

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC., and LG ELECTRONICS, INC.,
Petitioner,

v.

UNILOC 2017 LLC,
Patent Owner.

Case IPR2018-00361
Patent 6,216,158 B1

Before JENNIFER S. BISK, MIRIAM L. QUINN, and
CHARLES J. BOUDREAU, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318

I. INTRODUCTION

We instituted *inter partes* review pursuant to 35 U.S.C. § 314 to review claims 1, 2, 6–9, 12, 14, 15, and 20 of U.S. Patent No. 6,216,158 B1 (Ex. 1001, “the ’158 patent”), owned by Uniloc 2017 LLC. We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 2, 6–9, 12, 14, and 15 of the ’158 patent are unpatentable. Petitioner has not shown by a preponderance of the evidence that claim 20 of the ’158 patent is unpatentable.

II. BACKGROUND

A. *Related Matters*

The parties indicate that the ’158 patent is involved in *Uniloc USA, Inc. v. Apple Inc.*, Case No. 3-18-cv-00365 (N.D. Cal.) and other proceedings. Pet. 2; Paper 3.

B. *The ’158 Patent*

The ’158 patent relates to controlling network devices using a palm-sized, or otherwise reduced functionality, computer. Ex. 1001, 1:8–10. According to the ’158 patent, a palm-sized computer has limited processing, display, and input capabilities, resulting in an inability to run the same applications as desktop or laptop computers. *Id.* at 1:22–27. Touting the desirability to access desktop functionality from palm-sized computers, the ’158 patent overcomes the palm-sized computer limitations by viewing a

network as “an extension of the palm sized computer’s resources.” *Id.* at 1:27–29, 2:10–13. “Functions can be downloaded into the device as needed, and overlaid after they have been used.” *Id.* at 2:14–15. Thus, when a palm-sized computer seeks to use services stored on a network, the palm-sized computer can access and control these services using a program (such as a middleware application) to access a registry of the network services. *Id.* at 1:36–39, 1:46–48, 2:15–23.

The ’158 patent explains that middleware “allows palm sized computers to discover network-based computing resources.” *Id.* at 2:29–30. Middleware includes a directory of resources (or services), a protocol for storing and receiving from the directory, and a mechanism to transfer software from the directory to a palm-sized computer. *Id.* at 2:32–36. The palm-sized computer also includes a control application to manipulate the computer services on the network. *Id.* at 2:37–40. In one embodiment, the middleware includes “Jini technology from Sun Microsystems.” *Id.* at 1:49–50, 1:62–67.

The ’158 patent describes running a PowerPoint slide presentation as an example of a service that can be invoked and controlled via a control device, which is a palm-sized computer. *Id.* at 3:4–10, 3:16–20. Figure 1 of the ’158 patent is reproduced below.

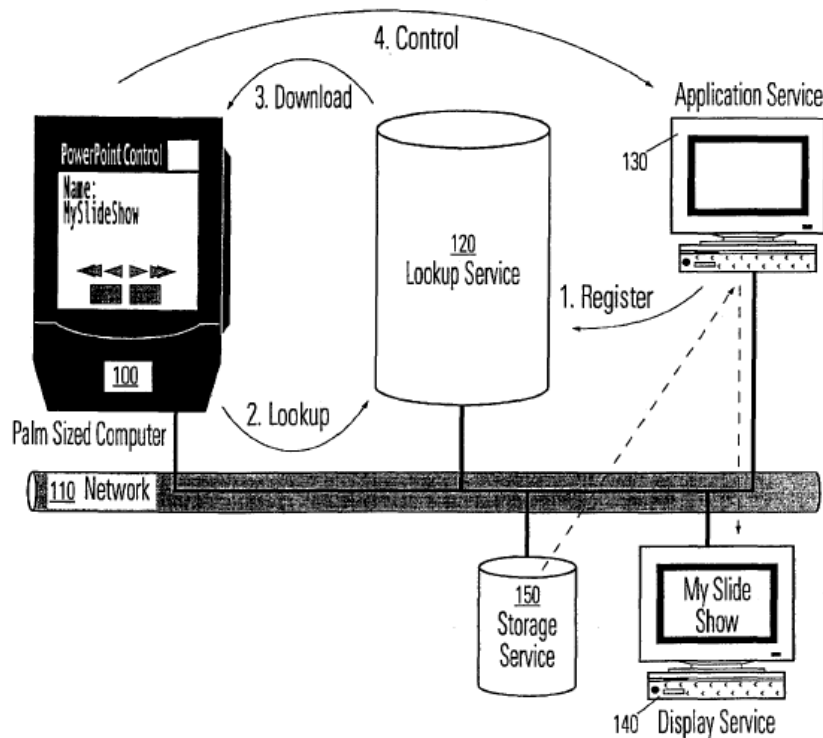


Figure 1 depicts a system having a palm-sized computer controlling operations of various network devices, such as application service 130 (to run the PowerPoint application), display service 140 (to display the presentation), and storage service 150 (to store the presentation). *Id.* at Fig. 1, 3:43–54. “None of these services are resident on the palm sized computer 100.” *Id.* at 3:60–61. After locating the necessary service (e.g., PowerPoint application) using lookup service 120, the palm-sized computer downloads the code required to control the located services. *Id.* at 3:45–49, 3:61–64, 6:1–3. The ’158 patent describes that the control device (i.e., palm-sized computer) uses a download interface to download “the application service descriptor.” *Id.* at 6:16–21 (referring also to “the GUI code for controlling a PowerPoint presentation”). The palm-sized computer

is then capable of directly controlling the service, such as by sending a “next slide” request to the application service running, for example, PowerPoint.

Id. at 3:66–67, 6:24–26.

C. Illustrative Claim

Of the challenged claims, claims 1, 8, and 20 are independent. Each of claims 2, 6, 7, 9, 12, 14, and 15 depends directly from either claim 1 or claim 8.

Claim 1 is illustrative:

1. A method of controlling a service on a network using a palm sized computer, the palm sized computer being coupled in communications with the network, the method comprising:

accessing a description of the service from a directory of services, the description of the service including at least a reference to program code for controlling the service;

downloading the program code to the palm sized computer;

the palm sized computer executing at least a portion of the program code; and

sending control commands to the service from the palm sized computer in response to the executing, wherein the service controls an application that cannot be executed on the palm sized computer.

Ex. 1001, 12:13–28.

D. Procedural History

Petitioner Apple Inc. filed a Petition for *inter partes* review challenging claims 1, 2, 6–9, 12, 14, 15, and 20 of the ’158 patent. Paper 1

(“Pet.”). Patent Owner, Uniloc 2017 LLC, filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). We instituted trial on July 15, 2018. Paper 8 (“Dec. on Inst.”). During trial, Patent Owner filed a Patent Owner Response (Paper 11 (“PO Resp.”)) and Petitioner filed a Reply (Paper 16 (“Reply”)). Both parties requested oral argument, which took place on April 11, 2019, the transcript of which is filed in the record as Paper 21 (“Tr.”).

E. Asserted Prior Art and Testimonial Evidence

This proceeding involves the following prior art references:

- a) *Jini-QS*: article titled “Jini: Quick Study,” published in COMPUTERWORLD, Dec. 7, 1998, filed in the record as Exhibit 1005;
- b) *Arnold*: U.S. Patent No. 6,393,497 B1, filed in the record as Exhibit 1006;
- c) *McCandless*: article titled “The PalmPilot and the Handheld Revolution,” (IEEE Expert, 1997), filed in the record as Exhibit 1007;
- d) *Riggins*: U.S. Patent No. 6,131,116, filed in the record as Exhibit 1008; and
- e) *Devarakonda*: U.S. Patent No. 6,757,729 B1, filed in the record as Exhibit 1009.

Petitioner also relies on a Declaration of Henry H. Houh, Ph.D., filed as Exhibit 1003 (“Houh Decl.”).

Patent Owner submitted a Declaration of William C. Easttom in support of patentability. Ex. 2001 (“Easttom Decl.”). The cross-examination of Mr. Easttom is filed in the record as Exhibit 1032 (“Easttom Dep.”).

