

PCT/US 02/00503

APPL NUM	FILING DATE	CLASS	SUBCLASS	GAU	EXAMINER
PCT/US02/00503	1/6 Jan 02				
**APPLICANTS: CORNERSTONE GROUP LTD					
**PRIORITY CLAIMS:					
**AGENTS: CHRISTHOPER J. ROURK AKIN GUMP STRAUSS HAUER & FELD, L.L.P. 1700 PACIFIC AVENUE SUITE 4100 DALLAS TX 75201-4675 US					
AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED
Foreign priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no				ATTORNEY DOCKET NO	
35 USC 119 conditions met <input type="checkbox"/> yes <input type="checkbox"/> no				121648.0001	
Verified and Acknowledged Examiners's initials					
TITLE : OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD					

U.S. DEPT. OF COMM. / PAT. & TM. DIV. / FORM 379 / (Rev. 12-90)

PCT/US 02/00503

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PCT

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Request for Access 11/6/15 per

Vanessa Clark
 Receiving Office PCT
 (703) 305-3165

APPL NUM	FILING
PCT/US02/00503	11/6/15
**APPLICANTS: CORNE	
**PRIORITY CLAIMS:	
**AGENTS:	
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AKIN GUMP STRAUSS F	
1700 PACIFIC AVENUE	
SUITE 4100	
DALLAS TX 75201-4675	
US	
AS FILED	STATE OR COUNTRY
Foreign priority claimed	
35 USC 119 conditions met	
Verified and Acknowledged Exam	
TITLE : OPTIMIZED DATA	

PCT/US 02/00503

98 Rec'd PCT/PTO 16 JAN 2002

TRANSMITTAL LETTER TO THE UNITED STATES RECEIVING OFFICE

Date	98 Rec'd PCT/PTO 16 JAN 2002
International Application No.	PCT/US 02/00501
Attorney Docket No.	

I. Certification under 37 CFR 1.10 (if applicable)

N/A - Via Hand-Delivery	Date of Deposit
Express Mail mailing number	

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

Signature of person mailing correspondence	Typed or printed name of person mailing correspondence
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II. New International Application

TITLE	OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD	Earliest priority date (Day/Month/Year)	16 January 2002 (16.01.2002)
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SCREENING DISCLOSURE INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

A. The invention disclosed was not made in the United States.
 B. There is no prior U.S. application relating to this invention.
 C. The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority.)

application no.	filed on

D. The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages [] and DOES NOT ALTER MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15

III. A Response to an Invitation from the RO/US. The following document(s) is(are) enclosed:

A. A Request for an Extension of Time to File a Response
 B. A Power of Attorney (General or Regular)
 C. Replacement pages:

Pages	of the request PCT/RO/101)	pages	of the figures
Pages	of the description		of the abstract
Pages	of the claims		

D. Submission of Priority Documents

Priority document	Priority document
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E. Fee as specified on attached Fee Calculation sheet form PCT/RO/101 annex

IV. A Request for Rectification under PCT 91 A Petition A Sequence Listing Diskette

V. Other (please specify):
 General Power of Attorney, Post Card, Check

The person signing this form is the:

<input type="checkbox"/> Applicant	ROURK, Christopher J.
<input checked="" type="checkbox"/> Attorney/Agent (Reg. No.): 39,348	Typed name of signer
<input type="checkbox"/> Common Representative	Signature

TRANSMITTAL LETTER TO THE
UNITED STATES RECEIVING OFFICE

Date **PCT/RO/101** 98 REC'D PCT/PTO 16 JAN 2002
 International Application No. **PCT/US 02/00503**
 Attorney Docket No. **PCT/US 02/0050**

I. **Certification under 37 CFR 1.10 (if applicable)**

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Signature of person mailing correspondence	Typed or printed name of person mailing correspondence
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Pages	_____ of the description		_____ of the abstract
Pages	_____ of the claims		

D. Submission of Priority Documents

Priority document	_____	Priority document	_____
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V. **Other (please specify):**
General Power of Attorney, Post Card, Check

The person signing this form is the:

<input type="checkbox"/> Applicant	ROURK, Christopher J.
<input checked="" type="checkbox"/> Attorney/Agent (Reg. No.): 39,348	Typed name of signer
<input type="checkbox"/> Common Representative	Signature

PCT/US02/00503

PCT OPERATIONS

FACSIMILE TRANSMISSION COVER SHEET

DATE: 17 Jan 01

TO: Roult Christopher etc.

TELEPHONE: _____
FAX NO.: 2149694343

FROM: Margaret Wilkins Pct

TELEPHONE: _____
FAX NO.: 703-308-4785 OR 703-305-3230

MESSAGE: Please disregard SN 02 00501
your new serial number is
02 00503
Thanking you in advance

NUMBER OF PAGES (INCLUDING THIS PAGE)

OK	RESULT
3	PGS. SENT
03:00	USAGE T
01/17 15:50	ST. TIME
	CONNECTION ID
	SUBADDRESS
912149694343	CONNECTION TEL
3768	TX/RX NO
	TRANSMISSION OK

*** TX REPORT ***

PCT/US02/00503



PCT OPERATIONS

FACSIMILE TRANSMISSION COVER SHEET

DATE: 17 Jan 01

TO: Roult Christopher etc.

TELEPHONE: _____
FAX NO.: 2149694343

FROM: MARGARET WILKINS Pct

TELEPHONE: _____
FAX NO.: 703-308-4785 OR 703-305-3230

MESSAGE: Please disregard SN 02 00501
your new serial number is
02 00503

Thanking you in advance

NUMBER OF PAGES _____ (INCLUDING THIS PAGE)

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**PCT
REQUEST**

The undersigned requests that the present International application be processed According to the Patent Cooperation Treaty.

For receiving Office use only
PCT/US 02/00501
International Application No.
PCT/US 02/00503
International Application No.
Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) 121648.0001

Box No. I TITLE OF INVENTION OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD	
Box No. II APPLICANT <input type="checkbox"/> This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
CORNERSTONE GROUP LTD. P.O. Box 1892 Laguna Beach, California 92652 United States of America	
Telephone No.	
Facsimile No.	
Teleprinter No.	
Applicant's registration No. with the Office	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant For the purposes of: <input type="checkbox"/> All designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> The States indicated in the Supplemental Box	
Box No. III. FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
KRICHEVSKY, Alexander P.O. Box 1892 Laguna Beach, California 92652 United States of America	
This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.)	
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State (that is, country) of nationality: RU	State (that is, country) of residence: US
This person is applicant For the purposes of: <input type="checkbox"/> All designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> The States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
ROURK, Christopher J. Akin, Gump, Strauss, Hauer & Feld, L.L.P. 1700 Pacific Avenue, Suite 4100 Dallas, Texas 75201-4675 United States of America	
Telephone No. 214/969-4669	
Facsimile No. 214/969-4343	
Teleprinter No.	
Agent's registration No. with the Office 39,348	
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

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Box No. V	DESIGNATION OF STATES	Mark the applicable check-boxes below; at least one must be marked.
The following designations are hereby made under Rule 4.9(a):		
Regional Patent		
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<input checked="" type="checkbox"/> EP	European Patent: AT Austria, BE Belgium, CH & LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, TR Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT	
<input checked="" type="checkbox"/> OA	OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line) GA GAMBIA	
National Patent (if other kind of protection or treatment desired, specify on dotted line):		
<input checked="" type="checkbox"/> AE United Arab Emirates	<input checked="" type="checkbox"/> GE Georgia	<input checked="" type="checkbox"/> MW Malawi
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<input checked="" type="checkbox"/> ES Spain	<input checked="" type="checkbox"/> MG Madagascar	<input checked="" type="checkbox"/> UZ Uzbekistan
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Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)		

See Notes to the request form

*Re/US**

JC07 Rec'd PCT/PTO 16 JAN 2002

PCT/US 02/00503

The PTO did not receive the following
listed item(s) No Postcard

Attorney Docket No.
121648.0001

PCT/US02/00503
PATENT APPLICATION

5 IN THE UNITED STATES RECEIVING OFFICE

SPECIFICATION
accompanying

10

TITLE OF THE INVENTION:
OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD

15 FIELD OF THE INVENTION

[0001] The present invention pertains to the field of data
transmission, and more particularly to a system and method
for optimizing data transmission that decreases bandwidth
20 requirements for data transmission.

Attorney Docket No.
121648.0001

BACKGROUND OF THE INVENTION

[0002] Data transmission systems are known in the art. Such data transmission systems often use compression to decrease bandwidth requirements. For example, compression techniques have been characterized as "lossless" when no
5 reduction in data occurs, or "lossy" when a loss of data occurs that does not adversely affect the intended use.

[0003] One drawback with such data transmission systems is that the compressed data must be "decompressed" on the
10 receiving end. Thus, for lossless data compression systems, the exact configuration of the data must be achieved when the data is decompressed. Likewise, even for lossy data compression systems, the data is decompressed and the lost data is then approximated. The need for such decompression
15 contributes to the overall difficulty in implementing data transmission in conjunction with compression.

Attorney Docket No.
121648.0001

SUMMARY OF THE INVENTION

[0004] In accordance with the present invention, a system and method for transmitting data are provided that overcome known problems with data transmission systems and methods.

5 [0005] In particular, a system and method for data transmission are provided that use data optimization instead of compression, so as to provide a mixed lossless and lossy data transmission technique.

[0006] In accordance with an exemplary embodiment of the present invention, a system for transmitting data is provided. The system includes a frame analysis system receiving frame data, such as a frame of video data, audio data, graphical data, text data, or other suitable data, and generating region data, such as a uniform matrix size that
15 is used to divide the frame into a predetermined set of matrices. A pixel selection system receives the region data and generates one set of pixel data for each region, such as by selecting one of the pixels contained within each of the original matrices that comprise the frame. For data that is
20 used for purposes other than the generation of a display, the pixel data can instead be audio data, text data, or other suitable data.

[0007] The present invention provides many important technical advantages. One important technical advantage of
25 the present invention is a system and method for transmitting data that do not require the data to be compressed at the sending end and decompressed at the receiving end. The present invention uses data optimization to transmit only the data that is necessary for the application, such that
30 decompression of the data on the receiving end is not

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PATENT APPLICATION

required. In this manner, the present invention incorporates features of both lossless and lossy compression without requiring the data to be decompressed on the receiving end.

[0008] Those skilled in the art will further appreciate
5 the advantages and superior features of the invention together with other important aspects thereof on reading the detailed description that follows in conjunction with the drawings.

Attorney Docket No.
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BRIEF DESCRIPTION OF THE DRAWINGS

- [0009] FIGURE 1 is a diagram of a system for transmitting data in accordance with an exemplary embodiment of the present invention;
- 5 [0010] FIGURE 2 is a diagram of a system for performing frame analysis in accordance with an exemplary embodiment of the present invention;
- [0011] FIGURE 3 is a diagram of a system for selecting optimized pixel data for transmission in accordance with an exemplary embodiment of the present invention;
- 10 [0012] FIGURE 4 is a diagram of a system for generating a frame in accordance with an exemplary embodiment of the present invention;
- [0013] FIGURE 5 is a flow chart of a method for optimizing data transmission in accordance with an exemplary embodiment of the present invention;
- 15 [0014] FIGURE 6 is a flowchart of a method for determining or assigning matrix or region size based on an exemplary embodiment of the present invention;
- 20 [0015] FIGURE 7 is a flowchart of a method for selecting a pixel within a region in accordance with an exemplary embodiment of the present invention;
- [0016] FIGURE 8 is a flowchart for method for generating optimized frame data in accordance with an exemplary embodiment of the present invention;
- 25 [0017] FIGURE 9 is a diagram 900 showing an exemplary uniform matrix segmentation of an array of pixel data; and
- [0018] FIGURE 10 is a diagram 1000 showing an exemplary non-uniform matrix segmentation of an array of pixel data.

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DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0019] In the description that follows, like parts are marked throughout the specification and drawings with the same reference numerals, respectively. The drawing figures
5 might not be to scale, and certain components can be shown in generalized or schematic form and identified by commercial designations in the interest of clarity and conciseness.

[0020] **FIGURE 1** is a diagram of a system 100 for
10 transmitting data in accordance with an exemplary embodiment of the present invention. System 100 allows data such as video data to be transmitted in a manner that does not require the data to be compressed, and which results in significant decreases in bandwidth requirements for data
15 transmission.

[0021] System 100 includes data transmission system 102, which is coupled to data receiving system 104 over a suitable communications medium 114. As used herein, the term "couple" and its cognate terms, such as "couples" and
20 "coupled," can include a physical connection (such as a copper conductor), a virtual connection (such as through randomly assigned memory locations of a data memory device), a logical connection (such as through logical gates of a semiconducting device), other suitable connections, or a
25 suitable combination of such connections. In one exemplary embodiment, systems and components are coupled to other systems and components through intervening systems and components, such as through an operating system of a general purpose computing platform. Communications medium 114 can
30 be the Internet, the public switched telephone network, a

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wireless network, a local area network, an optical network, other suitable communications media, or a suitable combination of such communications media.

[0001] Data transmission system 102 includes frame analysis system 106 and pixel selection system 108, each of which can be implemented in hardware, software, or a suitable combination of hardware and software, and which can be one or more software systems operating on a general purpose processing platform. As used herein, a software system can include one or more objects, agents, threads, lines of code, subroutines, separate software applications, user-readable (source) code, machine-readable (object) code, two or more lines of code in two or more corresponding software applications, databases, or other suitable software architectures. In one exemplary embodiment, a software system can include one or more lines of code in a general purpose software application, such as an operating system, and one or more lines of software in a specific purpose software application.

[0022] Data transmission system 102 reduces data transmission requirements by eliminating data that is not required for the application of the data on the receiving end. In one exemplary embodiment, data transmission system 102 can receive frames of video data, and can select pixels of data for transmission that are needed in order to allow the frames of video data to be viewed by the human eye. In this exemplary embodiment, a video display having a quiescent state of pixels in either the "on" or "off" states can be used to generate video data by selecting a subset of pixels within the frame to display image data. In this

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exemplary embodiment, if a frame of video data has low detail, it may only be necessary to provide a data value for one of every twenty-five pixels or less in order to create the image to be viewed by the human eye. Likewise, if the
5 frame of video data has a large amount of detail, it may be necessary to transmit each pixel in order to generate a suitable image. When a frame of video data includes regions of high detail and low detail, it may likewise be desirable to transmit only the necessary number of pixels in each
10 region that are required to generate the image. In this exemplary embodiment, the number of pixels to transmit can be decided on a region-by-region basis within the frame.

[0023] Data receiving system 104 includes pixel data system 110 and display generation system 112, each of which
15 can be implemented in hardware, software, or a suitable combination of hardware and software, and which can be one or more software systems operating on a general purpose processor platform. Data receiving system 104 receives the data from data transmission system 102, and generates a
20 display for a user that utilizes the optimized data set transmitted by data transmission system 102. In one exemplary embodiment, data receiving system 104 can generate a video display, such as by illuminating predetermined pixels within a frame based on the determination of the
25 level of detail required for the frame, and by leaving the remaining pixels in a quiescent state of either "off" or "on." Likewise, data receiving system 104 can generate frames of video data that have variable levels of detail, to accommodate the image data being transmitted.

