Exhibit 5
Part 20
To Third Declaration of
Joseph N. Hosteny

'137 Patent	'550 to Campbell, et al.
34. A method as in claim 32 wherein said transmitting the transaction data step comprises the steps of:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli
transmitting data within the remote locations;	Sending bank 14 includes check imaging equipment 18 and a network interface 20. Campbell, et al., FIG 1.
transmitting data from each remote location to a corresponding central location; and	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. 26-32.
transmitting data within the central locations.	Receiving bank 16 includes check imaging processing equipment 32 and a network interface 30 on a LAN. Campbell, et al., FIG 1. "Check images are received in a network interface 30 in the receiving institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, ln 41-52.
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:	Campbell et al. in view of Owens, et al. (4,264,808) and Minoli
connecting each remote location to a corresponding central location; and	"The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10." Campbell, et al., Col. 3, lns. 20-43.
connecting each central location to corresponding remote locations.	"The signals received by the network on line 22 may be transmitted through the network 10 via one or more trunks and one or more central offices to the check image processing node 12 as represented schematically by a dotted line 24. The check image processing node 12 then routes the received check image via one or more trunks and one or more central offices, as represented schematically by a dotted line 26, to a network access line 28 of suitable capacity which may be the same as or different from the network access line 22. Check images are received in a network interface 30 in the receiving

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	institution 16. The interface 30 transforms the signals from the network 10 into a form suitable for use by check image processing equipment 32 located in the receiving institution 16. The check image processing equipment 32 may be similar to the imaging equipment 18 located in the sending institution 14. The equipment 32 may also be facsimile equipment, character recognition equipment, e-mail systems, or any other image processing equipment by which the images received may be displayed or used by the receiving institution." Campbell, et al., Col. 3, ln 32-52.
36. A method as in claim 29 further comprising the steps of:	Campbell, et al.
collecting and sending the electronic or paper transaction data at intermediate locations;	A bank of first deposit 36 (remote location) may transmit images through an intermediary bank 14 (intermediate location), which forwards received images to the check processing node 12 (central location). Check images may be transmitted in a "forward flow path from a bank of first deposit [through the check processing node 12] to a payor bank." Campbell, et al., Col. 7, lns. 65-68. The bank of first deposit may have check processing equipment for generating images of the checks. Campbell, et al., Col. 4, lns 18-21; Col. 3, lns 46-48. Thus, the bank of first deposit 36 may be considered a remote data access subsystem that transmits images to the check processing node 12 (a central data access subsystem), for the forward presented of check images. Thus, this may be considered another teaching of claim 26. Furthermore, an intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49. Thus, the workflow is: (1) images are captured at the bank of first deposit 36; (2) the images are transmitted from the bank of first deposit 36 to an intermediate bank 14; the images are transmitted from the intermediate bank 14 to the check processing node 12.
managing the collecting and sending of the transaction data; and	Each bank, such as the intermediate bank 14 may have the equipment 18 and the associated hardware. Campbell, et al., Col. 3, lns. 46-48. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1." Campbell, et al., Col. 3, ln 20-31.
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." Campbell, et al., Col. 2, lns 25-33. "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.

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37. A method as in claim 36 wherein said managing the collecting and sending step comprises the steps of:	Campbell, et al. in view of 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 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.
Polling the remote locations for transaction data with servers in the intermediate locations;	"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." Campbell, et al., Col. 5, lns 23-28. Several severs are suitable for imaging applications. Minoli, p. 33; 250.
storing the transaction data in the intermediate locations in a useful form, said storing maintains the transaction data in a primary memory of a memory hierarchy and performs backup storage of the transaction data into a secondary memory of the memory hierarchy; and	"[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.
dynamically assigning the servers to receive portions of the transaction data for balancing the transaction data among the servers.	"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.

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38. The method as in claim 36 wherein said transmitting the transaction data step comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12. Campbell, et al., Col. 2, lns. 46-49; FIG. 2.
transmitting data within the remote locations;	The bank of first deposit may have check processing equipment for generating images of the checks. Campbell, et al., Col. 4, lns 18-21; Col. 3, lns 46-48.
transmitting data from each remote location to a corresponding intermediate location;	Intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49.
transmitting data within the intermediate locations;	Intermediate bank 14 includes check imaging equipment 18 and a network interface 20. Campbell, et al., FIG 1.
transmitting data from each intermediate location to corresponding central locations; and	The node 12 receives images of checks from [bank] 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33.
transmitting data within 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.
39. A method as in claim 38 wherein said transmitting data from each remote location to corresponding intermediate locations step comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12.
connecting each remote location to a corresponding intermediate location; and	Intermediate bank 14 may be located in between the bank of first deposit 36 and the check processing node 12, "[o]ne or both institutions 14 and 16 may also be check clearance flows between a bank of first deposit and a payor bank." Campbell, et al., Col. 2, lns 46-49. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by