F. Grounds of Unpatentability

The following grounds of unpatentability are at issue (Pet. 13–14):

Claims	Basis	References
1, 2, 6–9, 12, 14, 15, and 20	§ 103	Jini-QS, Arnold, and McCandless
1, 2, 6–9, 12, 14, and 15	§ 103	Riggins and Devarakonda

III. ANALYSIS

A. Claim Construction

Petitioner asserts that the ’158 patent will expire during the pendency of the requested *inter partes* review. Pet. 8. Patent Owner does not address this assertion. In an *inter partes* review, under 37 C.F.R. § 42.100(b), a party may request a district court-type claim construction approach to be applied if a party certifies that the involved patent will expire within 18 months from the entry of the Notice of Filing Date Accorded to Petition. *See* 37 C.F.R. § 42.100(b) (2017). The request must accompany the party’s certification. *Id.* In this proceeding, no such certification has been filed with a request. We expressed in our Decision on Institution the expectation that this issue would be clarified during trial. Neither party argued which claim construction standard should apply in this proceeding. Nor does either

party argue that claim construction under the broadest reasonable interpretation of the terms would be different under the application of the *Phillips* standard. We discuss the arguments raised regarding claim construction for each term.

1. Palm-sized Computer

Petitioner contends that “[f]or purposes of this proceeding, it is sufficient to specify that a personal digital assistant (PDA) and a 3Com Palm PlatformTM computer are examples of a ‘palm sized computer’ in the context of the ’158 Patent.” Pet. 9 (emphasis omitted). Patent Owner argues that this is not the “proper definition” of the term and it does not “fully define its scope.” PO Resp. 6. But Patent Owner does not propose an alternative proposal, save to say that “examples” of a palm-sized computer are not a proper definition of the term. *Id.* at 6–7. Nor does Patent Owner argue that the properly defined “palm sized computer” is not met by the asserted prior art. Accordingly, Patent Owner’s arguments do not raise a dispute regarding the scope of the term necessary for us to determine whether the prior art teaches the “palm sized computer” as recited. The ’158 patent plainly defines “palm sized computers” as personal digital assistants or PDAs and gives an example of the 3Com Palm Platform computer as a palm-sized computer. *See* Ex. 1001, 1:13–21. Therefore, we agree with Petitioner’s proposed construction of a personal digital assistant or PDA and the 3Com Palm Platform computer being examples of a “palm-sized computer.”

2. Means Plus Function Terms

Claim 20 recites four terms drafted in means-plus-function format: means for accessing, means for downloading, means for executing, and means for sending. Petitioner's proposed identification of the function and structure for each of these terms is as follows.

Term	Function	Structure
Means for accessing	Accessing a description of a service	A palm-sized computer executing the Jini middleware from Sun Microsystems, and equivalents thereof
Means for downloading	Downloading the program code	A palm-sized computer executing the Jini middleware from Sun Microsystems, and equivalents thereof
Means for executing at least a portion of the program code	Executing at least a portion of the program code	A palm-sized computer executing a Java Virtual Machine, and equivalents thereof
Means for sending	Sending control commands to the service in response to the means for executing	A palm-sized computer executing a control protocol capable of issuing control commands or Java's Remote Method Invocation (RMI) protocol, and equivalents thereof

Pet. 9–12. Patent Owner challenges the structures identified by Petitioner as focusing on specific embodiments. PO Resp. 7–12. We address each of Patent Owner's arguments in turn.

i. Means for Accessing and Means for Downloading

According to Patent Owner, the Specification describes embodiments other than Jini middleware as structures performing the accessing and downloading functions. *Id.* at 7–9. Patent Owner contends that the structures corresponding to the means for accessing and means for downloading should be “middleware and equivalents thereof.” *Id.* (emphasis omitted). We agree with Patent Owner that in addition to the Jini middleware embodiment, the Specification of the ’158 patent describes middleware in more general terms. *See* Ex. 1001, 2:29–36 (describing middleware as the mechanism for the palm-sized computer to discover network-based computing resources, including the directory of services, and providing a protocol for storing and retrieving from the directory and mechanism to transfer software from the directory to a palm-sized computer). Consequently, we are persuaded by Patent Owner’s argument that the means for accessing and means for downloading are not limited to Jini middleware and equivalents, but also would include middleware and equivalents.

ii. Means for Executing

Patent Owner argues that Petitioner focuses on a Java Virtual Machine, but the Specification does not limit the means for executing to a Java Virtual Machine. PO Resp. 9–10. Patent Owner also quotes the Specification at column 7 lines 24 to 40 and highlights the reference to “a CPU service 410.” *Id.* at 10. Patent Owner concludes that the

corresponding structure for the means for executing is a “CPU service, and equivalents thereof.” *Id.* (emphasis omitted)

The Specification describes the downloaded program “can include Java program code.” Ex. 1001, 1:51–52. The Specification further describes that, in the Jini embodiment, “[e]ach device is expected to run a Java Virtual Machine (JVM), or rely on a Jini proxy which runs a JVM on the device’s behalf.” *Id.* at 2:53–57. In the embodiment shown in Figure 2, however, the control application relies on “middleware,” not a JVM as shown in Figure 3. Therefore, we agree with Patent Owner that the means for executing is not limited to a JVM. However, a JVM may be one alternative that the palm-sized computer uses to run the program code.

As stated above, Patent Owner focuses on the disclosure of a CPU to argue that the means for executing includes a CPU. This disclosure, however, is not linked to executing the program code that is downloaded to the palm-sized computer. This disclosure addresses the software architecture of network-based computer service 250, i.e., the computer that runs the PowerPoint application controlled by the palm-sized computer controls. *Id.* at 7:25–40 (describing in further detail service control application 260 of network based computer service 250 shown in Figure 3, and further describing that the CPU service corresponds to application service 130, which is shown in Figure 1 as the application service on the network, not the palm-sized computer). Patent Owner’s point, however, is well taken; that is, the execution of the program code is performed by a processor. The processor, however, is in the palm-sized computer. *See id.*

at 1:22–25 (describing limitations of processing capability of the palm-sized computer).

It is clear from the Specification that the program code is running on the palm-sized computer, which we have determined above to include at least a personal digital assistant or a 3ComPalm Platform computer. *See id.* at 3:1–10 (describing a control device running Jini as the palm-sized computer and describing that a control application uses the control device to control the application). In order for the palm-sized computer to execute the program code, it must include an operating system and the required hardware. *See id.* at 4:34–53 (describing how the control device is able to control services in the network by executing the downloaded control application or program code as shown in Figure 2). As shown in Figure 2 of the '158 patent, the control device and its operating system run the control application, which includes the graphical user interface (GUI) code that controls the service, such as a PowerPoint presentation. *See id.* at Fig. 2 (depicting control device 200 with control device operating system 201), 6:19–21 (describing the GUI code for controlling a PowerPoint presentation); *see also* Fig. 3 (depicting the palm-sized computer having a palm operating system running the control application with the GUI code). From these disclosures we are persuaded that the '158 patent Specification describes that the processing capability of a palm-sized computer executes at least a portion of the program code.

Consequently, we determine that the corresponding structure of the means for executing is, at a minimum, the processor of the palm-sized computer.

iii. Means for sending

Patent Owner takes issue with Petitioner's proposed structure for the recited "means for sending" because "not every embodiment uses Java's Remote Method Invocation (RMI) protocol." PO Resp. 11. Patent Owner points out the Specification's description of a "generic control protocol capable of issuing control commands to an offboard resource." *Id.* (citing Ex. 1001, 4:15–25) (emphasis omitted). Patent Owner argues that the proper corresponding structure for the function "sending control commands to the service in response to the means for executing" is "a control protocol, and equivalents thereof." *Id.* at 11–12. We agree with Patent Owner that the Specification describes a generic control protocol capable of issuing control commands. Petitioner, however, did identify the control protocol in addition to the RMI protocol. Therefore, we determine that the corresponding structure for the means for sending is "palm-sized computer executing a control protocol capable of issuing control commands or Java's Remote Method Invocation (RMI) protocol, and equivalents thereof."

iv. Summary of Means-Plus-Function Terms

As discussed above, we have determined that the corresponding structure for the means-plus-function terms should be adjusted to account for additional embodiments that the '158 patent discloses. *See Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1369 (Fed. Cir. 2005) (determining that the proper claim construction must account for all structures in the specification corresponding to the claimed function). A summary of our determination for each term follows.

