

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS, LLC,
Petitioner,

v.

MICROPAIRING TECHNOLOGIES, LLC,
Patent Owner.

IPR2022-00317
Patent 7,178,049 B2

Before MIRIAM L. QUINN, JOHN R. KENNY, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

KENNY, *Administrative Patent Judge*.

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

I. INTRODUCTION

Unified Patents LLC (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 29–31 (the “challenged claims”) of U.S. Patent No. 7,178,049 B2 (Ex. 1001, the “’049 patent,” “challenged patent”) pursuant to 35 U.S.C. § 311 *et seq.* Paper 2 (“Pet.”). MicroPairing Technologies LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

The standard for institution is set forth in 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). Upon consideration of the parties’ contentions and the evidence of record, we conclude that Petitioner has not established a reasonable likelihood of demonstrating the unpatentability of at least one challenged claim of the ’049 patent. Accordingly, we *deny* Petitioner’s request and do not institute an *inter partes* review.

A. Related Matters

The parties identify the following district court litigations as involving the ’049 patent:

MicroPairing Technologies LLC v. FCA US LLC, Case 2:21-cv-12015 (E.D. Mich.);

MicroPairing Technologies LLC v. Mitsubishi Motors North America, Inc., Case 3:21-cv-00631 (M.D. Tenn.);

MicroPairing Technologies LLC v. Nissan North America, Inc., Case 3:21-cv-00633 (M.D. Tenn.);

MicroPairing Technologies LLC v. General Motors LLC, Case 6:21-cv-00761 (W.D. Tex.);

MicroPairing Technologies LLC v. Toyota Motor Manufacturing Texas, Inc., Case 6:21-cv-00762 (W.D. Tex.);

MicroPairing Technologies LLC v. American Honda Motor Co., Inc., Case 2:21-cv-04034 (C.D. Cal.);

MicroPairing Technologies LLC v. Hyundai Motor America, Case 8:21-cv-00881 (C.D. Cal.);

MicroPairing Technologies LLC v. Kia America, Inc., Case 8:21-cv-00882 (C.D. Cal.);

MicroPairing Technologies LLC v. Mazda Motor of America, Inc., Case 8:21-cv-00885 (C.D. Cal.); and

MicroPairing Technologies LLC v. Volvo Car USA, LLC, Case 6:21-cv-01108 (W.D. Tex.).

Pet. 1–2; Paper 5, 2–3.

B. Challenged Patent

The '049 patent is titled “Method for Multi-Tasking Multiple JAVA Virtual Machines in a Secure Environment.” Ex. 1001, code (54). The patent is directed to the “construction of a secure, real-time operating system from a portable language such as Java that appears to be a Java virtual machine from a top perspective but provides a secure operating system from a bottom perspective.” *Id.* at 1:58–63. According to the '049 patent, “[t]his allows portable languages, such as Java, to be used for secure embedded multiprocessor environments.” *Id.* at 1:63–65.

The '049 patent discloses system 15, which is shown in Figure 2 and reproduced below:

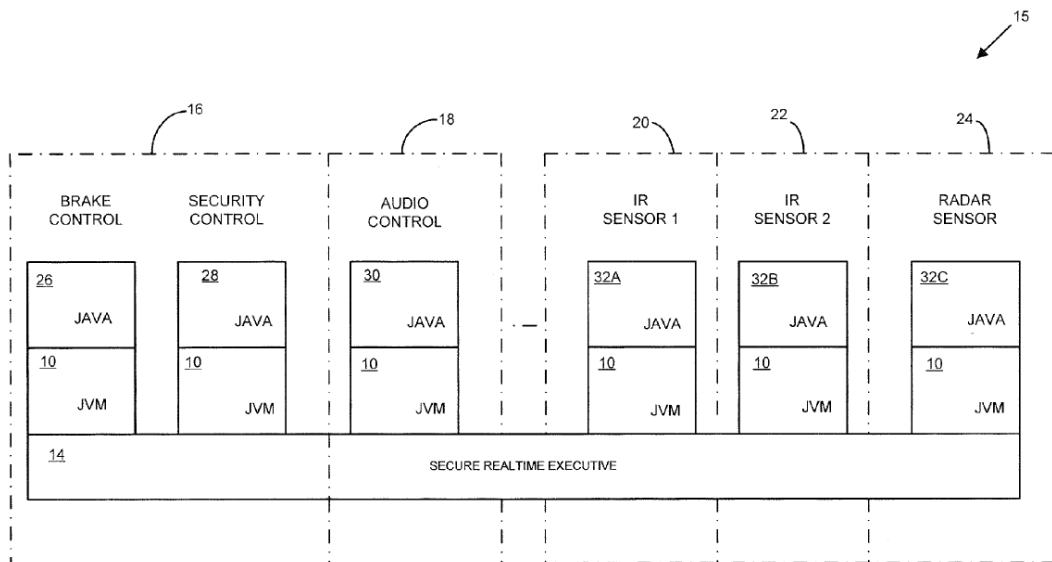


FIG 2

Ex. 1001, Fig. 2. Figure 2 above “is a diagram of a multiprocessor system that runs multiple Java Virtual Machines that each include a SRE [Secure Real-time Executive].” Ex. 1001, 2:10–11. As shown in Figure 2 above, system 15 “includes multiple processors 16, 18, 20, 22 and 24.” *Id.* at 2:45–46. “Each processor includes one or more JVM [Java Virtual Machine]s 10 that run different Java applications.” *Id.* at 2:46–47. “For example, processor 16 includes one Java application 28 that controls a vehicle security system and another Java application 26 that controls the vehicle[']s antilock brakes.” *Id.* at 2:47–50. “A processor 18 includes a Java application 30 that controls audio sources in the vehicle.” *Id.* at 2:50–52. “Other processors 20 and 22 may run different threads 32A and 32B for the same sensor fusion Java application 32 that monitors different IR sensors.” *Id.* at 2:52–54.

“A Secure Real-time Executive (SRE) 14 provides an extension to the JVM 16 and allows Java to run on different processors for real-time

applications.” Ex. 1001, 2:35–37. “The SRE 14 runs below the JVMs 10 in each processor and control tasks, messaging, security, etc.” *Id.* at 2:57–58.

“For example, the Java application 26 controls vehicle braking according to the sensor data collected by the sensor fusion Java application 32.”

Id. at 2:58–61. “The SRE 14 in one example prevents unauthorized data from being loaded into the processor 16 that runs brake control application 26.” *Id.* at 2:61–63. “The SRE 14 also prevents other Java applications that are allowed to be loaded into processor 16 from disrupting critical braking operations, or taking priority over the braking operations, performed by Java application 26.” *Id.* at 2:63–66.

C. Challenged Claims

Petitioner challenges claims 29–31. Pet. 4. Claim 29 is independent. Ex. 1001, 9:31–53. Claim 30 depends from claim 29, and claim 31 depends from claim 30. *Id.* at 9:54–64.

Claim 29 reads:

29. A method for configuring real-time vehicle applications in a distributed multi-processor system operating in a vehicle, comprising:

identifying vehicle applications running on different processors in the multiprocessor system;

operating a task manager that obtains different data and state information associated with the different vehicle applications;

operating a configuration manager that notifies the task manager upon detecting a failure running one of the identified vehicle applications in the multiprocessor system;

using the task manager for automatically identifying another processor in the multiprocessor system for running the identified vehicle application and redirecting the vehicle

application associated with the detected failure to the other identified processor in the vehicle;

using the configuration manager to redirect the data and state information to the other identified processor in the vehicle after detecting the failure; and

initiating the identified application in the identified other processor.

Ex. 1001, 9:31–53.

D. Asserted Challenge to Patentability and Prior Art

Petitioner challenges claims 29–31 based on the ground in the table below.

Claim(s) Challenged	35 U.S.C. §	References
29–31	103	Kizuka ¹ , Watabe ²

Pet. 4–5.

Petitioner relies on a declaration from its proffered expert, Christopher K. Wilson (Ex. 1003).

