by the polling device over the Internet. (*Id.*, 6:42-44 (“Printing services are provided via a spooling server 50 which is capable of receiving and storing one or more print jobs from a print job source 10 via a network 110”). With respect to the spooling server being distinct and separate from the printer polling device, see [47.PRE]. (Rabbani, ¶184).

10 c. **[27.B,C]: subsequent to establishing, using the communication unit, the connection between the apparatus and the one or more servers, the method further comprises receiving, at the apparatus over the network from the one or more servers, one or more pointers or references to digital content that is accessible, at least partly, by the apparatus from the digital content**
15 **service:**

See [1.F].

20 d. **[27.D]: delivering, from the apparatus to the one or more servers, at least a pointer or reference to selected digital content, the pointer or the reference to the selected digital content being related to a selection by the user, at the apparatus, from among the one or more pointers or references to the digital content accessible by the apparatus from the digital content service, the one or more pointers or references provided, at least in part, to the apparatus by the one or more servers:**

See [47.A], [1.G], and [18.J].

25 e. **[27.E]: delivering, from the apparatus, one or more device objects to the one or more servers, the one or more device objects including information corresponding to one or more devices that are distinct and separate**

5 devices from the one or more servers, and the information including at least one of device identification information, device address information, device capability information, model information, brand information, or registration information, individually or in any combination, related to the one or more devices:

See [1.E].

10 f. [27.F]: sending, from the apparatus to the one or more servers over the network, security or authentication information associated with a user operating the apparatus, and, in dependence of a successful authentication of the user, enabling the user access to the digital content service:

See [1.C].

15 g. [27.G]: receiving, at the apparatus, from the one or more servers operated, at least partly, by the digital content service, output data, the output data corresponding to the selected digital content and having a relationship, at least in part, to the one or more device objects delivered from the apparatus to the one or more servers over the network that includes the Internet, and the output data corresponding to the selected digital content further including an encryption scheme for ensuring security of the selected digital content for rendering at the one or more devices, and at least part of the output
20 data is device dependent for rendering at least part of the selected digital content at the one or more devices:

See [47.H.i] and [47.I].

25 19. Claim 29: ...in which the apparatus is embodied to be at least one of a smart phone, a screen phone, an Internet pad, an Internet appliance, a speaker, an audio output device, a display device, or a digital camera, individually or in any combination.

See claim 7.

30 20. Claim 30: ...further comprising sending a payment or subscription information from the apparatus to the one or more servers over the network as payment or subscription for accessing the digital content service, and, subsequent to having sent the payment or subscription information to the one or more servers, the apparatus receives the output data corresponding, at least in part, to the selected digital content from the one or more servers

operated, at least partly, by the digital content service.

See [1.D] for payment or subscription information, and [1.M.ii] for receiving output data subsequent to having sent payment or subscription information.

5 **21. Claim 35: ...in which the communication unit of the apparatus includes a communication interface and the method further comprises the apparatus establishing a wired or wireless connection, via the communication interface, with a device that includes at least one of a printer, a display device, a television, a controller wire connected to a television, or an audio output device, individually or in any combination, for transmitting at least part of**
10 **the selected digital content over the wired or wireless connection for rendering at the device.**

As described with respect to [27.PRE], Keeney's printer polling device had a communication unit including a printer interface (e.g., a communication interface). The printer interface "enable[d] the printer polling device 100 to forward the print
15 job to a printer 120 for printing." (Keeney, 14:44-45). It would have been obvious to a POSITA for the printer polling device to establish a wired or wireless connection with the printer, via the printer interface, since establishing this connection would have enabled the printer polling device to forward the print job to the printer. (Rab-
bani, ¶192).

