San Diego ARMA Chapter—2002/2003 Officers/Directors

Meeting: Thursday, June 19, 2003, 11:30 to 1:30
Location: Courtyard Marriott, 8651 Spectrum Center Blvd.
Reservations - Contact Trey Williams @ (858) 748-1100 x209
On-line RSVP: http://www.sandiegoarma.org/arma_registration.htm
Door Prizes: To be Announced

INTO THE FUTURE—A PERSPECTIVE ON THE FUTURE OF RIM

he San Diego Chapter of ARMA International is pleased to announce that Juanita Skillman, President of ARMA International will present our final program of the fiscal year. The Chapter is very fortunate to have Ms. Skillman, DTM, who is the Records Manager for the Orange County Sanitation District in Fountain Valley, California. Ms. Skillman holds both B.S. and M.A. degrees from Western New Mexico University and received her Certified Records Manager (CRM) designation in 1986. Before her election as the President of ARMA International, she served four years as Treasurer of the Association. An experienced speaker and trainer, she is a long time member of Toastmasters International and speaks frequently for ARMA and other business and professional groups. Se has been published in The Information Manager’s Toolkit, Records Management Quarterly, The Information Management Journal, The Records and retrieval Report, and Modern Office Technology. The tragic events of 9/11/2001 and the corporate scandals of the last two years have affected every sector of our American Society. How does our culture of public access to information clash with our heightened Homeland Security? How do new laws such as Sarbanes-Oxley, and those relating to spam prevention and individual privacy change the way we look at and practice, Records and Information Management? Now, as never before, RIM professionals need to be aware of government regulations and new laws that often shake up the "same old, same-old" RIM procedures we have used for years. How can we use these challenges to strengthen our profession? This session will raise your awareness of issues that require you to start planning for the future, NOW!

This is our final chapter meeting of the fiscal year. It is important that you attend the induction of your new ARMA Board.

MEETING AGENDA
11:30—12:00 Registration
12:00—1:00 Lunch & Keynote
1:00—1:30 Chapter Meeting

Join us on June 19th at our meeting location: Marriott Courtyard—Kearny Mesa!!
Lunch will feature a choice of Entrees, Dessert, Coffee and Iced Tea.
For information regarding vendor exhibit opportunities contact:
Jennifer Ota: (858) 554-1529 x240 or Jennifer.ota@ironmountain.com

Juanita Skillman
President, ARMA International
Now, as never before, RIM professionals need to be aware of government regulations and new laws that often shake up the "same old, same-old" RIM procedures we have used for years. How can we use these challenges to strengthen our profession? This session will raise your awareness of issues that require you to start planning for the future, NOW!

Please register early as seating is limited.

RSVP to Trey Williams: (858) 748-1100 x209 or twilliams@corovan.com

ARMA San Diego Chapter
12375 Kieran Street
Poway, CA 92064

San Diego ARMA Chapter—2002/2003 Officers/Directors

<table>
<thead>
<tr>
<th>Office</th>
<th>Person</th>
<th>Company</th>
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<th>Fax</th>
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<tr>
<td>President</td>
<td>David Taylor</td>
<td>San Diego Data Processing Corp</td>
<td>858 503-7284</td>
<td>858 503-7380</td>
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<td>Vice President</td>
<td>Susan Roberts</td>
<td>Corovan</td>
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<td>Iron Mountain</td>
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<td>Document Imaging Service Corp</td>
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<td>Olivenhain Water District</td>
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<td>Membership</td>
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<td>Corovan</td>
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Off the Record
June 2003

Off the Record
Volume 40, Issue 5

June 19, 2003

Printed on recycled paper
President's Message
by David Taylor

Thank you one and all!

It has been a wonderful challenging year. It is with a sense of sorrow that I must wish you all adieu. Unfortunately my new job requires considerable time, which will take away from my duties with the San Diego Chapter. As a result you will have a new President, Susan Roberts, after June 19. The wonderful programs and association with all of you are what I will miss most.

This is a time of reflection for me. I’m proud of the accomplishments San Diego ARMA board members made towards our mission and goals. Our mission is:

To provide a forum where professionals can meet, participate and further their knowledge in Records and Information Management practices and principles in a social environment.