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	an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
connecting the intermediate locations to corresponding remote locations.	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "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." Campbell, et al., Col. 3, lns 30-39.
40. A method as in claim 38 wherein said transmitting data from each intermediate location to corresponding central locations comprises the steps of:	Campbell, et al. Remote location = bank of first deposit 36; Intermediate location = bank 14; Central location = check processing node 12.
connecting each intermediate location to an external communication network; and	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, ln 20-31.
connecting the corresponding central locations to the communication network.	The node 12 receives images of checks from a sending institution 14 transmitted through the network 10." Campbell, et al., Col. 2, lns 25-33. "The node 12 accepts the images transmitted over the frame relay network 38... The node 12 contains frame relay assembler/disassembler 40 which receives frames of digital information representing check images sent by service subscribers to the network 38." Campbell, et al., Col. 4, lns. 26-33.
41. A method as in claim 40 wherein said transmitting data from each intermediate location to corresponding central locations step further comprises the steps of:	Campbell ,et al.
packaging the transaction data into frames; 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

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	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.
transmitting the frames through the external communication network.	"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.
42. A system for central management, storage and report generation of remotely captured paper transactions from checks comprising:	Checks used to effectuate commercial and private transactions may be cleared through the banking system by transporting images of those checks between sending institutions and receiving institutions in forward and reverse flow paths between banks of first deposit and payor banks. The check images are transported through a public switched telephone network which contains a special check imaging node which provides a network based check clearing service for customers of telephone network. The check imaging node receives images of checks from institutions which subscribe to this service and routes those images through the telephone network to intended subscriber and non-subscriber recipients. Campbell, et al., Abstract.
one or more remote data access subsystems for capturing and Sending paper transaction data	Remote data access subsystem = sending institution 14. "The sending institution 14 is a subscriber to the telecommunications services provided by the node 12." "For example, the sending institution 14 may be a payor bank and the receiving institution may be a bank of first deposit which are involved in a processes of returning a check dishonored by institution 14 to the institution 16. Alternatively, the sending institution 14 may be a bank of first deposit which is in the process of forwarding checks to an institution 16 which is acting as a payor bank." Campbell, et al., Col. 2, lns. 32-45. "The sending institution 14 possesses check imaging equipment 18 which produces electrical or optical signals representing the image of a check." Campbell, et al., Col. 2, ln 64-66. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, ln 17-20. The function groups include "item views". ANSI, p. 12. "Item Views" include "bundles of views of imaged items, item information for each view and item view data." ANSI, p. 12. "For each item, e.g., check, this standard defines mechanisms for sending and receiving both information about the item

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	(item information) and digitized representations of the item." ANSI, p. 9.
and verifying transaction data from the checks comprising	Images are transmitted from the sending bank 14 along with destination identifying data so that the image is routed to the appropriate receiving bank 16. Campbell, et al. Col. 3, lns. 61-63. The destination identifying data is "transaction data" in that it identifies one of the banks involved in the underlying transaction represented by the check. Campbell, et al., Col. 4, lns. 13-21. The destination identifying data may be obtained from the endorsements on the check. Campbell, et al., Col. 4, lns. 5-9. The destination identifying data may be obtained by an operator who views the image of the check and manually enters the destination data, verifying the accuracy of the endorsement from the image. Campbell, et al., Col. 3, lns. 65-67.
at least one imaging subsystem for capturing the checks and at least one data access controller for managing the capturing and sending of the transaction data;	"The sending institution 14 possesses check imaging equipment 18 which produces electrical or optical signals representing the image of a check. ... The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR. Campbell, et al.,Col. 2, ln. 64 – Col. 3, ln. 12.
at least one central data processing subsystem for processing, sending, verifying and storing the paper transaction data and the subsystem identification information comprising a management subsystem for managing the processing, sending and storing of the of the transaction data; and	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. 26-32. "[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. "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. Verify: "The controller 42 may receive instructions from the work center 54 through the interface 52 to control changes made to the information in the database 46. These changes may include the addition or changes to personal identification numbers or bank related data." Campbell, et al., Col. 5, lns. 31 -39.
at least one communication network for the transmission of the transaction data	The image of a check is created in a sending institution and sent to a receiving institution by means of the public switched telephone network." Campbell, et al., Col. 2, lns. 20-22. "The public switched telephone network 10 may be a telephone network provided by a local exchange carrier ...The network may be digital or analog. Two examples of suitable digital networks are a packet network and a frame relay network, such as the existing packet and frame relay networks now provided