20 **22. Claim 36: ...further comprising decoding or decompressing at least part of the output data corresponding to at least part of the selected digital content at the apparatus for rendering, and wherein the encryption scheme included with the output data corresponding to the selected digital content includes security keys for ensuring security of the selected digital content.**

25 See [6.B] for decoding output data for rendering and claim 48 for an encryption scheme including security keys.

23. Claim 50:

a. [50.PRE]: In a non-transitory computer memory or storage device at one or more servers or at an information apparatus, containing client software configured to be executable, at least partly, by one or more processors at the information apparatus for obtaining digital content from a digital content service operated, at least partly, over the Internet, the digital content obtained from the digital content service being encoded, at least partly, with an encryption scheme that is acceptable for rendering at one or more devices, the one or more devices includes the information apparatus, the information apparatus including:

As described with respect to [18.PRE], [18.A], and [18.E], Keeney disclosed an information apparatus (e.g., a printer polling device) containing client software executable by a processor for obtaining digital content from a digital content service (e.g., a service operated by the spooling server) over the Internet. It would have been obvious for the printer polling device to include a non-transitory computer memory or storage device, since it was well known for computing devices to include a memory or storage device. (Rabbani, ¶194). Finally, with respect to digital content being encoded with an encryption scheme that is acceptable for rendering at one or more devices (e.g., a printer), see [1.K]. Here, the claimed “one or more devices” are satisfied by Keeney’s disclosure of the printer polling device (an information apparatus) and the printer. (Rabbani, ¶194).

b. [50.A]: memory or storage device for storing at least

part of the client software:

It was well known for computing devices to include a memory or storage device for storing software, and thus it would have been obvious for Keeney's printer polling device to have a memory or storage device. (Rabbani, ¶195).

5 **c. [50.B]: a display screen or a speaker, individually or in any combination:**

The printer polling device taught by Keeney had a display. (Keeney, 9:10-12). (Rabbani, ¶196).

d. [50.C]: a user interface for interacting with a user:

10 See [18.D].

e. [50.D,E]: the information apparatus further including an operating system for facilitating operations of the client software at the information apparatus, the digital content for rendering at the one or more devices wherein the client software, facilitated by the operating system, is executable, at least partly, by the one or more processors at the information apparatus to perform a method at the information apparatus, the method comprising:

See [18.B] for an operating system and [27.PRE] for client software facilitated by the operating system that is executable to perform a method. With respect to the digital content being configured for rendering at the one or more devices, Keeney disclosed a "printer specific data file 805 for delivery to the printer polling device 100 to be printed at the target printer 120." (Keeney, 14:19-22). (Rabbani, ¶198).

f. [50.F]: establishing a communication channel between the information apparatus and the one or more servers over a network that includes the Internet, the one or more servers being distinct and separate devices from the information apparatus and the one or more devices, and the one

25

or more servers is operated, at least partly, by the digital content service:

See [27.A].

- 5 g. **[50.G]: sending, from the information apparatus to the one or more servers over the network that includes the Internet, security or authentication information associated with the user operating the information apparatus for authentication of the user to access the digital content service:**

See [47.C].

- 10 h. **[50.H]: obtaining, at the information apparatus, one or more device objects related to the one or more devices, the one or more device objects including device information related, at least in part, to at least one of device identification information, device address information, device capability information, model information, brand information, or registration information, individually or in any combination:**

See [1.E].

- 15 i. **[50.I]: delivering, from the information apparatus, at least part of the one or more device objects to the one or more servers:**

See [1.E].

- 20 j. **[50.J]: providing, over the user interface at the information apparatus, one or more pointers or references to the digital content that are available from the digital content service for selection by the user of the information apparatus:**

See [1.F].

- 25 k. **[50.K]: receiving a selected digital content, via the user interface at the information apparatus, from among the one or more pointers or references to the digital content provided over the user interface for selection by the user:**

See [18.J].

- l. **[50.L]: obtaining, at the information apparatus, a**

content object that includes a pointer or reference to the selected digital content:

See [18.J].

m. [50.M]: delivering, from the information apparatus, at least part of the content object to the one or more servers:

5 See [18.K].

n. [50.N]: receiving, from the one or more servers and at the information apparatus, output data that is device dependent for rendering at the one or more devices, the output data corresponding, at least in part, to the selected digital content and having a relationship, at least in part, to the device information included in the one or more device objects delivered from the information apparatus to the one or more servers over the network that includes the Internet, and the received output data further including an encryption scheme applied on at least part of the selected digital content for ensuring security of the selected digital content:

10

15 See [47.H.i] and [47.I].

o. [50.O]: decoding, at the information apparatus, at least part of the received output data that is at least in part device dependent for rendering at the one or more devices, the output data includes an encryption scheme applied on at least part of the selected digital content:

