

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte WILLIAM T. KREIN  
and STEVEN G. ROSKOWSKI

---

Appeal No. 95-5030  
Application 07/815,694<sup>1</sup>

---

ON BRIEF

---

Before THOMAS, HAIRSTON and LEE, Administrative Patent Judges.  
LEE, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-30. No claim has been allowed.

**References relied on by the Examiner**

Miro	5,220,653	Jun. 15, 1993
Fava et al. (Fava)	5,167,019	Nov. 24, 1992

---

<sup>1</sup> Application for patent filed December 30, 1991.

Appeal No. 95-5030  
Application 07/815,694

Sakon et al. (Sakon)            1-246664                            Oct. 2, 1989  
(Japanese Kokai)

**The Rejections on Appeal**

Claims 1-30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sakon. This rejection was first entered in the examiner's answer (Paper No. 11).

Claims 1-29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Fava and Miro (Paper No. 5).

We assume that claim 30 also stands finally rejected under 35 U.S.C. § 103 as being unpatentable over Fava and Miro. Although the cover page of the final rejection identified only claims 1-29 as having been rejected, the markings on the file jacket indicate that claim 30 has also been rejected. The appeal brief also regards claim 30 as having been rejected.

**The Invention**

This invention relates to computer interconnect circuitry. In particular, the order of data transmission through the interconnect circuitry is maintained. Claims 1, 17 and 25 are the sole independent claims, of which, claim 25 appears to be the broadest and reads as follows:

25. A method for controlling transmission of information in a computer interconnect controlled by a control

Appeal No. 95-5030  
Application 07/815,694

circuit, said method comprising:

    sending a signal from a first device coupled to a source of data to a second device which receives data from said first device, said signal indicating that data is ready for transfer to said second device;

    storing information relating to said data, said information including information indicating the order in which the information was received by the control circuit;

    incrementing the information indicating the order in which the information was received by the control circuit; and

    sending data to said second device in the order of receipt by the control circuit.

Claim 1 further recites a plurality of buffers for storing the information relating to the data for transfer, and claim 17 further recites that the information stored in the plurality of buffers include information for designating a priority for the data ready for transfer.

Note that claims 2, 17 and 26 have been amended in a paper concurrently filed with the appellants' reply brief.

### Opinion

We do not sustain the obviousness rejection of claims 1-30 over Fava and Miro.

We sustain the rejection of claims 1 and 25 as being anticipated by Sakon.

We do not sustain the rejection of claims 2-24 and 26-30 as

Appeal No. 95-5030  
Application 07/815,694

being anticipated by Sakon.

**The obviousness rejection of claims 1-30**

We do not sustain the rejection of claims 1-30 under 35 U.S.C. § 103 as being unpatentable over Fava and Miro. The appellants' appeal brief raises many issues concerning the rejection of claims 1-30 as being unpatentable over Fava and Miro. The examiner's answer enters a new ground of rejection of claims 1-30 under 35 U.S.C. § 102(b) as being anticipated by Sakon, and states at 7:

Applicant's arguments with respect to claims 1-30 have been considered but are deemed to be moot in view of the new grounds of rejection.

We disagree with the examiner's above-stated position. The fact that a new ground of rejection has been entered for the same claims does not render moot the appellants' arguments directed to the original ground of rejection. The original ground of rejection has not been withdrawn. If the examiner had intended to withdraw the obviousness ground of rejection, it has not been done in a sufficiently clear manner. We do not assume that the rejection has been withdrawn.

The appellants make several arguments with regard to the

Appeal No. 95-5030  
Application 07/815,694

obviousness ground of rejection. The arguments are based on the following correct observations with regard to Fava and Miro. Fava discloses a computer interconnect apparatus with a distributor through which information is passed between a plurality of elements. Fava does not disclose storing information indicating the order in which information was received. Instead, Fava discloses a round robin arbitration scheme and does not send data in the order of receipt.

