## EXHIBIT K



IN THE UNITED STATES DEPARTMENT OF COMMERCE PECEIVED

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In re application of:

PATENT GROUP 2900)

Inventors: Barnhard, et al.

Serial No.: 390,623

Paper No. 23

U.S. Filing Date: August 7, 1989

Examiner: Laura Brutman

Art Unit: 2311

For: Central Check Clearing System

41 South High Street

Attorney Docket No.: 1260900-50349 Columbus, Ohio 43215

June 29, 1993

The Honorable Assistant Secretary and Commissioner of Patents and Trademarks

Box AF

Washington, D.C. 20231

SECOND AMENDMENT AFTER FINAL ACTION AND STATEMENT PURSUANT TO 37 C.F.R. §1.116(b)

I. Introduction

This is a response to the advisory action mailed in this application on May 20, 1993. Entry of this amendment, reexamination and reconsideration are requested. A Statement Pursuant to 37 C.F.R. §1.116(b) setting forth the reasons for entry of this Amendment is included at page 10, infra.

By Express Mail, Receipt No. 980625349, June 29, 1993

### II. Amend Claims 7 and 10 as Follows:

A mechanism for physically exchanging financial instruments among a number of pre-selected financial institutions, each located at a preselected site, and for effecting the regular periodic settlement of the exchanged instruments among the institutions including:

(A) means within each of the pre-selected institutions:

(1) for sending and receiving the instruments, said means for sending including means for physically transporting the instruments from an institution at one site to each other of the institutions at the other sites, said means for receiving including means for physically accepting the instruments transported from the

other institutions;

(2) for sending to and receiving from a central processing unit connected to each institution information reporting in real time in correspondence with the occurrence of an event (a) the value of the instruments transported; and

(b) the transport status of the instruments with

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respect to their having been (i) sent and (ii) received; and

- (3) for receiving from the central processing unit a calculated value (a) on a real time basis and (b) on a regular periodic settlement basis, information regarding the debits and credits owing to or payable by an institution with respect to each other of the institutions with regard to instruments sent and received;
- (B) a central processing unit connected to each of the pre-selected institutions including

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- (1) means for <u>continuous</u> monitoring on a real time basis, as reported by each institution by the means for sending information within each institution:
  - (a) (i) the sending and receipt status of the instruments and (ii) the value of the instruments sent and received, as reported by each of the institutions, and
  - (b) the status in transit of the instruments with respect to their having been (i) sent and (ii) received, as reported by each of the institutions, according to the reporting

of an institution's sending and receiving of instruments,

- (2) means for calculating debits and credits, based on the value of the instruments sent and received by the institutions, as monitored on a real time basis from information reported by the institutions, of (a) the amount owing from or payable to each one of the pre-selected institutions with respect to each of the other institutions and (b) an aggregate amount owing from or payable to each one of the pre-selected
- (3) means for sending to each institution the information monitored with respect to instruments sent to an institution and the value of such instruments; and

institutions with respect to all of the other

institutions; and

(C) a cycling means interrelated with the central processing unit (a) for controlling the physical transport of the financial instruments among the institutions and (b) for controlling the means for calculating such that a final calculation of the debits and credits owing from or payable to, with

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respect to each of the institutions with regard to each other of the institutions, comprising the occurrence of the regular periodic settlement among the institutions, does not occur until pre-determined local settlements by the institutions in the pre-selected sites with institutions that are not among the number of pre-selected financial institutions, are completed.

The. A system for a financial clearinghouse comprised of an association of selected member financial institution participants situated in different localities including:

A. means at each of the participants (1) for sending and receiving financial instruments to be cleared and (2) for sending and receiving in real time information reporting the value and transit status of the financial instruments to be cleared, to a programmed central processing unit, and (3) for addressing the central processing unit by which a participant may determine in real time the information received by the processing unit with respect to that participant's relative credit and debit obligations with respect to other institutions arising from the instruments that are reported to be sent and received;

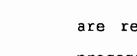
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#### B. a programmed central processing unit including:

means for calculating debits and credits owing from or payable (1) to one member to another member and (2) from or to one member to all other members, based upon the value of instruments reported by a participant as having been sent and received;

means for receiving and recording a participant's reports of the value and transit status of the instruments to be cleared as having been sent and received with respect to all participants in the system; and

means for monitoring on a real time as reported basis sending from and (1) the actual receipt by participant of the value of instruments being cleared as reported by the participants, and (2) the sending from and receipt by a participant of the actual instruments being cleared, said means for monitoring being operatively interconnected to the means for calculating whereby debits and credits owing from one member to another may be determined and monitored on a continuous basis in real time as reports of the value and transit status of the instruments to be cleared are reported by the participants and received by the processing unit; and



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C. a time control for determining the time of physical transport of financial instruments between and among the participants according to a predetermined time cycle, and for determining the occurrence of a final settlement by the clearinghouse participants at a pre-determined time until after a time that certain pre-determined local settlements in the localities, by the participants in the localities, are completed.