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[0024] Frame analysis system 106 receives frame data including pixel data and generates matrix size data based upon the pixel data. In one exemplary embodiment, frame analysis system 106 can analyze adjacent pixel data values
5 in the frame, and can apply one or more predetermined variation tolerances to select a matrix size for a data optimization region. In this exemplary embodiment, the matrix size for each data optimization region of a frame can be uniform, such that each data optimization matrix has the
10 same dimensions. Thus, if a 640 x 480 pixel frame is being transmitted, then the 640 x 480 pixel frame can be split up into a 64 x 48 frame of matrices, where each matrix is a 10 x 10 matrix. Likewise, frame analysis system 106 can assign a different matrix size on a frame by frame basis, such as
15 where a first frame is transmitted using 10 x 10 matrices for a 64 x 48 matrix frame, and a subsequent frame could then be transmitted using 5 x 5 data matrices, for a 128 x 96 matrix frame. In another exemplary embodiment, the size of matrices within the frame can be varied, such that a
20 given frame is made up of matrices varying in size, such as from a 1 x 1 matrix to a 5 x 5 matrix or greater. In yet another exemplary embodiment, the size of the matrices can be nonsymmetrical, such that an N x M matrix can be used where N and M are integer values that are not equivalent.
25 Likewise, other suitable data optimization regions can be selected, such as ones that are not based on a matrix structure, but which may be circular, elliptical, amorphous, or based on other suitable structures.

[0025] Pixel selection system 108 selects one or more
30 pixel within a predefined matrix or other region for

Attorney Docket No.
121648.0001

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transmission in an optimized data transmission system. In one exemplary embodiment, pixel selection system 108 can randomly select a pixel from a location within a matrix or other region, can use a sequence selection scheme such that
5 the pixel is selected in accordance with a predetermined sequence, or other suitable selection criteria can be used. Pixel selection system 108 can further generate pixel location data within the matrix, such that the pixel can be regenerated at a predetermined location, at a random
10 location, or in other suitable manners. For example, if a predetermined location is used, the predetermined location can be the same for each matrix or other region, such as by assigning a quadrant or other location (e.g., the first row and column position in the matrix). Likewise, if
15 randomization is used, control data can be generated that will cause data receiving system 104 to randomize the location of each pixel in each matrix or other region without requiring individual control data for each matrix or other region. Likewise, other suitable pixel selection data
20 can be generated.

[0026] Pixel data system 110 receives matrix data and pixel data and assembles frame data based on the matrix data and pixel data. In one exemplary embodiment, pixel data system 110 receives a matrix size identifier for an entire
25 frame, such that it can be determined that a uniform matrix size is used for each frame. Likewise, pixel data system 110 can receive matrix map data, such that a sequence of matrices and the size of each matrix can be determined. Likewise, pixel data system 110 can receive pixel data for
30 each matrix, such as pixel data with each matrix identifier,

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pixel data in a predetermined order based on the order of matrix data transmitted, or other suitable data.

[0027] Display generation system 112 receives frames of data from pixel data system 110 and generates video data, audio data, graphical data, textual data, or other suitable data for use by a user. In one exemplary embodiment, display generation system 112 receives an entire frame of data after it has been reconstructed by pixel data system 110. In another exemplary embodiment, display generation system 112 can receive frame data as it is generated by pixel data system 110 prior to the generation of the entire frame. Other suitable configurations can be used.

[0028] In operation, system 100 allows data transmission to be optimized so as to decrease bandwidth requirements. System 100 determines the optimal data for transmission based on the end use of the data. For example, system 100 can reduce the data transmitted for video display generation, such as by determining the level of detail required, and then transmitting data based on the level of detail required. Likewise, similar optimization processes can be used for audio data, graphical data, textual data, or other suitable data. Thus, system 100 is a lossy data transmission system, but can also be a lossless data transmission system depending on the data fields within a set of data for which lossy or lossless data transmission is desired. In this exemplary embodiment, system 100 allows data sets to be processed in a manner that allows data transmission to be both lossless and lossy based on application criteria for the data on the receiving end.

[0029] System 100 can also be used in conjunction with a compression system, a frame elimination system, or with other suitable systems or processes to achieve further savings in bandwidth requirements. For example, after data optimization has been achieved, the optimized data can then
5 be compressed using a lossy or lossless compression technique. Likewise, frame elimination can be used where such techniques do not result in an unacceptable decrease in the quality of the data at the receiving end.

10 [0030] **FIGURE 2** is a diagram of a system 200 for performing frame analysis in accordance with an exemplary embodiment of the present invention. System 200 includes frame analysis system 106 and pixel variation system 202, matrix size system 204, and matrix identification system
15 206, each of which can be implemented in hardware, software, or a suitable combination of hardware and software, and which can be one or more software systems operating on a general purpose processing platform.

[0031] Pixel variation system 202 determines the level of
20 detail required based on variations in pixel data. In one exemplary embodiment, pixel variation system 202 can receive pixel data values, such as (x/y/z) in a suitable pixel color pixel system (e.g., 16-bit values for R/G/B, Y/Cb/Cr, Y/U/V, or other suitable color data formats). Pixel variation
25 system 202 can then compare two adjacent pixels to determine whether the amount of variation between those two adjacent pixels exceeds a predetermined tolerance, such that the amount of pixel data required to transmit image data or other suitable data for perception by a human eye or other
30 suitable applications can be determined. In this exemplary

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embodiment, pixel variation system 202 can have a number of tolerance settings, so that a matrix size, region, or other data optimization set can be determined. For example, consider the following pixel set:

5

P1(121/34/187) P2(119/39/198) P3(117/42/202)

[0032] In this example, the variation between P1 and P2 may be lower than a first tolerance for the purposes of selecting a first data set, such as a 2 x 2 matrix, but the variation between P1 and P3 may be greater than a second tolerance for the purpose of selecting a second data set, such as a 3 x 3 matrix. In this manner, increasing groups of pixels can be analyzed so as to insure that desired levels of detail are not inadvertently omitted. For example, if video data includes an image of an essentially uniform object, such as the ocean or a grassy field, and where that essentially uniform object has details that are nonetheless of interest to the viewer, such as wave whitecaps or wildflowers, pixel variation system 202 can include tolerance settings such that variations between pixels that identify such details would be identified, but where such variations between two adjacent pixels within the field would be ignored. Likewise, other suitable pixel variation detection functionality can be provided.

[0033] Matrix size system 204 generates matrix size data based on pixel variation data. In one exemplary embodiment, matrix size system 204 can receive pixel variation data based on an analysis of an entire frame of data, such that a uniform matrix size can be assigned. Likewise, matrix size

system 204 can receive pixel variation data from pixel variation system 202, and can generate nonsymmetrical matrix dimensional data, such as $N \times M$ dimensions where "N" and "M" are integers that are not equivalent, circular region data, 5 elliptical region data, amorphous region data, or other suitable region identification data. Matrix size system 204 can also generate matrix size control data, such as where a non-uniform matrix or region size is used within a frame. In this exemplary embodiment, matrix size system 204 can 10 identify a sequence for matrices, coordinate data for matrices, size data for matrices, or other suitable data that can be used to assemble or sequence pixel data within matrices.

[0034] Matrix identification system 206 receives matrix 15 size data and generates matrix identification data. In one exemplary embodiment, matrix identification system 206 can receive matrix sequence data, and can assemble the matrix sequence data for use with pixel data generated by pixel selection system 108. In this exemplary embodiment, matrix 20 identification system 206 can identify whether a uniform matrix size is being generated, the number of matrices within a frame, sequence data for the matrices when a non-uniform matrix or region is being used, or other suitable data. Matrix identification system 206 generates matrix 25 identification data for use by data receiving system 104, so as to allow data receiving system 104 to generate the optimized data display.

[0035] In operation, system 200 allows frames to be 30 analyzed so as to determine the optimal data to be transmitted, based on the intended use of the frame. In one

exemplary embodiment, pixel variation system 202 or other suitable systems can be used to identify lossy and lossless regions within the frame. Likewise, uniform lossy regions can be identified, such as matrices having predetermined
5 dimensions of greater than 1 x 1 or other suitable data.

[0036] **FIGURE 3** is a diagram of a system 300 for selecting optimized pixel data for transmission in accordance with an exemplary embodiment of the present invention. System 300 includes pixel selection system 108
10 and pixel randomizer system 302, pixel sequencer system 304, and pixel identification system 306, each of which can be implemented in hardware, software, or a suitable combination of hardware and software, and which can be one or more software systems operating on a general purpose processor
15 platform.

[0037] Pixel randomizer system 302 selects a random pixel within a matrix or other region. In one exemplary embodiment, pixel randomizer system 302 can generate a random number and can select a pixel based upon a pixel
20 sequence and the relationship of the generated random number to that pixel sequence. In this exemplary embodiment, pixel randomizer system 302 can generate a random number between 0 and 1, and can multiply that random number times the number of pixels within a region, and can then select the pixel
25 based upon a pixel sequence from a predetermined location. Likewise, other suitable random pixel selection processes can be used. Pixel randomizer system 302 generates random pixel location data and random pixel value data.

[0038] Pixel sequencer system 304 generates pixel
30 selection data based on pixel sequence data. In one

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exemplary embodiment, such as when a uniform frame matrix size is being used, pixel sequencer system 304 can select pixels in a predetermined order, such that if a 3 x 3 matrix is used uniformly across the frame, the pixel at location
5 (1,1) is transmitted in the first frame, the pixel at location (1,2) is transmitted in the second frame, the pixel at location (1,3) is transmitted in the third frame, and so forth, until the pixel at location (3,3) has been transmitted, after which the pixel at location (1,1) will be
10 transmitted. Pixel sequencer system 304 can likewise send other suitable sequences, such as skipping every other pixel, skipping pixels based on predetermined display generation characteristics, or other suitable sequences.

[0039] Pixel identification system 306 generates pixel
15 identification data, such as may be required by a data receiving system to illuminate the pixel in a display. In one exemplary embodiment, pixel identification system 306 can identify the coordinates of a pixel where generation of the pixel by the data receiving system at the exact location
20 is desired. Likewise, pixel identification system 306 can identify a uniform pixel location within each matrix or other region, such as location (1,1) for all matrices, such as randomizer control data that will randomly place a pixel within a matrix or region, or other suitable pixel
25 identification data.

[0040] In operation, system 300 allows a pixel within a matrix or other suitable region to be selected based on data optimization. System 300 allows random, sequenced, or other suitable processes to be used to select and locate pixels
30 within optimized regions.

[0041] **FIGURE 4** is a diagram of a system 400 for generating a frame in accordance with an exemplary embodiment of the present invention. System 400 includes pixel data system 110, matrix definition system 402 and pixel location system 404, each of which can be implemented in hardware, software, or a suitable combination of hardware and software, and which can be one or more software systems operating on a general purpose processor platform.

[0042] Matrix definition system 402 receives matrix definition data for use in generating frame data. In one exemplary embodiment, matrix definition data can include data that identifies a uniform matrix size throughout the frame. In another exemplary embodiment, matrix definition data can include data that identifies matrix dimensions and sequences, so that a sequence of non-similar matrices can be assembled into a frame. Likewise, matrix definition system 402 can include region definition data, such as for ellipses, circles, amorphous shapes, or other suitable definition data.

[0043] Pixel location system 404 receives pixel location data for locating a pixel within a matrix or other region. In one exemplary embodiment, pixel location system 404 can receive data that locates pixels for each matrix within a frame on a uniform basis, such that each pixel received will be generated in a predetermined location (e.g. (1,1) in a 3 x 3 matrix). Likewise, pixel location system 404 can receive randomization data, such that the location of a pixel within a matrix or other region is randomly assigned. In yet another exemplary embodiment, pixel location system 404 can receive exact coordinates for placement of pixels.

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Other suitable processes can be implemented by pixel location system 404.

[0044] In operation, system 400 is used to locate pixels of data within a matrix or other region in an optimized data transmission system. System 400 thus allows optimized data, such as video data, audio data, or other suitable data, to be used to generate a display, an audio stream, graphic images, textual data, and other suitable data on a frame by frame basis.

10 [0045] **FIGURE 5** is a flow chart of a method 500 for optimizing data transmission in accordance with an exemplary embodiment of the present invention. Method 500 begins at 502 where a matrix size is determined. In one exemplary embodiment, the matrix size can be uniformly assigned across
15 the frame, a matrix size can assigned based upon regions within the frame, a region other than a matrix can be used, or other suitable matrix sizes or region sizes can be determined. The method then proceeds to 504.

[0046] At 504 a pixel within the matrix is selected. In
20 one exemplary embodiment, the pixel can be selected based on a predetermined location within the matrix, such as when uniform matrix sizes are used within a frame, or in other suitable manners. In another exemplary embodiment, pixel selection can be performed based on random selection, based
25 upon predetermined rules regarding selection of pixels, or in other suitable manners. The method then proceeds to 506.

[0047] At 506 the matrix and pixel data is transmitted. In one exemplary embodiment, the matrix and pixel data can be transmitted in pairs, such that each set of matrix
30 definition data or location data is paired with

corresponding pixel brightness data. Likewise, matrix data and pixel data can be transmitted in sequence, such that the sequence of matrix data is received first, and the sequence of pixel data for each corresponding matrix is then received. Other suitable transmission sequences can likewise be used. The method then proceeds to 508.

[0048] At 508 the matrix and pixel data is assembled into a frame. In one exemplary embodiment, the frame assembly can be performed on a line-by-line basis, such that each line of data can be generated as it is created. In another exemplary embodiment, an entire frame of data can be generated prior to utilization of the frame of data. The method then proceeds to 510.

[0049] At 510 a display is generated using the matrix and pixel data. As previously described, the display can be generated from an entire frame data set after it has been completed. Likewise, the display can be generated on a line-by-line basis, audio streams or graphical displays can be generated, or other suitable displays can be generated. The method then proceeds to 512.

[0050] At 512 it is determined whether a frame is completed. If the frame is not completed the method returns to 508. Otherwise the frame is complete, the method proceeds to 514 and the method proceeds to the next frame.

[0051] **FIGURE 6** is a flowchart of a method 600 for determining or assigning matrix or region size based on an exemplary embodiment of the present invention. Method 600 begins at 602 where a pixel variation is determined. In one exemplary embodiment, the pixel data values for two adjacent pixels can be compared, and it can be determined whether the

variations between the two adjacent pixel data values exceed predetermined allowable variations. The suitable variation techniques can be implemented. The method then proceeds to 604.

5 [0052] At 604 it is determined whether the variation is greater than a predetermined tolerance. If it is determined at 604 that the variation is greater than the tolerance the method proceeds to 606 where the matrix size is assigned based on the number of pixels under consideration. In one
10 exemplary embodiment, if a first and second pixel have been compared and it is determined that the variation between pixels exceeds the tolerance, then a matrix size of 1 x 1 (i.e., an individual pixel), can be transmitted such that data transmission is lossless. If it is determined that the
15 variation is not greater than the tolerance, the method proceeds to 608.

[0053] At 608, the next pixel is selected. In one exemplary embodiment, the next pixel can be selected based upon an N x N matrix size, an N x M matrix size, a circular
20 region size, an elliptical region size, an amorphous region size, or other suitable regions. The method then proceeds to 610.

[0054] At 610 the tolerance is modified. In one exemplary embodiment, the tolerance can be modified with
25 each increasing region size, such that smaller tolerances are imposed for larger regions. Likewise, a maximum region size can be imposed such that the tolerance is set to zero. Likewise, if it is determined at 604 that the maximum region size has been reached, the method can proceed directly to

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606. After the tolerance is modified at 610, the method returns to 602.