Term	Function	Structure
Means for accessing	Accessing a description of a service	A palm-sized computer executing middleware or the Jini middleware from Sun Microsystems, and equivalents thereof;
Means for downloading	Downloading the program code	A palm-sized computer executing middleware or the Jini middleware from Sun Microsystems, and equivalents thereof
Means for executing at least a portion of the program code	Executing at least a portion of the program code	Processor of palm-sized computer or a palm-sized computer executing a Java Virtual Machine, and equivalents thereof
Means for sending	Sending control commands to the service in response to the means for executing	A palm-sized computer executing a control protocol capable of issuing control commands or Java's Remote Method Invocation (RMI) protocol, and equivalents thereof

3. Description of the Service

Claim 1 recites “accessing a description of the service from a directory of services, the description of the service including at least a reference to program code for controlling the service.” Ex. 1001, 12:17–19. Challenged independent claims 8 and 20 recite similar language. *Id.* at 12:56–59, 14:30–32. Neither party submitted a claim construction proposal

for the term “description of the service.” However, the parties’ arguments raise an implicit dispute as to the scope of this term that requires resolution. Petitioner, on the one hand, asserts that “accessing descriptions/icons of available services contained in a Lookup Service on the Jini platform” discloses accessing the description of the service. Pet. 28. Patent Owner, on the other hand, argues that icons are not a “description of the service” as required by the claim language, and that the Lookup Service does not describe accessing a “description of services.” PO Resp. 16. For the ground based on Riggins, Patent Owner also argues that the “description of the service” recited in the claims “includes details that one of ordinary skill in the art would recognize as being different than the mere webpage reflecting a user configuration file.” *Id.* at 33. Thus, the scope of a “description of the service” is at issue.

The claim language recites two aspects of the “description of the service” as: (1) “accessed from a directory of services,” and (2) “including at least a reference to program code for controlling the service.” Although these recitations refine where the “description of the service” is accessed from and what it includes, the claim does not define further what constitutes a “description of the service.” The plain and ordinary meaning of the words suggests that the term refers to “information that describes the service.” *See* Tr. 9:17–11:5 (Petitioner agreeing that the term means “information that describes a service that’s in a directory of services”); Tr. 31:15–32:19 (Patent Owner not disputing that the plain and ordinary meaning is “information that describes a service”). Patent Owner, however, argues that the claim language requires that the description, itself, must include a

reference to program code. *Id.* at 32:20–33:8. Patent Owner also argues that the service is distinct from the program code. *Id.* at 33:22–34:8. According to Patent Owner, then, the “description of the service” must include (1) that the description itself is stored in the directory and (2) a reference to the program code. *Id.*

We agree that the claim language refers to the “description of the service” under the plain and ordinary meaning as “information that describes the service” and the information is stored in a directory of services. We also agree that the claim language requires that the information must include, at least, a “reference to program code for controlling the service.” The Specification confirms this understanding as it describes a directory of services that encodes the set of services available on the network, where the directory will have “objects whose attributes describe the features of available services.” Ex. 1001, 9:12–22. We understand from this description that the described “objects” are data objects stored in the directory, and the features of the services are “described” via attributes of the data object. Accordingly, we construe the “description of the service” as information that describes the service. And we determine that the plain meaning of the surrounding claim language specifies that the description of the service is in a directory of services and that the description includes the recited reference to program code.

B. Level of Ordinary Skill in the Art

The patentability analysis under 35 U.S.C. § 103 includes determination of the level or ordinary skill in the art. *Graham v. John Deere*

Co., 383 U.S. 1, 17 (1966). Neither the Petition nor the Patent Owner Response (PO Resp. 3) states the applicable level of ordinary skill in the art, and neither party argues that the obviousness determination hinges on the level of ordinary skill. Accordingly, we do not find it necessary to define the level of skill with specificity save to note that the level of ordinary skill is evidenced by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (stating that the absence of specific findings on the level of skill in the art does not give rise to reversible error where the prior art itself reflects an appropriate level and a need for testimony is not shown).

C. Summary of Jini-QS and Riggins

The obviousness grounds rely on Jini-QS or Riggins as disclosing the majority of the limitations recited in the claims. Therefore, we summarize these references below.

1. Overview of Jini-QS

Jini-QS is an article in the Computer World periodical, dated December 7, 1998. The article defines Jini as “networking software created by Sun Microsystems Inc. as an extension of Java.” Ex. 1005, 5 (“Definition”). Jini-QS depicts “How it Works” in the graphic reproduced below.



Id. The illustration of “How it Works” depicts in the center the “Jini community network” and around it various devices, such as: (1) a “Laptop”; (2) a “Jini server”; (3) a “Legacy printer”; (4) a “Disk drive”; and (5) a “Projector.” With regard to the Laptop, Jini-QS describes it as “plugged into the network, and the Jini code in the Java virtual machine on the device broadcasts its presence.” *Id.* (“How it Works”). Further, Jini-QS states that when the user wants to print a presentation,

He selects the print option, which launches a query to the Lookup Service on the Jini Server. The server instantly sends proxy code back to the device. The legacy printer, which has no Java or Jini code at all, receives the printing instruction via that proxy code and prints the document.

Id. Jini-QS states that the “Lookup stores pointers to various services on the network as well as code for other services.” *Id.* (“Jini Speak,” “Lookup”). Jini-QS describes the “proxy” as the piece of Java code “that moves around from device to device acting as the front end for all the Jini-enabled or legacy systems.” *Id.* (“Jini Speak,” “Proxy”).

2. Overview of Riggins

Riggins, entitled “System and Method for Globally Accessing Computer Services,” describes a “roaming user” as one who travels and accesses a workstation remotely and can “manipulate the data on the remote workstation and, when finished, can upload the manipulated data back from the remote workstation to the local computer.” Ex. 1008, [54], 1:18–27. “However, slow computers and slow communication channels make downloading large files and programs a time-consuming process,” and downloading “severely threatens the integrity and confidentiality of the downloaded data.” *Id.* at 1:27–32. As an alternative, Riggins discloses that the roaming user “can carry a copy of all potentially needed information,” but that maintaining a “true copy” is a cumbersome process. *Id.* at 1:34–37. Thus, Riggins discloses using a “browser for receiving applet information corresponding to a service performed by one of the service engines from the server, and an applet engine for using the applet information to control user

interfaces I/O of the service.” *Id.* at 1:49–53. Figure 1, reproduced below, illustrates a system for roaming-user access.

