Exhibit 5
Part 10
To Third Declaration of
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Element by element comparison of claims 46-50 of the '988 Patent to Geer (USP 5,930,788).

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46. A method for transmitting data within and between one or more remote subsystems, at least one intermediate subsystem and at least one central subsystem in a tiered manner wherein each of the central subsystems communicate with at least one intermediate subsystem and each of the intermediate subsystems communicate with at least one remote subsystems comprising the steps of:	"The present invention comprises an integrated system beginning at a payee's item capture facility for effecting the efficient submission of checks and other financial instruments into the payment system for collection of funds. The financial instruments are received by a payee at a capture location remote from the payee's collecting and clearing depository bank and are presented for payment through the check payment system to the multiple institutions on which the instruments are drawn. In one embodiment, electronic scanning means at a first location established by the payee receives the financial instruments, scans and extracts necessary data therefrom including the data of the magnetic ink character recognition (MICR) line of the instrument, adds necessary data such as the amount and a document identification number to the electronic information associated with each check, and sends this electronic information to the payee's depository bank for further electronic sorting and processing both with regard to the introduction of the checks into the payment system and the crediting of funds represented by the checks to the payee's account at the bank, as the payee processes the check in its own record of account with the check payor. In this first embodiment, the paper financial instruments are typically imaged (electronically, digitally, optically, on microfilm or disk, or otherwise) for archival storage at the payee's location remote from the payee's depository bank, substantially contemporaneous with the capture of the financial or other information on the instrument." Col 4, lns 46-67. **remote subsystem** = payee 2 **intermediate subsystem** = depository bank 10 **central subsystem** = payment system 12
46a. capturing an image of documents and receipts and extracting data therefrom;	"The financial instruments are received by a payee at a capture location **remote** from the payee's collecting and clearing depository bank." Col 4, lines 49-51. "[F]or retail establishments such as grocery chains and the like that receive large numbers of point of sale checks, the present invention is applicable with the item capture location of the payee being the point of sale check receiving establishment. Point of sale capture may, but need not necessarily, include imaging of the check." Col. 8, lns 48-54. "An image of the physical check is **created**." "The image may be an optical or electronic gray-scale or color image of the check maintained in archival storage in pixel-by-pixel digital, optical, magnetic, electronic, fully optical or other storage technology from which information can be derived." Col 8, lns 12-19. "The electronic scanning for **extraction of the data** from the MICR line, etc., may be combined with the imaging of the check." Col 8, lns 61-64.
46b. transmitting data within the remote locations;	The internal communication **network** at the **remote capture location** is inherently disclosed. Referring to the FIGs., it is clear that electronic data is transmitted within the remote location among the functional components including the electronic sorter, the imaging unit, the archive, etc. "Following receipt and item capture by the payee, the check will advance to scanning and processing

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	in the electronic scanning block 6 of FIG. 1. In this step, the check is scanned by a suitable reader." Check images are created. "The data thus collected will typically include the MICR (Magnetic Ink Character Recognition) data from the MICR lines of the checks. The amount of the check and a date will also be collected (optionally verified by a human operator) and included with the electronic record to be associated with each check." [Col 7, lns 38-58] Ultimately, the check images and the information extracted from the check must be organized and transmitted to the bank of first deposit. Therefore, the electronic data is inherently transmitted within the remote location. "The embodiment of FIG. 1 uses electronic transmission of information related to electronically sorted information about checks received and electronic cash letters related to the particular groups of sorted checks. Therefore, sorting, reconciliation, etc., is effected by electronic means without the need for mechanical processing or delivery of physical paper checks." Col. 7, Lines 31-37. "The information flow within the check payee's organization from item capture 4 to the check payee accounting function 5 is a matter of payee preference." Col. 8, Lines 6-9
46c. transmitting data from each remote location to corresponding intermediate location;	"A **communication link** is established between the **payee's location** and the **depository bank**. Information pertaining to the checks and/or the cash letters in anticipation of a deposit in the payee's account corresponding to a cash letter (or cash letters) is **transmitted** from the payee to the collecting and clearing depository bank." [Col 5, lns 25-31]. "[T]his **image of the check may also be transmitted electronically** to the bank along with the other information extracted from the check." [Col 9, lns 1-10].
46d. transmitting data within the intermediate locations;	While the specification does not explicitly disclose the communication network internally at the bank of first deposit, it does disclose the flow of the electronic check information and check images through several functional blocks of the bank of first deposit.[1] Therefore, the electronic data is inherently transmitted within the bank of first deposit.
46e. transmitting data from each intermediate location to corresponding central locations; and	"The electronic check information ... is sent via an appropriate communication link 15 into the payment system 12." [Col 9, lns 27-30]
46f. transmitting data within the central	"The payment system 12 includes clearing institutions such as the Federal Reserve Banks,

[1] "The electronic check information ... is sent via an appropriate communication link 15 into the payment system 12." [Col 9, lns 27-30] "The image 7 is transferred via a communication link 11 from payee 2 to depository bank 10 for financial information processing and archival storage." [Col 10, lns 1-3] "At the depository bank, the appropriate adjustments of the payee's account balances by the depository bank are carried out 13." [Col 9, lns 11-25] "The payee's account is credited with the appropriate amounts as such are compiled by the payee and the information thereof is received electronically from the payee. The electronic check information is sorted and routed via 14, with appropriate electronic information added thereto to insure proper routing through the payment and clearing system to the appropriate payor bank." [Col 9, lns 14-16]