During this past year we hosted five great seminars:

- "A Trial Lawyer’s take on the admissibility of electronic records" presented by Mr. John J. Isaza, Esq.
- "How Long Should I Keep My Records?? Developing a Credible Retention Schedule" by Ms. Marti Fischer, CRM
- "How to Communicate with Anyone, Anywhere on Their Level" by Ms. Sheryl Roush
- "Managing Electronic Documents" our 1/2-Day Seminar with John T. Phillips, CRM, CDIA, FAI

And our upcoming finale, “Into the Future – A Perspective on the Future of RIM” by Juanita Skillman, President of ARMA International

The luncheon programs and 1/2-day seminar have been the flagship of our organization and special thanks go to Susan Comer and Richard Berlin for arranging the stellar events. The programs have stayed true to the theme originally set out: Managing Information as an Asset.

We have produced five quality newsletters this past year. Special thanks to Cynthia Lacy for making this 16-page newsletter happen. It is full of information, records management ads and reference material, which is vital to our organization’s communication lifeline with our members.

Trey Williams was instrumental in keeping us on target with our goal to increase our membership by 10%, which is 85 members. As of the end of May we are at 84 and I’m sure by the time of our meeting we will have made the goal. Congratulations.

Thanks!! Dave for all your hard work and leadership!
The Role of Bar Code Recognition in Document Capture

Introduction

The ability to accurately detect and decode a bar code is extremely important in the document imaging market. Implementing bar code technology is proven to be an efficient, lower cost solution for the automatic indexing of documents, automatic scanner control, batch separation, job control, and the overall quality assurance of images.

Kofax Image Products has been a leader in providing bar code technology to the document imaging market for the past 15 years. With the release of the Enhanced Bar Code engine, Kofax is proud to continue enabling this valuable tool. As a testament to our commitment to support new advances in the field, the Kofax Enhanced Bar Code engine now incorporates the SwiftDecoder algorithm from Omniplanar, Inc.

Whether scanning in color, grayscale, or black and white, the new Enhanced Bar Code Engine from Kofax Image Products is the most accurate bar code recognition software in the document imaging market.

Missing Bar Codes = Losing Documents

Bar code technology is well documented and extremely reliable when properly implemented. Generally speaking, if bar codes are created with a reputable encoding engine, to the proper specification, on clean white backgrounds from a 600 dpi printer, they should be read 100% of the time. Bar code failure rates using a laser gun to manually read a bar code (such as the guns used in department stores) occur in the 1 in 3 million range.

However, when we discuss bar codes in document imaging the story changes. Bar code recognition fails for the following reasons:

- Scanners stretch barcodes
- Dot matrix or ink jet printers are often used to create bar codes
- Ribbons and ink cartridges are not replaced as often as they should
- Bar codes are scanned from NCR forms
- Bar code specifications are not respected due to limited space on a form or document
- Quiet zones are often compromised
- Bar codes get torn or creased
- Scanned images are sometimes photocopies or faxes of an original
- Scanners get dirty and bulbs burn out
- Bar codes get stamped, written over, and damaged

The net result of the problems we face in scanning documents with bar codes is that we sometimes cannot control the generation, quality, or integrity of the bar codes we must scan; however, we can be sure to utilize the best recognition engine to reduce the amount of bar codes that are missed.

What is the measurable cost associated with missing bar codes and thus losing documents? Ultimately this depends on whether or not the document was a key piece of evidence in a legal action, the signature page of a contract, or a blank sheet of paper.

The harsh reality is that any missed bar code in a system utilizing bar codes for indexing or document separation can result in a lost image. Lost images are unacceptable. The Kofax Enhanced Bar Code engine is the most powerful, accurate and forgiving bar code recognition and decoding tool in the market.

Associated Costs of Missed Bar Codes

Many companies have implemented quality control procedures for dealing with poor quality images, OCR verification, index data verification, and bar code recognition. These quality control procedures cost valuable time, resources and money. The question must be asked, what is the cost of a bar code error rate?

Enhanced Bar Code Engine

The Enhanced Bar Code engine from Kofax Image Products provides the next generation bar code recognition and decoding technology.