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within and between said one or more data access subsystems and said at least one data processing subsystem,	by carriers such as AT&T." Campbell, et al., Col. 2, lns. 50-63. "A local area network 56 connects the subsystems of the node 12 described above." Campbell, et al., Col. 4, lns. 56-58. "The images produced by the equipment 18 are directed to a network interface 10 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al., Col. 3, lns. 17-20. "The network access lines 22 may comprise any form of transmission line suitable for carrying the expected volume of check image traffic between the sending institution 14 and the telephone network 10. For example, the network access lines 22 may comprise one or more digital transmission lines operating at speeds of about 2400 bits per second to about 1.544 megabits per second or more. Connection to the network 10 may be by an ordinary dial up line or by a dedicated private line." Campbell, et al., Col. 3, lns. 20-43.
with the data access subsystem providing encrypted subsystem identification information and encrypted paper transaction data to the data processing subsystem.	"The controller 42 may also be configured to handle information encrypted by sending institutions to provide security for the images transported by the network 38. The controller 42 may have its own encryption and decryption equipment to provide a secure environment in the node 12." Campbell, et al., Col. 5, lns. 55-60. This implies that the sending bank 14 is capable of sending encrypted information. This information includes check images and also information "about the identity of the sending institution." Campbell, et al., Col. 5, lns. 26-27.
43. A method for central management, storage and verification of remotely captured paper transactions from checks comprising the steps of:	Checks used to effectuate commercial and private transactions may be cleared through the banking system by transporting images of those checks between sending institutions and receiving institutions in forward and reverse flow paths between banks of first deposit and payor banks. The check images are transported through a public switched telephone network which contains a special check imaging node which provides a network based check clearing service for customers of telephone network. The check imaging node receives images of checks from institutions which subscribe to this service and routes those images through the telephone network to intended subscriber and non-subscriber recipients.
capturing an image of the check at one or more remote locations and sending a captured image of the check;	"The sending institution 14 possesses check imaging equipment 18 which produces electrical or optical signals representing the image of a check. .... The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR. Campbell, et al., Col. 2, ln. 64 – Col. 3, ln. 12. Remote location = sending institution 14. "The images produced by the equipment 18 are directed to a network interface 20 which converts the signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al.,Col. 3, ln 17-20. "The output of the network interface 20 is connected to one or more network access lines 22 in FIG. 1. Campbell, et al., Col. 3, ln 20-31.
managing the capturing and sending of the	"The images produced by the equipment 18 are directed to a network interface 20 which converts the

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transaction data;	signals from the equipment 18 into signals suitable for transmission on the telephone network 10." Campbell, et al.,Col. 3, ln 17-20. "The imaging equipment may be large multiworkstation systems available from companies such as IBM, UNISYS, or NCR." Campbell, et al., Col. 3, ln. 10-12.
collecting, processing, sending and storing the transaction data at a central location;	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. 26-32. "[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. "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, ln 30 – 39. "The controller 42 may receive instructions from the work center 54 through the interface 52 to control changes made to the information in the database 46. These changes may include the addition or changes to personal identification numbers or bank related data." "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." Campbell, et al., Col. 5, ln 23-28.
managing the collecting, processing, sending and storing of the transaction data;	"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, ln 30 – 39. "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. The controller 42 also routes the check images from the node 12 to their ultimate destinations by way of the assembler/disassembler 40 and the frame relay network 38. 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. ... The controller 42 may also be configured to handle information encrypted by sending institutions to provide security for the images transported by the network 38. The controller 42 may have its own encryption and decryption equipment to provide a secure environment in the node 12." Campbell, et al., Col 5, ln 14-60.
encrypting subsystem identification	"The controller 42 may also be configured to handle information encrypted by sending institutions to

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information and the transaction data;	provide security for the images transported by the network 38. The controller 42 may have its own encryption and decryption equipment to provide a secure environment in the node 12." Campbell, et al., Col. 5, lns. 55-60. This implies that the sending bank 14 sends encrypted information. This information includes check images and also information "about the identity of the sending institution." Campbell, et al., Col. 5, ln 26-27. Thus, both the check images and the identifying information may be encrypted.
verifying the transaction data from the check; and	Images are transmitted from the sending bank 14 along with destination identifying data so that the image is routed to the appropriate receiving bank 16. Campbell, et al. Col. 3, lns. 61-63. The destination identifying data is "transaction data" in that it identifies one of the banks involved in the underlying transaction represented by the check. Campbell, et al., Col. 4, lns. 13-21. The destination identifying data may be obtained from the endorsements on the check. Campbell, et al., Col. 4, lns. 5-9. The destination identifying data may be obtained by an operator who views the image of the check and manually enters the destination data, verifying the accuracy of the endorsement from the image. Campbell, et al., Col. 3, lns. 65-67.
transmitting the transaction data and the subsystem identification information within and between the remote location(s) and the central location.	"The image of a check is created in a sending institution and sent to a receiving institution by means of the public switched telephone network." Campbell, et al., Col. 2, lns. 20-22. "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." Campbell, et al., Col. 5, ln 23-28.