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locations.	correspondent banks, The National Clearinghouse Association (described in United States Letters Pat. No. 5,265,007), the electronic check clearing house organization (described in Stephens et al., supra), and like mechanisms. Having a direct relationship to the check payment system, the collecting and clearing depository bank 10 is considered a part of the check payment system." [Col 9, lns 30-37] "The payment system 12 receives checks from depository bank 10 and other banks of first and subsequent deposit (not depicted on FIG. 1) intended for various payor banks, B.sub.1, B.sub.2, B.sub.3 . . . B.sub.n, collectively denoted as 16 in FIG. 1. The check information from the payment system 12 reaches the appropriate payor banks 16 for proper debiting of the accounts of check writers 1 thus completing the payment cycle. In the event of dishonor of a check by a payor bank, the process reverses as to the collection of the dishonored check, and this **information may be transmitted electronically back through payment system 12** (or by more direct means of reversal) to depository bank 10 for unwinding the transaction and for debiting of the payee's account as to the dishonored check. " [Col 9, lns 38-51]
47. A method as in claim 46 wherein said transmitting data from each remote location to corresponding intermediate locations step comprises the steps of:	See claim 46
47a. connecting each remote location to a corresponding intermediate location; and	"A **communication link** is established between the **payee's location** and the **depository bank**." Col. 5 ln 25-27.
47b. connecting the intermediate locations to corresponding remote locations.	"A **communication link** is established between the **payee's location** and the **depository bank**." Col. 5 ln 25-27.
48. A method as in claim 47 wherein said transmitting data from each intermediate location to corresponding central locations comprises the steps of:	See Claim 47
48a. connecting each intermediate location to an external communication network; and	"The electronic check information as sorted, grouped and annotated by the depository bank [10] is sent via an appropriate communication link 15 into the payment system 12." [Col 9, lns 27-30]. Inherently, a connection between the depository bank 10 (the intermediate location) and the payment system 12, which includes a variety of independent "clearing institutions, such as the Federal Reserve Banks, correspondent banks, The National Clearinghouse Association . . . " (col. 9, ln. 25-34), requires first connecting the depository bank with an external network . . .
48b. connecting the corresponding central locations to the external communication	which, in turn, connects with the payment system 10.

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network.	
49. A method as in claim 48 wherein said transmitting data from each intermediate location to, corresponding central locations step further comprises the steps of:	See Claim 48.
49a. packaging the transaction data into frames; and	The transmission using frames is not expressly disclosed in the Geer patent. However, frame relay transmission was well-known at the time of the earliest Ballard patent filing and thus it would be a matter of obvious design choice to implement this specific method of transmitting data in the Geer system. See for example, the X.25 and X.31 protocols
49b. transmitting the frames through the external communication network.	See above.
50. A method as in claim 46 wherein said data is obtained from (a) electronic transactions from credit cards, smart cards and debit cards, signature data or biometric data, or (b) paper transactions from documents and receipts.	The data that is transmitted throughout the system is capture and extracted from check. See Claim 46(a) analysis above. Thus, the data of the claim elements, is obtained from paper transactions from documents and reciepts.

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	within the originating financial institution. ANSI, p. 202 (FIG. F.1). Items are transmitted from the "Receiving FII translator" to the "Image and Data Processing Application" within the receiving financial institution. ANSI, p. 203 (FIG. F.2).
between said one or more data access subsystems and said at least one data processing subsystem,	Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199.
1d. with the data access subsystem providing encrypted subsystem identification information and encrypted paper transaction data to the data processing subsystem.	The ANSI describes encryption and various security methods. ANSI, p. 55-61. Encryption of specific data elements is taught, "[e]ncryption key name... conveys the name of the key used to encipher the contents of this functional group. The name is mutually known to the security originator and the security recipient, is unique for this relationship, and allows a particular key to be specified." ANSI, p. 57. Thus, data elements are encrypted (enciphered) at the functional group level. This is further supported by the initialization vector showing the length of the data element to be encrypted. ANSI, p. 55-618. As explained, one (1) type of functional group is known as "item views." The check images are item views. The "creation computer" which identifies the computer that creates the image is also an item view data element. ANSI, p. 93; 105. Thus, the originating institution (remote subsystem) provides encryption to both the images and the subsystem identification information.
2. A system as in claim 1 wherein said one or more data access subsystems further comprise at least one scanner for capturing the paper transaction data.	ANSI X9.46 standard "The institution participating in check image interchange shall capture both the full front and the full back of the item. ANSI, p. 9. The definition of "Image Capture" is found in the glossary of the standard on p. 220, "The operation of converting a human-readable image on paper to a digital representation stored in memory, or some other electronic, or optical, or electromagnetic, surfaced storage media. This is normally accomplished using some type of scanning device or camera."
3. A system as in claim 2 wherein said one or more data access subsystems also capture electronic transactions from credit cards, smart cards and debit cards, signature data or biometric data, further comprising:	ANSI in view of prior art admission
at least one card interface for capturing the electronic transaction data;	Applicants' admission
at least one signature interface for capturing an electronic signature; and	Applicants' admission