#### III. Remarks

The Examiner's withdrawal of the rejection under 35 U.S.C. §112 is noted. The foregoing amendments are made in view of Examiner's continuation of the rejection under 35 U.S.C. §103.

The claims and cited references S, T and U were discussed in detail in the Amendment filed on May 5, 1993 (Paper No. 20). In general, the references related to settlement mechanisms and methods for electronic funds transfer.

Applicant submits that amended claims 7 and 10 patentably distinguish the invention over the references of record.

As amended claims 7 and 10 now clarify the invention, the real time component of the mechanism and the provision of continuous reporting is set forth in a combination that otherwise includes a plurality of institutions at different sites, the exchange of physical instruments by transportation means, and the coordination of the net settlement, in real

time, as information about the instruments and their value are reported as sent and received under the umbrella of a predetermined schedule or cycle. In contrast, typical clearings between two banks need not be accomplished according to a schedule. And net settlements among a plurality of banks occur at a single location, at which the settlement instruments are exchanged, at a fixed time.

In the invention of the amended claims, the fluidity of a real time mechanism is evident as opposed to the static clearing and settlement mechanism of the references. data is entered, the information is there for participants to see. The monitoring of data, in co-ordination the physical exchange of instruments as they dispatched and received for settlement speeds up the clearing process. The mechanism is not simply a physical exchange, nor is the mechanism merely an electronic funds transfer. mechanism of the amended claims co-ordinates both in a system in which actual instruments are exchanged between and among institutions. Real time coordination occurs continuous reporting and monitoring allow for efficient funds management, i.e., the preparation of funds needed to effect settlement, or the utilization of funds received at settlement, or to plan for the utilization of mechanical sorters, which would otherwise sit idle. In the system of the claimed mechanism, the institutions do not need to "wait until the witching hour" (as in conventional settlements) when funds and instruments are physically settled to determine their respective liabilities. The mechanism is a continuous and active process conducted and monitored by a plurality of participants, as the instruments are in various stages of transport and/or exchange, in real time; and as the participants' settlement obligations are determined, they are available for continuous monitoring by the participants.\*

For these reasons, the amendments to claims 7 and 10 are considered to result in their allowability. The dependent claims, 8 and 9, dependent on claim 7, and 11 and 12, dependent on claim 10, relate to variations of sorter configuration in the systems of claims 7 and 10 and are distinguishable over the references cited as are the claims on which they depend.

Reexamination, reconsideration and allowance are therefore requested.

#### IV. Submission of Proposed Formal Drawings

Appended hereto is one sheet of formal drawings for which the Examiner's approval is requested. The proposed drawing (Figure 1) conforms to the informal drawing originally submitted. Extraneous material is deleted.

<sup>\*</sup> An article from the <u>ABA Banking Journal</u>, May 1993 (pages 62-66) entitled "Electronic check clearing alternatives take shape" is enclosed. The article describes the newly implemented NCHA/CHEXS system which utilizes the invention.

#### V. Statement Pursuant to 37 C.F.R. §1.116(b)

Applicant submits that the foregoing amendment should be admitted because of the following good and sufficient reasons why it is necessary and was not earlier presented:

Applicants consider the amendment places all claims condition for allowance by avoiding the sole grounds under 35 U.S.C. §103 that are asserted for rejection. The allowability of the claims after a minor amendment is a classic reason justifying the entry of an amendment after final rejection. See M.P.E.P. §714.12.

Both the Examiner and applicants have carefully considered references cited during prior prosecution application; no additional search is required. evident that the clarifying distinction made in amended claims 7 and 10 puts the application in condition for allowance.

#### VI. Conclusion

It is requested that the amendment be entered and this application allowed and passed to issue.