20 As stated in [50.PRE], the information apparatus receives digital content that is “encoded, at least partly, with an encryption scheme.” Likewise, [50.N] states that the received output data has “an encryption scheme applied on at least part of the selected digital content.” Thus, Petitioner interprets “decoding, at the information apparatus, at least part of the received output data” to include an operation to decrypt

25 the received, encrypted output data. To this end, Keeney disclosed the printer polling device (the information apparatus) “decrypt[ing] [an encrypted print job] using a key.” (Keeney, 8:59-60). Decrypting the print job enabled it to be rendered (e.g.,

printed) at a printer, one of the claimed “one or more devices.” (*Id.*, 8:62-63 (The decrypted print job can then be forwarded to the printer 120 for printing’’)). (Rabbani, ¶208).

5 p. **[50.P]: rendering at least part of the decoded output data related, at least in part, to the selected digital content at the one or more devices, the one or more devices includes the information apparatus:**

As discussed in [50.O], Keeney’s printer polling device (information apparatus) sent the decrypted print job (decoded output data) to a printer for printing (rendering). (Rabbani, ¶209).

10 **24. Claim 52: ...in which the encryption scheme of the output data for ensuring security of the selected digital content includes security keys.**

See claim 48.

15 **25. Claim 57: ...further comprising software executable at the information apparatus for sending, from the information apparatus to the one or more servers over the network that includes the Internet, payment or subscription information for accessing the digital content service provided by the one or more servers, and the receiving of the output data for rendering at the one or more devices is subsequent to having sent the payment or subscription information.**

20 See [18.E] for software executable at the information apparatus, [1.D] for payment or subscription information, and [1.M.ii] for receiving output data subsequent to having sent payment or subscription information.

B. Ground 2: Claims 47, 48, and 61 are obvious over Keeney and Vatland

1. Motivation to Combine

A POSITA would have used Vatland’s disclosed compression and decom-
5 pression of raster data to transmit the raster data disclosed by Keeney over a net-
work. A POSITA would have been motivated to combine Keeney and Vatland
with reasonable expectation of success.

For example, Keeney and Vatland both described transmitting raster data
over a network for printing. (Keeney, 14:13-15 and 14:40-42; Vatland, 11:8-10).
10 Vatland taught that raster data can be compressed prior to transmission “to obtain
additional network bandwidth” (*id.*, 11:25-26), thereby increasing the speed of the
data transfer. (*Id.*, 11:8-10). Thus, a POSITA would have been motivated to com-
press raster data for transmission over a network, as taught by Vatland, to improve
the speed of the data transfer taught by Keeney. (Rabbani, ¶212-213).

2. Claim 47

15 For the reasons set forth in Ground 1, claim 47 is obvious over Keeney in
view of the general knowledge of a POSITA. In the alternative, claim 47 is obvi-
ous over Keeney in view of Vatland.

a. [47.PRE]:

20 The discussion of Keeney with respect to [47.PRE] above is incorporated
herein.

b. [47.A]:

The discussion of Keeney with respect to [47.A] above is incorporated herein.

c. [47.B]:

The discussion of Keeney with respect to [47.B] above is incorporated herein.

5 **d. [47.C]:**

The discussion of Keeney with respect to [47.C] above is incorporated herein.

e. [47.D]:

The discussion of Keeney with respect to [47.D] above is incorporated herein.

f. [47.E]:

10 The discussion of Keeney with respect to [47.E] above is incorporated herein.

g. [47.F]: apply, by the server system, an encoding operation on at least part of the digital content for transmitting the output data that is associated with at least part of the digital content:

The discussion of Keeney with respect to [47.F] above is incorporated herein.

15 To the extent Keeney in view of the general knowledge of a POSITA does not render obvious the “encoding operation” recited in limitation [47.F], Vatland taught it.

Keeney described transmitting rasterized data over a network for printing. (Keeney, 14:13-15 (“the page description language needs to be rasterized into a bit-
20 map form”); 14:40-42 (describing transmission of the print job over the “network 110”); 7:11-12 (explaining that the network 110 included the Internet)).