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at least one biometric interface for capturing biometric data.	Applicants' admission
4. A system as in claim 3 wherein said at least one data access controller successively transforms the captured transaction data to a bitmap image, a compressed bitmap image, an encrypted, compressed bitmap image and an encrypted, compressed bitmap image tagged with information identifying a location and time of the transaction data capture.	ANSI in view of prior art admission Items (images) may be compressed, encrypted and tagged with an image key for transmission. "Compression of views of items included in an interchange shall use one or more of the following algorithms." ANSI, p. 8; 93; 162. "Each pixel of uncompressed image shall be encoded as standard binary numbers." ANSI, p. 165. Encryption keys encipher the contents of the functional group. ANSI, p. 57. The function groups include "item views". ANSI, p. 13. An image key is another type of item view that may be transmitted. ANSI, p. 88. The "image key data element contains a unique value which is assigned to the image to provide a cross-reference between the financial data and the images and associated image data. This value is unique within the ECE institution." The image key contains a date, a sequence number, and a cycle number. ANSI, p. 90.
5. A system as in claim 4 wherein said one or more data access subsystems further comprise digital storage for storing the tagged, encrypted, compressed bitmap image.	ANSI in view of prior art admission The standard "defines a query protocol that may be used to request specific imaged items, or to request groups of imaged items being held in another institution's image storage facility." ANSI, p. 1. Several storage scenarios are detailed in the ANSI, both at paying and presenting banks. ANSI, p. 166-68. Storage may be by the imaging bank in the manner that it is captured or in the manner that images are ultimately transmitted. ANSI, p. 166.
6. A system as in claim 5 wherein said at least one card interface initiates the electronic transaction.	ANSI in view of prior art admission Applicants' admission
7. A system as in claim 6 wherein said one or more data access subsystems further comprise at least one printer for printing the paper transaction initiated by said at least one card interface.	ANSI in view of prior art admission Applicants' admission
8. A system as in claim 7 wherein the paper transaction printed by said at least one printer includes data glyphs.	ANSI in view of prior art admission Applicants' admission
9. A system as in claim 1 wherein said data management subsystem of said at least one data processing subsystem comprises:	ANSI in view of Owens, et al. (4,264,808) and Minoli

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at least one server for polling said one or more remote data access subsystems for transaction data;	"As the 'images' of the documents 18 included in a transaction group or batch are received in the form of entry records 74 (FIG. 3B) by the communication means 88, they are routed to the image file means 100 via a system bus 102 which may be any conventional high-speed bit serial bus." Owens, et al., Col. 12, lns 12-16. Minoli describes several servers suitable in imaging applications. Minoli, p. 33; 250.
a database subsystem for storing the transaction data in a useful form;	All images and data coming into or going out of the IPC 14 are controlled by the communication means 88, which performs all handshake protocol, logical addressing and communications packaging, and which directs all incoming images and data to the appropriate file means, as for example, image file means 100. The image file means 100 is processor controlled and broadly includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106. Owens, et al., Col. 12, lns 18-27.
a report generator for generating reports from the transaction data and providing data to software applications;	"The data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. From the interface 124, the data associated with the "on-us" documents 18 is presented in the desired format to the conventional application systems 126 where reports and application posting are performed." Owens, Col. 14, lns 12-18.
at least one central processing unit for managing the storing of the transaction data;	"A system manager 108 at the IPC 14 (FIG. 1) provides common support functions such as operator consoles 110 (only one being shown), line printers (not shown), program libraries, and non-volatile storage and retrieval of system information needed by other subsystems. The system manager 108 also provides the operator interface to all subsystems of the banking system 10, and conventionally provides the control of initiation, termination and re-start processes." Owens, Col. 12, lns 27-36.
a domain name services program for dynamically assigning one of said at least one server to receive portions of the transaction data for balancing the transaction data among said at least one server; and	"The communications controllers 232, 234, and 236 (FIG. 5A) act as buffers in controlling the flow of the entry records 74 to the communications nodes 246, 248 which also include memory to store portions of an entry record 74. Conventional direct link adapters 252 are used to couple the communication nodes 246, 248 to the system bus 102. When all the portions of an entry record 74 are received at one of the communication nodes 246, 248 all of these portions of an entry record are then routed to the image file means 100 (FIG. 1) under the control of an image file processor 254 (FIG. 5B) which is included in the image file means 100. When all the entry records 74 for a transaction group are received at the image file means 100, an end of documents 18 signal from the input hopper 24 shown in FIG. 3A indicates this fact to the system manager 108." Owens, Col. 21, lns 1-17. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.
a memory hierarchy.	"The image file means 100 is processor controlled and broadly includes a primary storage 104 which