[0055] In operation, method 600 allows a matrix or other suitable region size to be determined based upon pixel variations. In one exemplary embodiment, pixel variation can be determined at 602 on a frame basis, such that a first tolerance is set for having uniform matrices of 2 x 2 size, a second tolerance is set for having uniform matrices of a 3 x 3 size, and other suitable tolerances can be used. Likewise, tolerances can be set and regions can be determined based on a region-by-region basis, such that in areas having low information content, the matrix size is increased whereas in areas having high information content the matrix size is decreased. In one exemplary embodiment, the matrix size can be decreased to 1 x 1, such that in areas having high information content, the data transmission can be lossless, but in areas having low information content, the data transmission can be lossy.

[0056] **FIGURE 7** is a flowchart of a method 700 for selecting a pixel within a region in accordance with an exemplary embodiment of the present invention. Method 700 begins at 702 where matrix or other region data is received. In one exemplary embodiment, the matrix data can include a matrix size, a region size, a region boundary for amorphous regions, or other suitable data. The method then proceeds to 704.

[0057] At 704, it is determined whether random or sequencing selection is being used for selecting the pixel data. If it is determined that sequencing data is used, the method proceeds to 706 where the sequence data is obtained.

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In one exemplary embodiment, such as where a uniform matrix size is used within the frame, a sequence of pixels can be used such that the pixels are "swept" across the matrix. Likewise, other suitable sequence data can be used. After
5 the sequence is obtained at 706 the method proceeds to 708 where a pixel is selected based on the sequence data. The pixel data for the matrix is then stored.

[0058] Likewise, if it is determined at 704 that a random pixel selection is being used, the method proceeds to 710
10 where a random number is generated. The method then proceeds to 712.

[0059] At 712 a pixel is selected based on a random number. In one exemplary embodiment, a random number generated between 0 and 1 can be multiplied by the number of
15 pixels within the matrix or region, and a predetermined sequence can be used to select the pixel. Likewise, the pixel data values can be randomly identified or other suitable random selection processes can be used.

[0060] In operation, method 700 allows pixel data within
20 a matrix or other region to be selected, which as based on sequencing, random selection, or in other suitable manners. Method 700 allows pixel data for optimized data applications to be used, such as where video data having low information content and regions of high information content is being
25 transmitted or in other suitable applications.

[0061] **FIGURE 8** is a flowchart of a method 800 for generating optimized frame data in accordance with an exemplary embodiment of the present invention. Method 800 begins at 802 where matrix and pixel data are received. In
30 one exemplary embodiment, the matrix and pixel data can

include a standard or uniform matrix size and a sequence of pixels for the frame. In another exemplary embodiment, the matrix and pixel data can include a sequence of matrix sizes that define a frame and a sequence of pixels for generation
5 within each matrix. In yet another exemplary embodiment, the matrix and pixel data can be region and pixel data, such as where the region data defines one or more regions within a frame and the pixel data includes points that go within that region. Other suitable data can also be used, such as
10 audio data, graphical data, text data, or other suitable data. The method then proceeds to 802.

[0062] At 802 the matrix and pixel data are combined into a frame. In one exemplary embodiment, the frame can be generated on a line-by-line basis, such that the matrices
15 are assembled in rows and that the pixel for each matrix are assigned after a row is complete. In this exemplary embodiment, such as where matrix sizes exceed 2×2 , then assembling a row of matrices can result in the assembly of two or more lines of data, such as where video data is
20 generated by scanning lines from the top of a display to the bottom of a display. In this exemplary embodiment, the frame can be generated as each line is completed. The method then proceeds to 804.

[0063] At 804 it is determined whether the frame has been
25 completed. In one exemplary embodiment, an entire frame of data can be reconstituted prior to generation of the frame. Likewise, in another exemplary embodiment, the data can be generated on a line-by-line basis, so that the data does not need to be buffered until a complete frame is generated.
30 Other suitable processed can also be used. If it is

determined at 804 that the frame is not complete, the method returns to 800. Otherwise, the method proceeds to 804 and advances to the next frame.

[0064] In operation, method 800 allows frames of data, such as video data, audio data, graphical data, textual data, or other suitable data, to be generated in an optimized manner, such that lossy, lossless, or a combination of lossy and lossless data transmission is used based upon the end use of the data. In this exemplary embodiment, uniform or non-uniform matrices or regions can be used, such that only one of two or more points of data within a data set for each region needs to be transmitted.

[0065] FIGURE 9 is a diagram 900 showing an exemplary uniform matrix segmentation of an array of pixel data. Each matrix of the array is of uniform size, such as 4 x 4. Thus, the matrix size data for the entire frame can be represented by a single data set.

[0066] In the first row of matrices, the location "X" of a single pixel of data is identical (e.g. (2,2)), such as where the location of the pixel in each matrix is based on sequential data. In the second row, the location of the pixel in each matrix is different, such as where the location of the pixel in each matrix is random. In this exemplary embodiment, the matrix data can include the single uniform size (e.g. 4 x 4), the pixel location data can include the location of the pixel in each matrix (e.g. (2,2), "random," or the coordinates of each pixel starting with the first matrix and sweeping across from left to right until the last matrix in the last row is reached (e.g. (4,1) (1,4), (3,2), (3,4)) and the pixel data for each matrix can

include the (X/Y/Z) data, such as where the pixel is a color pixel. Likewise, other suitable data can be used.

[0067] FIGURE 10 is a diagram 1000 showing an exemplary non-uniform matrix segmentation of an array of pixel data.

5 Each matrix of the array can be of different size, but the matrices must form the array when combined. In each matrix, the location of the pixel in each matrix is different, such as where the location of the pixel in each matrix is random. In this exemplary embodiment, the matrix data can include

10 the size of each matrix in series, starting from the first matrix and sweeping across from left to right until the last matrix is reached (e.g. (7 x 3), (5 x 6), (5 x 4), (7 x 7), (2 x 3), (2 x 7)), the pixel location data can include the location of the pixel in each matrix (e.g. (2,2), "random,"

15 or the coordinates of each pixel starting with the first matrix and sweeping across from left to right until the last matrix in the last row is reached (e.g. (2,1), (4,4), (2,2), (5,6), (2,2), (2,2)), and the pixel data for each matrix can include the (X/Y/Z) data, such as where the pixel is a color

20 pixel. Likewise, other suitable data can be used.

[0068] Although exemplary embodiments of a system and method of the present invention have been described in detail herein, those skilled in the art will also recognize that various substitutions and modifications can be made to the

25 systems and methods without departing from the scope and spirit of the appended claims.

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WHAT IS CLAIMED IS

1. A system for transmitting data comprising:
a frame analysis system receiving frame data and
generating region data; and
a pixel selection system receiving the region data and
5 generating one set of pixel data for each region.

2. The system of claim 1 wherein the frame analysis
system comprises a pixel variation system receiving two or
more sets of pixel data and generating the region data based
on pixel variation data from the two or more sets of pixel
5 data.

3. The system of claim 1 wherein the frame analysis
system comprises a matrix size system receiving pixel
variation data and generating matrix size data.

4. The system of claim 1 wherein the frame analysis
system comprises a matrix identification system receiving
matrix size data and generating matrix identification data.

5. The system of claim 1 wherein the pixel selection
system comprises a pixel randomizer system receiving two or
more sets of pixel data for each region and randomly
selecting one of the two or more sets of pixel data.

6. The system of claim 1 wherein the pixel selection system comprises a pixel sequencer system receiving two or more sets of pixel data for each region and selecting one of the two or more sets of pixel data based on sequence data.

7. The system of claim 1 wherein the pixel selection system comprises a pixel identification system generating pixel location data based on a location of the set of pixel data associated with each of the regions.

8. The system of claim 1 further comprising a data receiving system receiving the region data and the pixel data for each region and generating a display.

9. The system of claim 8 wherein the data receiving system comprises a pixel data system receiving matrix definition data and pixel data and generating pixel location data.

10. The system of claim 8 wherein the data receiving system comprises a display generation system receiving pixel location data and generating display data that includes the pixel data placed according to the location data.

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11. A method for transmitting data comprising:
receiving frame data;
generating matrix data from the frame data;
selecting one of two or more sets of pixel data based on
5 the matrix data; and
transmitting the pixel data and the matrix data.
12. The method of claim 11 wherein receiving frame data
comprises receiving an array of pixel data.
13. The method of claim 11 wherein generating matrix
data from the frame data comprises setting a matrix size
based on pixel variation data.
14. The method of claim 11 wherein selecting one of two
or more sets of pixel data comprises selecting the pixel data
from a matrix of sets of pixel data.
15. The method of claim 11 wherein transmitting the
pixel data and the matrix data comprises transmitting an
array of pixel data and uniform matrix size data.

16. A method for transmitting data comprising:
dividing an array of pixel data into two or more
regions;
selecting a set pixel of pixel data from each region;
5 and
transmitting region data and the pixel data for each
region.

17. The method of claim 16 wherein dividing the array
of pixel data comprises dividing the array of pixel data into
two or more matrices having a uniform size.

18. The method of claim 16 wherein dividing the array
of pixel data comprises dividing the array of pixel data into
two or more matrices having two or more different sizes.

19. The method of claim 16 wherein selecting the set of
pixel data from each region comprises selecting a random set
of pixel data.

20. The method of claim 16 wherein transmitting the
region data and the pixel data for each region comprises
transmitting matrix data and the pixel data for each matrix.

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ABSTRACT OF THE DISCLOSURE

A system for transmitting data is provided. The system includes a frame analysis system receiving frame data, such as a frame of video data, and generating region data, such as a uniform matrix size that is used to divide the frame into a predetermined set of matrices. A pixel selection system receives the region data and generates one set of pixel data for each region, such as by selecting one of the pixels contained within each of the original matrices that comprise the frame.

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(PCT Rule 90.5)

The undersigned person(s):

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hereby appoint(s) the following person as: agent _____ common representative

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to represent the undersigned before all the competent International Authorities
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CORNERSTONE GROUP LTD.

Signature: _____

Connie Nash

Title: _____

Date: _____

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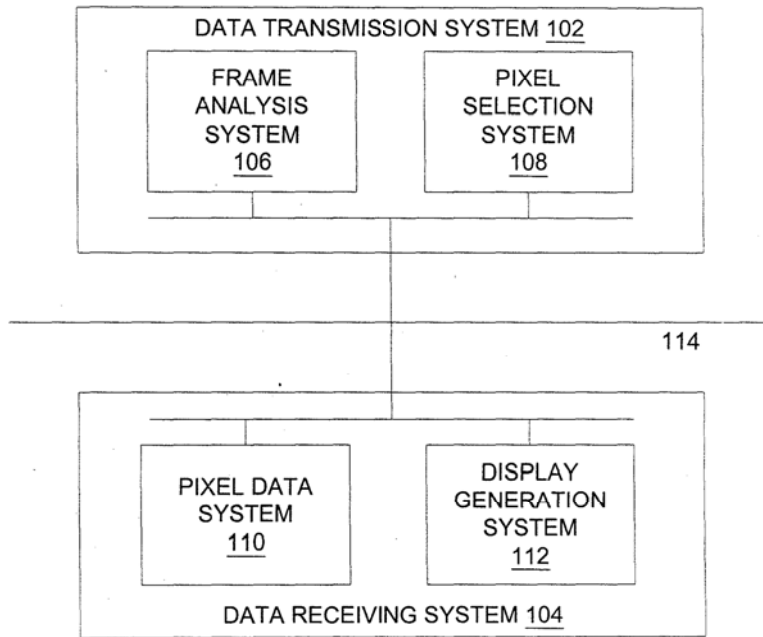


