

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

ORCKIT CORPORATION,
Patent Owner.

IPR2023-00714
Patent 6,680,904 B1

Before KRISTEN L. DROESCH, NATHAN A. ENGELS, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Petitioner, Cisco Systems, Inc., requests that we institute an *inter partes* review challenging the patentability of claims 1–26 (the “challenged claims”) of U.S. Patent 6,680,904 B1 (Ex. 1001, “the ’904 patent”). Paper 2 (“Petition” or “Pet.”). Patent Owner, Orckit Corp., argues that Petitioner’s request is deficient and should not be granted. Paper 7 (“Preliminary Response” or “Prelim. Resp.”).¹

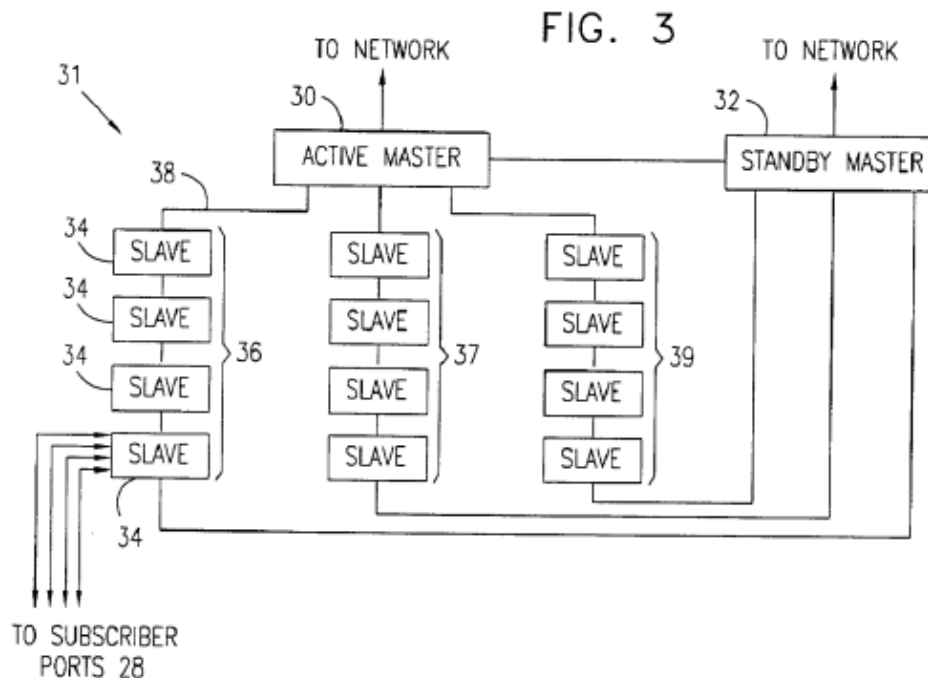
Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute an *inter partes* review.²

B. *The ’904 Patent*

The ’904 patent is titled “Bi-Directional Chaining of Network Access Ports,” and is directed “to high-speed data communication systems, and specifically to digital subscriber line systems.” Ex. 1001, code (54), 1:5–7. Figure 3, reproduced below, illustrates an exemplary multi-shelf access system to provide access to a network. *Id.* at 6:11–16.

¹ Petitioner also filed a Preliminary Reply (Paper 9) and Patent Owner filed a Preliminary Sur-reply (Paper 10). These papers were limited responses that are now moot as Patent Owner has withdrawn its arguments surrounding *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) and our discretion to institute under 35 U.S.C. § 314(a). Ex. 3001. Similarly, Patent Owner’s arguments at pages 19–33 of the Preliminary Response are also now moot.

² Our findings and conclusions at this stage are preliminary, and thus, no final determinations are made.



In the system of Figure 3, two mutually-linked masters 30 and 32 are linked to a plurality of slaves 34 by daisy chains 37, 38, and 39. *Id.* at 6:21–27.

“Each slave comprises multiple subscriber ports 28, which link system 31 to respective subscriber locations.” *Id.* at 6:27–29. The active master 30 is so termed because “in the absence of faults in the system, downstream traffic from the network is routed from master 30 down chains 36, 37 and 39 to the respective slaves 34. Upstream traffic from the slaves is likewise routed up the chains to master 30.” *Id.* at 6:38–43. “In case of a fault in one of chains 36, 37 or 39, . . . the traffic direction in all or a part of the faulty chain is reversed. Packets are then directed between some of the slaves and standby master 32, rather than directly between the slaves and active master 30.” *Id.* at 6:47–51.