Element by element comparison of claims 1 and 26 of the '137 Patent to ANSI X9.46-1995 Printed Publication.

'137 Patent	ANSI X9.46-1995 Printed Publication
1. A system for central management, storage and report generation of remotely captured paper transactions from checks comprising:	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 checks; 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.
1.a one or more remote data access subsystems for	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.
capturing and	"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."
sending	Transaction sets are interchanged. Transaction set contents are different for each functional group that can be interchanged. ANSI, p. 14.
paper transaction data including	The function groups include "item views". ANSI, p. 12. "Item Views" include "bundles of views of imaged items, item information for each view and item view data." ANSI, p. 12. "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.
a payer bank's routing number, a payer bank's routing information, a payer's account number,	**The '137 patent – claims 1-41 financial data elements** | **ANSI X9.46 standard**

<table>
<tr><th>'137 Patent</th><th colspan="2">ANSI X9.46-1995 Printed Publication</th></tr>
<tr><td rowspan="9">a payer's check, a payer bank's draft, a check amount, a payee bank's identification number, a payee bank's routing information, and a payee's account number,</td><td>a payer bank's routing number</td><td>Payor bank routing number, p. 88</td></tr>
<tr><td>a payer bank's routing information</td><td>Bank name, p. 100</td></tr>
<tr><td>a payer's account number</td><td>MICR code line, p. 100</td></tr>
<tr><td>a payer's check</td><td>Check images, p. 7</td></tr>
<tr><td>a payer bank's draft (type of check)</td><td>Check images, p. 7 (front and back of check, i.e., after endorsement)</td></tr>
<tr><td>a check amount</td><td>Item amount, p. 88</td></tr>
<tr><td>a payee bank's identification number</td><td>Payee name, p. 100
Payee endorsement, p. 100
Bank of first deposit endorsement, p. 100</td></tr>
<tr><td>a payee bank's routing information</td><td>Payee name, p. 100
Payee endorsement, p. 100
Bank of first deposit endorsement, p. 100</td></tr>
<tr><td>a payee's account number</td><td>Payee endorsement, p. 100</td></tr>
<tr><td>further including subsystem identification information</td><td>Creation computer, p. 105</td></tr>
<tr><td>and further including subsystem identification information comprising</td><td colspan="2">Subsystem ID: In addition to images, a data element known as "creation computer" which "conveys the system name of the originator's host computer that was used to create and digitize the imaging data" may be transmitted. ANSI, p. 105. The "creation computer" is a item view data element. ANSI, p. 93-94.</td></tr>
<tr><td>at least one imaging subsystem for capturing the checks and</td><td colspan="2">The institution participating in check image interchange shall capture both the full front and the full back of the item. This is accomplished using some type of scanning device or camera. ANSI, p. 9; 217.</td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td>at least one data access controller

for managing the capturing and sending of the transaction data;</td><td colspan="2">"The data to be interchanged from the originating imaging application are packaged by the FII-translator." ANSI, p. 12.

"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. 14; 150-151.</td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td>1b. at least one central data processing subsystem for</td><td colspan="2">"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.</td></tr>
</table>

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processing, sending, verifying and storing	"[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. On p. 14, lines 465-466, of the standard states that the "edi" translator function of the receiving application translates the "edi" interchange into the locally understood data structures for subsequent storage or processing of the data by the receiver's application."
the paper transaction data and the subsystem identification information comprising	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. Subsystem ID: In addition to images, a data element known as "creation computer" which "conveys the system name of the originator's host computer that was used to create and digitize the imaging data" may be transmitted. ANSI, p. 105. The "creation computer" is a item view data element. ANSI, p. 93-94.
A data management subsystem for managing the processing, sending and storing of the of the transaction data; and	"[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.
1c. at least one communication network for the transmission of the transaction data	"[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. 16; 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).

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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 standard 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;	Applicant's admission
at least one signature interface for capturing an electronic signature; and	Applicant's admission
at least one biometric interface for capturing biometric data.	Applicant's admission

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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
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.

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	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 represents, for example, a plurality of high-capacity magnetic discs and a back-up storage or archival

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	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	ANSI in view of Owens, et al. (U.S. Patent No. 4,264,808) and Minoli

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database subsystem comprises at least one predefined template for partitioning the stored transaction data into panels and identifying locations of the panels.	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.
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	ANSI in view of Minoli

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least one communication network further comprises:	
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	"The node 12 contains a frame relay assembler/disassembler 40 which receives frames of digital

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remote data access subsystems for transaction data;	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." 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	ANSI in view of Campbell, et al. (5,373,550) and Minoli