FIGURE 1

100 ↑

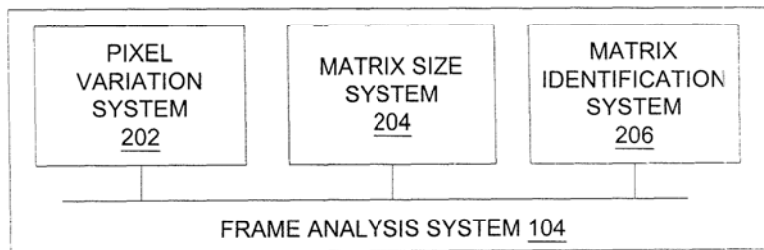


FIGURE 2

200 ↑

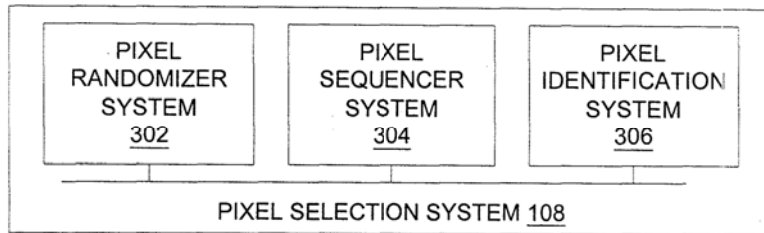


FIGURE 3

300 ↑

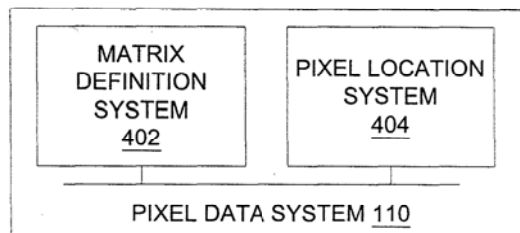


FIGURE 4

400 ↑

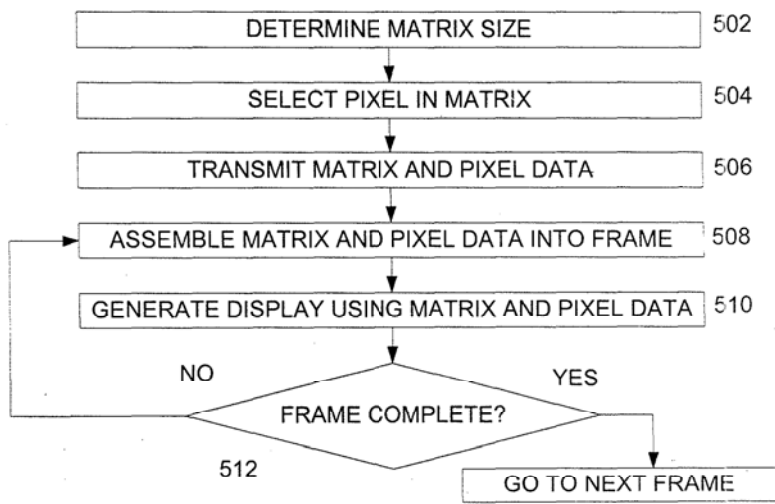
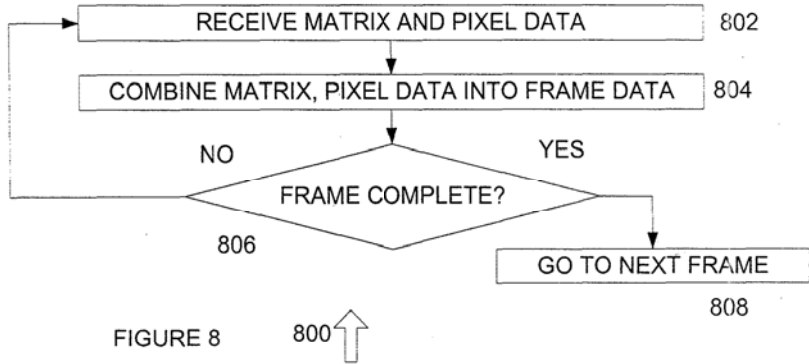
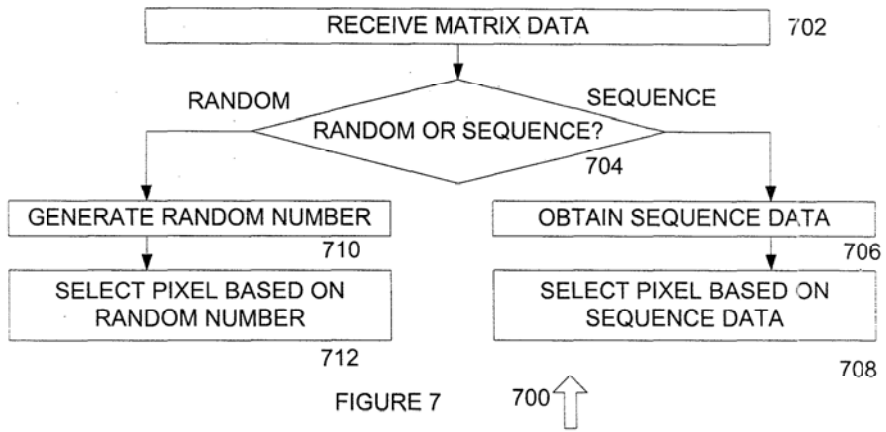
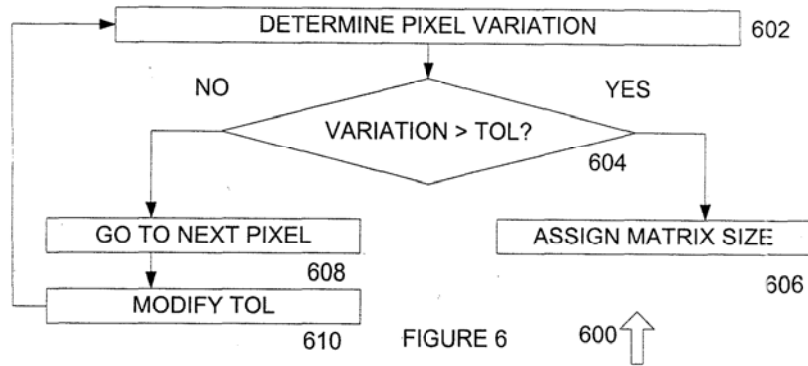


FIGURE 5

500 ↑



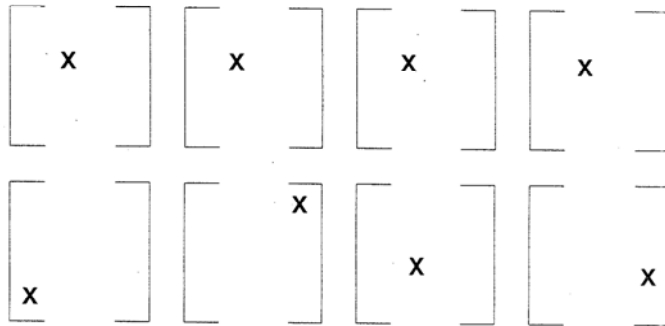



FIGURE 9 900 

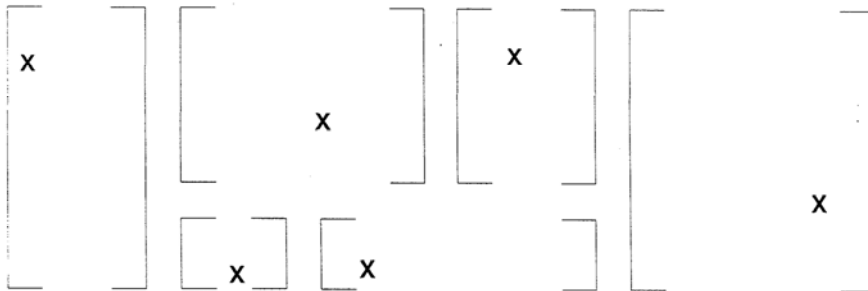



FIGURE 10 1000 

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UNITED STATES RECEIVING OFFICE(RO/US) FEE CODING AND RECORDING SHEET										App. Sheet	
IDENTIFICATION OF THE INTERNATIONAL APPLICATION											
International application No.				International filing date (mm/dd/yyyy)							
				16 JAN 2002							
Applicant (Name)											
PAYMENTS						REFUNDS					
Payment on Filing			Deposit Account		Deposit Account		To Deposit Account		To Deposit Account		
			Date:		Date:		Date:		Date:		
<input type="checkbox"/> CASH/CHECK			<input type="checkbox"/> CASH/CHECK		<input type="checkbox"/> CASH/CHECK		<input type="checkbox"/> BY CHECK		<input type="checkbox"/> BY CHECK		
150											
151											
153											
800											
801											
802											
809											
905											
Total Paid:			Total Paid:		Total Paid:		Total Refunded:		Total Refunded:		
150			0.00		0.00		0.00		0.00		
States included for 892:			892:		892:						
States included for 893:			893:		893:						
CALCULATED FEE AMOUNT -						AMOUNT OF DIFFERENCE -					
RO/US Authorization			RO/US Authorization		RO/US Authorization		RO/US Authorization		RO/US Authorization		

Form PCT/RO/1026 (U.S. VERSION)
(Rev. 07-97)

U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

PCT

To:
 CHRISTHOPER J. ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

NOTIFICATION CONCERNING PAYMENT
 OF PRESCRIBED FEES

(PCT Rules 14, 15 and 16 and Administrative
 Instructions, Sections 304(a) and (b) and 323(b))

Applicant's or agent's file reference 121648.0001		Date of mailing <i>(day/month/year)</i> 14 Mar 2002
International application No. PCT/US02/00503		PAYMENT DUE see item 3 for time limits
International filing date/Date of receipt <i>(day/month/year)</i> 16 Jan 2002	Priority date <i>(day/month/year)</i>	
Applicant CORNERSTONE GROUP LTD.		

1. The applicant is hereby notified that this receiving Office has received:

the payment of all the prescribed fees, and an overpayment, which will be refunded in due course.

no or insufficient payment of the prescribed fees and the applicant is hereby invited to pay the balance due, as summarized under item 2, within the time limit(s) indicated under item 3.

2. Fees and payment calculation:

1,868.00	1,868.00	0.00
-----	-----	-----
Total fees payable	Amount paid	Balance

The details of the calculation are given in the Annex.

3. Time limit(s) for payment and amount(s) payable (Rules 14.1, 15.4 and 16.1(f)):

within ONE MONTH from the date of receipt of the international application (for the transmittal fee (if any), the search fee, the basic fee and the designation fee). The amount payable for each fee is the amount applicable on the date of receipt of the international application.

within ONE YEAR from the priority date (only for the designation fee and only if this time limit expires later than the above time limit).
 -- If the designation fee is paid within one month from the date of receipt of the international application, the amount payable is the amount applicable on that date of receipt.
 -- If the designation fee is paid within one year from the priority date but later than one month from the date of receipt of the international application, the amount payable is the amount applicable on the date of payment. The receiving Office should be consulted for the applicable amount.

within 16 MONTHS from the priority date (only for the fee for priority document). The applicant's attention is drawn to the fact that the request made by the applicant under Rule 17.1(b) will be considered not to have been made unless the fee is paid within that time limit.

4. Additional observations (if necessary):

The search copy will not be transmitted to the International Searching Authority until the search fee is paid (therefore the start of the international search will be delayed) (Rule 23.1(a) and (b)).

Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No.
---	--

**ANNEX TO FORM PCT/RO/102
CALCULATION OF THE PRESCRIBED FEES**

International application No.
PCT/US02/00503

T Transmittal Fee				
Prescribed amount:	240.00	<input type="checkbox"/>		
Amount paid:	240.00		<input checked="" type="checkbox"/>	correct amount
Balance:	0.00		<input type="checkbox"/>	overpayment
			<input type="checkbox"/>	balance due
S Search Fee				
Prescribed amount:	700.00	<input type="checkbox"/>		
Amount paid:	700.00		<input checked="" type="checkbox"/>	correct amount
Balance:	0.00		<input type="checkbox"/>	overpayment
			<input type="checkbox"/>	balance due
I International Fee				
B Basic Fee				
Fixed amount for first 30 sheets:	407.00	<input type="checkbox"/>		
Amount per additional sheet:	9.00			
Number of additional sheets: x	9			
	81.00	<input type="checkbox"/>		
Prescribed amount (b1 + b2)	488.00	<input type="checkbox"/>		
D Designation Fee				
Amount of designation fee:	88.00			
Number of designation fees payable (maximum 6):	5			
Prescribed amount	440.00	<input type="checkbox"/>		
R Reduction where PCT-EASY software is used				
<i>(See the PCT Applicant's Guide, Volume I, General Part, for details on the availability of this reduction):</i>				
	0.00	<input type="checkbox"/>		
Sub-total (B+D-R):	928.00	<input type="checkbox"/>		
Prescribed total amount <i>(The amount to be entered at I is the sub-total entered at (B+D-R), except where the applicant is for all applicants are) entitled to a reduction of 75%, in which case the amount to be entered at I is 25% of the sub-total (B+D-R); certain applicants from certain States are entitled to a reduction of 75% of the international fee; see Notes to the Fee Calculation Sheet as annexed to the Request Form, PCT/RO/101, for details):</i>				
	928.00	<input type="checkbox"/>		
Amount paid:	928.00		<input checked="" type="checkbox"/>	correct amount
Balance:	0.00		<input type="checkbox"/>	overpayment
			<input type="checkbox"/>	balance due
P Fee for priority document				
Prescribed amount:	0.00	<input type="checkbox"/>		
Amount paid:	0.00		<input checked="" type="checkbox"/>	correct amount
Balance:	0.00		<input type="checkbox"/>	overpayment
			<input type="checkbox"/>	balance due
Additional observations <i>(if necessary)</i>				
<input type="checkbox"/> The amount paid for the designation fee covers the following designations:				
<input type="checkbox"/> Other <i>(specify)</i> :				

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

To: CHRISTHOPER J. ROURK AKIN GUMP STRAUSS HAUER & FELD, L.L.P. 1700 PACIFIC AVENUE SUITE 4100 DALLAS, TEXAS 75201-4675		<h2 style="margin: 0;">PCT</h2> <p style="margin: 0;">NOTIFICATION OF THE INTERNATIONAL APPLICATION NUMBER AND OF THE INTERNATIONAL FILING DATE</p> <p style="margin: 0;">(PCT Rule 20.5(c))</p>	
		Date of mailing <i>(day month year)</i>	14 Mar 2002
Applicant's or agent's file reference 121648.0001		IMPORTANT NOTIFICATION	
International application No. PCT/US02/00503	International filing date <i>(day month year)</i> 16 Jan 2002	Priority date <i>(day month year)</i>	
Applicant CORNERSTONE GROUP LTD.			
Title of the invention OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD			

1. The applicant is hereby notified that the international application has been accorded the international application number and the international filing date indicated above.	
2. The applicant is further notified that the record copy of the international application:	
<input checked="" type="checkbox"/> was transmitted to the International Bureau on <u>14 Mar 2002</u>	
<input type="checkbox"/> has not yet been transmitted to the International Bureau for the reason indicated below and a copy of this notification has been sent to the International Bureau*:	
<input type="checkbox"/> because the necessary national security clearance has not yet been obtained.	
<input type="checkbox"/> because <i>(reason to be specified)</i> :	
* The International Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/IB/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c)).	
3. FOREIGN TRANSMITTAL LICENSE INFORMATION Completed by: <u>VC</u>	
<input type="checkbox"/> Additional license for foreign transmittal not required. This subject matter is covered by a license already granted or the equivalent U.S. national application. Refer to that license for information concerning its scope.	
<input type="checkbox"/> License for foreign transmittal not required. 37 CFR 5.11(e)(1) or 37 CFR 5.11(e)(2). However, a license may be required for additional subject matter. See 37 CFR 5.15(b).	
<input checked="" type="checkbox"/> Foreign transmittal license granted. 35 U.S.C. 184; 37 CFR 5.11 on <u>11 Mar 2002</u>	
<input checked="" type="checkbox"/> 37 CFR 5.15(a) <input type="checkbox"/> 37 CFR 5.15(b)	
Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No. vc

Form PCT/RO/105 (July 1992)

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

To:
 CHRISTHOPER J. ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

PCT

INVITATION TO CORRECT DEFECTS IN
 THE INTERNATIONAL APPLICATION

(PCT Articles 3(4)(i) and 14(1) and Rule 26)

Applicant's or agent's file reference 121648.0001	Date of mailing (day month year) 14 Mar 2002
International application No. PCT/US02/00503	REPLY DUE within 1 ... months days from the above date of mailing
Applicant CORNERSTONE GROUP LTD.	International filing date (day month year) 16 Jan 2002

1. The applicant is hereby invited, within the time limit indicated above, to correct the defects in the international application as filed, the defects specified on the attached

Annex A
 Annex B1 (text matter of the international application as filed)
 Annex C1 (drawings of the international application as filed)

2. The applicant is hereby invited, within the time limit indicated above, to correct the defects in the translation of the international application furnished under Rule 12.3, the defects specified on the attached

Annex A
 Annex B2 (text matter of the translation of the international application)
 Annex C2 (drawings of the translation of the international application)

Additional observations (if necessary):


HOW TO CORRECT THE DEFECTS?

Correction must be submitted by filing a replacement sheet embodying the correction and a letter accompanying the replacement sheet, which shall draw attention to the difference between the replaced sheet and the replacement sheet. A correction may be stated in a letter only if it is of such a nature that it can be transferred from the letter to the record copy without adversely affecting the clarity and direct reproducibility of the sheet onto which the correction is to be transferred (Rule 26.4 a)).

ATTENTION

Failure to correct the defects will result in the international application being considered withdrawn by this receiving Office (see Rule 26.5 for further details).

A copy of this invitation and any attachments has been sent to the International Bureau and the International Searching Authority.

Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US	Authorized officer VANESSA CLARK
Facsimile No. 703-305-3230	Telephone No. 

Form PCT/RO/106 (July 1998)

ANNEX A TO FORM PCT/RO/106

International application No.
PCT/US02/00503

The receiving Office has found the following defects in the international application as filed:

1. As to **signature*** of the international application (Rules 4.15 and 90.4), the request:
- a. is not signed.
- b. is not signed by all applicants.
- c. is not accompanied by the statement referred to in the check list in Box No. VIII of the request explaining the lack of the signature of an applicant for the designation of the United States of America.
- d. is signed by what appears to be an agent/common representative but
 the international application is not accompanied by a power of attorney appointing him.
 the power of attorney accompanying the international application was not signed by all the applicants.
- e. other (*specify*):

* All applicants must sign, including inventors if they are also applicants (e.g. where the United States of America is designated).

2. As to indications concerning the **applicant**, the request (Rules 4.4 and 4.5):
- a. does not properly indicate the applicant's name (*specify*):
- b. does not indicate the applicant's address.
- c. does not properly indicate the applicant's address (*specify*):
- d. does not indicate the applicant's nationality.
- e. does not indicate the applicant's residence.
- f. other (*specify*):

3. As to the **language** of certain elements of the international application, other than the description and claims (Rules 12.1(c) and 26.3ter(a) and (c)):
- a. the **request** is not in a language which is both a language accepted by this receiving Office and a language of publication, which is (are):
- b. the **text matter of the drawings** is not in the language in which the international application is to be published, which is:
- c. the **abstract** is not in the language in which the international application is to be published, which is:

4. The **title** of the invention:
- a. is not indicated in Box No. I of the request (Rule 4.1(a)).
- b. is not indicated at the top of the first sheet of the description (Rule 5.1(a)).
- c. as appearing in Box No. I of the request is not identical with the title heading the description (Rule 5.1(a)).