Key Features

Key features of the Enhanced Bar Code engine include:

(Continued on page 4)
The Role of Bar Code Recognition in Document Capture

(Continued from page 3)

<table>
<thead>
<tr>
<th>Scans per Day</th>
<th>1% Bar Code Error</th>
<th>QC Time Related to Bar Code Error</th>
<th>Hourly Rate of Scan Operator</th>
<th>Cost—Per Day</th>
<th>Cost—Per Year</th>
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<td>10,000</td>
<td>100</td>
<td>2 hours</td>
<td>$15</td>
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<td>8 hours</td>
<td>$15</td>
<td>$120</td>
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- Color Support—The ability to read bar codes directly from 100 or 150 dpi color images.
- Grayscale Support—The ability to read bar codes directly from grayscale images.
- Decodes Smaller More Compact Bar Codes—Saves space on the document.
- 2D Bar Code Support—PDF417, Data Matrix, MaxiCode, QR Code, and Aztec Code are all newly supported 2D symbologies.
- Available at no extra charge with Adrenaline 850, 1700 and 650i boards.
- Bundled with the Adrenaline Image Processing Engine for customers wishing to have bar code recognition performed at a server or scan time.

Color Scanning

The move to color is happening. Scanner manufacturers are releasing production level document scanners that leverage the ability to scan in color. With this transition to color, it is extremely important that your scan, index, and image processing technology leverage the benefits of color scanning.

Benefits of Color Scanning

There are many benefits to color scanning in the document imaging market:

- Capturing in color is faster—the fear of correctly converting highlights, stamps, color annotations, pictures, low contrast test, colored backgrounds, etc., to black and white is no longer a concern.
- Bar Code Recognition—150 dpi color images provide more data and information than 200 dpi bitonal images. This is especially true for small and or poor quality bar codes.
- Advanced Color Dropout—this feature is no longer bulb dependent. Also, there is a wider range of colors to dropout on the same form.
- Forms Recognition—the color of the form can now assist in the forms recognition process in addition to a logo/object, text string, or global pattern of the form.
- Easy Document Identification and Retrieval—it is much easier to see the pink copy if the document is scanned in color.
- Document segmentation—Apply image processing features (black and white or color) to different areas of a particular document.
- Form Routing—it is now possible to route a particular form based upon the color.
- And Much More . . .

Color Bar Code Recognition

Scanning in color provides more data for bar code recognition and decoding, and color scanning preserves the integrity of the bar code lines.

(Continued on page 5)
As the two graphics above illustrate, the color 150 dpi image presents a clean image with all the bar code information intact. The bars and spaces are correct widths, straight and clean. The 200 dpi bitonal bar code, the bars, spaces, and widths are severely damaged and even blend together in certain places. This can present issues for some bar code engines.

Benefit of Reading Directly from a Color Image

- Color images provide more data for the bar code engine.
- Because the bar code integrity is preserved, the engine can work around damage to a bar code.
- Since you are already scanning in color, why sacrifice performance and quality to read the bar code from a black and white image?
- Speed - Thresholding a color image to black and white in order for the bar codes to be detected by a bitonal bar code engine sacrifices precious time, not to mention the fact that the color image provides a much better bar code than a bitonal image.
- Converting a color image to black and white compromises all the benefits that color scanning provides in regards to bar code recognition.

In the samples below, the 150 dpi color bar code was decoded, whereas the 200 dpi bitonal was not. You can clearly see in the 200 dpi image that the stamp was converted to black, which damaged the barcode. By scanning in color, the Enhanced Bar Code Engine was able to decode the bar code regardless of the stamp.

Color Bar Code Recognition Performance

Since color and grayscale images have much more data associated with them and the file sizes are larger, there is a natural impact to bar code performance. The Kofax Enhanced Bar Code algorithm has been optimized
The Role of Bar Code Recognition in Document Capture

for color or grayscale scanning so the performance impact is significantly less than algorithms that need to decompress the color file, threshold the image to black and white, and run the black and white image through their bithonal bar code engine. Thresholding takes additional time and sacrifices the quality of the image.

Color Resolutions

Depending on the bar code symbologies, the bar code generation software, and the character pitch, the scanner resolution for successful bar code reading can vary between 75 dpi and 600 dpi color. With the Enhanced Bar Code engine, Kofax recommends the following configuration to ensure reliable and proper decoding at the preferred DPI.

| Resolutions | 2D Bar Code | 2D Bar Code
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<td>800</td>
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<td>1200</td>
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By utilizing the recommended bar widths you should expect excellent and consistent results using the Kofax Enhanced Bar Code Engine. Symbols will read with lower than the recommended resolutions and widths, but results may vary.