With respect to Miro, the appellants note that while Miro discloses a FIFO service queue to store disk drive I/O requests (column 7, lines 51-54), the inputs to the FIFO service queue are taken from a set of ten (10) holding queues each having a different assigned priority with respect to received I/O requests (column 3, lines 37-68). The appellants note (Br. at 12) that a request directed to a given disk drive is entered into the particular holding queue having a service priority corresponding to the priority class of tasks of such requests. In that regard, see column 3, lines 41-44, of Miro. Items from the holding queues are moved to the FIFO service queue on the basis of priority classes rather than the time order of receipt in the arbitration or control circuit. On that basis, the appellants argue that although Miro's control circuit includes a FIFO

Appeal No. 95-5030  
Application 07/815,694

service queue, Miro would not have suggested circuitry which maintains the order of transmission of information by storing information indicating the order of receipt and sending such information according to the order of receipt. In our view, the argument is reasonable and the examiner has provided no response.

The appellants also note that neither Fava nor Miro discloses or reasonably suggests incrementing the information indicating the order in which the information was received. In this context and in light of the specification, incrementing the order means updating the order of receipt as new items come in. According to the appellants, since neither Fava nor Miro store the order in which information is received, neither updates that stored information. Again, this argument appears reasonable. We find that Miro's arbitration or control circuit is not simply the FIFO service queue, but includes the prioritized holding queues.

With respect to all of the foregoing arguments regarding Fava and Miro, the examiner has provided no response, except to say, in an advisory Office action (Paper No. 8 at 3), that:

(B) Applicants argue on page 3 paragraph 2 that Fava et al nor Miro discloses a "plurality of buffers for storing information relating to data, the information including information indicating the order in which the information was received by the control circuitry . . ." This is a basic

Appeal No. 95-5030  
Application 07/815,694

characteristic in any networking system.  
(See. IEEE 802 + standards for LAN's) . . . .  
Such limitations to information regarding  
data [sic, is] in not patentable over IEEE  
standards nor over the prior art of Fava et  
al in view of Miro.

The appellants disagree that the limitation at issue is a basic characteristic of any networking system and notes that the examiner has not furnished a copy of any IEEE publication or alternative form of evidence relating to IEEE standards to the appellants (Br. at 14-15). We will not simply take the examiner's word as sufficient evidentiary support for an important finding of fact, where the appellants have challenged the examiner's position and discussed examples inconsistent with the examiner's position. In In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the Federal Circuit has stated:

Assertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art and the appellant given, in the Patent Office, the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference.

Even though the examiner has referred to IEEE standards as having certain features, no IEEE publication or other IEEE type prior art has been included in the basis of the rejection. We

Appeal No. 95-5030  
Application 07/815,694

note that all prior art references on which the examiner relies in support of a rejection should be positively recited in the stated ground of rejection. In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970). Thus, here, no IEEE standard can be relied upon in support of the examiner's rejection, not to mention that no such reference has even been furnished by the examiner for anyone's consideration.

Claims 1, 17 and 25 are the only independent claims. All other claims depend directly or indirectly from one of claims 1, 17 and 25. For the foregoing reasons, we cannot sustain the rejection of claims 1-30 under 35 U.S.C. § 103 as being unpatentable over Fava and Miro.

**The anticipation rejection of claims 1-30**

Anticipation is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. In re Spada, 911 F.2d 705, 707, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); Verdegaal Bros. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987); RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Appeal No. 95-5030  
Application 07/815,694

Except for independent claims 1 and 25, each of the claims on appeal, in our view, includes at least one limitation or claim feature which is not disclosed, either expressly, inherently, or implicitly, by Sakon. We point out this feature specifically with respect to claim 2, claim 17, and claim 26, and simply note that all other claims on appeal, aside from independent claims 1 and 25, depend ultimately from one of claims 2, 17 and 26 and thus include the feature which we find missing in Sakon.

Claim 2 depends from independent claim 1 and further requires the information relating to the data to be transferred to include information for "designating a priority" for the data ready to transfer, and specifies that the order of receipt is an order of receipt "within a given priority."

Claim 17 is an independent claim and recites that the information relating to the data for transfer includes information for "designating a priority" for the data ready for transfer, and specifies a means for sending "for said [designated] priority," the information in the order of receipt.

Claim 26 depends from independent claim 25 and further requires the information relating to the data to be transferred to include information for "designating a priority" for the data

Appeal No. 95-5030  
Application 07/815,694

ready for transfer, and specifies the maintaining of the order of transfer "within each particular priority level."