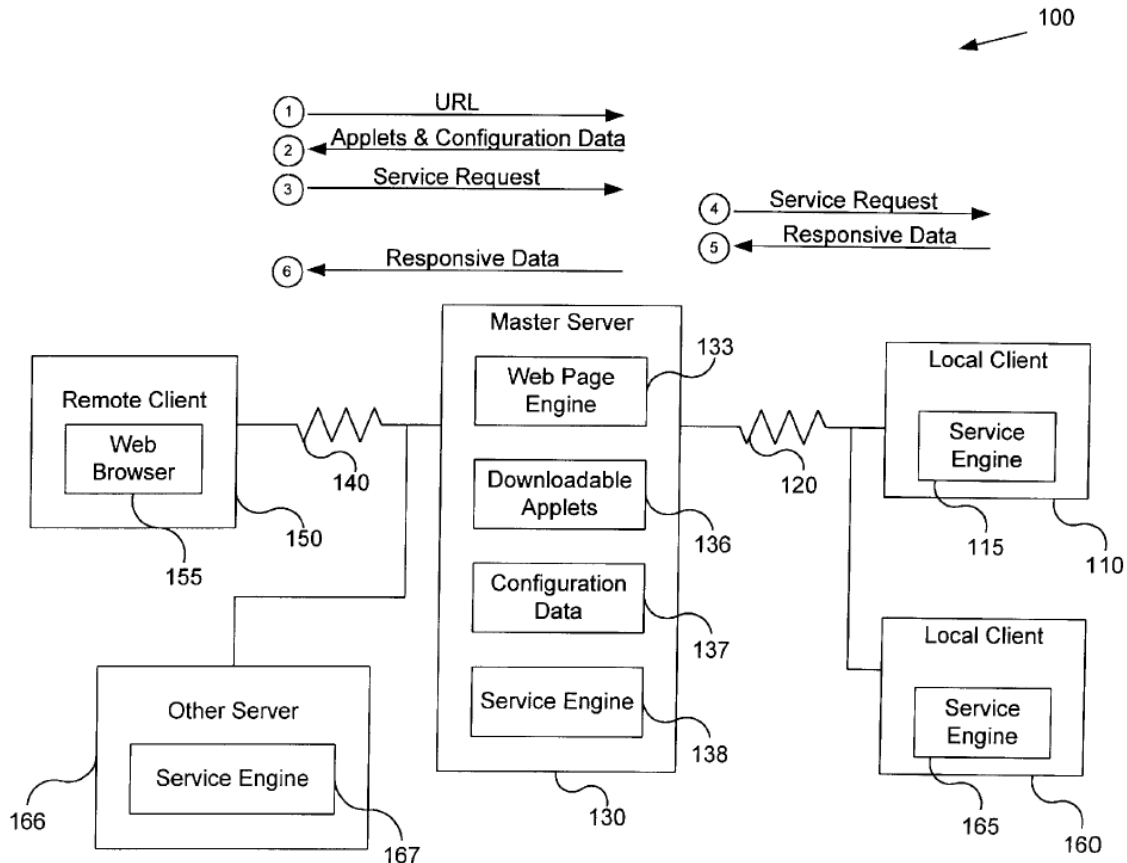


FIG. 1

Figure 1 illustrates roaming-user network access system 100. According to Figure 1, master server 130 and remote client 150 communicate via Internet 140. *Id.* at 2:47–51. Local client 110 communicates with the master server via local network 120. *Id.* at 2:51–53. The remote client includes an “applet-based web browser,” which is configured for communicating with the Internet and for reading and executing applets. *Id.* at 2:64–67.

Figure 1 also illustrates that the remote client inputs a predetermined Uniform Resource Locator (URL) address (shown in line (1) “URL”) for opening the web page managed by the master server. *Id.* at 3:49–52. Web page engine 133 of the master server sends (shown in line (2)) at least one of the applets (downloadable applets 136) and web browser configuration data 137 to the web browser of the remote client. *Id.* at 3:52–54. The user then selects a particular service corresponding to one of the applets to access an e-mail service, for example. *Id.* at 3:55–58. Selection of a service causes an applet engine of remote client 150 “to connect to or execute the applet . . . corresponding to the selected service” *Id.* at 6:58–60. The web browser forwards to the master server a service request (shown in line (3)) for initiating execution of the selected service. *Id.* at 3:59–61. The master server determines the location of the service and sends the service request (shown in line (4)) to the appropriate address (to a service engine in either the local computer or a depicted server). *Id.* at 3:61–67. The appropriate service engine executes the service and generates responsive data, which is sent (shown in lines (5) and (6)) to the master server and to the remote client. *Id.* at 4:1–8.

D. Analysis of Ground Based on Jini-QS

Based on the full record and the arguments presented, we determine that Petitioner has not proven by a preponderance of the evidence that the challenged claims of the ’158 patent would have been obvious under this ground because Petitioner failed to demonstrate that Jini-QS teaches the limitation of “accessing a description of the service from a directory of

services, the description of the service including at least a reference to program code for controlling the service.” The Petition points to the Lookup Service as the directory of services and states that “the Jini platform includes a Lookup Service that keeps track of which services are available on the network—i.e., ‘Lookup is the equivalent of a network bulletin board for all available services.’” Pet. 27 (citing Ex. 1005, 29 (left column)). Petitioner points to the Jini-QS “How it Works” portion of the article that states: “The user requests services that are available, and icons appear on his screen.” *Id.* Petitioner argues that this disclosure teaches that a PalmPilot accesses “descriptions/icons of available services contained in a Lookup Service on the Jini platform, where the Lookup Service includes service descriptions and pointers (references) to downloadable proxy code for controlling a service.” *Id.* at 28 (citing Ex. 1003). The cited Houh Declaration does not explain these contentions further except to add that descriptive icons corresponding to the services are equivalent to a descriptive name or illustration of the service and that Jini-QS teaches the accessing limitation because “a PalmPilot user access[es] descriptions/icons of available services contained in a Lookup Service on the Jini platform, where the Lookup Service includes service descriptions and pointers.” Ex. 1003, 56–57.

Patent Owner contends that Jini-QS is vague in its disclosure of the “Lookup” feature and that Petitioner’s arguments and evidence are insufficient. PO Resp. 15–17. For instance, Patent Owner argues that Jini-QS merely states, without any further explanation, that the user requests services that are available and icons appear on the screen. *Id.* at 16. Patent Owner also argues that the “Lookup” feature does not teach a “description of

the service.” *Id.* We agree with Patent Owner that Jini-QS is too vague in its description of the PalmPilot operation and the “Lookup” feature to assess whether Petitioner is correct that Jini-QS teaches a “description of the service,” as we have construed the term.

As stated in our analysis of the term “description of the service,” the claim recites two requirements for the limitation: (1) the information that describes the service is accessed from the directory of services; and (2) that information must include at least a reference to program code for controlling the service. As stated above, the Petition and Dr. Houh identify “icons” as the “description of the service.” Jini-QS “icons,” however, fail to meet either requirement of the “description of the service.” First, Petitioner relies on the Lookup Service as the “directory of services.” Pet. 27; Ex. 1003, 55 (“[T]he Lookup is a ‘network bulletin board’ or directory of available services.”). Thus, to meet the recited “description of the service,” we look for the information to be accessed from the Lookup Service. Jini-QS, however, is silent as to whether the PalmPilot device accesses a “description of a service” from the Lookup Service. Indeed, Jini-QS states that the Lookup is a “network bulletin board” for the services that are “available,” but does not explain how being a “bulletin board” for available services in any way teaches that *the information* describing any of those available services is *accessed* by the PalmPilot device. Second, even though Jini-QS states that “[t]he user requests services that are available,” Jini-QS does not provide any detail as to how that user requests the services, so that we can determine whether the user accesses the information from the Lookup Service. The omission of this explanation in Jini-QS is significant because a

close reading of Jini-QS informs us that accessing the Lookup Service may not be at all how the described system works. For instance, Jini-QS states that a “device is plugged into the network, and the Jini code in the Java virtual machine on the device broadcasts its presence.” Ex. 1005, 29 (step 1 in “How it Works”). Jini-QS then states that the user requests services that are available, and icons appear on his screen. *Id.* The article appears to make a link between the broadcast of the device’s presence and the discovery of a service that the device provides. No mention of the Lookup Service is provided in this step; thus, we do not presume that it is involved in either the broadcasting of the device’s presence or the request of the available services. It is just as possible that the Jini code enables the devices to detect each other’s broadcasts. There is just not enough information in the Jini-QS article for a person of ordinary skill in the art to presume that when a user requests available service, that request is necessarily using the Lookup Service. Indeed, it is not until step 2 of the “How it Works” infographic that the Lookup Service is illustrated to be involved in registering the new laptop on the network. This explanation suggests that the Lookup Service, which until step 2 does not know of the laptop’s existence on the network, is not involved in the previous step of the “user request[ing] services that are available, and icons appear on his screen.”

Our determination that Jini-QS does not teach that the user requests are accessing information from the Lookup Service is further confirmed by step 3 of the “How it Works” infographic, where Jini-QS describes that if the user wants to print a presentation, “[h]e selects the print option, which launches a query to the Lookup Service on the Jini Server.” *Id.* (step 3,

“How it Works”). This step expressly mentions a query to the Lookup Service. But Petitioner does not mention this query as meeting the accessing step. And, therefore, we do not consider this disclosure for that purpose. However, the query disclosure highlights that the author of this article knew the difference between a “query” and a “request” and chose to describe the “user requests” in connection with the new device broadcasting its presence in the network, while explaining that a query of the Lookup Service does not occur until after that device is properly registered with the Lookup Service. Accordingly, we are not persuaded by Petitioner’s contention, and do not credit Dr. Houh’s testimony, that Jini-QS teaches “accessing a description of the service from the directory of services” merely because the “user requests services that are available,” as Jini-QS does not teach that the Lookup Service is involved in this request in any way. Ex. 1003, 56–57.

