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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ALBERT ROOYAKKERS, JAMES G. CALVIN,  
CRAIG MARKOVIC, KEN DOUCETTE, and BRIAN ANDERSON

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Appeal 2017-010437  
Application 14/446,412<sup>1</sup>  
Technology Center 2800

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Before MARK NAGUMO, KAREN M. HASTINGS, and  
SHELDON M. McGEE, *Administrative Patent Judges*.

Opinion of the Board filed by *Administrative Patent Judge* McGEE

Opinion dissenting filed by *Administrative Patent Judge* HASTINGS

McGEE, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134, Appellant seeks our review of the  
Examiner's final rejection claims 1–6, 8–17, and 19–22.

We have jurisdiction. 35 U.S.C. § 6.

We reverse.

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<sup>1</sup> Appellant is the Applicant, Bedrock Automation Platforms Inc., and is  
stated to be the real party in interest. App. Br. 4.

## BACKGROUND

The claimed subject matter relates to a cable containing circuitry that is configured to authenticate a device to which it is connected (independent claims 1 and 8), as well as control systems employing such a cable (independent claims 15 and 19).

The Specification discloses that authentication may involve the cable performing a “handshake” operation between the cable and the “coupled module to verify that the cable is mated with an appropriate and/or desired device.” Spec. ¶¶ 24, 29. Such authentication of a device connected to the cable is said to prevent or minimize “the use of counterfeit equipment in an industrial automation setting.” *Id.* at ¶ 25. More particularly, “[b]ased on the results of the authentication process, the element being authenticated can be activated, partial functionality of the element can be enabled or disabled within the process control system 200,” or complete functionality of the element can be either enabled or disabled. *Id.* at ¶ 53. “For example, limitations can be placed upon communication (e.g., data transfer) between that element and other elements of the process control system 200, such that the element [cannot] work/function within the process control system 200.” *Id.* at ¶ 55. As a result, counterfeit or otherwise unapproved / unsecure devices can be prevented from being substituted into a control system, which may, in turn, prevent introduction of malicious software. *Id.* at ¶¶ 55–56.

Independent claim 8 is illustrative, is copied from the Claims Appendix of the Appeal Brief, and appears below (with the key limitation italicized):

8. A cable comprising:  
a wiring assembly comprising a plurality of wires bundled together by a sleeve;

a connector assembly comprising a connector for connecting to a device, the connector assembly having a plurality of connections for respective ones of the plurality of wires, the connector assembly capturing an end of the wiring assembly; and

*a controller configured to authenticate the device connected to the cable by the connector.*

App. Br. 43.

#### REFERENCES

The Examiner relies on the following references as evidence of unpatentability:

Ohnuma et al. (“Ohnuma”)	US 4,079,440	Mar. 14, 1978
Minoo et al. (“Minoo”)	US 2009/0061678 A1	Mar. 5, 2009
Mori	US 7,510,420 B2	Mar. 31, 2009
Ku et al. (“Ku”)	US 2012/0282805 A1	Nov. 8, 2012

#### REJECTIONS ON APPEAL

- I. Claims 8–11 under 35 U.S.C. §102(a)(1) as anticipated by Minoo.
- II. Claims 1–6 under 35 U.S.C. §103 as unpatentable over Ku in view of Minoo.
- III. Claims 12 and 13 under 35 U.S.C. §103 as unpatentable over Minoo in view of Mori.
- IV. Claim 14 under 35 U.S.C. §103 as unpatentable over Minoo in view of Ku.
- V. Claims 15–17 and 19–22 under 35 U.S.C. §103 as unpatentable over Ohnuma in view of Ku and Minoo.

OPINION

Beginning with claim construction, we find each appealed apparatus claim 1, 8, and 15 requires “a controller configured to authenticate [a] device connected to the cable by the connector.” A similar limitation appears in independent claim 19 which indicates that the second cable has a controller configured to authenticate a “first control element or subsystem.”

Thus, we must first determine the scope of the phrase “configured to” — namely, whether “a controller configured to authenticate the device” or “first control element or subsystem” means that the controller is merely “capable of” or “suitable for” authenticating the device, or whether the “configured to” phrase has a narrower meaning. *See In re Giannelli*, 739 F.3d 1375, 1379 (Fed. Cir. 2014) (explaining that while phrases such as “configured to” and “adapted to” may mean “capable of” or “suitable for,” the written description can make clear that the phrase “configured to” has a narrower meaning).

Based on our review of the Specification, we determine that the written description makes clear that the phrase “configured to” indeed has a narrower meaning than merely “capable of” or “suitable for.”<sup>2</sup> Here, the Specification instructs that the circuitry contained within the cable is “configured to” perform an authentication process by including the necessary hardware, software and/or firmware to carry out the desired function —e.g., authentication of a device connected to the cable.

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<sup>2</sup> Based on our claim construction, it follows that the Examiner’s determination (Ans. 4–5) that the claimed controller need only be “*arranged/designed* such that authentication *can be* done in a device” is unreasonably broad.