5. As to the **abstract** (Rule 8):
- the international application does not contain an abstract.

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

To:
 CHRISTHOPER J. ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

PCT

NOTIFICATION REGARDING CERTAIN
 CORRECTIONS MADE *EX OFFICIO*

(PCT Administrative Instructions, Section 327)

Date of mailing <i>(day-month-year)</i>		14 MAR 2002
Applicant's or agent's file reference 121648.0001	REPLY DUE	NONE; However, see paragraph 3 below
International application No. PCT/US02/00503	International filing date <i>(day-month-year)</i>	16 Jan 2002
Applicant CORNERSTONE GROUP LTD.		

1. The applicant is hereby notified that this receiving Office has corrected formal defects in the international application *ex officio*, as shown on the attached copy of:

the request, sheet No.: _____ 2 _____

the description, sheet No.: _____

the claims, sheet No.: _____

the drawings, sheet No.: _____

other *(specify)*: _____

2. If the applicant agrees with these corrections, no further action is required in this regard.

3. **In case of disagreement** with these corrections, the applicant should promptly inform this receiving Office accordingly.

Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No. _____
---	---

Form PCT/RO/146 (July 1992)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF RECEIPT
OF SEARCH COPY

(PCT Rule 25.1)

To:
CHRISTHOPER J. ROURK
AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
1700 PACIFIC AVENUE
SUITE 4100
DALLAS, TEXAS 75201-4675

Date of mailing
(day month year) 14 Mar 2002

Applicant's or agent's file reference
121648.0001 **IMPORTANT NOTIFICATION**

International application No. PCT/US02/00503
International filing date (day month year) 16 Jan 2002
Priority date (day month year)

Applicant
CORNERSTONE GROUP LTD.

1. **Where the International Searching Authority and the receiving Office are not the same Office:**
The applicant is hereby notified that the search copy of the international application was received by this International Searching Authority on the date indicated below.

Where the International Searching Authority and the receiving Office are the same Office:
The applicant is hereby notified that the search copy of the international application was received on the date indicated below.

14 Mar 2002 *(date of receipt)*

2. The search copy was accompanied by a nucleotide and/or amino acid sequence listing in computer readable form.

3. **Time limit for establishment of international search report**
The applicant is informed that the time limit for establishing the international search report is 3 months from the date of receipt indicated above or 9 months from the priority date, whichever time limit expires later.

4. A copy of this notification has been sent to the International Bureau and, where the first sentence of paragraph 1 applies, to the receiving Office.

Name and mailing address of the ISA/ Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn: RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No. VC
--	--

TO: CHRISTOPHER J. ROURK AKIN GUMP STRAUSS HAUER & FELD, L.L.P. 1700 PACIFIC AVENUE SUITE 4100 DALLAS, TEXAS 75201-4675		UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)	
		NOTIFICATION OF STATUS OF REQUIREMENTS UNDER 35 U.S.C. 371	
		DATE OF MAILING <small>(day/month/year)</small>	14 Mar 2002
		FILE REFERENCE	121648.0001
IDENTIFICATION OF INTERNATIONAL APPLICATION			
International application No. PCT/US02/00503	International filing date <small>(day/month/year)</small> 16 Jan 2002	Priority Date Claimed	
Applicant for DO/EO/US KRICHVESKY, ALEXANDER			
NOTIFICATION			
The applicant is hereby advised that the U.S. Patent and Trademark Office in its capacity as <input checked="" type="checkbox"/> Designated Office <input type="checkbox"/> Elected Office has received following items as of the date of mailing indicated above			
1. <input type="checkbox"/> U.S. Nation fee [35 U.S.C 371 (c) (1)] 2. <input type="checkbox"/> Oath of declaration [35 U.S.C 371 (c) (4)] 3. <input checked="" type="checkbox"/> Copy of International application as [35 U.S.C 371 (c) (2)] 4. <input type="checkbox"/> Translation of Application [35 U.S.C 371 (c) (2)] 5. <input type="checkbox"/> Amendments under PCT Article 19 [35 U.S.C 371 (c) (3)] 6. <input type="checkbox"/> Translation of PCT Article 19 Amendments [35 U.S.C 371 (c) (3)] 7. <input type="checkbox"/> Search Report or Declaration under PCT Article 17(2) [35 U.S.C 371 (a)] 8. <input type="checkbox"/> International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3)(b) [35 U.S.C 371 (a)] 9. <input type="checkbox"/> Translation of Annexes to the International Preliminary Examination Report under PCT Article 36(3)(b) [35 U.S.C 371 (c) (5)] 10. <input type="checkbox"/> Other items received: <input type="checkbox"/> Assignment Document <input type="checkbox"/> Prior Art Statement <input type="checkbox"/> Preliminary Amendment			
A. <input type="checkbox"/> Requirements for U.S. National processing have been met. Processing will commence <input type="checkbox"/> at the expiration of the applicable time limit under either <input type="checkbox"/> PCT Article 22 [35 U.S.C 371 (b)] or <input type="checkbox"/> PCT Article 39 [35 U.S.C 371 (b)] <input type="checkbox"/> on the date indicated below under the provisions of 35 U.S.C 371 (f)			
_____ U.S. NATIONAL SERIAL#	_____ DATE UNDER 35 U.S.C. 102(e)	_____ DATE OF COMMENCEMENT OF NATIONAL PROCESSING	
<i>All correspondence submitted after the date of commencement of U.S. National processing indicated above should refer to the U.S. National Serial Number and the appropriate U.S. National processing organization of Officer.</i>			
B. <input type="checkbox"/> As the above identified application has been accepted for U.S. National processing under the provision of 35 U.S.C. 371 (f) before expiration of the applicable time limit under <input type="checkbox"/> PCT Article 22 <input type="checkbox"/> PCT Article 39, applicant is reminded that <input type="checkbox"/> Amendments under PCT Article 19 and/or <input type="checkbox"/> the International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3) (a), and (b) and any translation thereof, if applicable, must be submitted to the Patent and Trademark Office as soon as they are available.			

International application No. PCT/US02/00503	International filing date 16 Jan 2002	Priority Date Claimed
<p>C. <input checked="" type="checkbox"/> In order that U.S. National processing may begin, certain items must be received by the DO/EO/US by the expiration of applicable time limit under</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> PCT Article 22 or <input checked="" type="checkbox"/> PCT Article 39. <p>Specifically:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 1. U.S. National Fee <input checked="" type="checkbox"/> 2. Oath or Declaration <input type="checkbox"/> 3. Copy of Application <input type="checkbox"/> 4. Translation of application <input checked="" type="checkbox"/> 5. Amendments under PCT Article 19, if any <input type="checkbox"/> 6. Translation of PCT Article 19 Amendments, if applicable <input type="checkbox"/> 7. Search Report or PCT Article 17(2) declaration <input type="checkbox"/> 8. International Preliminary Examination Report and its Annexes, if any, under PCT Article 36(3)(a), if applicable <input type="checkbox"/> 9. Translation of Annexes to the International Preliminary Examination Report under PCT Article 36(3)(b), if applicable <p><i>THE ABOVE CHECK ITEMS MUST BE TIMELY RECEIVED TO AVOID ABANDONMENT OF THE APPLICATION. [35 U.S.C. 371(d)]</i></p> <p>D. Further information for the applicant:</p> <p style="text-align: center;">This is only a reminder.</p>		
UNITED STATES DESIGNATED/ELECTED OFFICE		
Address Only: Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US	Authorized Officer VANESSA CLARK VC	

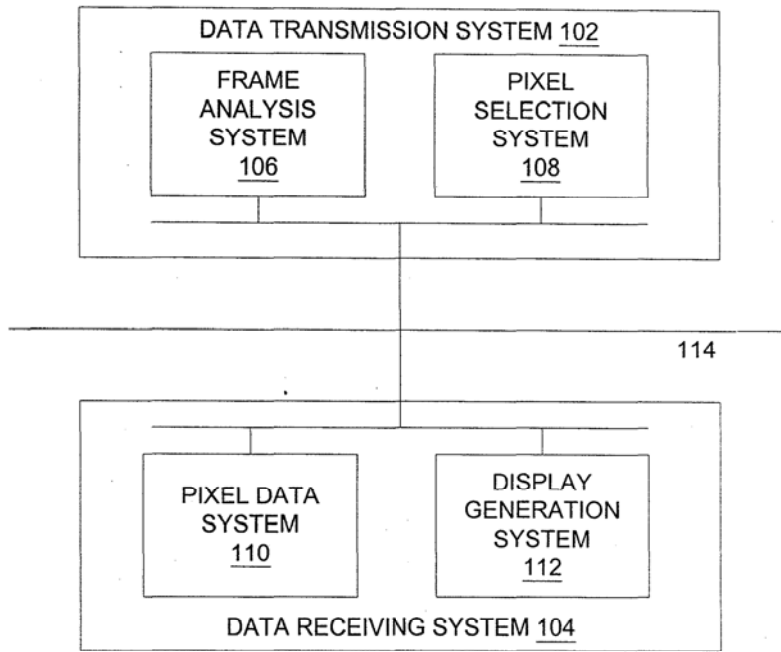


FIGURE 1

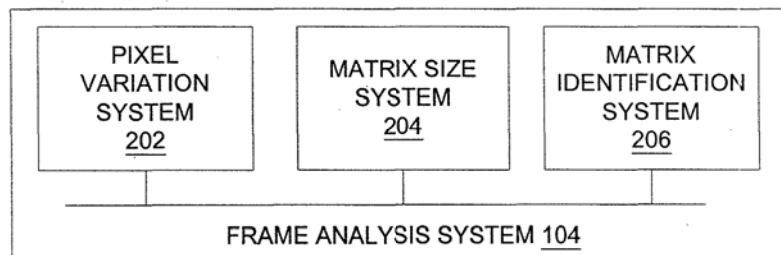


FIGURE 2



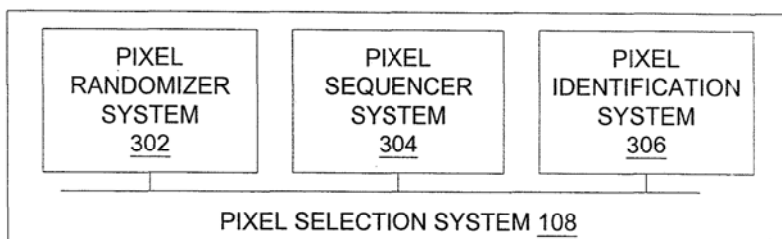


FIGURE 3

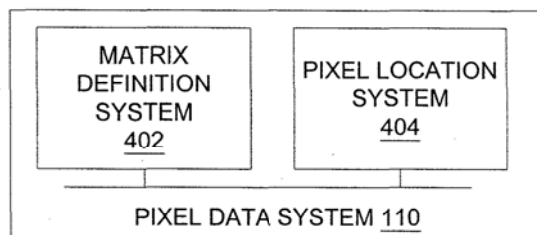


FIGURE 4

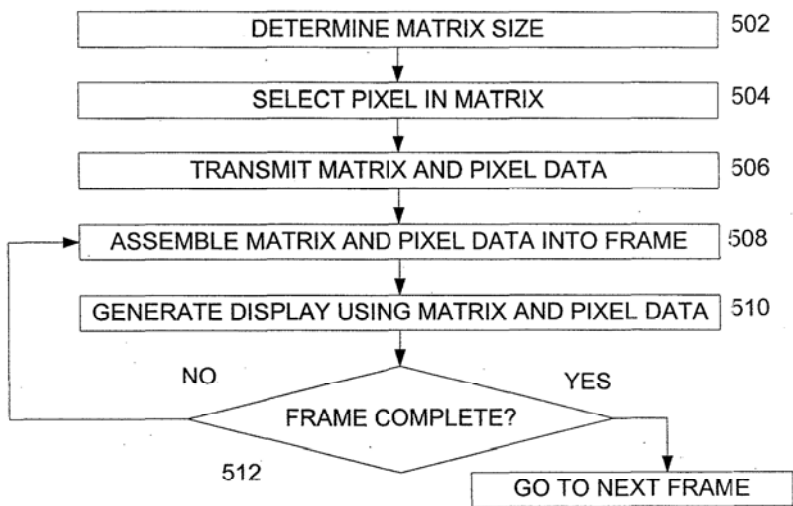


FIGURE 5



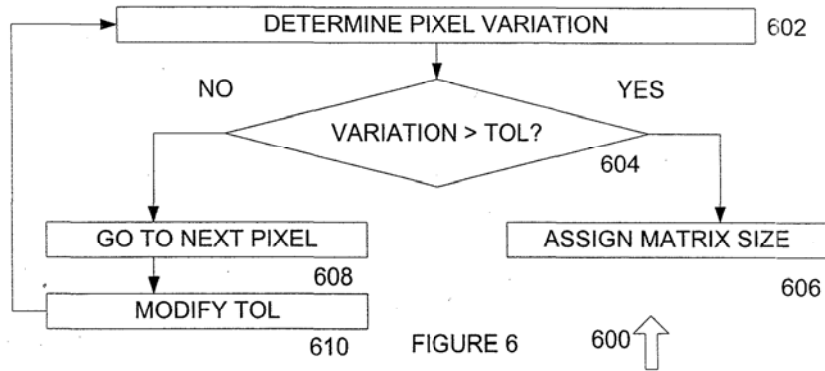


FIGURE 6

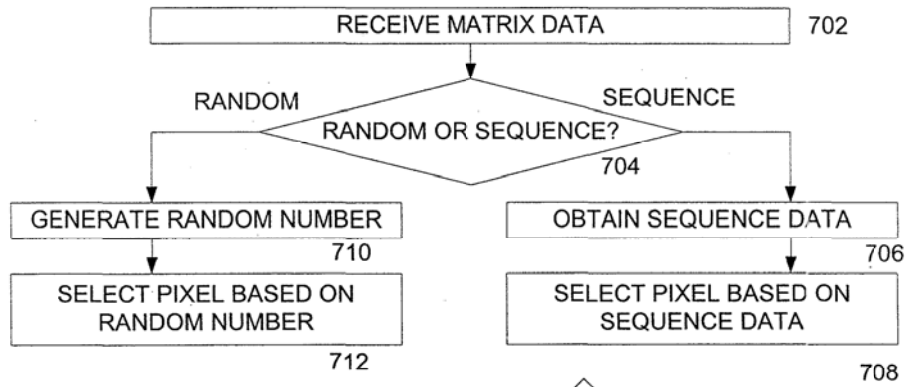


FIGURE 7

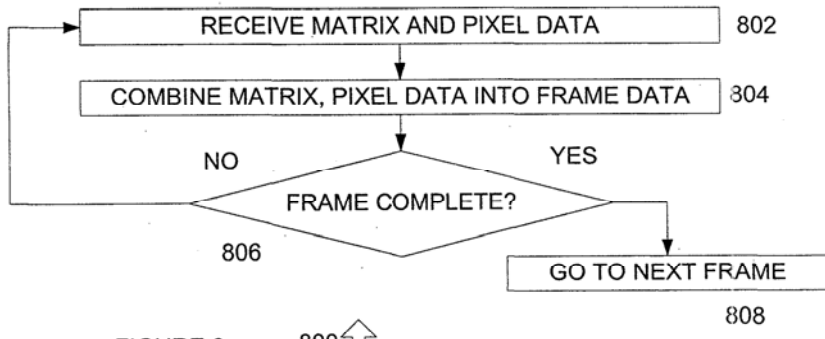


FIGURE 8



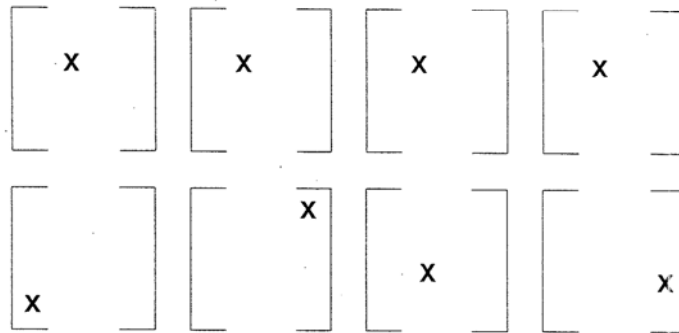


FIGURE 9 900 ↑

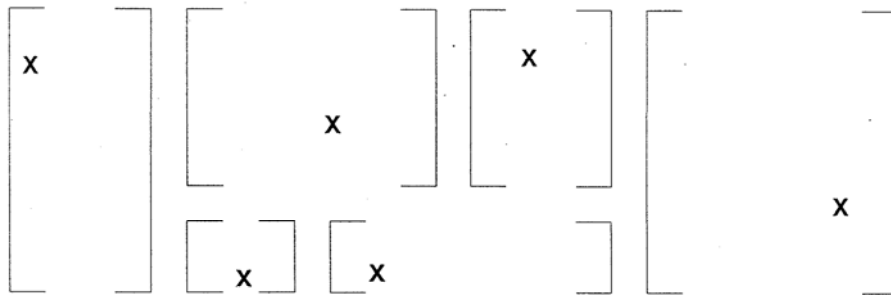


FIGURE 10 1000 ↑

Copy for the receiving Office (RO/US)