Why Read Bar Codes At Lower Resolutions?

A common compromise of color scanning is the file size of the image. 200 dpi bitonal images with Group IV compression maintain a relatively small file size for storage; however, color images can be quite large if they are scanned at 200 dpi or greater. By providing users with the ability to scan at 100 dpi and accurately read bar codes, Kofax provides users with an option as to which resolution is best for their circumstances.

Grayscale Scanning

The principles and benefits outlined in Section 4 - Color Scanning also apply to grayscale.

Improved Recognition

The Enhanced Bar Code not only provides the best color and grayscale support, but it also decodes damaged and challenging bar codes. The algorithm is intelligent enough to identify a damaged or questionable bar code on a document and work around the compromised areas to accurately decode the proper value.

Damaged Bar Codes

The samples below are Code 39 that were scanned at 200 dpi black and white. Even with the severe damage, the bar codes were detected and properly decoded. The Kofax Enhanced Bar Code engine looks for the best path through the bar code and will work around specific areas of damage.

(Continued on page 7)
Hello, everyone. This has been a great year for me. I've made many new friends from my involvement with ARMA San Diego. Our last luncheon of the season will be important and informative because the President of ARMA International, Juanita Skillman will be the guest speaker. Next year will be great too, because Linda Maczko from University of California, San Diego will co-chair the Membership position with me. She'll have the big crowds coming from all over to attend our luncheons. Make sure you bring a friend to our last luncheon of the year so they can learn something about effective records and information management. They would not want to miss a shot at winning one of our great raffle prizes, too!

See you there,
Trey

A Contest
BRING A GUEST TO THE LUNCHEON
1. Come to the Luncheon
2. Bring a book for the Literacy Program
3. Contribute an article for the newsletter
(More ways to win will be announced)
You will receive a Blue ARMA Card
Collect these ARMA Cards till the end of the year!
For the person who has the most Cards collected, our ARMA Reward will be...
( Drum roll! )
A Surprise Gift
Questions? - Call Trey Williams @ 858-748-1100 x209

MEMBERSHIP

The Role of Bar Code Recognition in Document Capture

Skewed Bar Codes
Regardless of the direction or orientation, the bar codes in the following sample were detected and decoded from a 100 dpi color image. The Enhanced Bar Code engine is intelligent enough to locate and return the bar code value. Many times, as with this example, the bar codes are placed on the document by hand, creating difficulties for other bar code engines. The Enhanced Bar Code engine searches the entire document regardless for bar codes regardless of their direction.

2002-2003 Meeting Programs
June 19, 2003 Final Luncheon for the year

CERTIFIED DOCUMENT DESTRUCTION
A DIVISION OF DALTUN ENTERPRISES, INC.
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weshred.net ask for Roy Stocking

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- Mobile or Off-Site
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- Fast & Economical
- Bonded & Insured
- Certificate of Destruction
- Free Trial Period

Protecting Your Privacy

Off the Record
June 2003
10
The Role of Bar Code Recognition in Document Capture

(Continued from page 7)

Sad news from the New Mexico Chapter:

Most of you in our chapter know Valli Norland. She was chapter president for two terms from 1998 – 2000, and active in the chapter before and after those years. This is a very hard email for me to write and certainly not the sort of news that should be sent via email, but I’m not able to call each of you at this time. Valli was an amazing woman, a very kind and generous spirit. She had been in the hospital for a long time. She was very much loved by everyone in our chapter, and by our friends in other chapters around the country.

Valli had asked that I not tell everyone because she assumed she knew that it would end this way. There were probably some underlying medical conditions that no one was aware of. She had been in and out of the hospital for the last three weeks. The last time she went in was last Tuesday, 4/1, and her kidneys began to fail. Her family from Colorado and Tucson came into town. She was put on dialysis, but that failed to produce the desired results. They continued to make her comfortable as possible and she died in her sleep Sunday morning. It was Valli’s wish to be cremated and returned to Colorado. Her family has not planned any sort of memorial service in Phoenix and I don’t know of their plans for a memorial service in Colorado.