Spec. ¶¶ 28, 42–45. “In the case of a software implementation,” “program code that performs specified tasks when executed on a processor” is “stored in one or more computer-readable memory devices.” *Id.* at ¶ 43. “The processor [] provides processing functionality for the controller,” and “can execute one or more software programs that implement techniques” such as the described authentication process. *Id.* at ¶ 44. Based on this disclosure, it is clear that, in order for the controller to be “configured to authenticate the device connected to the cable,” the controller must have the software, firmware and/or hardware necessary to carry out the authentication process for the device. Therefore, we construe the “controller” limitation recited in each independent claim as having the necessary programming and/or hardware arranged or set up to carry out the recited authentication process for the device (claims 1, 8, 15) or control element/subsystem (claim 19).

Relevant to the appeal of Rejection I, the Examiner finds that Minoo anticipates claim 8, and various claims dependent therefrom, because Minoo discloses a cable having, *inter alia*, a “controller configured to authenticate a device connected to the cable.” Final Act. 2, 14. For support, the Examiner points to Figures 2, 3, and 4 of Minoo, and accompanying description for these figures in paragraphs 21, 22, and 28. *Id.*

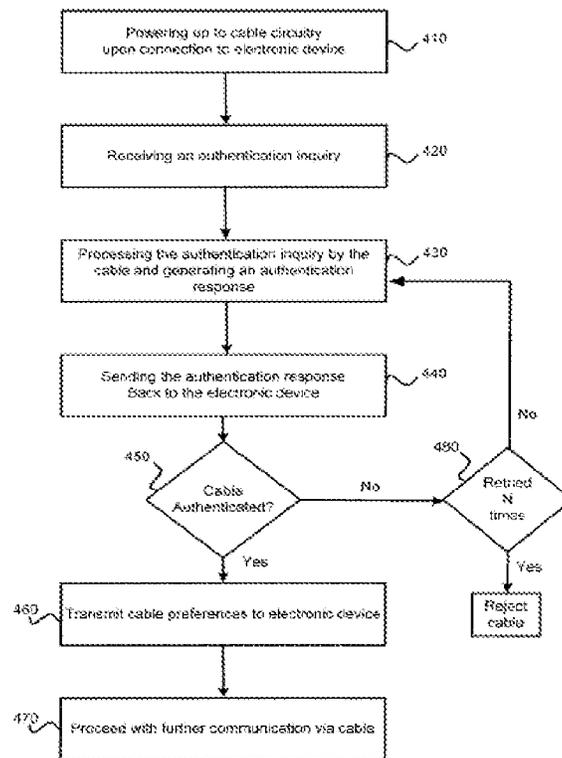
Appellant challenges the Examiner’s finding that Minoo teaches a controller that is configured to authenticate a device. App. Br. 21, 25–27. Specifically, Appellant contends that “Minoo describes cable authentication” and “nowhere discloses, teaches, or otherwise suggests that a media device can be authenticated to a cable.” *Id.* at 26.

Thus, the dispositive issue is whether the Examiner has established, by a preponderance of the evidence, that Minoo’s authentication is for the

*cable* as contended by Appellant, or for the *device* to which the cable is attached as found by the Examiner.

We find Minoo discloses a cable 100 with a connector 110. Minoo, ¶¶ 17, 21, 22, Figs. 1, 2. Connector 100 contains micro-controller 210 and authentication coprocessor 220. *Id.*, ¶ 21, 22, Fig. 2. “[W]hen connector 110 is connected to a media device, the media device may send an authentication inquiry to the cable.” *Id.* ¶ 22. The micro-controller 210 receives the inquiry and communicates it to the authentication coprocessor 220, where the authentication coprocessor processes the request “using an authentication algorithm.” *Id.* Afterward, Minoo’s authentication result is communicated from coprocessor 220 to micro-controller 210 and then back to the media device that sent the authentication inquiry. *Id.*

Similarly, Minoo also discloses an authentication method set forth in Figure 4. Minoo’s Figure 4 is illustrated below:



Minoo's Figure 4 depicts a method for authenticating a cable. Minoo ¶ 28. According to Figure 4 and the description thereof, a cable is connected to an electronic device and powered up (process 410) and the cable circuitry receives an authentication request from the device (process 420). *Id.* The cable then processes the request and generates an authentication response (process 430) which is then sent back to the device that requested the authentication (process 440). *Id.* If the cable is authenticated (process 450), the cable may then be used to transmit information therethrough (processes 460, 470), but if not, the cable will be rejected and "the cable may be assumed to be unauthorized and no further communication via that cable may be allowed" (process 480). *Id.*