As for the “icons,” Jini-QS does not explain how the “icons” are related to the so-called “bulletin board” of the Lookup Service. Further, the fact that a user requests services that are available, and “icons appear on his screen” may be indicative that the icons are responsive to the request, but Jini-QS does not explain what those “icons” describe or where they came from. Petitioner argues that “[i]f the icons were not visually descriptive, the user would be unable to select the print service from among the other services.” Reply 13. But even if the “icon” somehow indicates the “print option” that the user selects, a point on which Jini-QS is silent, Petitioner does not explain, nor does Jini-QS teach, that the displayed “icons” are accessed from the Lookup Service. See Tr. 16:6–19 (discussing that Jini-QS is not explicit as to storage, speculating as to where “icons” are stored, and

contending, for the first time at oral argument, that there are “multiple pieces of information that describe the service stored in the lookup”). Additionally, even if we were to assume that the “icons” identify a service, there is no disclosure in Jini-QS that describes the “icons” as including a reference to program code for controlling the service, which is a requirement of the claim. Although Jini-QS states that the “Lookup stores pointers to various services on the network as well as code for other services,” there is no evidence that the displayed “icon” includes the “pointers” that are stored in the Lookup Service or that such pointers are in any way linked to that “icon.” See Ex. 1005, 29. In other words, Jini-QS does not say that selecting “the print option” is performed using “icons,” but even if “the print option” was present as the “icon,” Jini-QS states that selecting the “print option” causes a query of the Lookup Service—there is no explanation how this “query” in any way involves a pointer to program code. Thus, Jini-QS does not teach that the “icon” (an alleged “description of the service”) includes a reference to program code for controlling the service. The “icon” selection, at best, causes a search in the Lookup Service. Jini-QS, however, is silent as to how it performs that search in response to the selection by the user of “the print option.”

Petitioner also argues in its Reply that there is an additional “description of the service” in the form of the “pointers” stored in the Lookup, and that the claim language “requires only that the description consist of ‘a reference to program code’ and nothing more.” Reply 13–14. We do not agree with Petitioner’s characterization of the claim language. As stated in our construction of the term, the “description of the service” is

itself information that describes the service, and the claim further requires that the description of the service include at least a reference to a program code for controlling the service. The claim language “the description of the service including” has an antecedent basis that refers back to the “description of the service” that is being accessed. There is no contention in the Petition that either the PalmPilot or the user accesses the “pointers” that are stored in the Lookup. It is not enough to point to two different pieces of information described in the prior art and argue they are both “descriptions of the service” without the link that the claim language requires. If the “icon” is the descriptor, then it must include the reference to the program code, and Petitioner has not shown that Jini-QS teaches this. If the “pointers” stored in the Lookup are the “description,” then the “pointers” must be accessed as the claim requires. Petitioner did not show that Jini-QS teaches the “accessing” of the “pointers.” Accordingly, Petitioner’s Reply argument concerning the “pointers” being “a description of the service,” belatedly presented, fails to satisfy Petitioner’s burden.

Finally, with regard to claim 20, we note that the structure for the means for accessing is a palm-sized computer running middleware. *See supra* Section III.A.2.iv. To the extent Petitioner and Dr. Houh argue that the “PalmPilot user” is one who accesses the alleged description of the service or icons, we find that the contentions regarding claim 20 also fail to show the required structure performing the accessing function. *See* Pet. 28 (“the *user* requests (accesses) descriptions of the available services” (emphasis added)), 46 (identifying the PalmPilot executing the “Jini code” as the “means for accessing,” but referring to the discussion of the claim

limitation of claim 1, which refers to the *user*); Ex. 1003, 57 (“a PalmPilot *user* accessing descriptions/icons of available services” (emphasis added)); 90 (“Jini-QS teaches that the PalmPilot *user* accesses descriptions of the available services via the Lookup Service and in response is shown descriptive icons corresponding to the services.” (emphasis added)); Reply 13 (“[T]hese icons are part of the descriptive service information accessed by the user; they enable the user to visually differentiate between the plurality of services and select a desired service.”). The “user” in Jini-QS is a human being. See Ex. 1005, 29, item 3 “How it Works” (“Say the user wants to print a presentation. He selects the print option.”). A “user” is not a palm-sized computer running middleware. Therefore, for this additional reason, Petitioner has failed to demonstrate by a preponderance of the evidence that Jini-QS teaches the “means for accessing” limitation.

The deficiencies noted above are not cured by Petitioner’s reliance on Arnold and McCandless.¹ We determine, therefore, on this record, that Petitioner has not proven by a preponderance of the evidence that claims 1, 8, and 20 of the ’158 patent are unpatentable over Jini-QS, Arnold, and McCandless. The remaining dependent claims depend directly or indirectly from claims 1 and 8, and, therefore, Petitioner has not proven by a preponderance of the evidence that those claims of the ’158 patent are unpatentable over Jini-QS, Arnold, and McCandless.

¹ Patent Owner further argues that Jini-QS is not enabled. PO Resp. 13–15. Because we determine that Jini-QS does not teach the “accessing” limitation, we need not determine the enablement issue.

E. Analysis of Riggins-Based Ground

Petitioner maps the remote client of Riggins, in combination with Devarakonda, to the palm-sized computer limitations, recited in claims 1 and 8. Pet. 58–68, 71–80. In particular, Petitioner points to Riggins’s disclosures of a “network computer” as the remote computer that a remote user utilizes to access a service such as e-mail. *Id.* at 58–59 (citing Ex. 1008, 1:49–53, 2:47–53, 4:9–16, 6:31–32, 8:23–25, Fig. 1). Petitioner also argues (1) that Devarakonda teaches that a network computer can be embodied on a PDA, and (2) that a person of ordinary skill in the art “would have been motivated to utilize Devarakonda’s PDA as Riggins’s network computer.” *Id.* at 59–60. Petitioner provides at least one reason to combine, such as the advantage of using a PDA to access the processing power of a full-featured computer to accomplish processor-intensive tasks, especially in light of Devarakonda’s teaching that “network computers . . . did not have adequate physical resources to execute applications intended for full-featured operating environments.” *Id.* at 56–57 (citing Ex. 1003 ¶ 103, which relies further on Ex. 1009, 1:28–32, 2:11–13, 2:20–22; Ex. 1013, 4).

Patent Owner primarily presents three arguments in response to the challenge based on Riggins and Devarakonda. First, Patent Owner argues that Riggins does not teach the accessing limitation because Riggins’s website is not “a description of the services from a directory of services” and Riggins does not reference program code. PO Resp. 32–34. Second, Patent Owner argues that neither Riggins alone nor Riggins in combination with Devarakonda teaches “wherein the service controls an application that

cannot be executed on the palm sized computer.” *Id.* at 34–36. Third, Patent Owner argues that there is no motivation to combine Riggins and Devarakonda because Petitioner’s contentions are not factually supported, web browsers would not work in PDAs at the time of the invention, and Riggins teaches away from the combination. *Id.* at 37–44. We address each of these arguments under corresponding headings below.

1. Accessing a Description of the Service

According to Petitioner, Riggins teaches that a master server maintains configuration data that includes a list of services that will be provided to the user, i.e., a directory of services. Pet. 60 (citing Ex. 1008, 5:51–57). Riggins states that “[c]onfiguration data 137 further includes service addresses 398 specifying the location of each of the services 396 accessible via the master server 130.” Ex. 1008, 5:51–57. Petitioner further asserts that a “user accesses descriptions of the available services via a webpage, called a ‘roam page,’ that displays ‘a listing of the provided services.’” Pet. 61. Figure 5 of Riggins, which displays said “list,” is reproduced below.

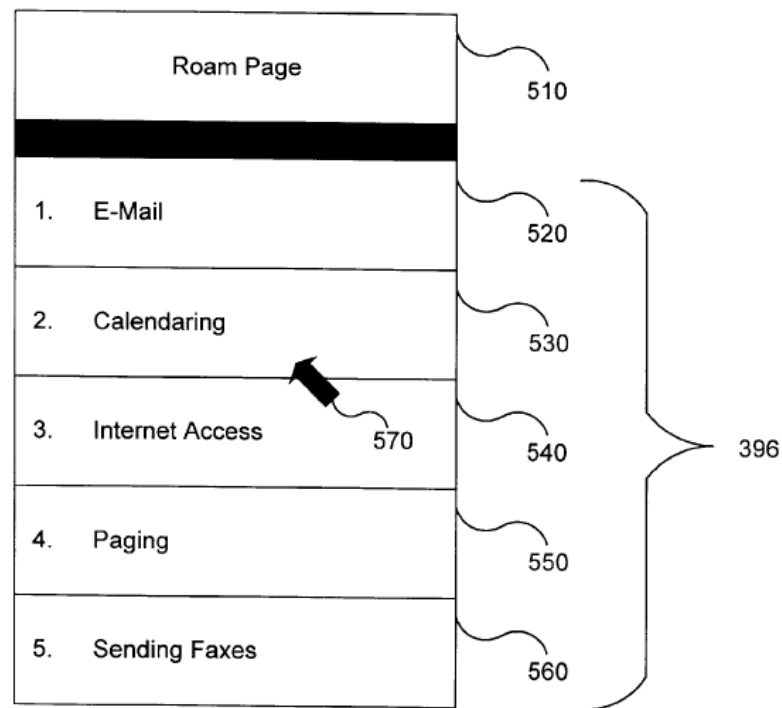


FIG. 5
(Roam Page Screen Shot)