Vatland was generally directed towards “facilitating printing a document over a network by increasing the speed of raster data transfers over the network.” (Vatland, 11:8-10). To help achieve the goal of increasing data transfer speed, Vatland disclosed that “data may be compressed and decompressed to obtain additional network bandwidth.” (*Id.*, 11:25-26). Compression is a form of encoding, as explained by Dr. Rabbani. (Rabbani, ¶29, 34-50). Thus, Vatland taught performing an encoding operation on data being transmitted over a network for printing.

A POSITA would have been motivated to combine Keeney and Vatland to render obvious the encoding operation recited in [47.F] because, as explained by Vatland, applying a compression operation to rasterized data prior to transmitting the data over a network would have increased the speed of the data transfer. A faster data transfer speed would have enabled faster printing of the transferred document, improving the experience for the user of Keeney’s system. (Rabbani, ¶¶111-121, ¶¶212-213).

h. [47.G]:

The discussion of Keeney with respect to [47.G] above is incorporated herein. (Rabbani, ¶¶111-124, ¶¶212-213).

i. [47.H.i]:

The discussion of Keeney with respect to [47.H.i] above is incorporated herein.

j. [47.H.ii]:

The discussion of Keeney with respect to [47.H.ii] above is incorporated herein.

k. [47.I]:

5 The discussion of Keeney with respect to [47.I] above is incorporated herein.

3. Dependent claim 48:

The discussion of Keeney with respect to claim 48 above is incorporated herein.

4. Dependent Claim 61:

10 The discussion of Keeney with respect to claim 61 above is incorporated herein.

IX. DENIAL IS INAPPROPRIATE

A. §314(a)

Consistent with the Director's June 21, 2022, guidance, Petitioner stipulates
15 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 district court litigation.

B. §325(d)

All references used in this Petition are entirely new references that were not cited or considered during the original examination nor used as grounds by Roku
20 when challenging the '233 patent in IPR2022-01114, (P.T.A.B, June 30, 2022)

(settled/voluntarily dismissed prior to institution on November 28, 2022). Discretionary denial is therefore inappropriate.

X. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 1, 2, 4-
5 7, 9, 11, 12, 13, 17-21, 27, 29, 30, 35, 36, 47, 48, 50, 52, 57, and 61 of the '233
patent are invalid. Petitioner requests institution of an *inter partes* review and
cancellation of these claims.

Dated: April 28, 2023

Respectfully submitted,

/Amy E. Simpson/

Lead Counsel

Amy E. Simpson, Reg. No. 54,688

PERKINS COIE LLP

11452 El Camino Real, Suite 300

San Diego, CA 92130

Telephone: (858) 720-5700

Fax: (858) 720-5799

Back-up Counsel

Babak Tehrani, Reg. No. 55,937

Kristen Schunter, Reg. No. 76,519

Attorneys for Petitioner

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. 9,965,233 B1 totals 13,394 words, excluding the parts exempted by 37 C.F.R. § 42.24(a). 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 28, 2023

Respectfully submitted,

/Amy E. Simpson/

Lead Counsel

Amy E. Simpson, Reg. No. 54,688

PERKINS COIE LLP

11452 El Camino Real, Suite 300

San Diego, CA 92130

Telephone: (858) 720-5700

Fax: (858) 720-5799

Back-up Counsel

Babak Tehrani, Reg. No. 55,937

Kristen Schunter, Reg. No. 76,519

Attorneys for Petitioner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true copy of the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,965,233 and supporting materials (Exhibits 1001-1009 and Power of Attorney) have been served this 28th day of April 2023, by FedEx® delivery service on Patent Owner at the correspondence address for the attorney of record for the '233 patent shown in USPTO PAIR:

CHERNOFF, VILHAUER, MCCLUNG & STENZEL, LLP
111 SW Columbia Street
Suite 725
Portland, OR 97201
psabido@chernofflaw.com

and via electronic mail to the patent owner and attorneys of record for Plaintiff in the concurrent litigation matter:

CHERNOFF, VILHAUER, MCCLUNG & STENZEL, LLP
Peter Sabido - psabido@chernofflaw.com

Nelson Bumgardner Conroy, P.C.
Charles Austin Ginnings - austin@nelbum.com
James M. Francis - jim@francis-law.com
Timothy E. Grochocinski - tim@nelbum.com

Dated: April 28, 2023

By: /Meghan Bright/
Meghan Bright, Patent Paralegal