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	represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, Col. 12, lns 23-27.
10. A system as in claim 9 wherein said at least one server also polls for biometric and signature data, said database stores the biometric data and the signature data, and said at least one central processing unit verifies the biometric data and the signature data.	ANSI in view of Owens, et al. (4,264,808) and Minoli and prior art admission Applicants' admission "Signature cards or images 166 which are input into the system 10 via the ILU 22 in FIG. 2 are data completed as non-dollar batches by the data development means 112 and are used to derive account and control information therefrom; they are placed in the data file means 114 (FIG. 1)." Owens, et al., Col. 16, lns 20- 26. "With regard to FIG. 8, the various reports (non-image application reports) shown as 214, various reporting data 216, the associated images 218 from the image file means 100, qualified transaction data 220 from the data file means 114 and the associated signatures 222 from a signature file means located at IPC 14 are used to create image reports 224 at the associated IPC 14." Owens, et al., Col. 19, lns 3-9.
11. A system as in claim 9 wherein said memory hierarchy comprises at least one primary memory for storage of recently accessed transaction data and at least one secondary memory for storage of other transaction data.	ANSI in view of Owens, et al. (4,264,808) and Minoli "The image file means 100 is processor controlled and broadly includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, et al., Col. 12, lns 23-27; Owens, et al., Col. 21, lns 17-38.
12. A system as in claim 11 wherein said at least one secondary memory comprises at least one write once read many jukebox and at least one optical storage jukebox.	ANSI in view of Owens, et al. (4,264,808) and Minoli Minoli displays each of an optical jukebox (p. 30), a WORM jukebox (p. 31), and a video jukebox (p. 28). Owens, et al. describes its back-up storage as a video disc, video recorder or magnetic disc. Col. 21, lns 35-39; Col. 22, lns 33-35.
13. A system as in claim 12 wherein said at least one optical storage jukebox comprises read only memory technology including compact disc read only memory form factor metallic write once read many disc.	ANSI in view of Owens, et al. (4,264,808) and Minoli CD-ROM optical storage is described as being faster (150 kbps) than video servers. Minoli, p. 33.
14. A system as in claim 9 wherein said database subsystem comprises at least one predefined template for partitioning the stored	ANSI in view of Owens, et al. (U.S. Patent No. 4,264,808) and Minoli MPR (machine pattern recognition) units connected to processors at the IPC (FIG. 5C) "include[] a

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transaction data into panels and identifying locations of the panels.	conventional character recognition reader which reads the decompressed image of a document 18 and ascertains the monetary amount thereon." Owens, et al., Col. 23, lns 44-47.
15. A system as in claim 14 wherein said data processing subsystem further comprises a data entry gateway for correcting errors in the panels of stored transaction data.	ANSI in view of Owens, et al. (U.S. Patent No. 4,264,808) and Minoli "After completion at the MPR unit 140, all the developed data for a document 18 is analyzed for completeness. When data is missing, the associated image is routed to one of the processors 396, 398 for display on one of the CRTS 150 where an operator keys in the appropriate data on an associated keyboard 152. The image display controllers 410 and 412 have conventional decompression units associated therewith for the purpose of permitting operator viewing of the images from the file means 100. The operators complete the data completion function 148 (FIG. 10) by keying in the appropriate data such as monetary amounts (if necessary) while using the keyboards 152." Owens, et al., Col. 23, lns 47-52.
16. A system as in claim 1 wherein said at least one communication network comprises:	ANSI in view of Minoli
at least one first local area network for transmitting data within a corresponding one of said one or more remote data access subsystems;	Scan Segment on a LAN (Minoli, p. 31). ANSI, p. 196; 202-203 illustrate that a financial institution may have multiple subsystems, such as a FII system user and a FII translator. Such subsystems may be connected by a LAN.
at least one second local area network for transmitting data within a corresponding one of said at least one data processing subsystem; and	Access Segment on a LAN (Minoli, p. 31). ANSI, p. 196; 202-203 illustrate that a financial institution may have multiple subsystems, such as a FII system user and a FII translator. Such subsystems may be connected by a LAN.
at least one wide area network for transmitting data between said one or more remote data access subsystems and said at least one data processing subsystem.	WAN connectivity for associated imaging and processing LANs through a Public PVC or SVC frame relay network. (Minoli, Pages 269-270). Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 173; 199. These are examples of WANs.
17. A system as in claim 16 wherein said at least one communication network further comprises:	ANSI in view of Minoli

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at least one modem for connecting said at least one first local area network of said one or more data access subsystems to a corresponding one of said at least one second local area network of said at least one data processing subsystem through said at least one wide area network; and	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
at least one bank of modems for connecting said at least one second local area network of said at least one data processing subsystem to a corresponding some of said at least one first local area network of said one or more data access subsystems through said at least one wide area network.	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
18. A system as in claim 1 further comprising at least one data collecting subsystem for collecting and sending the electronic or paper transaction data comprising a further management subsystem for managing the collecting and sending of the transaction data.	ANSI "[T]he communications of an interchange is an end-to-end service which may involve the use of intermediate relay points. Intermediate FII-translators forward received transaction sets destined to other users by embedding them in a newly constructed interchange." ANSI, p. 199. Financial institutions and intermediaries may interchange images. ANSI, p. 2.
19. A system as in claim 18 wherein said further data management subsystem of said at least one data collecting subsystem comprises:	ANSI in view of Campbell, et al. (5,373,550) and Minoli Image processing node = data collecting subsystem "The system of FIG. 1 comprises a public switched telephone network 10. The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns 25-33.
at least one server for polling said one or more remote data access subsystems for transaction data;	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30 - 39. "The controller 42 may read some data accompanying check images, for example, it may identify that TCP/IP protocol information accompanying those images. That information may instruct the node 12 about the identity of the sending institution and the intended receiving institution."