Respectfully submitted,

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#### CERTIFICATE OF FILING BY EXPRESS MAIL

I hereby certify that this Second Amendment After Final Action and Statement Pursuant to 37 C.F.R. §1.116(b) (including proposed formal drawing and copy of article) accompanied by a Petition for Extension of Time and Payment of Fee Under 37 C.F.R. §1.136 (2 copies), Check No. 214743, a cover letter and post card receipt in the below captioned application, are being deposited with the United States Postal Service (Postage prepaid, Express Mail, Receipt No. 980625371) in an envelope addressed to The Honorable Commissioner of Patents and Trademarks, Attention: Box AF, Washington, D.C. 20231, on June 29, 1993 and pursuant to the provisions of 37 C.F.R. 1.10, it is requested that June 29, 1993 be the filing date accorded to these documents.

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#### ♦ COVER REPORT/OPERALIONS ◆

# Electronic check clearing alternatives take shape

There's a brave new world of check clearing on the horizon, and paper checks have little to do with it...maybe

f your memory is long enough in this business you'll recall numerous attempts at rolling back the sea of paper checks processed and cleared by banks each year.

The automated clearing house system, after all, was intended to do this. While it has slowed check growth, it hasn't reversed the upward trend of check volume in the two decades since the system was created. Check truncation, electronic check collection, and other efforts to reduce the paper flow have also been introduced, and some of them remain active.

Will the '90s bring a different approach to check processing? Quite possibly, yes.

For one thing, increased competition continues to press banks to contain costs and improve operating efficiency. For another, electronic technology has advanced a lot farther than the early days of the ACH. As a result, several electronic check clearing and truncation projects hold promise for reducing or at least maintaining the cost of clearing paper checks.

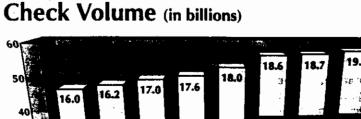
Proponents admit that big cost reductions won't come in the short term. But there is a strong possibility that banks will see reductions in loss exposures, a general containment of the estimated \$40 billion tab spent each year on check clearing, and new opportunities to enhance revenue streams through check services.

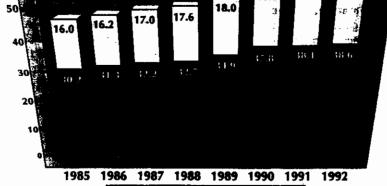
**Privatisation.** By modernizing the check clearing process, many bankers also hope the industry will be able to wrest control of the payments system from the Federal Reserve.

"Privatization of the payments sys-

Writer Patricia A. Murphy covers electronic banking developments from Takoma Park, Md.

By Patricia A. Murphy





The Federal Reserve commands a healthy percentage of total check clearing volume, but that percentage has been diminishing slightly since 1985. Most experts attribute the drop in the Fed's share of clearing volume more to industry consolidation than to increased competition.

Source: Federal Reserve Board

tem is absolutely necessary for the survival of banking," insists Dick Ercole, president of Huntington Technology Co., Columbus, Ohio. "It's really the last franchise we have."

The Huntington Bancshares unit manages a new national check-exchange system called the National Clearinghouse Association (NCHA). The system is an example of a joint-venture approach to check-clearing that competes with the Fed and works to improve revenue streams for member banks.

NCHA, which is also known as CHEXS (for Check Exchange System), is the product of an alliance between Huntington; Littlewood, Shain & Company (an Exton, Pa.-based consulting firm); and U.S. Check (a Columbus-based air courier service). The organization was created in 1992

to provide a national check clearing and settlement apparatus through member participation in local clearing houses.

Beyond check clearing. The primary intent of NCHA was to undercut the prices charged by Federal Reserve Banks for check-collection services by expanding the local clearing house mechanism nationwide. But already, NCHA members are preparing to exploit their affiliations with the group to enhance correspondent and corporate cash-management services.

"There are a lot of products that can come out of these initiatives," notes Ercole. Among them: check clearing for downstream correspondents, electronic check returns, and enhanced cash-management reporting.

At last count, there were 18 banks participating in the CHEXS system,

#### ♦ COVER REPORT/OPERALIONS ♦

exchanging checks in about 30 cities. Banks participating in NCHA agree to accept checks from all other members of the national clearing house for presentment to paying banks through local clearing house affiliations.

From the vantage of Ercole and others, NCHA is ideally suited for banks looking to contain costs without the large up-front investments required of other, high-technology approaches to check clearing, like electronic check presentment (ECP).