C. Illustrative Claim(s)

Of the challenged claims, claims 1, 4, 9, 11, 14, and 19 are independent. Claim 1 is representative:

1. Network access apparatus, comprising:

first and second master units, each comprising a physical interface to a packet-switched network;

a plurality of slave units, each slave unit comprising one or more ports to respective subscriber lines; and

a plurality of physical interface lines, which link the slave units in one or more daisy chains, in which the slave units are mutually connected in series by the physical interface lines therebetween, each daisy chain comprising

at least a first slave unit connected one of the physical interface lines to the first master unit,

a second slave unit connected to the first slave unit but not to the first or second master unit, and

a last slave unit connected by another of the physical interface lines to the second master unit.

Ex. 1001, 11:39–56 (some paragraphing added).

D. Evidence

Petitioner’s grounds of unpatentability rely on the following evidence:

Name	Patent Document	Exhibit
Vink	WO 91/14324 (Sept. 19, 1991)	1005
Patrick	US 5,790,541 (Aug. 4, 1998)	1006

E. Prior Art and Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 15), supported by the declaration of Henry H. Houh, Ph.D. (Ex. 1003):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–26	103	Vink, Patrick
1–26	103	Vink, Patrick, AAPA ³

³ Applicant Admitted Prior Art (“AAPA”), which refers to admissions made by the patent applicant in the ’904 patent.

II. ANALYSIS

A. *Legal Standards*

Petitioner bears the burden to demonstrate unpatentability. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this preliminary stage, we determine whether the information presented in the Petition shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have been obvious over the proposed combinations of prior art. *See* 35 U.S.C. § 314(a).

A claim is unpatentable as obvious if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). We resolve the question of obviousness based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims; (3) the level of skill in the art; and (4) when in evidence, objective indicia of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We apply these principles to the Petition’s challenges.

B. *Level of Ordinary Skill in the Art*

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Id.* at 13, 17. Petitioner asserts that a person of ordinary skill in the art (POSA)

would have had a bachelor’s degree in computer science, computer engineering, electrical engineering, or equivalent

training, or approximately two years of experience working in the field of information technology and networking Lack of professional experience can be substituted by additional education, and vice versa.

Pet. 12 (citing Ex. 1003 ¶¶ 59–60). “Patent Owner does not dispute Petitioner’s definition.” Prelim. Resp. 13.

We are persuaded, on the present record, that Petitioner’s proposal is consistent with the problems and solutions in the ’904 patent and prior art of record. We adopt Petitioner’s definition of the level of skill for the purposes of this Decision.

C. Claim Construction

In *inter partes* review, we construe claims using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2022).

Petitioner provides a construction of “second master unit.” Pet. 13–15. Patent Owner “takes no positions regarding this construction,” and does not offer any other constructions. Prelim. Resp. 12.

We determine that no terms need to be construed at this time. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. 35 U.S.C. § 103 – Vink and Patrick (and AAPA)

Petitioner argues that the combination of Vink and Patrick, or the combination of Vink, Patrick, and AAPA, renders obvious the subject matter

of claims 1–26. Pet. 19–98. Patent Owner argues Petitioner has not demonstrated a reasonable likelihood of success in showing that at least claim 1 is unpatentable. Prelim. Resp 14–19. For the reasons expressed below, we determine that Petitioner has established a reasonable likelihood of succeeding in showing that at least claim 1 is unpatentable.

In the below analysis, we first review the cited prior art of Vink and Patrick, and then address the parties’ arguments with respect to the claims.

1. *Vink*

Vink is titled “Method and Communication System for the Bit-Serial Exchange of Data,” and is directed to “serially exchanging data bits with one or more input (I) and/or output (O) modules (10), under the control of at least one master station (1).” Ex. 1005, code (54), Abstr. Vink illustrates the architecture of a communication system in Figure 2, reproduced below.