II. LEVEL OF SKILL AND CLAIM CONSTRUCTION

A. Ordinary Level of Skill in the Art

Petitioner argues that an ordinarily skilled artisan:

at the priority date (April 24, 2002) for the '049 Patent [] would have had a bachelor's degree in electrical or computer engineering, or a closely related scientific field such as computer science, and two years of work experience with automotive computing systems or related fields (e.g., applications for control devices).

¹ US 5,796,937, filed Sept. 29, 1995, iss. Aug. 18, 1998 (Ex. 1004).

² US 5,796,936, filed Feb. 14, 1997, iss. Aug. 18, 1998 (Ex. 1005).

Pet. 8. Petitioner further argues that “[a] lack of experience can be remedied with additional education (e.g., a Master’s degree), and likewise, a lack of education can be remedied with additional work experience (e.g., 4–5 years).” *Id.* (citing EX1003 ¶¶ 40–43). For the Preliminary Response, Patent Owner does not contest Petitioner’s proposed definition for an ordinarily skilled artisan. Prelim. Resp. 7.

After reviewing the record, we find Petitioner’s proposed definition to be reasonable and adopt it for purposes of this Decision.

B. Claim Construction

Petitioner proposes that we construe the following recitations in claim 29: “configuring,” and “using the task manager for automatically identifying another processor in the multiprocessor system for running the identified vehicle application.” Pet. 11–15. In the Preliminary Response, Patent Owner does not dispute Petitioner’s proposed constructing of “configuring.” Prelim. Resp. 7. Patent Owner argues, however, that the phrase “using the task manager . . . application” does not require construction. *Id.* We determine that, for purposes of this Decision, no claim term requires express construction. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

III. ANALYSIS OF ASSERTED GROUND

Petitioner asserts that claims 29–31 would have been obvious over the combination of Kizuka and Watabe. Pet. 4.

A. Kizuka

Kizuka discloses a “multiprocessor system” with “processors for processing distributed works.” Ex. 1004, code (57). The term “works” in

Kizuka includes “operating system[s] (OS), applications, and communication control.” *Id.* at 1:26–30. Kizuka discloses that its system includes a “monitoring facility for detecting an abnormality in any one of the processors,” an “administration facility for providing information about the abnormal processor and information about a redundant processor,” and a “work allocation facility for seeking the distributed works of the abnormal processor from a work table according to these pieces of information and allocating the sought works to given ones of the processors.”

Id. at code (57). An object of Kizuka’s invention is “to deal with a processor abnormality in various ways” and to “effectively use a redundant processor.”

Id. at 1:56–59. One example of Kizuka’s system is depicted in Figures 1A–1B, which are reproduced below:

Fig.1A

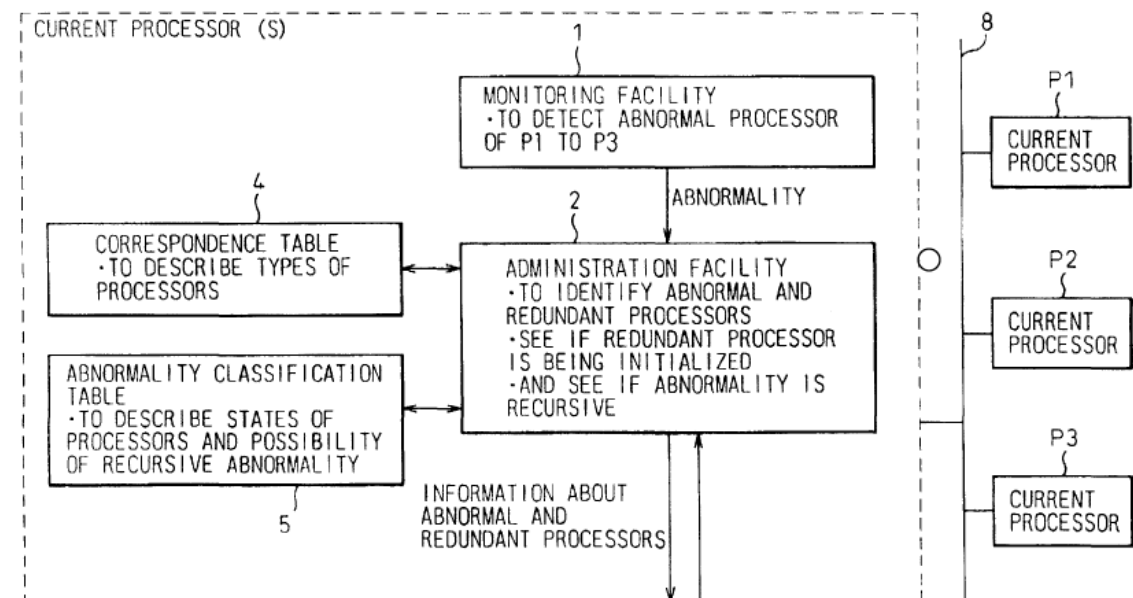
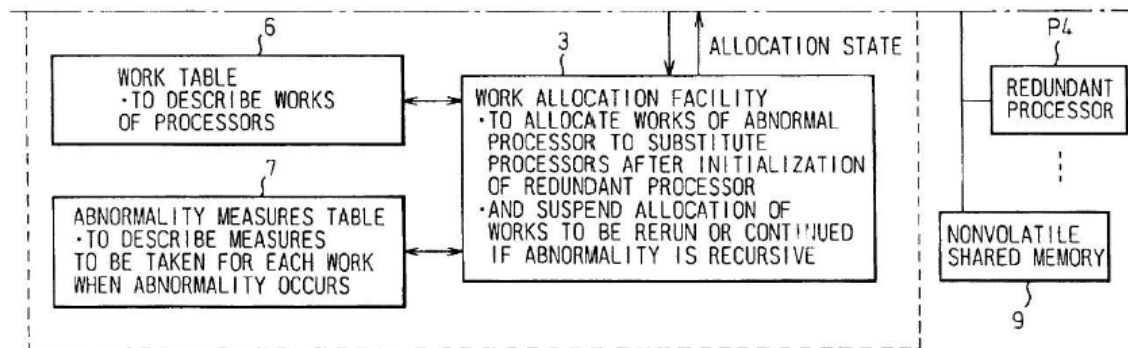


Fig. 1B



Ex. 1004, Figs. 1A and 1B. Figures 1A and 1B above “show a basic structure of a multiprocessor system.” *Id.* at 2:21–22. Kizuka explains:

A processor monitoring facility 1 monitors the operating states of current processors P1 to P3 and detects an abnormality in any one of them.

An administration facility 2 notifies a work allocation facility 3 of information about an abnormal processor and a redundant processor and administers information about a possibility of recursive abnormality as well as information about whether or not a redundant processor is being initialized. The recursive abnormality usually occurs when one processor takes over a work from another.

The work allocation facility 3 allocates works of the abnormal processor sought from a work table 6 to given processors according to measures described in an abnormality measures table 7. If the administration facility 2 notifies the work allocation facility 3 that there is a possibility of recursive abnormality, the facility 3 suppresses allocating works to be rerun or continued to the other processors. If the facility 2 notifies the facility 3 that the redundant processor is being initialized, the facility 3 delays allocating works to the redundant processor.

Id. at 3:31–50.

Figures 3A and 3B of Kizuka are reproduced below:

Fig. 3A

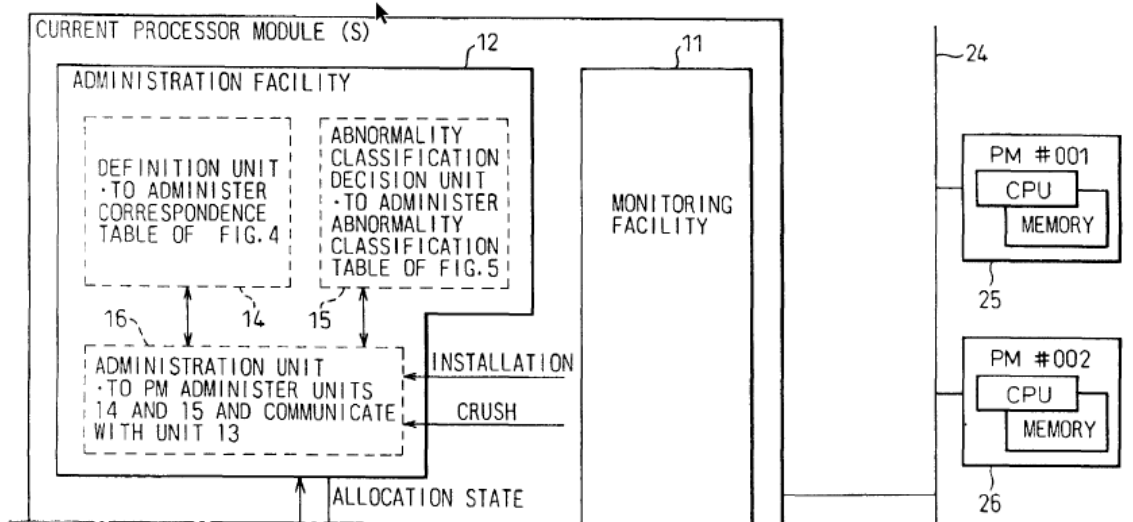
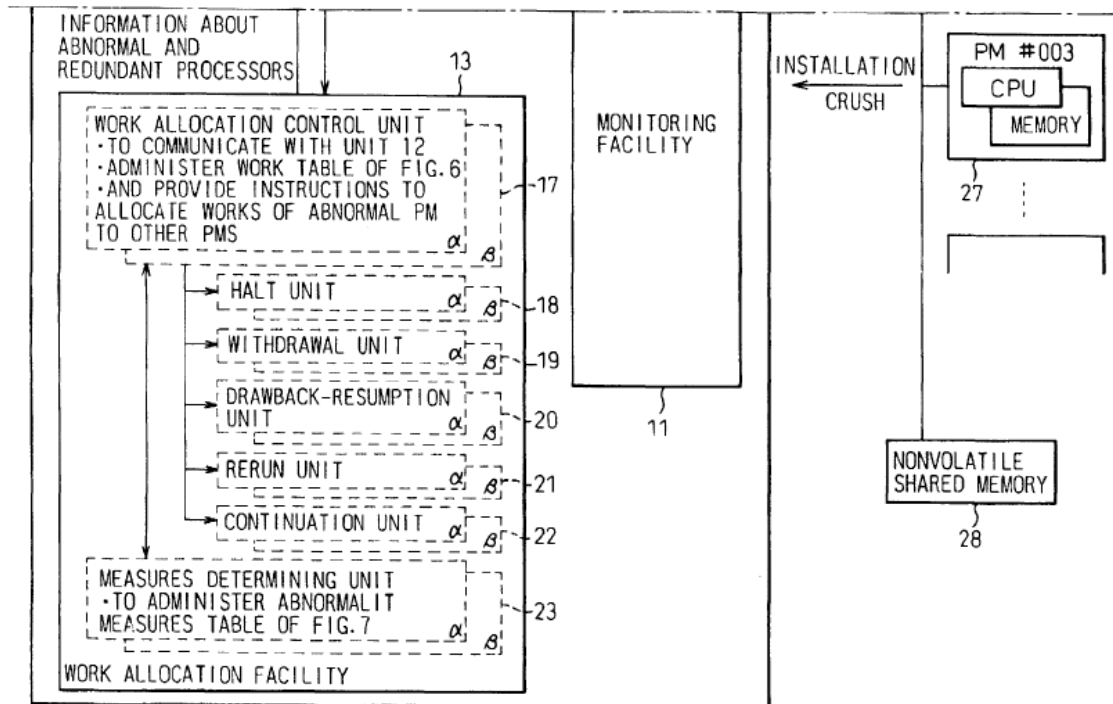


Fig. 3B



Ex. 1004, Figs. 3A and 3B. Figures 3A and 3B illustrate the operation of the multiprocessor system shown in Figures 1A and 1B. *Id.* at 2:27–28. Kizuka explains:

The system has a monitoring facility 11, an administration facility 12, a work allocation facility 13, a definition unit 14, an abnormality classification decision unit 15, an administration unit 16, a work allocation control unit 17, a halt unit 18, a withdrawal unit 19, a drawback resumption unit 20, a rerun unit 21, a continuation unit 22, a measures determining unit 23, a high-speed bus 24, the processor modules (PMs) 25 to 27, and a nonvolatile shared memory 28.