In our view, each of claims 2, 17 and 26, either expressly or implicitly requires multiple levels of priority wherein the order of transfer for each priority level is in accordance with the order of receipt by the control circuit. We recognize that claim 17 does not expressly state "each" priority level. However, we regard as unreasonable considering the language "designating a priority level" and "sending, for said priority . . . in the order of receipt" of claim 17 as having been met where all transfer requests have the same priority and are handled on a "first come first served" basis in sequential order.

The appellants are correct in noting that Sakon does not disclose multiple levels of priority for the data transfer requests. Rather, the data transfer requests are handled simply in their sequential order of receipt. As is illustrated in Figures 3B and 3C of Sakon, while there are three different data input devices and the transfer requests are maintained separately for each device, the requests are served in their overall order of receipt with respect to all three input devices. In

Appeal No. 95-5030  
Application 07/815,694

discussing its Figure 3B, Sakon states (at 8):

It can be seen from this figure that regardless of the specific data input unit, the input data are appended with the order numbers according to the input order.

. . .

Figure 3(C) illustrates the state after reading of the data with order number 1 by means of data input unit (10). In this case, the data of data input unit (2) are made up of data "8" with order number 2 and data "5" with order number 4, while the others are determined to be unchanged.

With regard to conventional systems, Sakon describes that the actual order of input is ignored (page 8, lines 21-26).

According to Sakon, its disclosed method avoids the problem (page 8, line 27).

The "1," "2," and "3" designations in the first column of the tables shown in Figures 3B and 3C of Sakon indicate the corresponding input device numbers, not different levels of priority. Note that in Figure 3B, the first item actually served is the item "2" from input device number 2 because it is first in the overall order of receipt. The designation beneath the data "2" shows that that element is first or "1" in the order of receipt.

The examiner is erroneous in finding that Sakon "does NOT

Appeal No. 95-5030  
Application 07/815,694

put equal weight for each input device" (supp. answer at 7). The examiner's quotation of the paragraph in Sakon from the bottom of page 11 to the top of page 12 is also misplaced (supp. answer at 7). The text does not suggest that the different input devices are assigned different priority levels. Note that even in the middle of the quoted text appears the statement "and the unit corresponding to the earliest input is stored in temporary memory unit (12) of input unit number." Also, the immediately following paragraph appearing on page 12 of Sakon, discusses comparing the order of receipt of data from different input units and appears to indicate that the operations of Figure 7 are for determining the unit number having the earliest input data item. The determined unit number is stored in the input unit number temporary memory unit. As is indicated in lines 11-16 on page 13 of Sakon, the input unit number stored in the input unit number temporary memory unit governs which input unit will be read next.

In summary, the examiner has failed to demonstrate, on a prima facie basis, that the three different input devices of Sakon are assigned different levels of intrinsic priority or that data is transferred on any basis other than the order of receipt.

Appeal No. 95-5030  
Application 07/815,694

For these reasons, we do not sustain the rejection of claims 2-24 and 26-30 under 35 U.S.C. § 102 as being anticipated by Sakon.

Claims 1 and 25, on the other hand, do not require a plurality of levels of priority. Rather, all they require is the keeping of information indicating the order of receipt and the sending of information according to their order of receipt.

Our decision is based solely on the arguments raised by the appellants. We offer no opinion on arguments which could have been raised but which were not set forth in the appeal brief. The appellants essentially raise two arguments with regard to claims 1 and 25. First, the appellants argue that Sakon does not disclose incrementing the order in which the information was received by the control circuit. As we discussed earlier, in the context of the appellants' invention, incrementing means updating the order as new items are received.

According to the appellants, Sakon simply generates a sequential order number and assigns it to each new item. In that manner, the appellants argue that the previously generated order numbers and attached to previously received items are never changed or modified and thus are never "incremented" as is required by claims 1 and 25. We are not persuaded by the appellants' argument, because Sakon discloses the use of header

and tail pointers to keep track of the items received from each input data device, and each new entry for each input device causes an updating of the corresponding tail pointer. See Sakon at page 6, lines 10-18. Sakon on page 11 describes the initializing of the head position and tail position pointers for each input data memory unit.