Our Chapter has decided to make a $500 donation the ARMA Educational Foundation in honor of Valli.

Benefit to Document Imaging

PDF417 bar codes can contain all of the index information of a particular form or document, virtually eliminating the need for manual key indexing. In addition, to the benefits of automatic indexing, a PDF417 can contain a complete database record for a particular customer or prospect. The data can be easily decoded and populated into the respective database.

A standard 1D bar code can only point to a particular data base record for a customer. The PDF417 can encode the entire database record into a single bar code. It is the equivalent of having a mobile database that travels with the respective document.

Tax Form Example

Every April 15th Americans must pay their State income taxes for the previous calendar year. Many Americans utilize software from TurboTax to assist in determining the amount of tax they are required to pay. Information is keyed into the TurboTax application based upon specific questions. Once all the information is entered, TurboTax prints the State income tax return. Users then sign the form and mail it to the State.

The State receives the form and processes the information. In some States TurboTax has done them a great favor. They have encoded all of the data on the form into a PDF17 bar code. States where the PDF417 is provided simply scan the tax form and populate their tax database based upon the data encoded in the single PDF417 bar code.

States that do not support PDF417 must both manually key the data into a database or OCR the form, and perform quality control and verification actions to ensure the data is accurate. With the PDF417 bar code, not only is the State guaranteed to get accurate data, but the time necessary to process a PDF417 bar code versus zonal OCR of approximately 30 to 40 fields is significantly less.

In summary, States that utilize a PDF417 to encode the data from tax forms can process the forms much faster with fewer problems. Normally this scenario also translates into a greater cost savings as well.

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http://www.arma.org/resources/calendar.cfm

Here’s the url for the Calendar of Events from the ARMA website:

FREE TRAINING CLASSES!!

Centers for Education and Technology (CET), a part of the San Diego Community College District, is offering free training classes in a wide range of topics. Their Business Information Technology courses include offerings in HTML, XML, Java programming, JavaScript, UNIX, Cisco, Oracle, Linux, Visio, AutoCAD, TCP/IP, MS Office and many others. These courses are offered at several campuses throughout the city.

Please take a look at their web site, http://www.sandiegocet.net/index.php, for class and registration information.

Now Available! HIPAA Privacy Essentials Online Course

The definitive guide to understanding the Health Insurance Portability and Accountability Act (HIPAA), HIPAA Privacy Essentials Online Course from ARMA International and the Privacy Council is your HIPAA privacy primer. HIPAA Privacy Essentials helps you understand how the HIPAA Privacy Rule impacts your organization.

Written by the Privacy Council and leading HIPAA privacy experts who were instrumental in working with Congress to write the HIPAA statute, this course focuses specifically on the requirements of the HIPAA Privacy Rule. The principal purpose of this online course is to orient the user to the new HIPAA landscape and familiarize the user with its rules, compliance issues, administrative requirements and more. Upon successful completion of the course, users should understand

• how HIPAA evolved
• how HIPAA fits with other major privacy laws and regulations
• patient’s rights and provider’s responsibilities under the Privacy Rule
• how HIPAA is enforced

With April compliance deadlines just around the corner, the time is now to understand how HIPAA applies to your organization. Special price of $199 for ARMA members gives you access to this first-rate interactive online course, and includes a certificate of completion upon successful completion of the course. For CRMs, this course has been pre-approved for 7.5 education credits!

Register for this and other ARMA online courses at the new ARMA Learning Center. The Learning Center includes courses and seminars in records and information management, computer skills, and special topics such as privacy and HIPAA.

Check out the site today at www.armalearningcenter.org.
The Role of Bar Code Recognition in Document Capture

(Continued from page 7)

2D Bar Code Support

The Kofax Enhanced Bar Code engine provides support for decoding 2D symbologies: PDF417, Data Matrix, Maxicode, QR Code, and Aztec Code.

PDF417

PDF417 bar codes can contain up to 1850 characters of information with built in error detection and nine levels of correction. With the redundancy and error correction a heavily damaged PDF417 bar code can still be read. The information contained in a single PDF417 bar code could be anything from an entire database record for a particular customer, URL to a specific website, XML data, or even the text of a document. Since the bar code is so flexible almost any ASCII or text information can be encoded.