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	Campbell, et al., Col. 5, lns 23-28. Multiple types of servers may be used in image interchange. Minoli, 33; 250.
a database for storing the transaction data in a useful form;	"The database 46 contains two types of data, data relating to subscribers to the services of node 12 and data relating to banks and other potential destinations which do not subscribe to the services of the node 12." Campbell, et al., Col. 6, lns 9-12. "A subscriber's check images will be stored in the storage device 48 if the subscriber elects this option." Campbell, et al., Col. 6, lns 63-64.
at least one central processing unit for managing the collecting of the transaction data;	"[T]he processing node 12 receives check images and performs certain processing procedures on those images, including at least temporary storage of the received check images." Campbell, et al., Col. 3, lns. 43-58.
a domain name services program for dynamically assigning one of said at least one server to receive portions of the transaction data for balancing the transaction data among said at least one server; and	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38. The assembler/disassembler 40 also transmits frames of digital information representing check images to the network 38 after those images have been processed by the node 12. A node controller and router 42 controls the routing of check images to their intended destinations, both in the controller and to their ultimate destinations outside the network 38." Campbell, et al., Col. 3, lns 30 - 39. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.
a memory hierarchy.	"The storage device 48 may be a rewritable mass storage device which can at least temporarily store or archive compressed or uncompressed check images prior to transmission to their destinations." Campbell, et al., Col. 6, lns 57-60. "In addition to temporary storage of check images, the storage mechanism 48 may be configured to provide long term archiving of check images." Campbell, et al., Col. 7, lns 6-8.
20. A system as in claim 19 wherein said memory hierarchy comprises at least one primary memory for collecting transaction data and at least one secondary memory for backup storage of the transaction data.	ANSI in view of Campbell, et al. (5,373,550) and Minoli "The storage device 48 may be a rewritable mass storage device which can at least temporarily store or archive compressed or uncompressed check images prior to transmission to their destinations." Campbell, et al., Col. 6, lns 57-60. "In addition to temporary storage of check images, the storage mechanism 48 may be configured to provide long term archiving of check images." Campbell, et al., Col. 7, lns 6-8.
21. A system as in claim 20 wherein said at least one secondary memory comprises at least one DLT jukebox.	ANSI in view of Campbell, et al. (5,373,550) and Minoli DLT = Digital Linear Tape, a type of magnetic tape storage device. Minoli describes several image storage systems including: CD-ROMs, WORMs, recordable CD, and

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	magnetooptic (MO) storage. Minoli, p. 219.
22. A system as in claim 18 wherein said at least one communication network comprises:	ANSI in view of Minoli
at least one first local area network for transmitting data within a corresponding one of said one or more remote data access subsystems;	Scan Segment on a LAN (Minoli, p. 31; 269-270) ANSI, p. 196; 202-203 illustrate that a financial institution may have multiple subsystems, such as a FII system user and a FII translator. Such subsystems may be connected by a LAN.
at least one second local area network for transmitting data within a corresponding one of said at least one data collection subsystem;	Utilities Segment on a LAN (Minoli, p. 31; 269-270) "[T]he communications of an interchange is an end-to-end service which may involve the use of intermediate relay points. Intermediate FII-translators forward received transaction sets destined to other users by embedding them in a newly constructed interchange." ANSI, p. 199. Financial institutions and intermediaries may interchange images. ANSI, p. 2.
at least one third local area network for transmitting data within a corresponding one of said at least one data processing subsystem; and	Access Segment on a LAN (Minoli, p. 31; 269-270). ANSI, p. 196; 202-203 illustrate that a financial institution may have multiple subsystems, such as a FII system user and a FII translator. Such subsystems may be connected by a LAN.
at least one wide area network for transmitting data between said one or more remote data access subsystems, said at least one data collection subsystem and said at least one data processing subsystem.	WAN connectivity for associated imaging and processing LANs through a Public PVC or SVC frame relay network. (Minoli, Pages 269-270). Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199. These are examples of WANs.
23. A system as in claim 22 wherein said at least one communication network further comprises:	ANSI in view of Minoli
at least one first modem for connecting said at least one first local area network of said one or more data access subsystems to a corresponding one of said at least one second local area network through said at least one	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.

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wide area network;	
at least one bank of modems for connecting said at least one second local area network of said at least one data collection subsystem to a corresponding some of said at least one first local area network of said one or more data access subsystems through said at least one wide area network;	Dial-up link between LAN routers. This approach involves the use of modems connected to the LAN server (bridge or router), to utilize the analog public telephone network. Circuit switching implies that the communications channel is not dedicated 24 h per day, but must be brought on line when needed (via a process called call setup) and then taken down when no longer needed. Minoli, p. 263.
at least one first wide area network router for connecting a corresponding one of said at least one second local area network of said at least one data collecting subsystem to said at least one wide area network; and	Minoli Fig. 9.7 (p. 269) First router connecting two or more LANs over a WAN. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199.
at least one second wide area network router for connecting a corresponding one of said at least one third local area network of said at least one data processing subsystem to said at least one wide area network.	Minoli Fig. 9.7 (p. 269) Second router connecting two or more LANs over a WAN. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199.
24. A system as in claim 23 wherein said at least one first wide area network and said at least one second wide area network comprises a carrier cloud, said carrier cloud using a frame relay method for transmitting the transaction data.	ANSI in view of Minoli "Frame relay service provides interconnection among n sites by requiring only that each site be connected to the 'network cloud' via an access line. ... The cloud consists of switching nodes interconnected by trunks used to carry traffic aggregated from many users (see Fig. 9.7). In a public frame relay network the switches and the trunks are put in place by a carrier for use by many corporations. ... In a private frame relay network, the switches and trunks are put in place (typically) by the corporate communications department of the company in question." Minoli, p. 268. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 202.
25. A system as in claim 22 wherein said at least one second local area network and said at least one third local area network further comprises a corresponding one of at least one network switch for routing transaction data within said at least one second local area network and said at least one third local area	ANSI in view of Minoli "Frame relay service provides interconnection among n sites by requiring only that each site be connected to the 'network cloud' via an access line. ... The cloud consists of switching nodes interconnected by trunks used to carry traffic aggregated from many users (see Fig. 9.7). In a public frame relay network the switches and the trunks are put in place by a carrier for use by many corporations. ... In a private frame relay network, the switches and trunks are put in place (typically) by the corporate communications department of the