With reference to Sakon's Figure 3B, we agree that the order numbers are necessary to keep track and maintain the order of receipt of data across all three data input devices. In other words, the second item from input device number 2 may not be the second item received overall. However, neither claim 1 nor 25 requires plural data input devices. Both claims require only a source of data for transfer, e.g., a single data input device. From that perspective, the head and tail position pointers of Sakon are sufficient to maintain order for a single input device and the order numbers of Sakon which apply to items from all three input devices are irrelevant. It would appear that even without the benefit of order numbers, the head and tail position pointers for each input data memory would reveal which items are prior to which items from the same input device. Since Sakon discloses updating the tail position pointer as each new item is

Appeal No. 95-5030  
Application 07/815,694

processed, in our view the claim feature of incrementing the information indicating the order of receipt is satisfied.

The discussion in the supplemental examiner's answer on page 3 about connectionless packet switched networks in general is not supported by citation to any specific prior art reference. Also, the stated ground of rejection is anticipation over the single reference Sakon, not any prior art pertaining to connectionless packet switched networks. The appellants petitioned to have that portion of the supplemental answer excised and the petition was denied on the ground that it did not serve as the basis of any ground of rejection. In our view, such assertions by the examiner without proper citation and inclusion in the ground of rejection is improper and has no place in this appeal.

The appellants argue (Reply at 3) that Sakon does not disclose sending a signal from a first device coupled to a source of data to a second device which receives data from said first device, which signal indicates that data is ready for transfer to the second device. The appellants further state (Reply at 4) that because Sakon performs its own examination to determine the presence or absence of incoming data, there is no reason for Sakon to send a data transfer ready signal and it would not be inherent in Sakon's device to send a data transfer ready signal.

Appeal No. 95-5030  
Application 07/815,694

Responding to the appellants' argument, the examiner stated  
(supp. answer at 6):

First, such a signal designating an initiation of a transfer is well known in the art of I/O processing which is known as "handshaking". Furthermore, in a networking environment such handshaking is performed [sic, performed] at the data link layer by sending supervisory frame to initiate a transfer which is essentially the same thing as saying "I have something to send, are you ready". As claimed, such limitations are not distinct from interface(s) to a plurality of input units to a computer terminal for inventory management. Such a system would use normal protocol for sending the appropriate signals to initiate a transfer. Thus, any interface would receive a ready signal from an input unit to relay a signal to the receiving unit (i.e. computer terminal through the interface "interconnect circuitry") the sending unit has something to send. Sakon et al teaches such a system.

In addition, because of a lack of distinctions in the claims, the data processing device taught by Sakon et al is construed as a receiving unit (second device) connected to a plurality of input devices through an interconnect circuitry (nos. 6-8, Fig. 1). When the data processing device determines that there is a presence/absence of data in memory unit 11 such a determination can be construed as sending a signal [from] a first device to a second device.

Thus, it is evident that in the supplemental examiner's

Appeal No. 95-5030  
Application 07/815,694

answer the examiner made a specific finding that although not explicitly described, the normal protocol for transferring data from Sakon's input devices includes a "handshaking" signal which informs the interface that data is ready for transfer. In the supplemental answer, the examiner also made known for the first time his particular position on claim interpretation with regard to what would constitute sending a signal to the second device.

The appellants filed no response to the newly stated finding and conclusions of the examiner contained in the supplemental examiner's answer. Thus, on this record, it can only be considered that the specific finding of the examiner is uncontroverted and that his claim interpretation is not refuted.

We will sustain the rejection of claims 1 and 25 under 35 U.S.C. § 102 as being anticipated by Sakon.

#### **Conclusion**

The rejection of claims 1-30 under 35 U.S.C. § 103 as being unpatentable over Fava and Miro is reversed.

The rejection of claims 1 and 25 under 35 U.S.C. § 102 as being anticipated by Sakon is affirmed.

The rejection of claims 2-24 and 26-30 under 35 U.S.C. § 102 as being anticipated by Sakon is reversed.

Appeal No. 95-5030  
Application 07/815,694

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**AFFIRMED-IN-PART**

JAMES D. THOMAS	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
KENNETH W. HAIRSTON	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
JAMESON LEE	)	
Administrative Patent Judge	)	

Appeal No. 95-5030  
Application 07/815,694

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN  
12400 Wilshire Blvd., 7th Floor  
Los Angeles, CA 90025