PDF417 bar codes can contain all of the index information of a particular form or document, virtually eliminating the need for manual key indexing. In addition, to the benefits of automatic indexing, a PDF417 can contain a complete database record for a particular customer or prospect. The data can be easily decoded and populated into the respective database.

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Vall passed away around 4AM Sunday, 4/6, at Thunderbird Samaritan. You had been in a minor fender bender on March 15. There appeared to be very little injury from that small accident but it started a chain of events of one medical problem after another. Vall had asked that I not tell everyone because she assumed she was going to recover, and didn't feel like visitors, etc. - no one knew that it would end this way. There were probably some underlying medical conditions that no one was aware of. She had been in and out of the hospital for the last three weeks. The last time she went in was last Tuesday, 4/1, and her kidneys began to fail. Her family from Colorado and Tucson came into town. She was put on dialysis, but that failed to produce the desired results. They continued to make her comfortable as possible and she died in her sleep Sunday morning. It was Vall's wish to be cremated and returned to Colorado. Her family has not planned any sort of memorial service in Phoenix and I don't know of their plans for a memorial service in Colorado.

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Here's the URL to a very important site—the Chapter Connection on the ARMA International website!!

To access the Chapter Connection:

Go to www.arma.org/intranet

Click on Chapter Connection

You're There!

3 Day Document Imaging and Document Management Course

June 24 to June 26, 2003 (Weekdays) / downtown Los Angeles, CA

A second 3 day course is scheduled for August 1 to August 3, 2003 (Weekend) / downtown Los Angeles, CA


Check out this URL to find out about ARMA Webinars:

http://www.arma.org/resources/calendar.cfm

Here's the url for the Calendar of Events from the ARMA website:

http://www.arma.org/resources/calendar.cfm

FREE TRAINING CLASSES!!

Centers for Education and Technology (CET), a part of the San Diego Community College District, is offering free training classes in a wide range of topics. Their Business Information Technology courses include offerings in HTML, XML, Java programming, JavaScript, UNIX, Cisco, Oracle, Linux, Visio, A+ Training, TCP/IP, MS Office and many others. These classes are offered at several campuses throughout the city.

Please take a look at their web site, http://www.sandiegocet.net/index.php, for class and registration information.

Now Available! HIPAA Privacy Essentials Online Course

The definitive guide to understanding the Health Insurance Portability and Accountability Act (HIPAA), HIPAA Privacy Essentials Online Course from ARMA International and the Privacy Council is your HIPAA privacy primer. HIPAA Privacy Essentials helps you understand how the HIPAA Privacy Rule impacts your organization. Written by the Privacy Council and leading HIPAA privacy experts who were instrumental in working with Congress to write the HIPAA statute, this course focuses specifically on the requirements of the HIPAA Privacy Rule. The principal purpose of this online course is to orient the user to the new HIPAA landscape and familiarize the user with its rules, compliance issues, administrative requirements and more. Upon successful completion of the course, users should understand:

• how HIPAA evolved
• how HIPAA fits with other major privacy laws and regulations
• patient’s rights and provider’s responsibilities under the Privacy Rule
• how HIPAA is enforced

With April compliance deadlines just around the corner, the time is now to understand how HIPAA applies to your organization. Special price of $199 for ARMA members gives you access to this first-rate interactive online course, and includes a certificate of completion upon successful completion of the course. For CRPM, this course has been pre-approved for 3.5 education credits.

Register for this and other ARMA online courses at the new ARMA Learning Center. The Learning Center includes courses and seminars in records and information management, computer skills, and special topics such as privacy and HIPAA.

Check out the site today at www.armalearningcenter.org.
Hello, everyone. This has been a great year for me. I’ve made many new friends from my involvement with ARMA San Diego. Our last luncheon of the season will be important and informative because the President of ARMA International, Juanita Skillman will be the guest speaker.

Next year will be great too, because Linda Maczko from University of California, San Diego will co-chair the Membership position with me. She’ll have the big crowds coming from all over to attend our luncheons. Make sure you bring a friend to our last luncheon of the year so they can learn something about effective records and information management. They would not want to miss a shot at winning one of our great raffle prizes, too!