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network.	company in question." Minoli, p. 268. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199.
26. A method for central management, storage and verification of remotely captured paper transactions from documents and receipts comprising the steps of:	The ANSI X9.46 standard is an electronic data interchange protocol for the exchange of electronic digitized images of financial documents among different financial institutions involved in a payment transaction. ANSI, p. 1. The exchange occurs across diverse computing platforms. Packaged interchange content may be delivered from the originating imaging application's financial image interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the data electronically. ANSI, p. 15-16. "This standard is intended to improve the payments system by supporting the interchange of digitized images of financial documents, specifically check and similar paper-based instruments; facilitate the truncation of the paper at the earliest possible point in the clearing process; and support transmissions from a single transaction to many transaction serving banking payment processing applications." ANSI, p. 1.
26a. capturing an image of the paper transaction data	"The institution participating in check image interchange shall capture both the full front and the full back of the item. ANSI, p. 9.
at one or more remote locations and	The ANSI X9.46 standard is an electronic data interchange protocol for the exchange of electronic digitized images of financial documents among different financial institutions involved in a payment transaction. ANSI, p. 1.
sending a captured image of the paper transaction data;	Transaction sets are interchanged. Transaction set contents are different for each functional group that can be interchanged. ANSI, p. 16. The function groups include "item views". ANSI, p. 14. "Item Views" include "bundles of views of imaged items, item information for each view and item view data." ANSI, p. 16. "For each item, e.g., check, this standard defines mechanisms for sending and receiving both information about the item (item information) and digitized representations of the item." ANSI, p. 9.
26b. managing the capturing and sending of the transaction data;	"The data to be interchange from the originating imaging application are packaged by the FII-translator." ANSI, p. 10. "The translator (FII-translator) function of the originating application produces an interchange object (i.e., a complex data structure) by translating the output of the local imaging handling, data processing, or data storage application into a standardized interchangeable 'edi' structure." ANSI, p. 12; 150-151.
26c. collecting,	"The data to be interchanged from the originating imaging application are packaged by the FII-translator, and sent to the receiving imaging application." ANSI, p. 12.
processing,	"[U]pon receipt of the interchanged data, the FII-translator will parse the incoming data for the receiving imaging application. Then, the receiving imaging application may generate acknowledgements or replies to query requests, and become the originating imaging application for a new image interchange." ANSI, p. 12.
sending and	
storing the transaction data	On p. 14, lines 465-466, of the standard states that the "edi" translator function of the receiving application

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	translates the "edi" interchange into the locally understood data structures for subsequent storage or processing of the data by the receiver's application."
at a central location;	The ANSI X9.46 standard is an electronic data interchange protocol for the exchange of electronic digitized images of financial documents among different financial institutions involved in a payment transaction. ANSI, p. 1.
26d. managing the collecting, processing, sending and storing of the transaction data;	"[U]pon receipt of the interchanged data, the FII-translator will parse the incoming data for the receiving imaging application. Then, the receiving imaging application may generate acknowledgements or replies to query requests, and become the originating imaging application for a new image interchange." ANSI, p. 12.
26e. encrypting subsystem identification information and	The ANSI describes encryption and various security methods. ANSI, p. 55-61. Encryption of specific data elements is taught, "[e]ncryption key name... conveys the name of the key used to encipher the contents of this functional group. The name is mutually known to the security originator and the security recipient, is unique for this relationship, and allows a particular key to be specified." ANSI, p. 56. Thus, data elements are encrypted (enciphered) at the functional group level. This is further supported by the initialization vector showing the length of the data element to be encrypted. ANSI, p. 55; 57. As explained, one (1) type of functional group is known as "item views." The check images are item views. The "creation computer" which identifies the computer that creates the image is also an item view data element. ANSI, p. 93-94; 105 Thus, the originating institution (remote subsystem) provides encryption to both the images and the subsystem identification information.
the transaction data; and	Transaction sets are interchanged. Transaction set contents are different for each functional group that can be interchanged. ANSI, p. 14. The function groups include "item views". ANSI, p. 14. "Item Views" include "bundles of views of imaged items, item information for each view and item view data." ANSI, p. 14. "For each item, e.g., check, this standard defines mechanisms for sending and receiving both information about the item (item information) and digitized representations of the item." ANSI, p. 9.
26f. transmitting the transaction data and the subsystem identification information	"[P]ackaged interchange content is delivered from the originating imaging application's financial image interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the packaged interchange data electronically." ANSI, p. 15; 199.
within and	Items are transmitted from the "Image and Data Processing Application" to the "Originating FII translator" within the originating financial institution. ANSI, p. 202 (FIG. F.1). Items are transmitted from the "Receiving FII translator" to the "Image and Data Processing Application" within the receiving financial institution. ANSI, p. 203 (FIG. F.2).
between the remote location(s) and the central	"[P]ackaged interchange content is delivered from the originating imaging application's financial image