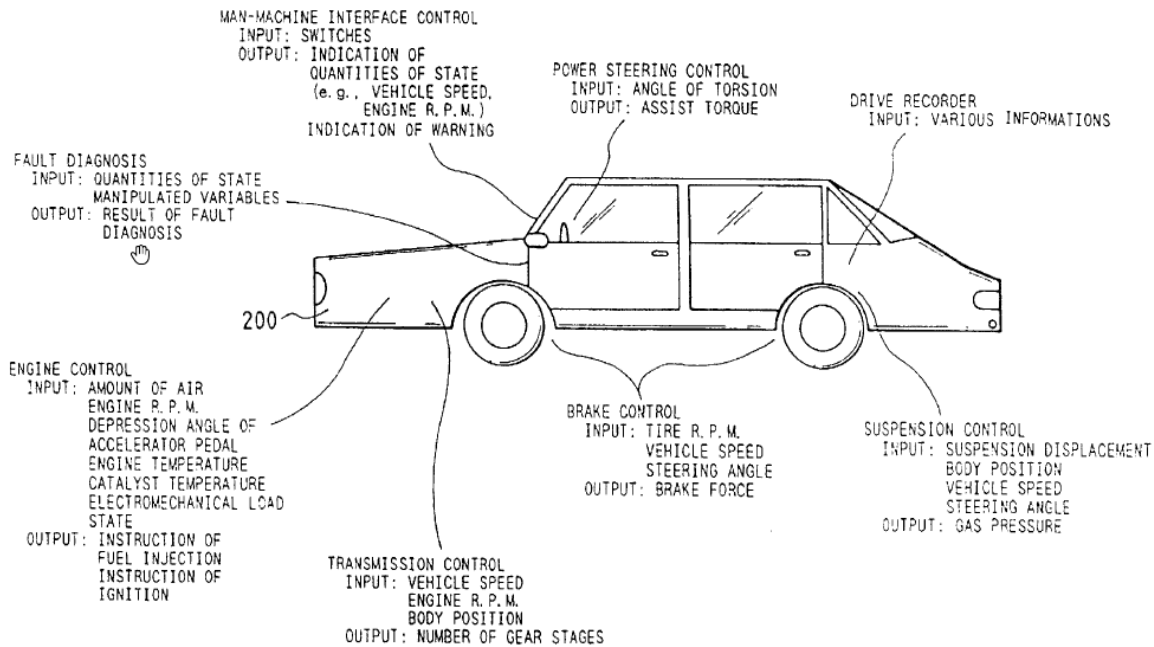
Id. at 6:10–18.

B. Watabe

Watabe describes a “distributed control system” which “includes a plurality of controllers each composed of a plurality of processors and being coupled through a network.” Ex. 1005, code (57). In Watabe, “[e]ach controller includes a scheduler for measuring a load; internal backup means for controlling which controller bears the load; backup request means for requesting another controller to bear the load; and backup accept means for answering to a request for bearing the load from another controller.” *Id.* Watabe discloses that “[t]hus, the load which cannot be executed by one controller can be distributed and executed by other controllers in accordance with their loads.” *Id.* Watabe further discloses that its control systems can be used “for a variety of controls, such as process controls, plant controls or vehicle controls; and, more particularly, to a distributed control system in which individual controllers perform backup operations by sharing the loads without using any backup controller.” *Id.* at 1:9–16.

Figure 17 of Watabe is reproduced below:

FIG. 17



Ex. 1005, Fig. 17. Figure 17 above “is a diagram showing the control objects of an automobile.” Ex. 1005, 4:4–5.