See you there,
Trey

A Contest
BRING A GUEST TO THE LUNCHEON

1. Come to the Luncheon
2. Bring a book for the Literacy Program
3. Contribute an article for the newsletter
(More ways to win will be announced)

You will receive a Blue ARMA Card
Collect these ARMA Cards till the end of the year!
For the person who has the most Cards collected, our ARMA Reward will be...
( Drum roll!!)
A Surprise Gift
Questions? - Call Trey Williams @ 858-748-1100 x209

The Role of Bar Code Recognition in Document Capture

Skewed Bar Codes
Regardless of the direction or orientation, the bar codes in the following sample were detected and decoded from a 100 dpi color image. The Enhanced Bar Code engine is intelligent enough to locate and return the bar code value. Many times, as with this example, the bar codes are placed on the document by hand, creating difficulties for other bar code engines. The Enhanced Bar Code engine searches the entire document regardless for bar codes regardless of their direction.
The Role of Bar Code Recognition in Document Capture

for color or grayscale scanning so the performance impact is significantly less than algorithms that need to decompress the color file, threshold the image to black and white, and run the black and white image through their bitonal bar code engine. Thresholding takes additional time and sacrifices the quality of the image.

Color Resolutions

Depending on the bar code symbologies, the bar code generation software, and the character pitch, the scanner resolution for successful bar code reading can vary between 75 dpi and 600 dpi color. With the Enhanced Bar Code engine, Kofax recommends the following configuration to ensure reliable and proper decoding at the preferred DPI.

<table>
<thead>
<tr>
<th>Symbology</th>
<th>Linear Bar Code</th>
<th>Linear Color Code</th>
<th>2D Bar Code</th>
<th>2D Color Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>Scanned DPI</td>
<td>Width (mm)</td>
<td>Width (mm)</td>
<td>Width (mm)</td>
<td>Width (mm)</td>
</tr>
<tr>
<td>100</td>
<td>27.5</td>
<td>50.0</td>
<td>8.0</td>
<td>10.0</td>
</tr>
<tr>
<td>150</td>
<td>19.0</td>
<td>30.0</td>
<td>5.0</td>
<td>7.0</td>
</tr>
<tr>
<td>200</td>
<td>11.0</td>
<td>20.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>300</td>
<td>6.0</td>
<td>10.0</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>600</td>
<td>3.0</td>
<td>5.0</td>
<td>1.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

By utilizing the recommended bar widths you should expect excellent and consistent results using the Kofax Enhanced Bar Code Engine. Symbols will read with lower than the recommended resolutions and widths, but results may vary.

Why Read Bar Codes At Lower Resolutions?

A common compromise of color scanning is the file size of the image. 200 dpi bitonal images with Group IV compression maintain a relatively small file size for storage; however, color images can be quite large if they are scanned at 200 dpi or greater. By providing users with the ability to scan at 100 dpi and accurately read bar codes, Kofax provides users with an option as to which resolution is best for their circumstances.

Grayscale Scanning

The principles and benefits outlined in Section 4 - Color Scanning also apply to grayscale.

Improved Recognition

The Enhanced Bar Code not only provides the best color and grayscale support, but it also decodes damaged and challenging bar codes. The algorithm is intelligent enough to identify a damaged or questionable bar code on a document and work around the compromised areas to accurately decode the proper value.

Damaged Bar Codes

The samples below are Code 39 that were scanned at 200 dpi black and white. Even with the severe damage, the bar codes were detected and properly decoded. The Kofax Enhanced Bar Code engine looks for the best path through the bar code and will work around specific areas of damage.

(Continued from page 5)
As the two graphics above illustrate, the color 150 dpi image presents a clean image with all the bar code information intact. The bars and spaces are correct widths, straight and clean. The 200 dpi bitonal bar code, the bars, spaces, and widths are severely damaged and even blend together in certain places. This can present issues for some bar code engines.

**Benefit of Reading Directly from a Color Image**

- Color images provide more data for the bar code engine.
- Because the bar code integrity is preserved, the engine can work around damage to a bar code.
- Since you are already scanning in color, why sacrifice performance and quality to read the bar code from a black and white image?
- Speed - Thresholding a color image to black and white in order for the bar codes to be detected by a bitonal bar code engine sacrifices precious time, not to mention the fact that the color image provides a much better bar code than a bitonal image.
- Converting a color image to black and white compromises all the benefits that color scanning provides in regards to bar code recognition.