Figure 5 illustrates an example of a graphical user interface of a webpage. According to Riggins, the webpage includes a title, “Roam Page,” and “a listing of the provided services 396 and a pointer 570 for selecting one of the provided services 396.” Ex. 1008, 6:28–31. One of the provided services may include e-mail service 520. *Id.* at 6:31–32. Riggins explains that the web page generated at the remote client, i.e., the Roam Page, is based on the configuration data and downloaded applets. *Id.* at 6:52–55. The configuration data includes multiple pieces of information, including web browser settings, applet engine settings, applet configuration data, user preferences, and the services that will be provided to the user. *Id.* at 5:40–52. Riggins explains that the services include a list of each user’s

desired services specifying each user's set of downloaded applets and service addresses specifying the location of each of the services accessible via the master server. *Id.* at 5:52–57.

Based on the above-described disclosures in Riggins, we agree with Petitioner and find that Riggins teaches the accessing limitation. The “list” of services available for a roaming user is described in the configuration data (recited “directory of services”) that is maintained at the master server. Ex. 1008, 5:51–57. The “list” is accessed by a user by inputting the URL address for the web page titled “Roam Page.” *See id.* at 3:49–52. This “Roam Page,” as illustrated in Figure 5, displays the name of the service that is available. *Id.* at Fig. 5 (depicting a listing of, for example, “1. E-mail”). The information that is displayed on the “Roam Page” is derived from the configuration data, which includes not only the identification of the service, i.e., that e-mail is an available service, but also a service prompt corresponding to an applet. *See id.* at 3:57–58; 5:52–57 (describing that the services listed in the configuration data also specify a service address and identification of downloaded applets); *see also id.* at 8:25–31 (“Although the remote client 150 has been described as downloading all selectable applets 294 from the master server 130, the remote client 150 can alternatively download selectable service prompts and can then download from the master server 130 only the applet corresponding to the selected service.”). Thus, the information describing each service in the configuration data, which is further displayed on the Roam Page, includes, at a minimum, the name of the service that is available and the selectable service prompt, which is a link

to the applet code, such that, upon selection, the corresponding applet code is downloaded. Accordingly, the configuration data includes a “description of a service,” where that description includes “a reference to program code for controlling the service.”

i. Patent Owner’s Argument that Riggins Does not Reference Program Code

Patent Owner argues that Riggins does not teach the accessing limitation because there is no reference to program code in the “list” that Petitioner alleges corresponds to the “description of services.” PO Resp. 30–33. In particular, Patent Owner contends that the Roam Page lists services for which applets have already been downloaded. *Id.* (citing Ex. 1008, 6:52–55). If the applet has already been downloaded, Patent Owner posits, then the “list” in Riggins does not need a “reference to program code.” *Id.* at 32. Relying on Figure 8 of Riggins, which describes downloading the applets from the master server before the Roam Page is displayed, Patent Owner argues that the entirety of Riggins is devoted to downloading applets before the display of the web page, and one cannot pick and choose some aspects of Riggins at the exclusion of others. *Id.*

We do not agree with Patent Owner that Riggins’s disclosure is limited to applets downloaded before the Roam Page is displayed. Riggins describes an alternative embodiment in which the applets are not downloaded until they are selected. Ex. 1008, 8:27–30; Reply 19. In such an embodiment, the configuration data that is delivered to the web browser still delivers the service addresses specifying the location accessible via the master server and the applet information corresponding to the service. Ex.

1008, 5:51–57. The only difference is that the displayed “prompt” does not point to a downloaded applet, but, rather, it is a “selectable service prompt” that is downloaded when the Roam Page is generated for a particular user. *Id.* at 8:9–11 (describing how the web browser downloads a predetermined set of applets, including the e-mail applet when downloading information for displaying the Roam Page); *but see id.* at 8:26–31 (describing that instead of downloading the applet, selectable service prompts are downloaded instead, so the web browser downloads an applet only after a user has selected the service, using the downloaded prompt). Thus, we do not see Riggins as describing exclusively a “download-applet-first, display-second” technique. Riggins expressly describes an alternative embodiment that is compatible with the configuration data and Roam Page operation disclosed for all other embodiments.

We also do not agree that in this case Petitioner is “picking and choosing” a particular disclosure at the expense of Riggins’s teachings. Riggins expressly discloses an alternative embodiment of downloading selectable service prompts in lieu of downloading applets at the outset of the web page generation. As stated above, this embodiment is explained in context of the entirety of the disclosure and is not inconsistent with the further teachings of Riggins concerning the web page and configuration data operations. Thus, we are not persuaded by Patent Owner’s arguments in this regard.

ii. *Whether a Web Page is a Description of Services*

Petitioner has pointed to the list of available services displayed in the Roam Page as a description of services. Pet. 61. Patent Owner takes issue with this assertion. Patent Owner characterizes Riggins as “display[ing] the contents of the information configuration file for the user (e.g., ‘email,’ ‘calendar,’ etc.).” PO Resp. 33. But according to Patent Owner, the recited “description of services from a directory of services” includes “details that one of ordinary skill in the art would recognize as being different than the mere webpage reflecting a user configuration file.” *Id.* Relying on the ’158 patent Specification, Patent Owner highlights that the description of services refers to object attributes that are stored and that include the name of the service and the physical location of the service. *Id.* (citing Ex. 1001, 9:12–22, claims 2, 4). Patent Owner, however, does not explain the difference between the listing of available services displayed on the Roam Page and what it regards to be the proper scope of the “description of services from a directory of services.” We have construed the term to mean information that describes a service. The list in the Roam Page is information that describes a service. As stated above, for the e-mail service, the Roam Page displays the name of the service and the selectable service prompt identifies the applet that is needed to control the e-mail service. Thus, the information on the Roam Page, which is derived directly from the configuration data that resides in the master server, constitutes a description of the service that is accessed from a directory of services and includes a reference to program code for controlling the service. Accordingly, we are not persuaded by Patent Owner’s argument that the “list” Petitioner

identifies does not meet the “description of services” merely because the ’158 patent describes object attributes. The argument is not commensurate with the scope of the claim. Nor does the argument cogently explain how a person of ordinary skill in the art would understand that a web page reflecting the configuration file is materially different from the data objects with attributes including the name of the service and the physical location of the service disclosed in the ’158 patent Specification.

2. Downloading and Loading Limitation

Claim 1 recites “downloading the program code to the palm sized computer; the palm sized computer executing at least a portion of the program code.” See Ex. 1001, 12:20–24. Claim 8 recites “loading the program code.” For both of these limitations, Petitioner points out that upon a user selecting a service, the remote client downloads from the master server only the applet corresponding to the selected service. Pet. 63 (citing Ex. 1001, 8:29–30, Fig. 1, Fig. 6, 3:49–58, 6:50–60, 8:4–18; Ex. 1003, 126–130), 77–78. Petitioner also points out that the remote computer executes the downloaded applet via the web browser. *Id.* at 64, 78 (citing Ex. 1008, 3:18–21). We agree with Petitioner that these disclosures of Riggins teach the downloading limitation recited in claim 1 and the loading limitation of claim 8.

3. Sending Control Commands to the Service

Claim 1 recites “sending control commands to the service from the palm sized computer in response to the executing.” Ex. 1001, 12:25–26.

Claim 8 recites, in a similar manner, “issuing control commands to the network device using the program code, the control commands causing the network device to control the program.” *Id.* at 12:61–63. Petitioner points out that Riggins’s remote computer forwards instructions to the service engine. Pet. 65 (citing Ex. 1008, 7:17–23, 7:48–52, 8:4–18). For instance, Petitioner argues, and we agree, that when a user selects the e-mail service, the web browser retrieves the e-mail application program address and sends a request to the service interface, which initiates the e-mail application at the network device, and all instructions are directed to the Input/Output control of the remote computer. *Id.*; *see also* Pet. 79–80. We agree with Petitioner that these disclosures of Riggins teach the sending and issuing control commands limitations of claims 1 and 8.