Thus, in the portions of Minoo relied on by the Examiner, Minoo discloses a combination of hardware (connector 110, micro-controller 210, authentication coprocessor 220) and software (authentication algorithm) to perform an authentication. Consistent with our claim construction, *supra*, to establish a prima facie case of anticipation of claim 8, Minoo's controller 210, in the cable, must have the requisite programming to authenticate the device connected to the cable. *See Typhoon Touch Techs, Inc. v. Dell, Inc.*, 659 F.3d 1376, 1380–81 (Fed. Cir. 2011). In *Typhoon Touch*, the Federal Circuit upheld the district court's holding that a claim reciting "a memory for storing at least one data application configured to determine contents and formats of said inquiries displayed on said screen" required the memory to *perform* the recited function, rather than the memory simply having a *capability* of carrying out such function should further modification or programming be made. *Id.* Also, the predecessor to our reviewing court has held that a "programmed machine is structurally different from a machine without that program." *In re Noll*, 545 F.2d 141,

148 (CCPA 1976); *see also In re Bernhart*, 417 F.2d 1395, 1399–1400 (CCPA 1969) (“[I]f a machine is programmed in a certain new and unobvious way, it is physically different from the machine without that program; its memory elements are differently arranged. The fact that these physical changes are invisible to the eye should not tempt us to conclude that the machine has not been changed.”).

The Minoo disclosure identified by the Examiner is insufficient to establish that Minoo’s cable and authentication process, using a cable authentication algorithm, evinces the “controller configured to authenticate the device connected to the cable” as recited in claim 8. In reaching this determination, we note in particular process steps 450 and 480 where the cable itself is either authenticated or rejected. Minoo, Fig. 4, ¶ 28. The Examiner has not directed our attention to credible evidence of record that establishes that Minoo’s cable authentication algorithm is able to also perform authentication of a device.

We are not persuaded to reach a different conclusion based on the Examiner’s reliance on Minoo’s “incorporation by reference” of U.S. Patent Application 11/051,499 (US 2006/0156415 A1, published July 13, 2006). Minoo ¶ 22; Final Act. 14; Ans. 3, 5. Specifically, we disagree with the Examiner that this reference’s “authentication process is incorporated by reference in its entirety.” Final Act. 14; Ans. 3, 5. Rather, Minoo makes clear that it is the ’499 application as a whole that is “hereby incorporated,” not any specific authentication process disclosed therein. Such generic incorporation by reference of the ’499 application fails to satisfy our reviewing court’s requirement for “detailed particularity” for the Examiner to rely on a specific authentication algorithm that may be disclosed therein. *See Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282–

83 (Fed. Cir. 2000) (explaining how “[i]ncorporation by reference provides a method for integrating material from various documents into a host document—a patent or printed publication in an anticipation determination—by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein. To incorporate material by reference, *the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.*” (emphasis added, citations omitted)). *See also In re Seversky*, 474 F.2d 671, 674 (CCPA 1973) (providing that incorporation by reference requires a statement “clearly identifying the subject matter which is incorporated and where it is to be found”). Moreover, even if Minoo’s incorporation by reference was deemed specific enough to identify an authentication process, Minoo merely states that “authentication techniques *similar to those described*” in the ’499 application can be implemented. Minoo ¶ 22 (emphasis added). It is unclear how such “similar” (i.e., not identical) techniques anticipate the programming required to authenticate a device as claimed.

For these reasons, we do not sustain the Examiner’s anticipation rejection of claims 8–11 (Rejection I). Moreover, because each of the obviousness rejections before us (Rejections II–V) improperly rely on Minoo to satisfy the recited limitations requiring authentication of a device (claims 1 and 15; Final Act. 5, 11) or a control element/subsystem (claim 19; Final Act. 12), we also do not sustain these rejections.

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CONCLUSION

The decision of the Examiner is reversed.

REVERSED

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Appeal 2017-010437  
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Before MARK NAGUMO, KAREN M. HASTINGS, and  
SHELDON M. McGEE, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*, dissenting.

I respectfully dissent. Specifically, I disagree with my colleagues' reasoning that the Examiner's reliance on paragraph 22 of Minoo, including Minoo's "incorporated by reference in its entirety" of U.S. Patent Application 11/051,499 (US 2006/0156415 A1, published July 13, 2006; now U.S. Patent 7,823,214) (Minoo ¶ 22; Final Act. 14; Ans. 3, 5) is insufficient to establish anticipation of the claimed invention. I believe that the Appellant has not shown error in the Examiner's determination that this reference's "authentication process is incorporated by reference in its entirety." A preponderance of the evidence supports the Examiner's de facto position that one of ordinary skill in the art, upon reading paragraph 22 of Minoo and looking at the disclosure of U.S. Patent Application

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11/051,499, which is explicitly directed to authenticating a device, would have immediately inferred/envisaged that the controller of Minoos may be configured to authenticate the device connected to the cable as recited in claims 1, 8, and 15 (as well as the corresponding language of claim 19) (see, e.g., abstract of 11/051,499 (the herein described “improved techniques can use cryptographic approaches to authenticate electronic devices”)). *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (In determining whether a reference anticipates the subject matter recited in a claim, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”). *Cf. In re Schaumann*, 572 F.2d 312, 317 (CCPA 1978) (In order to anticipate, a reference must identify something falling within the claimed subject matter with sufficient specificity to constitute a description thereof within the purview of § 102.).

Thus, I believe that Appellant has not shown error in the Examiner’s rejections of the claims on appeal.