NCHA members, Ercole explains, incur a total cost of 1.05 cents for each check cleared through the system, compared with anywhere from one cent to five cents per item for clearing checks through the Federal Reserve. And unlike electronic check presentment, NCHA requires no new investments in software.

"It's definitely cheaper than ECP," says Ercole of the NCHA approach to clearing checks.

Perhaps. But ECP brings to the table its own set of advantages, a fact that Ercole concedes. "ECP is ulti-

#### CHECK-CLEARING TERMS AND PLAYERS

Alternative check-clearing arrangements are ushering in a whole new vernacular for the check operations business. The following are some of the more commonly used terms in today's check-clearing community.

• ECP (Electronic Check Presentment): The generic acronym used to describe the process of transmitting check magnetic ink character recognition (MICR) information electronically ahead of the actual movement of paper items. In the traditional sense, ECP is a bank-to-bank process. But the data necessary to present checks electronically also can be captured at the point of sale, thereby entering the merchant into the process.

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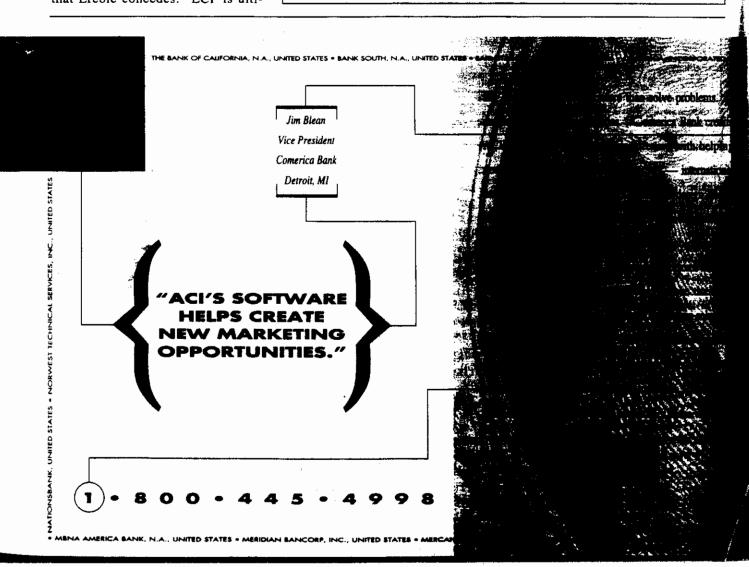
• ECCHO (Electronic Check Clearing House Organization): An organization of banks that are pursuing ECP. Participants provide electronic prenotifications to one another of large-dollar checks, followed by later presentment of the items.

• NACS (National Association for Check Safekeeping): An organization of banks that aims to stop the flow of paper checks completely and clear check payments using special automated clearing house (ACH) formats. NACS represents the "keeper bank model" of check truncation, where the bank of first deposit retains the physical item and passes on only information relevant to the clearing process; the physical item is never returned to the check writer.

clearing process; the physical item is never-returned to the check writer.

• NCHA (National Clearinghouse Association): A national organization designed to leverage the local check clearing-house arrangement on a national scale. NCHA members agree to accept checks from all other members for presentment to paying banks through local clearing house arrangements. Accounting information related to presentments is handed over to a specialized network, the Check Exchange System; net sattlement for check exchanges occurs through a special account maintained with the Federal Reserve.

Truncation: Stopping the flow of paper checks completely and converting
payment information to electronic form. In a typical truncation program, the
physical checks are kept for a time before being microfilmed and destroyed.



#### ♦ COVER REPORT/OPERATIONS ◆

mately the way to go," relates Ercole. who as a former executive with Security Pacific Bank once sat on the board of directors of the Electronic Check Clearing House Organization (EC-CHO), a national ECP group.

NCHA, Ercole adds, provides a transition to ECP for banks that aren't ready for or can't afford the technology necessary to make ECP a reality. Looking forward, he suggests, even NCHA will venture into ECP.

ECP advantages. ECP offers an array of clearing advantages: reduced dependency on processing equipment and transportation services, float savings, later deposit deadlines, and earlier return check notifications, to name a

"Each time a check goes through a sorter, it presents new opportunities for mishandling, paper jams, and other problems," explains Jay Simmons. vice-president, Citibank (Delaware).