4. Application That Cannot Be Executed on Palm-Sized Computer

Claim 1 recites “wherein the service controls an application that cannot be executed on the palm sized computer.” Ex. 1001, 12:25–27. Claim 8, in its preamble, similarly recites “the [palm sized] computer is not capable of executing the program by itself.” *Id.* at 12:51–52. Petitioner relies on a combination of teachings from Riggins and Devarakonda as teaching this limitation. For instance, Petitioner argues that Riggins teaches remotely accessing an e-mail application program and that Devarakonda teaches that it was well known to persons of ordinary skill in the art that network computers, such as palm-sized PDAs, did not have adequate physical resources to execute applications intended for full-featured operating environments. Pet. 67 (citing Ex. 1008, 3:15–29, 7:60–65;

Ex. 1009, 1:28–32, 2:11–13, 2:20–22). Furthermore, according to Petitioner, a person of ordinary skill in the art would have been motivated to use Devarakonda's PDA to control Riggins's e-mail application program because the PDA, which has limited physical resources, itself cannot execute the e-mail application. *Id.* at 67–68 (citing Ex. 1003 ¶¶ 100–103, 141–143). In particular, Petitioner argues that it would have been beneficial for a roaming user, who desires portability as provided by a PDA such as a PalmPilot, to use that PDA in accordance with Riggins's goal of supporting remote user access. Pet. 55 (citing Ex. 1008, 1:18–19; Ex. 1003 ¶ 101). Furthermore, Petitioner argues, it was well known to execute resource-intensive applications on a central computer rather than lightweight clients, and, therefore, it would have been advantageous and predictable to utilize a PDA, notwithstanding its limited processing power, to access programs running on a full-featured computer, where the programs otherwise cannot be executed directly by the PDA. *Id.* at 56–57 (citing Ex. 1003 ¶ 103; Ex. 1009, 1:28–32, 2:11–13, 2:20–22; Ex. 1013, 4). We agree with Petitioner's arguments in view of the cited evidence. Riggins in combination with Devarakonda teaches that Riggins's remote computer and remote access of programs, such as e-mail, would have been embodied in a PDA, which would have not been capable of executing such an e-mail application, as it would have been advantageous to provide the portability of a PDA and the added benefit of executing the program on a full-featured computer yet still provide the feature of e-mail on a personal device.

i. PDA Web Browser Issue

Patent Owner challenges Petitioner's reasons to combine by arguing that the PDAs at the time of the invention did not have the capability of running a web browser, and, therefore, that a person of ordinary skill in the art would not have been motivated to use a PDA instead of Riggins's remote computer, which relies on web browser technology to perform the remote access. PO Resp. 37–39. For instance, Patent Owner argues, supported by Mr. Easttom's testimony, that "it was impractical to access web services on a PDA and facilitating this was a topic of research." *Id.* at 38 (citing Ex. 2001 ¶ 76). According to Mr. Easttom, the research into facilitating web services on a PDA "demonstrates the long-felt need for a solution that did not depend on web browsers for PDA[s], which is what the '158 patent provided." Ex. 2001 ¶ 76. Furthermore, Mr. Easttom opines that it would have been "disastrous" to combine Devarakonda with Riggins because although Riggins focuses on web-based technology, Devarakonda, in contrast, makes only a passing remark about a PDA without detail as to how to use the PDA "in conjunction with an applet used with a browser." *Id.* ¶ 77.

In its Reply, Petitioner proffers evidence of commercially available PDAs incorporating web browser technology by 1996. Reply 25 (citing Ex. 1039, 7–9 to 7–12; Ex. 1040; Ex. 1041, 4–9). Petitioner also proffers evidence that prior art literature described PDAs with web browsers. *Id.* at 25 (citing Ex. 1042, 5:23–31, 5:42–45; Ex. 1043, 3:15–27). This evidence shows that web browser technology was neither impractical nor "disastrous"

to use with PDAs. Accordingly, Patent Owner's argument is not persuasive. We do not credit Mr. Easttom's testimony in this regard.

ii. *Riggins Teaches Away*

Patent Owner argues that Riggins teaches away from the asserted combination because Riggins discloses that the remote client includes a Motorola Power PC microprocessor or Intel Pentium microprocessor as the CPU, a keyboard and a mouse as the input device, and a cathode ray tube display. PO Resp. 39–40 (citing Ex. 1008, 4:33–44). According to Patent Owner, a palm-sized computer does not have, “by definition,” any of these components. *Id.* at 40. Patent Owner then concludes that Riggins teaches away from Devarakonda because the intended design of Riggins's remote computer would not be accomplished with a PDA. *Id.* We are not persuaded by Patent Owner's arguments.

First, the '158 patent does not provide any details regarding the processor, input/output device, or storage capabilities that are unique to a PDA or palm-sized computer, such that we can glean from such a description that the computing power limitations of a PDA are dictated by a particular specification. Patent Owner makes much of the '158 patent's description of a palm-sized computer having “limited processing, display and input capabilities,” but the '158 patent does not describe that a PDA cannot include any particular type of CPU, keyboard, pointing device, or display. See Ex. 1001, 1:23–25. Thus, the '158 patent Specification is not instructive on the issue of whether or not a person of ordinary skill in the art

would have had reason to combine Riggins's remote computer teachings with the teaching of using a PDA of Devarakonda.

Second, the fact that Riggins discloses a *personal computer* with a CPU, a keyboard, mouse, etc., does not, by itself, teach away from the use of a PDA to perform the methods disclosed. Patent Owner provides only attorney argument that an intended design of Riggins would somehow be vitiated by the teachings of a PDA in Devarakonda. PO Resp. 40–41. The evidence of record is to the contrary. The Petition explains that Riggins discloses a “network computer”: “although the remote client 150 . . . has been described as a personal computer, the remote client 150 can alternatively be a JavaTM workstation or a network computer.” Ex. 1008, 8:22–25. Petitioner admits that Riggins does not describe the “type” of *network computer* used in its system in further detail, but Petitioner contends it would have been “advantageous and predictable” to use a PDA as described by Devarakonda. Pet. 55 (citing Ex. 1003 ¶ 100). Dr. Houh explains that both Riggins and Devarakonda disclose using a “network computer,” with Devarakonda also explaining that the “network computer” uses a web browser that can either be downloaded or is integrally provided. Ex. 1003 ¶ 2; Ex. 1009, 3:7–10. Therefore, focusing on Riggins's *personal computer* specifications is not sufficient to show that a person of ordinary skill in art would have been discouraged from using a PDA as the alternative “network computer” described in Riggins in view of Devarakonda. *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or

would be led in a direction divergent from the path that was taken by the applicant.”). That is, the fact that Riggins teaches an embodiment of the personal computer does not teach away, *ipso facto*, from the “network computer” embodiment having different specifications.

Accordingly, we are not persuaded by Patent Owner’s argument that Riggins teaches away from the combination Petitioner asserts.

iii. *Factual Inquiry*

Patent Owner also challenges the sufficiency of Petitioner’s proffered reasons to combine Riggins and Devarakonda, arguing that the Petition is conclusory and lacks adequate explanation. PO Resp. 41–44. For instance, Patent Owner argues that the Petition states, in a conclusory manner, that modifications, to the extent needed, would have been within the level of ordinary skill in the art, and that the only support for the assertion is an equally conclusory statement from Dr. Houh. *Id.* at 41–42. Patent Owner also provides another example of an allegedly deficient argument concerning whether a person of ordinary skill in the art would have considered the teachings of Devarakonda regarding registering network services. *Id.* at 43–44. Neither of these arguments is persuasive. Our decision here relies on Petitioner’s combination of teachings of Devarakonda’s use of a PDA with Riggins’s method. The determination does not rely on any modification or implementation of components from one reference to another. Accordingly, even if Petitioner’s statements regarding a purported modification were conclusory, we have not relied on a modification rationale for the combination of teachings.