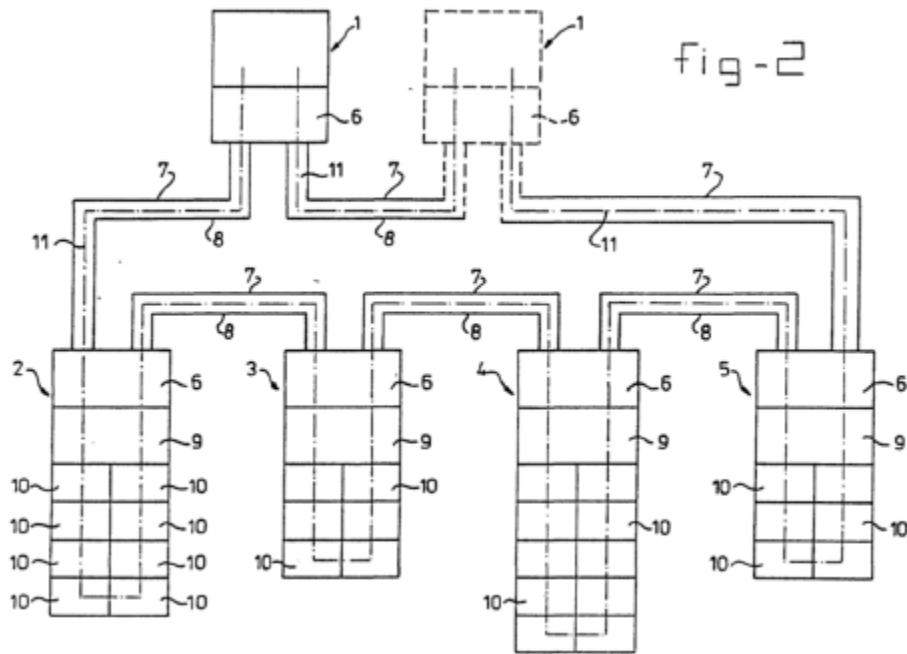


Figure 2 shows a system having an active master station (1), in solid lines, and a passive master station (1), in dotted lines, both connected to substations (slaves) (2, 3, 4, 5) via transmission rings (7, 8). *Id.* at 15:28–34,

16:19–21. “The master station and the substations of said communication system each form a node between which information is bit-serial exchanged.” *Id.* at 11:9–11. “Each slave 2, 3, 4, 5 comprises a control module 9 which is connected to the associated transmitting/receiving unit 6 and to which one or more input (I) and/or output (O) module(s) [10] are connected.” *Id.* at 15:36–16:1.

In Figure 2, “[a] dash-dot line 11 diagrammatically shows the data flow in the communication system. The data bits are serially transferred both in the transmission system 7, 8 and to the level of the I/O modules 10.” *Id.* at 16:7–10. All masters “can assume the function of the active master, for example in the event of faults.” *Id.* at 16:24–26. This is because the passive masters “receive all the information which is intended for the active master” “as consequence of their cascade arrangement and the serial transfer of data bits in the communication system.” *Id.* at 16:26–31.

2. *Patrick*

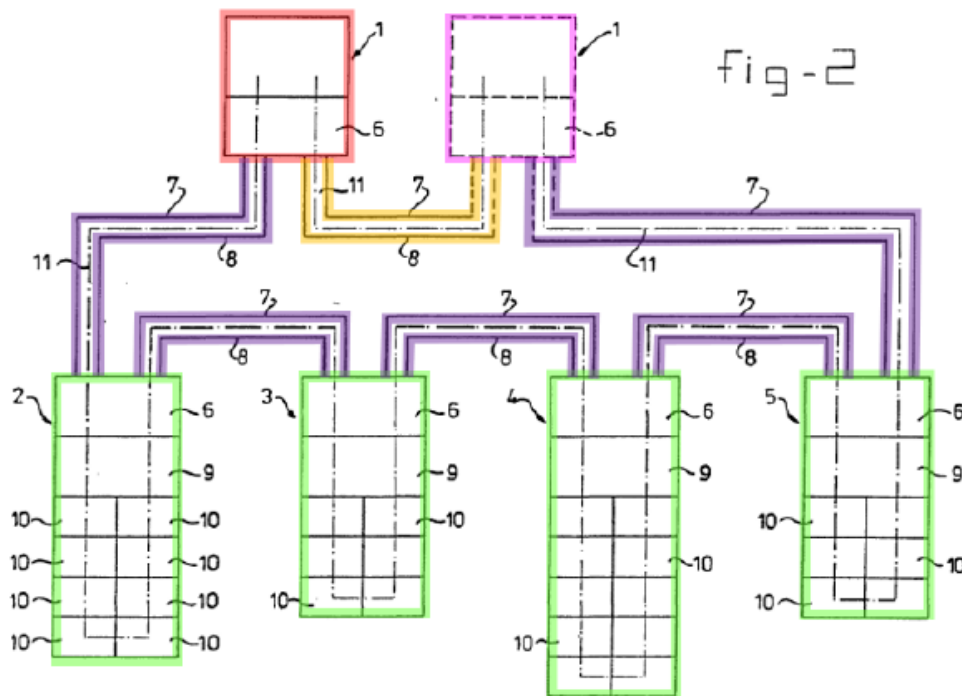
Patrick is titled “Apparatus, Method, System and System Method for Distributed Routing in a Multipoint Communication System” and describes a method and system “for distributed internetwork routing of information in a communication system.” Ex. 1006, code [54], Abstr. The system may comprise a primary station (101) connected to a network (105) and a plurality of secondary stations (110). *Id.* at 3:11–15, Fig. 1.