In an ECP environment, the routing and payment information encoded on the magnetic ink character recognition (MICR) line is captured at the bank of first deposit. That bank transmits the MICR data directly to the paying bank or to an intermediary, such as a correspondent bank, clearing house, or Federal Reserve Bank. In effect, the need for a prime pass run is eliminated when a bank accepts check presentments electronically. That translates into savings.

Transportation savings. Because the most important check informationaccount numbers and payment amounts—is captured and transmitted early in the collection cycle in the ECP environment, there is no pressing need to transport checks physically to the paying bank.

"ECP diminishes the need for the speedy delivery of checks and therefore saves costs," observes Howard Wentworth, senior vice-president, CoreStates Financial Corp., Philadelphia. ECP provides the ability to link the bank of first deposit with the paying bank overnight, he explains, meeting or exceeding the Reg CC guidelines for check availability.

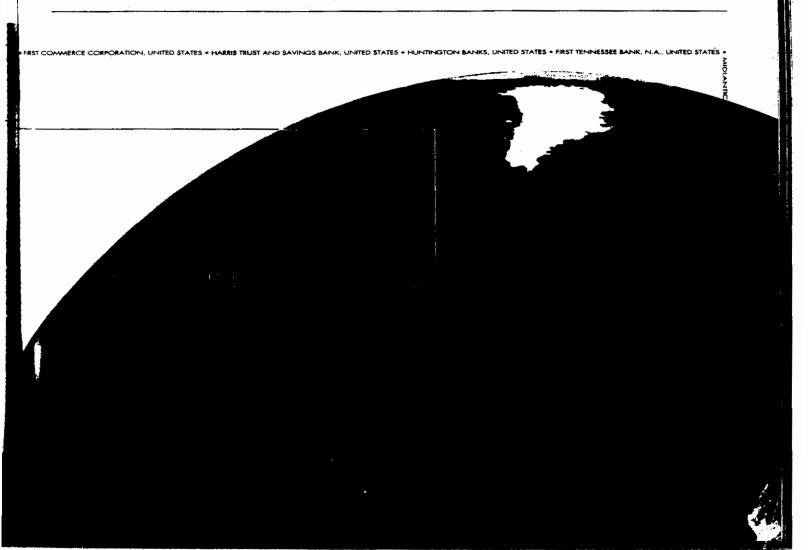
The paying bank already has

enough information to make a pay/no pay decision about the checks it receives. If the paying bank decides not to honor a particular check, it can alert the collecting bank of this fact before the paper checks are even shipped out, thereby providing the collecting bank with ample opportunity to withhold funds from the depositor of the check.

This reduces risk in the check collection process, particularly in a regulatory environment that requires availability on check deposits before many banks even learn of the imminent return of bad checks.

ECP's early days. "ECP is at the beginning of its evolution," explains William Toner, technology strategist with J.D. Carreker and Associates (JDCA), a Dallas-based consulting firm that provides administrative and software support for ECCHO. But those who champion ECP see great promise in the technology.

Besides ECCHO, which claims 19 banks exchanging check information electronically, there are ECP initiatives now taking shape within the Federal



This activity will cause two out of three checks by the end of 1993 to be [cleared via] ECP," predicts Denny Carreker, JDCA president.

Sharing resources. Most of the ECP activity in the country is concentrated among large banks. The Fed's ECP work is a notable exception because it serves some of the smallest banks, many of which are located in remote regions such as the Upper Peninsula of Michigan.

Other efforts also are under way to spread the benefits of ECP throughout banking.

J.D. Carreker, for example, is working on a new network configuration that will provide utility support for broad-based ECP. Payment System Network (PSN), as the project is known, is intended to serve as an electronic version of the traditional checkclearing apparatus.

With the involvement of about a dozen bankers, existing IBM network systems, First Tennessee Bank's First Express check-courier service, and the New York Clearing House, JDCA plans to provide a utility function for the ECP-related data communications, transportation, and settlement activi-

"PSN provides a structure where we can increase the number of banks participating in ECP, increase the types of transactions being processed, and increase the volume of transactions being processed," explains Toner. "The whole thing is leverage.'

Community banker's view. "If we as community bankers don't find a way to deliver products and services at rock-bottom prices, we're not going to be able to stay independent community banks for very long," warns Susanne Boxer, president and CEO of \$60 million-assets Houghton National Bank, Houghton, Mich.

Boxer sees great promise in ECP. Her bank is one of three participating in an electronic check clearing pilot with the Federal Reserve Bank of Minneapolis, where the banks both send and receive check MICR information electronically.