As to the second alleged deficiency, which concerns dependent claim 2, we disagree that the assertions are conclusory because the Petition cites specific teachings of Devarakonda and relies on other evidence of record that support Petitioner's contentions. *See, e.g.*, Ex. 1003 ¶ 105 (relying on Ex. 1013, 4; Ex. 1010, 12, 15; Ex. 1017, 14:16–21 for the proposition that it was well known to register a service in a centralized directory before clients can locate them); *see also* Pet. 57; Ex. 1003 ¶ 106 (alleging advantages of registering services to facilitate accessibility and citing Exs. 1008, 1010, and 1017 in support). Finally, we remain persuaded that Petitioner proffered sufficient argument and evidence of reasons to combine the two references, such as the advantages of using a PDA for remote e-mail access, supported by the Houh Declaration and the cited evidence of record, as discussed above. Pet. 56–57 (citing Ex. 1003 ¶ 103; Ex. 1009, 1:28–32, 2:11–13, 2:20–22; Ex. 1013, 4).

In conclusion, and after considering all of Patent Owner's arguments and evidence, we are persuaded that Petitioner has shown by a preponderance of the evidence that independent claims 1 and 8 would have been obvious over Riggins and Devarakonda.

5. Dependent Claims

For dependent claims 2, 6, 7, 9, 12, 14, and 15, Petitioner has mapped the limitations further recited therein to Riggins and Devarakonda. Pet. 68–71, 80–81. Patent Owner does not present any arguments challenging the Petition's arguments and evidence for these claims. Having reviewed the information presented in the Petition and supporting evidence,

we determine that Petitioner has demonstrated by a preponderance of the evidence that these dependent claims are also unpatentable over Riggins and Devarakonda. A discussion of each dependent claim follows.

i. Claims 2 and 14

Claim 2 depends from claim 1, and further recites “registering the service in the directory of services by storing the description of the service in the directory of services.” Claim 14 depends from claim 8, and further recites “the network device registering the description of the service with the directory of services.” Petitioner asserts that Riggins discloses that the master server stores a list of services available in the network in the configuration data. Pet. 68–69 (citing Ex. 1008, Fig. 3B, Fig. 5, 5:39–57, 6:24–36). We agree with Petitioner that Riggins teaches this limitation. Figure 3B, reproduced below, depicts the contents of configuration data 137, which is the alleged directory of services that is stored in the master server. Ex. 1008, Fig. 3B.

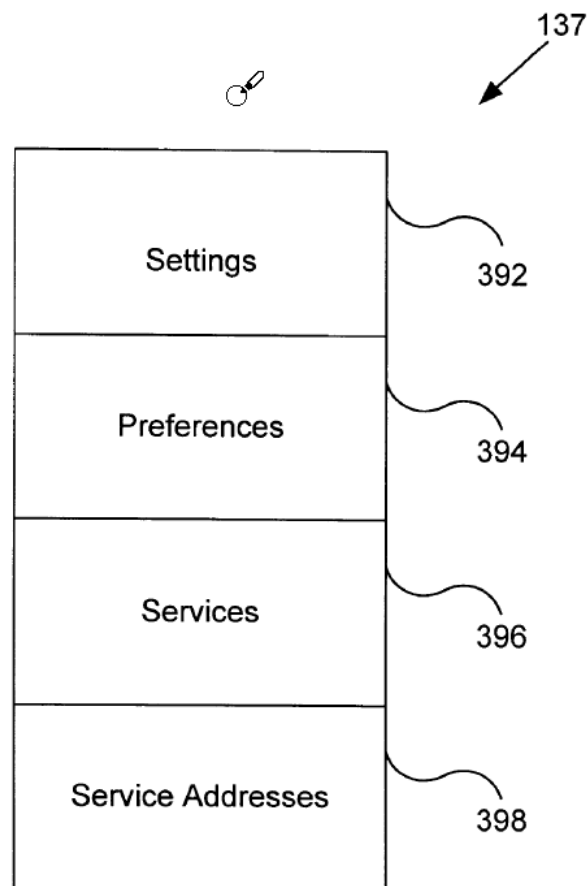


FIG. 3B

Figure 3B is a block diagram illustrating the details of configuration data 137. *Id.* at 5:38–39. As shown in Figure 3B, configuration data includes services 396, which is a list of the registered user’s desired services. *Id.* at 5:52–54. Figure 3B also includes service addresses 398, which specify the location of the services 396 accessible via the master server. *Id.* at 5:55–57. Because Riggins stores the *registered* services and the service addresses in the configuration data, Riggins teaches “registering the service in the directory of services by storing the description of the service in the directory of services.”

Patent Owner argues Petitioner's assertions concerning the combination of Riggins and Devarakonda are conclusory and, therefore, not worthy of consideration. PO Resp. 43–44. As stated above, in section III.E.4.iii, we do not agree with Patent Owner's contention that the Petition lacks factual support in this regard. Nevertheless, we do not rely on the combination of Riggins and Devarakonda in our determination that Petitioner has shown by a preponderance of the evidence that Riggins alone teaches the limitation further recited in claims 2 and 14.

ii. Claim 6

Claim 6 depends from claim 1, and further recites “wherein the program code includes code to implement a graphical user interface on the palm sized computer.” Petitioner asserts that Riggins discloses the limitation because it teaches that the downloaded applet “acts as the Input/Output (I/O) interface to the service[,] display[s] responsive data received from the service engine 490[, and] forward[s] instructions to the service engine.” Pet. 70 (citing Ex. 1008, 7:17–23). Petitioner further argues that applets execute inside of a graphical web browser such as “Netscape,” and that users can upload applet configuration data in order to obtain similar functionality, look, and feel from any web browser. *Id.* at 71 (citing Ex. 1008, 2:64–3:5, 3:37–40, 4:67–5:5). We agree with Petitioner's contention that Riggins discloses the limitation as identified above. We determine that Petitioner has shown by a preponderance of the evidence that Riggins alone teaches the limitation further recited in claim 6.

iii. Claims 7 and 15

Claim 7 depends from claim 1, and further recites “wherein the application includes a desktop program.” Claim 15 depends from claim 8, and further recites “wherein the program includes a desktop program.” Petitioner contends that Riggins teaches the limitation via its disclosure of executing an e-mail application program, a paging application program, or a word-processing application program. Pet. 71 (citing Ex. 1008, 3:24–29, 7:60–64). These applications are loaded on a work computer. *Id.* We agree and determine that Petitioner has shown by a preponderance of the evidence that Riggins alone teaches the limitation further recited in claims 7 and 15.

iv. Claims 9 and 12

Claim 9 depends from claim 8, and further recites “wherein loading the program code includes loading the program code onto the palm sized computer and the issuing the control commands includes the palm sized computer issuing the control commands.” Claim 12 depends from claim 8, and further recites “wherein loading the program code includes loading the program code onto the palm sized computer from the directory of services.”

Petitioner asserts that its contentions regarding claim 8 include the assertion that the loading from the directory of services, executing, and issuing steps were performed by a palm-sized computer. Pet. 80–81. We agree. Consistent with our analysis disclosed *supra* in section III.E.2–4, we determine that Petitioner has further demonstrated by a preponderance of the evidence that Riggins in view of Devarakonda teaches the further recited limitation of claims 9 and 12.

F. Patent Owner's Constitutional Argument

Patent Owner notes that an argument made in an appeal pending at the U.S. Court of Appeals for the Federal Circuit asserts that “the Board’s appointments of administrative patent judges violate the Appointments Clause of Article II” of the U.S. Constitution. PO Resp. 44. “Patent Owner . . . adopts this constitutional challenge . . . to ensure the issue is preserved pending the appeal.” *Id.*

The Board has previously “declin[ed] to consider [the] constitutional challenge as, generally, ‘administrative agencies do not have jurisdiction to decide the constitutionality of congressional enactments.’” *Square, Inc. Unwired Planet LLC*, Case IPR2014-01165, slip op. at 25 (PTAB Oct. 30, 2015) (Paper 32) (quoting *Riggin v. Office of Senate Fair Emp’t Practices*, 61 F.3d 1563, 1569 (Fed. Cir. 1995)). We, likewise, decline to consider Patent Owner’s constitutionality argument.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 6–9, 12, 14, and 15 of the ’158 patent are unpatentable based on obviousness over Riggins and Devarakonda. We determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 6–9, 12, 14, 15, and 20 of the ’158 patent are unpatentable as obvious over Jini-QS, Arnold, and McCandless.

V. ORDER

Accordingly, it is:

ORDERED that claims 1, 2, 6–9, 12, 14, and 15 of the '158 patent have been shown to be unpatentable;

FURTHER ORDERED that claim 20 of the '158 patent has not been shown to be unpatentable.

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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