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

INVITATION TO CORRECT
DECLARATION(S) MADE IN THE REQUEST
UNDER PCT RULE 4.17

(PCT Rules 4.17 and 26ter.2(a))

To:

ROURK, Christopher, J.
Akin, Gump, Strauss, Hauer & Feld, LLP
Suite 4100
1700 Pacific Avenue
Dallas, TX 75201-4675
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)	26 March 2002 (26.03.02)
Applicant's or agent's file reference 121648.0001	REPLY DUE See below
International application No. PCT/US02/00503	International filing date (day/month/year) 16 January 2002 (16.01.02)
Applicant CORNERSTONE GROUP LTD.	

1. The applicant is hereby invited to submit to the International Bureau a corrected declaration within the time limit indicated below and as explained in the Annex. The applicant's attention is drawn to the fact that the declaration has not been examined for compliance with national law requirements of the designated State(s) for which that declaration is made.

When? Within 16 months from the priority date, provided that any corrected declaration which is received by the International Bureau after the expiration of that time limit shall be considered to have been received on the last day of that time limit if it reaches it before the technical preparations for international publication have been completed (Rule 26ter.1)

How? By submitting a replacement sheet containing a corrected declaration accompanied by a letter explaining the correction (see Section 216). See Sections 211 to 215 for the applicable standardized wording.

Where? Directly to the International Bureau at the address indicated below.
If the corrected declaration is submitted to the receiving Office, that Office shall mark the date of receipt on it and transmit it promptly to the International Bureau. The declaration shall be considered to have been submitted to the International Bureau on the date marked (see Section 317).

2. Failure to correct the declaration within the time limit will result in copies of the declaration, as originally filed, being communicated by the International Bureau to the designated Offices concerned according to Rule 47.1 (a-ter).

Any declaration received after the expiration of the time limit under Rule 26ter.1 will have to be submitted by the applicant directly to the designated Offices concerned; it is only in the case of a signed declaration of inventorship for the purposes of the designation of the United States of America (Rule 4.17(iv)) that the original declaration will be returned to the applicant (see Section 419(d)).

3. In respect of national phase processing, the applicant's attention is drawn to Rule 51bis.2 which provides that the designated Office shall not, unless it may reasonably doubt the veracity of the declaration concerned, require any document or evidence relating to the subject matter of any declaration complying with Rule 4.17(i) to (iv) which is contained in the request or submitted to the International Bureau or directly to the designated Office. Note, however, that Rule 51bis.2 may not apply in respect of certain States. For further information, see Notes to the request form, Box No. VIII.

4. A copy of this invitation is being sent to the receiving Office.

The International Bureau of WIPO 34, chemin des Colombettes, 1211 Geneva 20, Switzerland	Authorized officer Hans LEISE
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

Form PCT/IB/370 (March 2001)

ANNEX TO FORM PCT/IB/370

International application No.
PCT/US02/00503

The International Bureau has found the following defect(s) in the declaration(s) listed below :

1. declaration as to the identity of the inventor (Rules 4.17(i) and 51bis.1(a)(i) and Section 211), in respect of:
 - a. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):
 - b. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):

2. declaration as to the applicant's entitlement, as at the international filing date, to apply for or be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii) and Section 212), in respect of:
 - a. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):
 - b. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):

3. declaration as to the applicant's entitlement, as at the international filing date, to claim priority of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii) and Section 213), in respect of:
 - a. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):
 - b. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):

4. declaration of inventorship (only for the purposes of the designation of the United States of America) (Rules 4.17(iv) and 51bis.1(a)(iv) and Section 214), in respect of:
 - a. (name(s) included in the declaration):
 is not in the prescribed wording
 is not signed by all inventors named in the declaration
 other (specify):
 - b. (name(s) included in the declaration):
 is not in the prescribed wording
 is not signed by all inventors named in the declaration
 other (specify):

5. declaration as to non-prejudicial disclosures or exceptions to lack of novelty (Rules 4.17(v) and 51bis.1(a)(v) and Section 215), in respect of:
 - a. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):
 - b. (name(s) included in the declaration):
 is not in the prescribed wording
 other (specify):

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PCT

REQUEST

The undersigned requests that the present International application be processed According to the Patent Cooperation Treaty.

PCT/US02/00503	
International Application No.	
International Filing Date	16 JAN 2002
Name of receiving Office and "PCT International Application"	
PCT INTERNATIONAL APPLICATION PCT/US	
Applicant's or agent's file reference (if desired) (12 characters maximum) 121648.0001	

Box No. I TITLE OF INVENTION OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD	
Box No. II APPLICANT <input type="checkbox"/> This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
CORNERSTONE GROUP LTD. P.O. Box 1892 Laguna Beach, California 92652 United States of America	Telephone No. Facsimile No. Teleprinter No. Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant For the purposes of: <input type="checkbox"/> All designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> The States indicated in the Supplemental Box	
Box No. III. FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
KRICHEVSKY, Alexander P.O. Box 1892 Laguna Beach, California 92652 United States of America	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (if this check-box is marked, do not fill in below.) Applicant's registration No. with the Office
State (that is, country) of nationality: RU	State (that is, country) of residence: US
This person is applicant For the purposes of: <input type="checkbox"/> All designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> The States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
ROURK, Christopher J. Akin, Gump, Strauss, Hauer & Feld, L.L.P. 1700 Pacific Avenue, Suite 4100 Dallas, Texas 75201-4675 United States of America	Telephone No. 214/969-4669 Facsimile No. 214/969-4343 Teleprinter No. Agent's registration No. with the Office 39,348
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

See Notes to the request form

Box No. V	DESIGNATION OF STATES	Mark the applicable check-boxes below; at least one must be marked	
The following designations are hereby made under Rule 4.9(a):			
Regional Patent			
<input checked="" type="checkbox"/> AP	ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, MZ Mozambique, OM Oman, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZM Zambia, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT		
<input checked="" type="checkbox"/> EA	Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT		
<input checked="" type="checkbox"/> EP	European Patent: AT Austria, BE Belgium, CH & LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, TR Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT		
<input checked="" type="checkbox"/> OA	OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line) GA Equatorial Guinea		
National Patent (if other kind of protection or treatment desired, specify on dotted line):			
<input checked="" type="checkbox"/> AE United Arab Emirates	<input checked="" type="checkbox"/> GE Georgia	<input checked="" type="checkbox"/> MW Malawi	
<input checked="" type="checkbox"/> AG Antigua and Barbuda	<input checked="" type="checkbox"/> GH Ghana	<input checked="" type="checkbox"/> MX Mexico	
<input checked="" type="checkbox"/> AL Albania	<input checked="" type="checkbox"/> GM Gambia	<input checked="" type="checkbox"/> MZ Mozambique	
<input checked="" type="checkbox"/> AM Armenia	<input checked="" type="checkbox"/> HR Croatia	<input checked="" type="checkbox"/> NO Norway	
<input checked="" type="checkbox"/> AT Austria	<input checked="" type="checkbox"/> HU Hungary	<input checked="" type="checkbox"/> NZ New Zealand	
<input checked="" type="checkbox"/> AU Australia	<input checked="" type="checkbox"/> ID Indonesia	<input checked="" type="checkbox"/> PL Poland	
<input checked="" type="checkbox"/> AZ Azerbaijan	<input checked="" type="checkbox"/> IL Israel	<input checked="" type="checkbox"/> PT Portugal	
<input checked="" type="checkbox"/> BA Bosnia and Herzegovina	<input checked="" type="checkbox"/> IN India	<input checked="" type="checkbox"/> RO Romania	
	<input checked="" type="checkbox"/> IS Iceland	<input checked="" type="checkbox"/> RU Russian Federation	
<input checked="" type="checkbox"/> BB Barbados	<input checked="" type="checkbox"/> JP Japan		
<input checked="" type="checkbox"/> BG Bulgaria	<input checked="" type="checkbox"/> KE Kenya	<input checked="" type="checkbox"/> SD Sudan	
<input checked="" type="checkbox"/> BR Brazil	<input checked="" type="checkbox"/> KG Kyrgyzstan	<input checked="" type="checkbox"/> SE Sweden	
<input checked="" type="checkbox"/> BY Belarus	<input checked="" type="checkbox"/> KP Democratic People's Republic of Korea	<input checked="" type="checkbox"/> SG Singapore	
<input checked="" type="checkbox"/> BZ Belize		<input checked="" type="checkbox"/> SI Slovenia	
<input checked="" type="checkbox"/> CA Canada	<input checked="" type="checkbox"/> KR Republic of Korea	<input checked="" type="checkbox"/> SK Slovakia	
<input checked="" type="checkbox"/> CH & LI Switzerland and Liechtenstein	<input checked="" type="checkbox"/> KZ Kazakhstan	<input checked="" type="checkbox"/> SL Sierra Leone	
<input checked="" type="checkbox"/> CN China	<input checked="" type="checkbox"/> LC Saint Lucia	<input checked="" type="checkbox"/> TJ Tajikistan	
<input checked="" type="checkbox"/> CO Colombia	<input checked="" type="checkbox"/> LK Sri Lanka	<input checked="" type="checkbox"/> TM Turkmenistan	
<input checked="" type="checkbox"/> CR Costa Rica	<input checked="" type="checkbox"/> LR Liberia	<input checked="" type="checkbox"/> TR Turkey	
<input checked="" type="checkbox"/> CU Cuba	<input checked="" type="checkbox"/> LS Lesotho	<input checked="" type="checkbox"/> TT Trinidad and Tobago	
<input checked="" type="checkbox"/> CZ Czech Republic	<input checked="" type="checkbox"/> LT Lithuania		
<input checked="" type="checkbox"/> DE Germany	<input checked="" type="checkbox"/> LU Luxembourg	<input checked="" type="checkbox"/> TZ United Republic of Tanzania	
<input checked="" type="checkbox"/> DK Denmark	<input checked="" type="checkbox"/> LV Latvia	<input checked="" type="checkbox"/> UA Ukraine	
<input checked="" type="checkbox"/> DM Dominica	<input checked="" type="checkbox"/> MA Morocco	<input checked="" type="checkbox"/> UG Uganda	
<input checked="" type="checkbox"/> DZ Algeria	<input checked="" type="checkbox"/> MD Republic of Moldova	<input checked="" type="checkbox"/> US United States of America	
<input checked="" type="checkbox"/> EE Estonia			
<input checked="" type="checkbox"/> ES Spain	<input checked="" type="checkbox"/> MG Madagascar	<input checked="" type="checkbox"/> UZ Uzbekistan	
<input checked="" type="checkbox"/> FI Finland	<input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia	<input checked="" type="checkbox"/> VN Viet Nam	
<input checked="" type="checkbox"/> GB United Kingdom		<input checked="" type="checkbox"/> YU Yugoslavia	
<input checked="" type="checkbox"/> GD Grenada	<input checked="" type="checkbox"/> MN Mongolia	<input checked="" type="checkbox"/> ZA South Africa	
		<input checked="" type="checkbox"/> ZW Zimbabwe	
Check-boxes below reserved for designating States which have become party to the PCT after issuance of this sheet:			
<input checked="" type="checkbox"/> Equatorial Guinea (GQ)	<input checked="" type="checkbox"/> Zambia (ZM)	<input checked="" type="checkbox"/> Tunisia (TN)	
<input checked="" type="checkbox"/> Philippines (PH)	<input checked="" type="checkbox"/> Oman (OM)	<input type="checkbox"/>	
Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)			

See Notes to the request form

replies

Box No. VIII (iv) DECLARATION: INVENTORSHIP (only for the purposes of the designation of the United States of America)
The declaration must conform to the standardized wording provided for in Section 214; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iv). If this Box is not used, this sheet should not be included in the request.

**Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))
 for the purposes of the designation of the United States of America**

I hereby declare that I believe I am the original, first and sole (if only one inventor is listed below) or joint (if more than one inventor is listed below) inventor of the subject matter which is claimed and for which a patent is sought.

This declaration is directed to the international application of which it forms a part (if filing declaration with application).

This declaration is directed to international application No. PCT / (if furnishing declaration pursuant to Rule 26ter).

I hereby declare that my residence, mailing address, and citizenship are as stated next to my name.

I hereby state that I have reviewed and understand the contents of the above-identified international application, including the claims of said application. I have identified in the request of said application, in compliance with PCT Rule 4.10, any claim to foreign priority, and I have identified below, under the heading "Prior Applications," by application number, country or Member of the World Trade Organization, day, month and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.

Prior applications:

I hereby acknowledge the duty to disclose information that is known by me to be material to patentability as defined by 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the PCT international filing date of the continuation-in-part application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: **Alexander KRICHEVSKY**

Residence: **Laguna Beach, California**
 (city and either US state, if applicable, or country)

Mailing address: **P.O. Box 1892, Laguna Beach, California 92652**

Citizenship: **Russia**

Inventor's Signature: Date:
 (if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent) (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

Name:

Residence:
 (city and either US state, if applicable, or country)

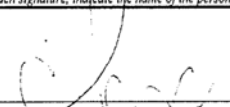
Mailing Address:

Citizenship:

Inventor's Signature: Date:
 (if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent) (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

This declaration is continued on the following sheet, "Continuation of Box No. VIII (iv)".