C. Claim 29

Our analysis focuses on claim 29’s recitation of “using the configuration manager to redirect the data and state information to the other identified processor in the vehicle after detecting the failure” (“redirection limitation”). Ex. 1001, 9:48–50. Petitioner argues that the combination of Kizuka and Watabe renders this limitation obvious. Pet. 46. Petitioner contends that Watabe teaches processors in a vehicle and that Kizuka teaches the remainder of the limitation. *Id.* Patent Owner disputes that Kizuka teaches the remainder of the limitation (i.e., using the configuration manager

to redirect the data and state information to the other identified processor after detecting the failure). Prelim. Resp. 28–31.

Petitioner maps the recited configuration manager to Kizuka’s administration facilities 2 and 12. Pet. 39. Petitioner argues that Kizuka’s continuation unit 22 “redirect[s] the data and state information to the other identified processor” after a failure is detected. *Id.* at 49 (citing Ex. 1003 ¶¶ 149–150). Although continuation unit 22 is not a component of administration facility 12 (or 2) (Ex. 1004, Fig. 3B), Petitioner argues that continuation unit 22 uses information from administration facility 12 to allocate work from the abnormal processor to the substitute processor and thus teaches using administrative facility 12 to allocate work from an abnormal processor to a substitute processor. *Id.* at 49–50. According to Petitioner, these disclosures in Kizuka teach the redirection limitation (minus the vehicle application). *Id.*

Petitioner further asserts that Kizuka’s explanation of tasks, other than redirecting data and state information to the other identified processor, that are performed by its administration facility supports Petitioner’s contention that Kizuka’s administration facility is used to redirect data and state information. Pet. 50 (citing Ex. 1004, 7:9–15). Petitioner quotes Kizuka’s disclosure that “administration facility 12 updates the correspondence table 31 after identifying the abnormal and redundant PMs and allocating the redundant PM to the name of the abnormal PM.” *Id.* (quoting Ex. 1004, 7:9–15). According to Petitioner, allocating the name of the redundant or replacement processor module to the name of the abnormal processor module would mean that applications referencing the particular name would execute, and use data and state information, on the other identified processor instead

of the abnormal processor. *Id.* Further, Petitioner asserts that correspondence table 31 is used by software. *Id.* (citing Ex. 1004, 6:22–24). Petitioner asserts that in the software context, the code of the particular software application has a reference to a processor name, and does not have a reference to a particular processor (i.e., the mounting number), such that the processor name can be assigned to a working (not abnormal) processor and the software application itself need not be aware of any change and need not be modified to use a different processor. *Id.* (citing Ex. 1003 ¶¶ 152–154). Petitioner argues that, instead, the administration facility is responsible for ensuring that the software operates on a functioning processor. *Id.* (citing Ex. 1003 ¶¶ 152–154).

Petitioner concludes that, by describing the use of takeover information that is transferred to a substitute processor upon usage of information from the administration facility, Kizuka with Watabe renders obvious using the configuration manager to redirect the data and state information to the other identified processor in the vehicle after detecting the failure as recited. Pet. 51 (citing Ex. 1003 ¶¶ 145–55).

Patent Owner argues that, in Kizuka, continuation unit 22 is a component of work allocation facility 13 and thus the function of redirecting the data and state information to another processor is performed by Kizuka's work allocation facility, not its administration facility. Prelim. Resp. 28–30 (citing Ex. 1004, Figs. 3A–3B). Patent Owner further argues that Kizuka's administrative facility is not used to perform the recited redirection merely because the work allocation facility uses information from the work allocation facility to perform the disclosed redirection. *Id.* at 30.

We agree with Patent Owner. It is undisputed that, in Kizuka, continuation unit 22 redirects data and state information to another identified processor after a failure is detected. Pet. 49; Ex. 1003 ¶¶ 149–150; Prelim. Resp. 28–29. Continuation unit 22, however, is not part of administration facility 12 (or 2), which Petitioner identifies as Kizuka’s configuration manager. Ex. 1004, Fig. 3A; Pet. 39. Instead, continuation unit 22 is part of work allocation facility 13, which Petitioner identifies as Kizuka’s task manager. Ex. 1004, Fig. 3B; Pet. 31. Thus, according to Petitioner’s mapping, it is Kizuka’s task manager, not its configuration manager, that redirects data and state information to another identified processor. Ex. 1004, Figs. 3A and 3B.