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location.	interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the packaged interchange data electronically." ANSI, p. 15; 199.
27. The method as in claim 26 wherein said managing the capturing and sending step comprises the steps of:	ANSI
successively transforming the captured transaction data to a bitmap image, a compressed bitmap image, an encrypted, compressed bitmap image and an encrypted, compressed bitmap image tagged with information identifying a location and time of the transaction data capturing; and	Items (images) may be compressed, encrypted and tagged with an image key for transmission. "Compression of views of items included in an interchange shall use one or more of the following algorithms." ANSI, p. 9; 88; 162-163. "Each pixel of uncompressed image shall be encoded as standard binary numbers." ANSI, p. 160. Encryption keys encipher the contents of the functional group. ANSI, p. 57. The function groups include "item views". ANSI, p. 14. An image key is another type of item view that may be transmitted. ANSI, p. 88. The "image key data element contains a unique value which is assigned to the image to provide a cross-reference between the financial data and the images and associated image data. This value is unique within the ECE institution." The image key contains a date, a sequence number, and a cycle number. ANSI, p. 90.
storing the tagged, encrypted, compressed bitmap image.	The standard "defines a query protocol that may be used to request specific imaged items, or to request groups of imaged items being held in another institution's image storage facility." ANSI, p. 1. Several storage scenarios are detailed in the ANSI, both at paying and presenting banks. ANSI, p. 173. Storage may be by the imaging bank in the manner that it is captured or in the manner that images are ultimately transmitted. ANSI, p. 173.
28. The method as in claim 27 wherein said managing the capturing and sending step also captures electronic transactions from credit cards, smart cards and debit cards, signature data or biometric data, further comprising the steps of:	ANSI in view of prior art admission Applicants' admission
initiating an electronic transaction;	Applicants' admission
capturing signature data;	Applicants' admission
capturing biometric data; and	Applicants' admission
printing a paper transaction with data glyphs for the initiated electronic transaction.	Applicants' admission

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29. A method as in claim 26 wherein:	ANSI
said capturing and sending step occurs at a plurality of remote locations; and	The ANSI X9.46 standard is an electronic data interchange protocol for the exchange of electronic digitized images of financial documents among different financial institutions involved in a payment transaction. ANSI, p. 1. "Image interchange will occur among a wide variety of financial institutions" ANSI, p. 2.
said collecting, processing, sending and storing step occurs at a plurality of central locations.	The ANSI X9.46 standard is an electronic data interchange protocol for the exchange of electronic digitized images of financial documents among different financial institutions involved in a payment transaction. ANSI, p. 1. "Image interchange will occur among a wide variety of financial institutions" ANSI, p. 2.
30. A method as in claim 29 wherein said collecting, processing, sending and storing step comprises the steps of:	ANSI in view of Owens, et al. (4,264,808) and Minoli
polling the remote locations for transaction data with servers at the central locations;	"As the 'images' of the documents 18 included in a transaction group or batch are received in the form of entry records 74 (FIG. 3B) by the communication means 88, they are routed to the image file means 100 via a system bus 102 which may be any conventional high-speed bit serial bus." Owens, et al., Col. 12, lns 12-16. Minoli describes several servers suitable in imaging applications. Minoli, p. 33; 250.
storing the transaction data at the central location in a memory hierarchy, said storing maintains recently accessed transaction data in a primary memory and other transaction data in a secondary memory; and	At the central processing center, "[t]he image file means 100 is processor controlled and broadly includes a primary storage 104 which represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival file system, shown, for example, as a video disc 106." Owens, et al., Col. 12, lns 23-27.
dynamically assigning the servers at the central location to receive portions of the transaction data for balancing the transaction data among the servers; and	"The communications controllers 232, 234, and 236 (FIG. 5A) act as buffers in controlling the flow of the entry records 74 to the communications nodes 246, 248 which also include memory to store portions of an entry record 74. Conventional direct link adapters 252 are used to couple the communication nodes 246, 248 to the system bus 102. When all the portions of an entry record 74 are received at one of the communication nodes 246, 248 all of these portions of an entry record are then routed to the image file means 100 (FIG. 1) under the control of an image file processor 254 (FIG. 5B) which is included in the image file means 100. When all the entry records 74 for a transaction group are received at the image file means 100, an end of documents 18 signal from the input hopper 24 shown in FIG. 3A indicates this fact to the system manager 108." Owens, Col. 21, lns 1-17. "Bridges connect two or more LANs at the MAC layer. A bridge receiving packets (frames of information will pass the packets to the interconnected LAN based on some forwarding algorithm selected by the manufacturer (explicit route, dynamic address filtering, static address filtering, etc.) Minoli, p. 248-49.