See Notes to the request form

Box No. IX CHECK LIST; LANGUAGE OF FILING	
<p>This international application contains:</p> <p>(a) the following number of sheets in paper form:</p> <p>request (including declaration sheets) : 5</p> <p>description (excluding sequence listing part) : 25</p> <p>claims : 4</p> <p>abstract : 1</p> <p>drawings : 4</p> <p>Sub-total number of sheets: 39</p> <p>Sequence listing part of description (actual number of sheets if filed in paper form, whether or not also filed in computer readable form: see (b) below) : _____</p> <p>Total number of sheets : 39</p> <p>(b) sequence listing part of description filed in computer readable form</p> <p>(i) <input type="checkbox"/> only (under Section 8.01(a)(i))</p> <p>(ii) <input type="checkbox"/> in addition to being filed in paper form (under Section 8.01(a)(ii))</p> <p>Type and number of carriers (diskette, CD-ROM, CD-R or other) on which the sequence listing part is contained (additional copies to be indicated under item 9(ii), in right column): _____</p>	<p>This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):</p> <p>1. <input checked="" type="checkbox"/> fee calculation sheet : _____</p> <p>2. <input type="checkbox"/> original separate power of attorney : _____</p> <p>3. <input type="checkbox"/> original general power of attorney : _____</p> <p>4. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any: : _____</p> <p>5. <input type="checkbox"/> statement explaining lack of signature : _____</p> <p>6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): : _____</p> <p>7. <input type="checkbox"/> translation of international application into (language): : _____</p> <p>8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material : _____</p> <p>9. <input type="checkbox"/> sequence listing in computer readable form (indicate also type and number of carriers (diskette, CD-ROM, CD-R or other))</p> <p>(i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application) : _____</p> <p>(ii) <input type="checkbox"/> (only where check-box (b)(i) or (b)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter : _____</p> <p>(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing part mentioned in left column : _____</p> <p>10. <input checked="" type="checkbox"/> other (specify): Transmittal, Post Card, Check: : _____</p>
Figure of the drawings which should accompany the abstract: 1	Language of filing of the international application: English
<p>Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE</p> <p><i>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</i></p>	
	
<p>ROURK, Christopher J., Attorney or Applicant</p> <p style="font-size: 1.5em; margin-left: 400px;">(116-01-04)</p>	
For receiving Office use only	
<p>1. Date of actual receipt of the purported international application</p> <p style="font-size: 1.2em; font-weight: bold; text-align: center;">98 Rec'd PCT/PTO 16 JAN 2002</p>	<p>2. Drawings:</p> <p><input type="checkbox"/> received:</p> <p><input type="checkbox"/> not received</p>
<p>3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:</p>	
<p>4. Date of timely receipt of the required corrections under PCT Article 11(2):</p>	
<p>5. International Searching Authority (if two or more are competent): ISA / <u>US</u></p>	<p>6. <input type="checkbox"/> transmittal of search copy delayed until search fee is paid</p>
For International Bureau use only	
<p>Date of receipt of the record copy by the International Bureau: _____</p>	

See Notes to the request form

Attorney Docket
No. 121648-0001 (B74216PCT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
UNITED STATES RECEIVING OFFICE (RO/US)

JCO5 REGISTRATION 12 APR 2002

In re International Application of
CORNERSTONE GROUP LTD.

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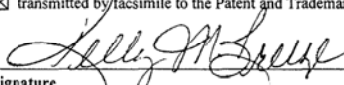
Authorized Officer:
Vanessa Clark

International Application No. PCT/US02/00503

International Filing Date: 16 JAN 2002

For: OPTIMIZED DATA TRANSMISSION
SYSTEM AND METHOD

BOX: PCT
Commissioner for Patents
Washington, D.C. 20231
ATTN: US/RO

EXPRESS MAIL CERTIFICATE OF MAILING UNDER (37 CFR 1.8(a)) & 37 CFR 1.10	
I hereby certify that this correspondence is, on the date shown below, being:	
<input checked="" type="checkbox"/>	deposited with the United States Postal Service with sufficient postage as U.S. Express Mail, in an envelope addressed to the Assistant Commissioner of Patents, Washington, DC 20231; Certificate No.EL431004961US.
<input checked="" type="checkbox"/>	transmitted by facsimile to the Patent and Trademark Office.
Signature	
Date:	April 12, 2002
	Kelly Breeze
	<i>(type or print name of person certifying)</i>

RESPONSE

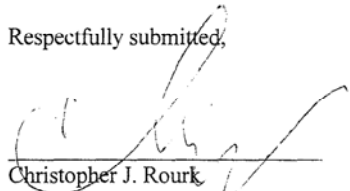
Responsive to the Invitation to Correct Defects in the International Application for this application, mailed on 14 March 2002, we respectfully enclose:

1. A power of attorney form responsive to Section 1(d) of Annex A to Form PCT/RO/106, dated 14 March 2002, of the Invitation to Correct Defects has previously been submitted, a copy of which is attached hereto.

The undersigned hereby attests to all papers filed for this application on 16 January 2002 in his capacity as attorney for the applicant.

Please charge any fees due to Deposit Account No. 01-0657.

Respectfully submitted,



Christopher J. Rourke
Registration No. 39,348

Date: April 12, 2002
AKIN, GUMP, STRAUSS, HAUER & FELD
P.O. Box 688
Dallas, Texas 75313-0688
214/969-4669

PCT/US 02/00503
RG/US 12 APR 2002

PCT

GENERAL POWER OF ATTORNEY

(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s):

(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)

Constance Nash, President
CORNERSTONE GROUP LTD.
P.O. Box 1892
Laguna Beach, California 92652
U.S.

hereby appoint(s) the following person as: agent common representative

Name and address

(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)


Rourk, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Hauer, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
 the International Searching Authority only
 the International Preliminary Examining Authority
only

in connection with any and all international applications filed by the undersigned with the following Office U.S. as receiving Office and to make or receive payments on behalf of the undersigned.

Signature(s) *(where there are several persons, each of them must sign; next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading this power):*

CORNERSTONE GROUP LTD.

Signature:  President
Constance Nash

Date: 4-11-2002

Attorney Docket
No. 121648-0001 (B74216PCT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
UNITED STATES RECEIVING OFFICE (RO/US)

JC05 REGISTRATION OF THE AFR 2002

In re International Application of
CORNERSTONE GROUP LTD.

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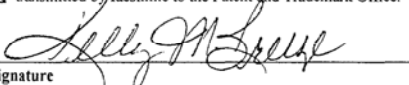
Authorized Officer:
Vanessa Clark

International Application No. PCT/US02/00503

International Filing Date: 16 JAN 2002

For: OPTIMIZED DATA TRANSMISSION
SYSTEM AND METHOD

BOX: PCT
Commissioner for Patents
Washington, D.C. 20231
ATTN: US/RO

EXPRESS MAIL CERTIFICATE OF MAILING UNDER (37 CFR 1.8(a)) & 37 CFR 1.10	
I hereby certify that this correspondence is, on the date shown below, being:	
<input checked="" type="checkbox"/>	deposited with the United States Postal Service with sufficient postage as U.S. Express Mail, in an envelope addressed to the Assistant Commissioner of Patents, Washington, DC 20231; Certificate No.EL431004961US.
<input checked="" type="checkbox"/>	transmitted by facsimile to the Patent and Trademark Office.
Signature	
Date: April 12, 2002	
	Kelly Breeze
<small>(type or print name of person certifying)</small>	

RESPONSE

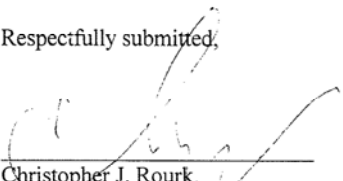
Responsive to the Invitation to Correct Defects in the International Application for this application, mailed on 14 March 2002, we respectfully enclose:

1. A power of attorney form responsive to Section 1(d) of Annex A to Form PCT/RO/106, dated 14 March 2002, of the Invitation to Correct Defects has previously been submitted, a copy of which is attached hereto.

The undersigned hereby attests to all papers filed for this application on 16 January 2002 in his capacity as attorney for the applicant.

Please charge any fees due to Deposit Account No. 01-0657.

Respectfully submitted,



Christopher J. Rourke
Registration No. 39,348

Date: April 12, 2002
AKIN, GUMP, STRAUSS, HAUER & FELD
P.O. Box 688
Dallas, Texas 75313-0688
214/969-4669

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

PCT

To:
 CHRISTOPHER J ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

INVITATION TO CORRECT DEFECTS IN
 THE INTERNATIONAL APPLICATION
 (PCT Articles 3(4)(i) and 14(1) and Rule 26)

Date of mailing <i>(day month year)</i>	14 Mar 2002
Applicant's or agent's file reference 121648.0001	REPL. D/F within 1 month days from the above date of mailing
International application No PCT/US02/00503	International filing date <i>(day month year)</i> 16 Jan 2002
Applicant CORNERSTONE GROUP LTD.	

1. The applicant is hereby invited, within the time limit indicated above, to correct the defects in the international application as filed, the defects specified on the attached

Annex A
 Annex B1 *(text matter of the international application as filed)*
 Annex C1 *(drawings of the international application as filed)*

2. The applicant is hereby invited, within the time limit indicated above, to correct the defects in the translation of the international application furnished under Rule 12.3, the defects specified on the attached

Annex A
 Annex B2 *(text matter of the translation of the international application)*
 Annex C2 *(drawings of the translation of the international application)*

Additional observations (if necessary):

HOW TO CORRECT THE DEFECTS?

Corrections must be submitted by filing a replacement sheet embodying the correction and a letter accompanying the replacement sheet, which shall draw attention to the difference between the replaced sheet and the replacement sheet. A correction may be stated in a letter only if it is of such a nature that it can be transferred from the letter in the record copy without adversely affecting the clarity and direct reproducibility of the sheet onto which the correction is to be transferred (Rule 26.4(a)).

ATTENTION

Failure to correct the defects will result in the international application being considered withdrawn by this receiving Office (see Rule 26.5 for further details).

A copy of this invitation and any attachments has been sent to the International Bureau and the International Searching Authority.

Name and mailing address of the receiving Office Assistant Commissioner for Patents, Box PCT Washington, D.C. 20231 Am RO/US	Authorized officer VANESSA CLARK
Facsimile No. 702-305-3220	Telephone No.
Form PCT/RO/116b (July 1998)	

ANNEX A TO FORM PCT/RO/106

International application No.
PCT/US02/00503

The receiving Office has found the following defects in the international application as filed:

1. As to signature* of the international application (Rules 4.15 and 90.4), the request:
 - a. is not signed
 - b. is not signed by all applicants
 - c. is not accompanied by the statement referred to in the check list in Box No. VIII of the request explaining the lack of the signature of an applicant for the designation of the United States of America
 - d. is signed by what appears to be an agent/common representative but
 - the international application is not accompanied by a power of attorney appointing him
 - the power of attorney accompanying the international application was not signed by all the applicants
 - e. other (specify):

* All applicants must sign (including inventors if they are all-n applicants (e.g. where the United States of America is designated))

2. As to indications concerning the applicant the request (Rules 4.4 and 4.5):
 - a. does not properly indicate the applicant's name (specify):
 - b. does not indicate the applicant's address
 - c. does not properly indicate the applicant's address (specify):
 - d. does not indicate the applicant's nationality
 - e. does not indicate the applicant's residence
 - f. other (specify):

3. As to the language of certain elements of the international application, other than the description and claims (Rules 12.1(a) and 26.3(a) *in part*):
 - a. the request is not in a language which is both a language accepted by this receiving Office and a language of publication which is (are):
 - b. the text matter of the drawings is not in the language in which the international application is to be published, which is:
 - c. the abstract is not in the language in which the international application is to be published, which is:

4. The title of the invention:
 - a. is not indicated in Box No. I of the request (Rule 4.1(a))
 - b. is not indicated at the top of the first sheet of the description (Rule 5.1(a))
 - c. as appearing in Box No. I of the request is not identical with the one heading the description (Rule 5.1(a))

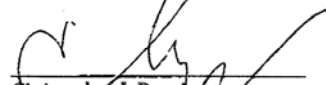
5. As to the abstract (Rule 8):
 - the international application does not contain an abstract

Apr-12-02 04:59pm From-AKIN GUMP ET EL-DAL

214-969-4343--0

T-402 P.03/07 F-100

Respectfully submitted,



Christopher J. Rourke
Registration No. 39,348

Date: April 12, 2002
AKIN, GUMP, STRAUSS, HAUER & FELD
P.O. Box 688
Dallas, Texas 75313-0688
214/969-4669

121648 0001 DALLAS 561977 v1

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1700 PACIFIC AVENUE
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DALLAS, TEXAS 75201
(214) 969-2800
FAX (214) 969-4343
www.akingump.com

E-MAIL ADDRESS: CROURK@akingump.com

RIYADH (AFFILIATE)

FAX TRANSMISSION

April 12, 2002

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FROM: Chris J. Rourk PHONE: 214/969-4669 FLOOR: 43

RE. International Application No.: PCT/US02/00503
Applicant: CORNERSTONE GROUP LTD.
International Filing Date: 16 Jan, 2002
Title: OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office, PCT US/RO on the date shown below.

Kelly Breeze

Typed or printed name

Signature

12 April 2002

Date

CLIENT/MATTER NO:	121648.0001
USER ID:	011352
SECRETARY:	Kelly Breeze
EXT:	14243

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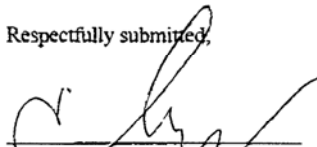
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Apr-12-02 04:59pm From-AKIN GUMP ET EL-DAL

214-969-4343--0

T-402 P.03/07 F-100

Respectfully submitted,



Christopher J. Rourke
Registration No. 39,348

Date: April 12, 2002
AKIN, GUMP, STRAUSS, HAUER & FELD
P.O. Box 688
Dallas, Texas 75313-0688
214/969-4669

121648.0001 DALLAS 561977 -1

PCT/US 02/00 503
RO/US 12 APR 2002

PCT

GENERAL POWER OF ATTORNEY

(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s):
(family name followed by given names; for a legal entity, full official designation. The address must include postal code and name of country.)

Constance Nash, President
CORNERSTONE GROUP LTD.
P.O. Box 1892
Laguna Beach, California 92652
U.S.

hereby appoint(s) the following person as: agent _____ common representative

Name and address
(family name followed by given names; for a legal entity, full official designation. The address must include postal code and name of country.)

Rourke, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Hauer, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
_____ the International Searching Authority only
_____ the International Preliminary Examining Authority only

in connection with any and all international applications filed by the undersigned with the following Office U.S. as receiving Office and to make or receive payments on behalf of the undersigned.

Signature(s) *(where there are several persons, each of them must sign next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not evident from reading the name.)*

CORNERSTONE GROUP LTD.

Signature: Constance Nash, President
Constance Nash

Date: 4-11-2002

PATENT COOPERATION TREATY

SL

From the RECEIVING OFFICE

To:
 CHRISTHOPER J. ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

PCT

NOTIFICATION CONCERNING
 REPRESENTATION

(PCT Rule 90 and Administrative
 Instructions, Section 328)

Applicant's or agent's file reference 121648.0001	Date of mailing (day/month/year) 04 Jun 2002
International application No. PCT/US02/00503	International filing date (day/month/year) 16 Jan 2002
Applicant CORNERSTONE GROUP LTD.	