Including the three banks that both send and receive check presentments, 17 Upper Peninsula banks receive check MICR data electronically from the Minneapolis Fed. If all of those banks were to participate in the sendreceive pilot, Boxer estimates 80% of Houghton's check clearing would be done electronically. That certainly would help contain costs, she notes.

"I don't think you'll see an immediate cost savings, but you'll see cost containment," says Boxer of the trend toward ECP.

Transition to truncation. Boxer has even greater hopes for check truncation. "The paper has got to come out of the system," she maintains. ECP, Boxer suggests, provides a transition step to truncation.

"If we as community bankers don't find a way to deliver products and services at rockbottom prices, we won't be able to stay independent community banks for long" -S. Boxer, Houghton Nat'l Bank

Boxer isn't alone in her truncation hopes. The Federal Reserve has been pushing truncation for years. Last year, the Fed joined forces with the National Association for Check Safekeeping (NACS) in a new test of the automated clearing house network to move truncated check data between banks.

To date, participation in the NACS pilot has been meager-two corporations, two payor banks, and ten Federal Reserve offices. The volume of checks truncated in the program reflects that fact; fewer than 100,000 items (all small-dollar rebate checks) were truncated during the first nine months of the program, according to officials at the National Automated Clearing House Association (NACHA), which administers NACS.

The Fed has had somewhat more success with its proprietary truncation efforts. Nearly 12 million checks per month are truncated by 11 Federal Reserve Banks, according to Joanna Frodin, vice-president, Federal Reserve Bank of Philadelphia and check product manager for the Federal Reserve System.

"Truncation is the king pin," says Frodin of the Fed's check-clearing endeavors. "The goal is to stop the paper."

So far, however, most interest in truncation has come from the U.S. Treasury Department and small financial institutions. Most bankers are uncomfortable forfeiting receipt of physical checks, Frodin notes,

ECP or imaging? What the Fed hopes will stimulate greater interest and a higher comfort level with truncation, Frodin adds. is imaging. In an imaging environment, a bank would receive images of checks drawn on it to aid in decisions (such as the pay/no pay decision or signature verification) in lieu of the actual pieces of paper.

'We're looking for image to break down the barriers to truncation." Frodin explains.

But there is a catch: many bankers remain wary of imaging. Some, for example, feel that imaging requires too much of an up-front investment and not enough of a payback.

"I can get into ECP tomorrow for a couple of hundred thousand dollars,' says Jay Simmons of Citibank. All that is needed is new software loaded onto existing hardware, he notes. By contrast, "imaging will cost me millions," he adds, and will require both hardware and software changes.

Even more importantly, the imaging nay-sayers contend, ECP and truncation support the banking industry's overall bent toward electronic payments processes and away from paper.

"Investing in NACS and ECCHO is an evolutionary step to creating a paperless payments system," observes Simmons, who sits on the ECCHO board of directors and also serves as NACS's vice-president. But imaging does not remove paper from the clear-ing process, he adds. "The two are diametrically opposed."

Despite such assertions, the Fed seems as committed to imaging as it is committed to ECP and truncation.

Some bankers see the Fed predilection as symptomatic of a "managed withdrawal" from the checking business—that the only way the Fed can keep its check-collection prices in line with the cheaper prices that will spring from emerging private-sector clearing arrangements is by reducing its dependency on check-processing equipment and transportation.

But as Frodin sees it, the variety of new clearing techniques and technologies will benefit the industry. "There are so many different needs and so many different niches, that there is no single new approach that is going to dominate tomorrow," she asserts.

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through Federal Reserve transmitted to Federal Reserve National settlement Accounting information Electronic communications RECEPT AND TRANSMISSION OF MONITORING DATA REAL TIME CALCULATIONS ACCOUNTING SERVICES MASTER SCHEDULING direct air and ground SETTLEMENT CPU through Federal Reserve Physical transfers, Local settlement transportation Bank Local Clearing Association Bank Participating Bank B Receives Letter Participating Bank A Outgoing Bank on - us

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For: CENTRAL CHECK CLEARING SYSTEM

Sir:

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Our postcard receipt, which we ask that you acknowledge and return to us for our file, is also enclosed.

Edwin M. Baranowski Reg. No. 27,482

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Enclosures

cc: (w/encl.) John Liebersbach, Esq.

EMB/kac/1546/71

By Express Mail, Receipt No. 980625349, June 29, 1993