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generating reports from the transaction data and providing data to software applications.	At the central processing center, "[t]he data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. From the interface 124, the data associated with the "on-us" documents 18 is presented in the desired format to the conventional application systems 126 where reports and application posting are performed." Owens, et al., Col. 14, lns 12-18.
31. A method as in claim 30 wherein said storing the transaction data step comprises the steps of:	ANSI in view of Owens, et al. (4,264,808) and Minoli
partitioning the stored transaction data with predefined templates into panels; and	At the central processing center, "[t]he data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. Owens, et al., Col. 14, lns 12-18. MPR (machine pattern recognition) units connected to processors at the IPC (FIG. 5C) "include[] a conventional character recognition reader which reads the decompressed image of a document 18 and ascertains the monetary amount thereon." Owens, et al., Col. 23, lns 44-47.
identifying locations of the panels.	At the central processing center, "[t]he data associated with a transaction group of documents 18 is extracted from the data file means 114, and is put in the appropriate format by a conventional interface 124. Owens, et al., Col. 14, lns 12-18. MPR (machine pattern recognition) units connected to processors at the IPC (FIG. 5C) "include[] a conventional character recognition reader which reads the decompressed image of a document 18 and ascertains the monetary amount thereon." Owens, et al., Col. 23, lns 44-47.
32. A method as in claim 31 wherein said managing the collecting, processing, sending and storing of the transaction data step comprises correcting errors in the panels of stored transaction data.	ANSI in view of Owens, et al. (4,264,808) and Minoli "After completion at the MPR unit 140, all the developed data for a document 18 is analyzed for completeness. When data is missing, the associated image is routed to one of the processors 396, 398 for display on one of the CRTS 150 where an operator keys in the appropriate data on an associated keyboard 152. The image display controllers 410 and 412 have conventional decompression units associated therewith for the purpose of permitting operator viewing of the images from the file means 100. The operators complete the data completion function 148 (FIG. 10) by keying in the appropriate data such as monetary amounts (if necessary) while using the keyboards 152." Owens, et al., Col. 23, lns 47-52.
33. A method as in claim 32 further comprising the steps of:	ANSI in view of Owens, et al. (4,264,808) and Minoli and prior art admissions

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polling the remote locations for captured electronic data, captured signature data and captured biometric data with servers at the central locations; and	Applicants' admission "IPC 230 in FIG. 9 may be configured to handle special entries such as those associated with the use of a credit card (as for example, VISA). In this situation the images or entry records 74 (FIG. 3) could be produced at any POA within the banking system 10 and transmitted to the IPC 230 for processing thereat as already explained." Owens, et al., Col. 20, lns 31-37.
comparing the captured signature data and the captured biometric data to stored signature data and stored biometric data respectively for identification verification.	Applicants' admission "With regard to FIG. 8, the various reports (non-image application reports) shown as 214, various reporting data 216, the associated images 218 from the image file means 100, qualified transaction data 220 from the data file means 114 and the associated signatures 222 from a signature file means located at IPC 14 are used to create image reports 224 at the associated IPC 14." Owens, et al., Col. 19, lns 3-9.
34. A method as in claim 32 wherein said transmitting the transaction data step comprises the steps of:	ANSI in view of Owens, et al. (4,264,808) and Minoli
transmitting data within the remote locations;	Items are transmitted from the "Image and Data Processing Application" to the "Originating FII translator" within the originating financial institution. ANSI, p. 202 (FIG. F.1).
transmitting data from each remote location to a corresponding central location; and	"[P]ackaged interchange content is delivered from the originating imaging application's financial image interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the packaged interchange data electronically." ANSI, p. 14; 155. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 199.
transmitting data within the central locations.	Items are transmitted from the "Receiving FII translator" to the "Image and Data Processing Application" within the receiving financial institution. ANSI, p. 203 (FIG. F.2).
35. A method as in claim 34 wherein said transmitting data from each remote location to a corresponding central location step comprises the steps of:	ANSI in view of Owens, et al. (4,264,808) and Minoli
connecting each remote location to a corresponding central location; and	"[P]ackaged interchange content is delivered from the originating imaging application's financial image interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the packaged interchange data electronically." ANSI, p. 15-16; 199.

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	Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 172; 155. "Communication protocol" is defined as "[a] set of conventions or rules involving predetermined sequences of control signals or characters to establish, or break, connection, or exchange data between discrete computer systems, within networks, (between mainframe and remote terminals), or between a computer and a peripheral." ANSI, p. 142.
connecting each central location to corresponding remote locations.	"[P]ackaged interchange content is delivered from the originating imaging application's financial image interchange translator to the receiving imaging application's financial image interchange translator is through a computer network by transmitting the packaged interchange data electronically." ANSI, p. 14; 155. Examples of communication methods include "teleprocessing methods: links, network end point addresses, speed, data transfer protocols, etc." ANSI, p. 167; 155. "Communication protocol" is defined as "[a] set of conventions or rules involving predetermined sequences of control signals or characters to establish, or break, connection, or exchange data between discrete computer systems, within networks, (between mainframe and remote terminals), or between a computer and a peripheral." ANSI, p. 216.
36. A method as in claim 29 further comprising the steps of:	ANSI in view of Campbell, et al. (5,373,550)
collecting and sending the electronic or paper transaction data at intermediate locations;	"The system of FIG. 1 comprises a public switched telephone network 10. The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns 25-33.
managing the collecting and sending of the transaction data; and	"The node controller and router 42 provides interfaces to systems external to the node 12. It is connected to all the other subsystems in the node 12 by way of the local area network 56. The controller 42 provides access to the database 46 and directs check images to appropriate subsystems in the node 12 connected to the local area network 56. Campbell, et al., Col. 5, lns. 14-26.]
transmitting the transaction data within the intermediate location and between the intermediate locations and the remote locations and the central locations.	"A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58. The node 12 receives images of checks from a sending institution 14 transmitted through the network 10. The node 12 processes the check images and sends them to a receiving institution 16." Campbell, et al., Col. 2, lns 25-33.
37. A method as in claim 36 wherein said managing the collecting and sending step comprises the steps of:	ANSI in view of Campbell, et al. (5,373,550) and Minoli "The system of FIG. 1 comprises a public switched telephone network 10. The network 10 contains at least one check image processing node 12 which provides check clearance services. The node 12 receives images of