1. This receiving Office hereby gives notice of the receipt of a document containing:

- a power of attorney
- a revocation of power of attorney
- a renunciation of appointment

2. This notification, together with a copy of the document indicated above, is sent to the addressee in its capacity as:

- the International Searching Authority.
- the International Bureau, which is requested to record a change in the person of the agent or common representative under Rule 92bis.1(a)(ii).

Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No.
---	--

SC

PATENT COOPERATION TREATY

F

From the RECEIVING OFFICE

To:
 CHRISTHOPER J. ROURK
 AKIN GUMP STRAUSS HAUER & FELD, L.L.P.
 1700 PACIFIC AVENUE
 SUITE 4100
 DALLAS, TEXAS 75201-4675

PCT

NOTIFICATION CONCERNING
 REPRESENTATION

(PCT Rule 90 and Administrative
 Instructions, Section 328)

Applicant's or agent's file reference 121648.0001	Date of mailing (day/month/year) 04 Jun 2002
International application No. PCT/US02/00503	International filing date (day/month/year) 16 Jan 2002
Applicant CORNERSTONE GROUP LTD.	

1. This receiving Office hereby gives notice of the receipt of a document containing:

- a power of attorney
- a revocation of power of attorney
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2. This notification, together with a copy of the document indicated above, is sent to the addressee in its capacity as:

- the International Searching Authority.
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Name and mailing address of the receiving Office Assistant Commissioner for Patent, Box PCT Washington, D.C. 20231 Attn:RO/US Facsimile No. 703-305-3230	Authorized officer VANESSA CLARK Telephone No.
---	--

cc

T-402 P.07/07 F-100
PCT/US 02/00503
RU/US 12 APR 2002

PCT

GENERAL POWER OF ATTORNEY (for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s):
(Family name followed by given name for a legal entity, full official designation. The address must include postal code and name of country.)

Alexander KRICHEVSKY
P.O. Box 1892
Laguna Beach, California 92652
U.S.

hereby appoint(s) the following person as: agent _____ common representative

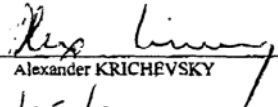
Name and address
(Family name followed by given name for a legal entity, full official designation. The address must include postal code and name of country.)

Rourk, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Hauer, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
_____ the International Searching Authority only
_____ the International Preliminary Examining Authority only

in connection with any and all international applications filed by the undersigned with the following Office U.S. as receiving Office and to make or receive payments on behalf of the undersigned.

Signature(s) *(where there are several persons, each of them must sign, next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading this power.)*

Signature: 
Alexander KRICHEVSKY

Date: 1/25/02

Form PCT/Model of general power of attorney (for several international applications) (July 1992)

PCT/US 02/00503
RO/US 12 APR 2002

PCT

GENERAL POWER OF ATTORNEY

(for several international applications filed under the Patent Cooperation Treaty)

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Constance Nash, President
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Laguna Beach, California 92652
U.S.

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Name and address
(family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Rowk, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Haner, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
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Signature(s) *(where there are several persons, each of them must sign next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading the name):*

CORNERSTONE GROUP LTD.

Signature: Constance Nash, President
Constance Nash

Date: 4-11-2002

PCT/US 02/00503
RU/US 12 APR 2002

PCT

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(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

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CORNERSTONE GROUP LTD.
P.O. Box 1892
Laguna Beach, California 92652
U.S.

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Name and address

(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)


Rourk, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Hauer, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
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 the International Preliminary Examining Authority
only

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CORNERSTONE GROUP LTD.

Signature:  President
Constance Nash

Date: 4-11-2002

T-402 P.07/07 F-100
PCT/US 02/00503
RU/US 12 APR 2002

PCT

GENERAL POWER OF ATTORNEY (for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

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(Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country.)

Alexander KRICHEVSKY
P.O. Box 1892
Laguna Beach, California 92652
U.S.

hereby appoint(s) the following person as: agent _____ common representative

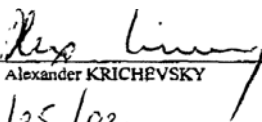
Name and address
(Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country.)

Rourk, Christopher J.
1700 Pacific Avenue, Suite 4100
Akin, Gump, Strauss, Hauer, & Feld, L.L.P.
Dallas, Texas 75201-4675
U.S.

to represent the undersigned before all the competent International Authorities
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in connection with any and all international applications filed by the undersigned with the following Office U.S. as receiving Office and to make or receive payments on behalf of the undersigned.

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Signature: 
Alexander KRICHEVSKY

Date: 1/25/02

Form PCT/Model of general power of attorney (for several international applications) (July 1992)

Copy for the receiving Office (RO/US)

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PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION RELATING TO
DECLARATION MADE UNDER PCT RULE 4.17

(PCT Rules 26ter.2(b), 47.1(a-ter) and 48.2(a)(x)
and Administrative Instructions, Section 419)

To:

ROURK, Christopher, J.
Akin, Gump, Strauss, Hauer & Feld, LLP
Suite 4100
1700 Pacific Avenue
Dallas, TX 75201-4675
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 25 June 2003 (25.06.03)	
Applicant's or agent's file reference 121648.0001	IMPORTANT NOTIFICATION
International application No. PCT/US02/00503	International filing date (day/month/year) 16 January 2002 (16.01.02)
Applicant CORNERSTONE GROUP LTD.	

1. The applicant is hereby notified of the following regarding the declaration indicated below in respect of (name(s) indicated in the declaration) KRICHEVSKY, Alexander

(i) declaration as to the identity of the inventor (Rules 4.17(i) and 51bis.1(a)(i) and Section 211)

(ii) declaration as to the applicant's entitlement, as at the international filing date, to apply for or be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii) and Section 212)

(iii) declaration as to the applicant's entitlement, as at the international filing date, to claim priority of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii) and Section 213)

(iv) declaration of inventorship (for the purposes of the designation of the United States of America) (Rules 4.17(iv) and 51bis.1(a)(iv) and Section 214)

(v) declaration as to non-prejudicial disclosures or exceptions to lack of novelty (Rules 4.17(v) and 51bis.1(a)(v) and Section 215)

2. **Addition or correction of the declaration within the time limit under Rule 26ter.1.**

The added or corrected declaration was received on (date), 24 June 2003 (24.06.03) which was received within the time limit under Rule 26ter.1.

Any declaration referred to under items 1(i) to (iv) whether or not the declaration complies with Rule 4.17, will be communicated to the designated Offices concerned pursuant to Rule 47.1(a-ter) and any declaration referred to under item 1(v) will be published as part of the pamphlet pursuant to Rule 48.2(a)(x).

3. **Failure to add or correct the declaration within the time limit under Rule 26ter.1.**

The declaration, was received on (date) _____, which was after the expiration of the time limit under Rule 26ter.1; therefore, any such declaration referred to under items 1(i) to (iv) will not be communicated to the designated Offices concerned, any such declaration referred to under item 1(v) will not be published as part of the pamphlet, and any signed declaration referred to under item 1(iv) is attached. Such declaration should be submitted by the applicant directly to the designated Offices concerned.

4. The applicant's attention is drawn to Rule 51bis.2 which provides that the designated Office shall not, unless it may reasonably doubt the veracity of the declaration concerned, require any document or evidence relating to the subject matter of any declaration complying with Rule 4.17(i) to (iv) which is contained in the request or submitted to the International Bureau or directly to the designated Office. Note, however, that Rule 51bis.2 may not apply in respect of certain States. For further information, see Notes to the request form, Box No. VIII.

5. A copy of this notification is being sent to the receiving Office and the International Searching Authority.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Alexander CRAKER (Fax 338-87-20)
Facsimile No. (41-22) 338.87.20	Telephone No. (41-22) 338.83.48

Copy for the International Searching Authority (ISA/US)

PATENT COOPERATION TREATY 03.25062003

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION RELATING TO DECLARATION MADE UNDER PCT RULE 4.17

(PCT Rules 26ter.2(b), 47.1(a-ter) and 48.2(a)(x)
and Administrative Instructions, Section 419)

To:

ROURK, Christopher, J.
Akin, Gump, Strauss, Hauer & Feld, LLP
Suite 4100
1700 Pacific Avenue
Dallas, TX 75201-4675
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 25 June 2003 (25.06.03)	
Applicant's or agent's file reference 121648.0001	IMPORTANT NOTIFICATION
International application No. PCT/US02/00503	International filing date (day/month/year) 16 January 2002 (16.01.02)
Applicant CORNERSTONE GROUP LTD.	

- The applicant is hereby **notified** of the following regarding the declaration indicated below in respect of (name(s) indicated in the declaration) KRICHEVSKY, Alexander
 - declaration as to the identity of the inventor (Rules 4.17(i) and 51bis.1(a)(i) and Section 211)
 - declaration as to the applicant's entitlement, as at the international filing date, to apply for or be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii) and Section 212)
 - declaration as to the applicant's entitlement, as at the international filing date, to claim priority of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii) and Section 213)
 - declaration of inventorship (for the purposes of the designation of the United States of America) (Rules 4.17(iv) and 51bis.1(a)(iv) and Section 214)
 - declaration as to non-prejudicial disclosures or exceptions to lack of novelty (Rules 4.17(v) and 51bis.1(a)(v) and Section 215)
- Addition or correction of the declaration within the time limit under Rule 26ter.1.**

The added or corrected declaration was received on (date), 24 June 2003 (24.06.03) which was received within the time limit under Rule 26ter.1.

Any declaration referred to under items 1(i) to (iv) whether or not the declaration complies with Rule 4.17, will be communicated to the designated Offices concerned pursuant to Rule 47.1(a-ter) and any declaration referred to under item 1(v) will be published as part of the pamphlet pursuant to Rule 48.2(a)(x).
- Failure to add or correct the declaration within the time limit under Rule 26ter.1.**

The declaration, was received on (date) _____, which was **after** the expiration of the time limit under Rule 26ter.1; therefore, any such declaration referred to under items 1(i) to (iv) will **not** be communicated to the designated Offices concerned, any such declaration referred to under item 1(v) will **not** be published as part of the pamphlet, and any signed declaration referred to under item 1(iv) is attached. **Such declaration should be submitted by the applicant directly to the designated Offices concerned.**
- The applicant's attention is drawn to Rule 51bis.2 which provides that the designated Office shall not, unless it may reasonably doubt the veracity of the declaration concerned, require any document or evidence relating to the subject matter of any declaration complying with Rule 4.17(i) to (iv) which is contained in the request or submitted to the International Bureau or directly to the designated Office. Note, however, that Rule 51bis.2 may not apply in respect of certain States. For further information, see Notes to the request form, Box No. VIII.
- A copy of this notification is being sent to the receiving Office and the International Searching Authority.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.87.20	Authorized officer Alexander CRAKER (Fax 338-87-20) Telephone No. (41-22) 338.83.48
--	---

Rec'd PCT/PTO 06 AUG 2004

PCT/US02/00503 .05082004

Aug-06-04 05:08pm From-AKIN GUMP ET EL-DAL

214-969-4343--2

T-257 P.01/02 F-786

**AKIN GUMP
STRAUSS HAUER & FELD LLP**

Attorneys at Law

JOHN M. CONE
(214) 969-4214/Fax: (214) 969-4343
jcone@akingump.com

August 6, 2004

FAX TRANSMISSION

PLEASE DELIVER 2 PAGE(S) (Including Cover Sheet) TO THE FOLLOWING:

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Central Fax	U.S.P.T.O.	(703) 305-3230	

FROM: **John M. Cone** PHONE: 214/969-4214 FLOOR: 43

RE: **Applicant: Cornerstone Group, Ltd.**
Serial No. PCT/US02/00503
Filed: January 16, 2002
For: OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD
Attorney Docket No. B74216PCT (121744-0001)

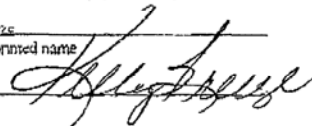
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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office, PCT US/RO on the date shown below.

Kelly Breeze

Typed or printed name

Signature



Date: August 6, 2004

CLIENT/MATTER NO.:	490005-0011		
USER ID	011352	SECRETARY:	Kelly Breeze EXT: 14243

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If there are any problems during this transmission, call our office at 214-969-4708.

1700 Pacific Avenue Suite 4100 / Dallas, Texas 75201 / 214 969 2800 / 214 969 4343 / www.akingump.com

PCT/US02/00503 .06082004

Aug-06-04 05:08pm From-AKIN GUMP ET EL-DAL

214-969-4343--2

T-257 P.02/02 F-796

**AKIN GUMP
STRAUSS HAUER & FELD LLP**

Attorneys at Law

JOHN M. CONE
(214) 969-4214/Fax (214) 969-4343
jcone@akingump.com

August 6, 2004

Via Facsimile Transmittal to PCT Central Fax

Mail Stop: PCT
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Re: International Application
Applicant: Cornerstone Group, Ltd.
International Application No.: PCT/US02/00503
International Filing Date: 16 January 2002
Agent's File Ref. 121648.0001 (B74216PCT)

Dear Sir or Madam:

Pursuant to Rule 90, the Agent for the above PCT Application respectfully renounces the Appointment. The present correspondence address for the Applicant is Connie Nash, Cornerstone Group, Ltd., P.O. Box 1892, Laguna Beach, California 92652, United States.

Kindly update your records to reflect same on all future correspondence. Thank you for your attention to this matter.

Sincerely,

AKIN, GUMP, STRAUSS, HAUER & FELD, L.L.P.



John M. Cone
Reg. No. 30,538

JMC/kb

cc: Ms. Connie Nash

121648.0001 WEST 5565602 1

1700 Pacific Avenue Suite 4100 / Dallas, Texas 75201 / 214 969 2800 / 214 969 4343 / www.akingump.com

PAGE 2/2 * RCVD AT 8/6/2004 6:06:50 PM [Eastern Daylight Time] * SVR:USPTO-EFXXF-2/0 * DNIS:7465092 * CSID:214 969 4343 2 * DURATION (mm-ss):01-36

11/6/15
paw.

Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR ACCESS TO AN ABANDONED APPLICATION UNDER 37 CFR 1.14

Bring completed form to:
File Information Unit, Suite 3A20
2800 South Randolph Street
Arlington, VA 22206

Telephone: (703) 756-1800

In re Application of

Krichevsky

Application Number

PCT/US02/00503

Filed

01.16.02

Paper No. _____

I hereby request access under 37 CFR 1.14(a)(1)(iv) to the application file record of the above-identified ABANDONED application, which is not within the file jacket of a pending Continued Prosecution Application (CPA) (37 CFR 1.53(d)) and which is identified in, or to which a benefit is claimed, in the following document (as shown in the attachment):

United States Patent Application Publication No. _____, page, _____ line _____

United States Patent Number _____, column _____, line _____

WIPO Pub. No. *03/06777*, page *1*, line *3*

Related Information About Access to Applications Maintained in the Image File Wrapper System (IFW) and Access to Pending Applications in General

A member of the public, acting without a power to inspect, cannot order applications maintained in the IFW system through the FIU. If the member of the public is entitled to a copy of the application file, then the file is made available through the Public Patent Application Information Retrieval system (Public PAIR) on the USPTO internet web site (www.uspto.gov). Terminals that allow access to Public PAIR are available in the Public Search Room. The member of the public may also be entitled to obtain a copy of all or part of the application file upon payment of the appropriate fee. Such copies must be purchased through the Office of Public Records upon payment of the appropriate fee (37 CFR 1.19(b)).

For published applications that are still pending, a member of the public may obtain a copy of:
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Kenneth Staker
Signature

Kenneth Staker
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