3. *Claim 1*

Petitioner argues that independent claim 1 is taught by the combination of Vink and Patrick or the combination of Vink, Patrick, and AAPA. Pet. 19–38. Petitioner relies on Vink for teaching most of the features of claim 1. *Id.* Petitioner relies on Patrick and AAPA for teaching, *inter alia*, that master stations were known to connect to networks, and also

to supplement its arguments concerning what the system is connected to and how it connects. *Id.* at 20–24, 26–27 (discussing networks), 33–36 (discussing ports to receive subscriber lines).

Vink Figure 2, as marked-up by Petitioner (*id.* at 20; *see also id.* at 25, 31, 37, 38), shows Petitioner’s positions as to how it argues Vink teaches most of the features of claim 1 (*id.* at 19–20, 24–26, 28–33–33, 36–38).



Vink Figure 2 shows the architecture of a communication system, and Petitioner has added highlighting to identify the features that it argues correspond with features of the claims. *Id.* In particular, Petitioner has added 1) red to identify the first master unit; 2) pink to identify the second master unit, 3) green to identify a plurality of slave units, including the first, second, and last slave units, and 4) purple to identify the plurality of physical interface lines which link the slave units in series in a daisy chain. *Id.* As can also be seen in Figure 2, Vink shows its first slave unit (2) connected via physical interface lines to the first master unit (in red), the second slave unit

(3) connected via physical interface lines to the first slave unit, but not to either master, and a last slave unit (5) connected via physical interface lines to the second master. *Id.* at 36–37.

We review Patent Owner’s arguments to the contrary below.

a) Slave Units Linked in Series in One or More Daisy Chains

Patent Owner argues that though the claims require the slave units be connected in series, “Vink, in contrast, shows slave units connected in parallel with two separate transmission lines.” Prelim. Resp. 16.

Though Vink Figure 2 does include two transmission lines (7, 8 in purple), Petitioner identifies that Vink expressly teaches that “[t]he data bits are serially transferred both in the transmission system 7,8 and to the level of the I/O modules 10.” Pet. 37 (quoting Ex. 1003, 16:8–10). The line preceding this in Vink also states that “dash-dot line 11 [in Figure 2] diagrammatically shows the data flow in the communication system.” As can be seen in Figure 2, dash-dot line 11 proceeds serially down and then up through each slave unit and then through the transmission lines. Thus, Vink expressly teaches that the slave units are connected in series.

Patent Owner then argues that

Petitioner has not shown that a fault in Vink’s transmission rings would cause the Vink system to operate in the manner described by column 3 lines 6-33 of the ’904 Patent where “data flow in a portion of the daisy chain between the location of the fault and the second master unit is reversed.” Nowhere does Vink describe its transmission rings as having a functionality of reversing data flow between a fault and the second master unit.

Prelim. Resp. 16–17.

As noted, Patent Owner focuses on language in the Specification. This language is not present in claim 1. Patent Owner provides no reason why this language should be read into the claim, and we see no reason to limit

claim 1 in this way.⁴ *See Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (“[I]t is long-settled that even though ‘claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim.’” (quoting *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1237 (Fed. Cir. 2001))).

