

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(2) is not binding precedent of the Board.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. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT HOFFMANN
and MARK CLARK

Appeal No. 97-2763
Application 08/580,790¹

ON BRIEF

Before HAIRSTON, MARTIN, and RUGGIERO, Administrative Patent
Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1

¹ Application for patent filed December 29, 1995.
According to applicants, the application is a continuation of
Application 08/035,051, filed March 22, 1993.

through 8.

The disclosed invention relates to a method for monitoring virtual connections within a digital telecommunications network that is formed of exchanges.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A method for monitoring virtual connections within a digital telecommunication network that is formed of exchanges, connected by transmission lines, operating in asynchronous transfer mode via which information transmitted in synchronous transfer mode is also switchable, wherein transmission monitoring cells, that contain a regular error-detecting code word and that may contain a sequence identifier as well as a particular about a length of an information cell block, are respectively allocated to information cell blocks to be transmitted, each of the monitoring cells having a header part and an information part and being allocated to a respective information cell block at an originating location of transmission links carrying the virtual connections, the error-detecting code word being formed using a totality of the information cell blocks, wherein an evaluation, on the basis whereof an information falsification is recognizable, respectively occurs at an end point of an appertaining transmission link by renewed formation of a further error-detecting code word and by comparison thereof to the regular error-detecting code word transmitted from the originating location, and wherein a message at least to the originating location of the appertaining transmission link is undertaken in case of a recognized information falsification, comprising the steps of:

forming error-detecting code words at an access boundary of a respective exchange upon exclusive acquisition of information parts of information cells of information cell blocks;

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forming transition monitoring cells from said error-
detecting code words and said information cells;

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transmitting said error-detecting code words through the respective exchange as a component part of said transition monitoring cells;

evaluating said error-detecting code words at an exit boundary of the respective exchange and outputting an appertaining error message to a maintenance position responsible therefor given an information falsification that is thereby identified;

before the information cell blocks pass the exit boundary, replacing the transition monitoring cells by newly formed transmission monitoring cells whose regular error-detecting code word respectively covers the entire, appertaining information cell block; and

wherein the information cell block is thereby faultlessly transmitted over the respective virtual connection.

The references relied on by the examiner are:

Philip et al. (Philip) 1980	4,197,523	Apr. 8,
Izawa et al. (Izawa) 1993	5,251,204	Oct. 5,
	(filing date of Sept. 19,	
1991)		
Uchida et al. (Uchida) 1994	5,313,453	May 17,
	(filing date of Mar. 20,	
1992)		

Claims 1 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Izawa.

Claims 1 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Uchida.

Claims 1 through 8 stand rejected under 35 U.S.C. § 103

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as being unpatentable over Philip.

Reference is made to the brief and the answer for the respective positions of the appellants and the examiner.

OPINION

All of the obviousness rejections of claims 1 through 8 are reversed.

The examiner is of the opinion that the forming steps, the transmitting steps, and the evaluating steps of claims 1 through 8 are taught by each of the applied references (Answer, pages 4, 6 and 8). The examiner acknowledges (Answer, pages 4, 6 and 8) that neither of the references teaches that "the transition monitoring cells are replaced with cells whose regular error detecting code word covers an entire cell block." The examiner concludes (Answer, pages 4 through 6, 8 and 9) that "it is well known in the art to use a redundancy character across a block of information (a CRC redundancy check for example)," and that it would have been obvious to one of ordinary skill in the art to modify each of the applied references to include "a block check word because one of ordinary skill in the art would want to make certain that when a block of information is transmitted errors are not generated."

Izawa discloses the use of either asynchronous transmission mode (ATM) cells (Figure 2) or synchronous

optical network (SONET) test frames (Figure 3) to conduct a test on a transmission line in a broadband ISDN (column 2, lines 1 through 5; col. 3, lines 43-64). In an on-line test in the broadband ISDN (Figure 4), a central conditioning (CC) unit 12 issues a command to test data inserter 13 to send test cell data (e.g., the test cell of Figure 2) through ATM switch 11 and through the transmission line to either ATM layer 14 or to the subscriber terminal adapters 17a and 17b where the test cell is turned around and sent back through the transmission line to the test data checker 18 (column 4, lines 6 through 41). In an off-line test of the broadband ISDN, the test cell data is sent via the ATM switch 11 and the transmission line to either the terminator 16 or the network terminator (NT) 15 where the test cell is turned around and sent back through the transmission line to the test data checker 18 (column 4, lines 48 through 57). The test cell checker 18 compares a turned around test cell with the test cell sent through the transmission line, and notifies the CC 12 of the results of the transmission line test (column 5, lines 29 through 39).

We agree with appellants' argument (Brief, pages 15 and 16) that Izawa only discloses the transmission of test cell

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data, and not the "transmission of the 'test information' along with the transmission of the 'message information.'" The evaluation performed by Izawa with the test cell data is performed at the input of the ISDN, and not at the "exit boundary" of an exchange. For this reason, Izawa cannot replace "the transition monitoring cells by newly formed transmission monitoring cells" "before the information cell blocks pass the exit boundary" (claims 1 through 8). Thus, the obviousness rejection of claims 1 through 8 based on the teachings of Izawa is reversed.

Uchida discloses apparatus for testing the switches of an ATM exchanger. In one of the disclosed forms of the testing apparatus (Figure 5B), test cell inserters 511 are provided at the input highways 509 to generate test cells with virtual identifiers attached thereto (column 11, lines 8 through 25). Test cell tag attachers 512 attach tags to the multiplexed test cells from test cell inserters 511 to enable switching operations to be performed at all crossing points in the multistage self-routing module 508 (column 11, lines 37 through 40). After the multistage self-routing module 508 performs a switching function to route test cells, the test

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cell checkers 513 extract test cells by recognizing the virtual identifiers, and then test the test cells for abnormalities and losses (column 12, lines 19 through 25).

Based upon the foregoing, we agree with appellants' arguments (Brief, pages 8 through 16) that the claimed steps are not found in Uchida. As a result thereof, the obviousness rejection of claims 1 through 8 based on the teachings of Uchida is reversed.

Philip discloses a digital switching network handling digital information samples (column 1, lines 38 through 41). The network includes a receive interface for each incoming junction path, and a transmit interface for each outgoing junction path (column 1, lines 41 through 45). "Each receive interface is arranged to generate an error indicating code for each information sample received and to pass each information sample accompanied by its error indicating code to both the first and second switching sub-networks" (column 1, lines 48 through 52). Each of the transmit interfaces compares each sample received from the first switching sub-network with that received from the second switching sub-network, and when the samples differ uses "the error detecting codes of each sample

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to decide which sample should be used for transmission over the outgoing exchange junction path served by the transmit interface" (column 1, lines 53 through 60).

We agree with appellants' argument (Brief, page 12) that "[b]ased on the testing principle [in Philip], one can see that this reference lies even farther from the subject matter of the present application than Izawa and Uchida." "Thus, the Philip reference comes no closer to obviating the subject matter of the present application than do the references of Izawa and Uchida, which concern ATM technology" (Brief, page 15). Accordingly, the obviousness rejection of claims 1 through 8 based on the teachings of Philip is reversed.

DECISION

The decision of the examiner rejecting claims 1 through 8 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	
JOHN C. MARTIN)	BOARD OF PATENT
)	APPEALS AND

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Administrative Patent Judge)	INTERFERENCES
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)	
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