We are not persuaded by Petitioner’s argument that administration facility 12 is used to redirect data and state information, as required by the claim, merely because continuation unit 22 may use some information obtained from administration facility 12 to redirect the information. Pet. 49–50. The redirection limitation recites *using the configuration manager* to redirect such information, not merely *using information from the configuration manager* to redirect such information. Ex. 1001, 9:48–50.

We are further not persuaded by Petitioner’s argument that Kizuka’s teachings regarding correspondence table 31 indicate that administration facility 12 is used to perform the recited redirection. Pet. 50. Kizuka describes continuation unit 22 in work allocation facility 13 as performing the recited redirection. Ex. 1004, 6:48–7:7. Although Kizuka discusses updates to correspondence table 31, Kizuka does not describe administration facility 12 as redirecting data and state information to a new processor. *Id.* at 7:8–14. Instead, Kizuka teaches that continuation unit 22 notifies the

administration facility 12 at the start and completion of each change-over, not that the administration facility 12 is used for the change-over. *Id.* at 7:3–8.

We also do not find Mr. Wilson’s opinion that Kizuka uses its administration facility 12 to perform the recited redirection sufficient to demonstrate a reasonable likelihood of prevailing on Petitioner’s challenge. Ex. 1003 ¶¶ 145–155. Mr. Wilson quotes Kizuka’s disclosure that “administration facility 12 updates the correspondence table 31 after identifying the abnormal and redundant PMs and allocating the redundant PM to the name of the abnormal PM.” *Id.* ¶ 152 (quoting Ex. 1004, 7:9–12) (emphasis omitted). Further, Mr. Wilson testifies that allocating the name of the redundant or replacement processor module would mean that application would use data and state information on the other processor because the name of the processor in correspondence table 31 is used by Kizuka’s software. *Id.* ¶ 153. Mr. Wilson further testifies that software code refers to a processor name, not the mounting number of a processor. *Id.* Further, Mr. Wilson testifies that in Kizuka the administration facility is responsible for ensuring the software application operates on a functioning processor. *Id.* ¶ 154. This testimony, however, does not persuade us (or establish a reasonable likelihood that we may be persuaded) that Kizuka’s administration facility is used to redirect data and state information to a new processor. As mentioned, Kizuka describes its work allocation facility as performing such a redirection (Ex. 1004, 6:48–7:7), and Mr. Wilson does not sufficiently explain why merely adjusting processor names in correspondence table 31 and ensuring that software applications are properly run on processors means Kizuka’s administration facility is used to redirect data and state information to a new processor. Ex. 1003 ¶¶ 145–155.

Thus, we determine that Petitioner has not sufficiently shown that Kizuka teaches, suggests, or renders obvious using the configuration manager to redirect the data and state information to the other identified processor after detecting the failure. Accordingly, Petitioner has not sufficiently shown that the combination of Kizuka and Watabe teaches, suggests, or renders obvious the redirection limitation. Thus, Petitioner has not demonstrated a reasonable likelihood of proving that claim 29 would have been obvious over Kizuka and Watabe.

D. Claims 30 and 31

Claim 30 depends from claim 29, and claim 31 depends from claim 30. Ex. 1001, 9:54–64. Petitioner’s arguments and evidence for dependent claims 30 and 31 do not remedy the shortcomings in Petitioner’s arguments and evidence for the redirection limitation of claim 29. Pet. 52–56. Thus, Petitioner has not demonstrated a reasonable likelihood of proving that claims 30 and 31 would have been obvious over Kizuka and Watabe.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one challenged claim. Accordingly, we do not institute *inter partes* review of the ’049 patent.

V. ORDER

It is:

ORDERED that the Petition is *denied* and no trial is instituted.

IPR2022-00317
Patent 7,178,049 B2

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