As discussed above with reference to Vink Figure 2, the Petition sufficiently identifies how Vink teaches “slave units [linked] in one or more daisy chains, in which the slave units are mutually connected in series by the physical interface lines therebetween.”

b) Packet-Switched Network

Claim 1 also requires “first and second master units, each comprising a physical interface to a packet-switched network.” As noted above, Petitioner relies on Patrick and AAPA for teaching, *inter alia*, that master stations were known to connect to networks. Pet. 20–24, 26–27. As noted by Petitioner, the ’904 patent admits (AAPA) that it was known to connect each of the two masters in a system to a network. *Id.* at 21–22 (citing Ex. 1001, Fig. 2B). Patent Owner does not contest this.

Petitioner further provides a number of reasons why it would have been obvious to combine Vink with Patrick, or with Patrick and AAPA, so

⁴ Some of the other claims, apart from claim 1, include limitations that are similar to this language. However, as we find that Petitioner provides a reasonable basis to determine that claim 1 is unpatentable, it is unnecessary for us to address the other claims. In addition, as the argument (*see* Prelim. Resp. 14–17 (includes no citations to or discussion of the Petition)) is essentially an assertion without addressing the arguments presented in the Petition (*see, e.g.*, Pet. 38–44, 48–55, 71–76), we decline to speculate as to how Patent Owner believes the Petition is deficient in this regard.

that its masters are connected to a network. *Id.* at 22–24. For example, Petitioner discusses the benefit of connecting Vink’s system to the internet (as taught by Patrick (*see* Ex. 1006, 1:19–28, 3:20–24)), for example, thereby “gaining access to a wider array of information that is available on the external network.” Pet. 23–24. As claim 3 further defines the network as “an Internet protocol (IP) network” (Ex. 1001, 11:59–60), this type of connection to the internet would appear to read on a “packet-switched network” as required in claim 1.

Patent Owner does not directly contest Petitioner’s arguments. Rather, Patent Owner identifies that Vink discusses working internally in a “synchronised manner” (Prelim. Resp. 17 (quoting Ex. 1005, Abstr.) (emphasis omitted)), and thus argues that Vink “is directed to a synchronous network” (*id.*). Patent Owner argues that the Petition is deficient because it “does not explain how a synchronous network such as Vink’s would be compatible with a packet-switched network.” *Id.* at 18–19.

Petitioner provides evidence that it was within the skill of one of skill in the art to connect Vink’s system to an external network, such as the internet. *See, e.g.*, Ex. 1003 ¶¶ 80–82. Patent Owner’s attorney argument that a detailed explanation is missing does not outweigh Petitioner’s evidence to the contrary that such modifications were within the skill of one skilled in the art. *See In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (“Attorney’s argument in a brief cannot take the place of evidence.”).

Though Vink does discuss working internally in a “synchronised manner,” Patent Owner does not identify Vink as defining itself as a synchronous network. At the same time, Petitioner identifies that Vink teaches that its communication system can be a Local Area Network (LANs). Pet. 19 (citing Ex. 1005, 1:6–15). At this stage of the proceeding,

we see no reason to require additional explanation for how a LAN could connect to the internet (as one example of a packet-switched network).

Further, it is unclear why a system that works internally in a certain way, i.e., in a “synchronised manner,” could not also communicate with other systems or networks, such as the internet. The claim merely requires the “master units, each comprising a physical interface to a packet-switched network.” The claim does not require that the master units communicate in a particular manner to a network that is outside of the master and slave system.

We have reviewed the Petition, supporting evidence, and Preliminary Response and determine that the Petition demonstrates a reasonable likelihood that Petitioner would prevail in showing claim 1 unpatentable over the combination of Vink and Patrick, or the combination of Vink, Patrick, and AAPA.

4. *Claims 2–26*

The Petition provides argument and supporting evidence to support its position that these claims are also unpatentable over Vink and Patrick, or Vink, Patrick, and AAPA. Pet. 19–95. Patent Owner does not provide any additional arguments other than those discussed above. *See generally* Prelim. Resp.

Having determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at least claim 1, it is unnecessary to address these additional claims at this stage.

III. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at

least one claim challenged in the Petition. We, therefore, institute trial as to all challenged claims on all grounds stated in the Petition.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, *inter partes* review of claims 1–26 of U.S. Patent 6,680,904 B1 is instituted; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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