In the samples below, the 150 dpi color bar code was decoded, whereas the 200 dpi bitonal was not. You can clearly see in the 200 dpi image that the stamp was converted to black, which damaged the barcode. By scanning in color, the Enhanced Bar Code Engine was able to decode the bar code regardless of the stamp.

**Color Bar Code Recognition Performance**

Since color and grayscale images have much more data associated with them and the file sizes are larger, there is a natural impact to bar code performance. The Kofax Enhanced Bar Code algorithm has been optimized
The Role of Bar Code Recognition in Document Capture

(Continued from page 3)

<table>
<thead>
<tr>
<th>Scans per Day</th>
<th>1% Bar Code Error</th>
<th>QC Time Related to Bar Code Error</th>
<th>Hourly Rate of Scan Operator</th>
<th>Cost—Per Day</th>
<th>Cost—Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>100</td>
<td>2 hours</td>
<td>$15</td>
<td>$30</td>
<td>$6,750</td>
</tr>
<tr>
<td>25,000</td>
<td>250</td>
<td>4 hours</td>
<td>$15</td>
<td>$60</td>
<td>$13,500</td>
</tr>
<tr>
<td>50,000</td>
<td>500</td>
<td>8 hours</td>
<td>$15</td>
<td>$120</td>
<td>$27,000</td>
</tr>
</tbody>
</table>

- Color Support—The ability to read bar codes directly from 100 or 150 dpi color images.
- Grayscale Support—The ability to read bar codes directly from grayscale images.
- Decodes Smaller More Compact Bar Codes—Saves space on the document.
- 2D Bar Code Support—PDF417, Data Matrix, MaxiCode, QR Code, and Aztec Code are all newly supported 2D symbologies.
- Available at no extra charge with Adrenaline 850, 1700 and 650i boards.
- Bundled with the Adrenaline Image Processing Engine for customers wishing to have bar code recognition performed at a server or scan time.

Color Scanning

The move to color is happening. Scanner manufacturers are releasing production level document scanners that leverage the ability to scan in color. With this transition to color, it is extremely important that your scan, index, and image processing technology leverage the benefits of color scanning.

Benefits of Color Scanning

There are many benefits to color scanning in the document imaging market:

- Capturing in color is faster—the fear of correctly converting highlights, stamps, color annotations, pictures, low contrast test, colored backgrounds, etc., to black and white is no longer a concern.
- Bar Code Recognition—150 dpi color images provide more data and information than 200 dpi bitonal images. This is especially true for small and or poor quality bar codes.
- Advanced Color Dropout—this feature is no longer bulb dependent. Also, there is a wider range of colors to dropout on the same form.
- Forms Recognition—the color of the form can now assist in the forms recognition process in addition to a logo/object, text string, or global pattern of the form.
- Easy Document Identification and Retrieval—it is much easier to see the pink copy if the document is scanned in color.
- Document segmentation—Apply image processing features (black and white or color) to different areas of a particular document.
- Form Routing—it is now possible to route a particular form based upon the color.
- And Much More...

Color Bar Code Recognition

Scanning in color provides more data for bar code recognition and decoding, and color scanning preserves the integrity of the bar code lines.

(Continued on page 5)
The Role of Bar Code Recognition in Document Capture

Introduction

The ability to accurately detect and decode a bar code is extremely important in the document imaging market. Implementing bar code technology is proven to be an efficient, lower cost solution for the automatic indexing of documents, automatic scanner control, batch separation, job control, and the overall quality assurance of images.

Kofax Image Products has been a leader in providing bar code technology to the document imaging market for the past 15 years. With the release of the Enhanced Bar Code engine, Kofax is proud to continue enabling this valuable tool. As a testament to our commitment to support new advances in the field, the Kofax Enhanced Bar Code engine now incorporates the SwiftDecoder algorithm from Omniplanar, Inc.

Whether scanning in color, grayscale, or black and white, the new Enhanced Bar Code Engine from Kofax Image Products is the most accurate bar code recognition software in the document imaging market.

Missing Bar Codes = Losing Documents

Bar code technology is well documented and extremely reliable when properly implemented. Generally speaking, if bar codes are created with a reputable encoding engine, to the proper specification, on clean white backgrounds from a 600 dpi printer, they should be read 100% of the time. Bar code failure rates using a laser gun to manually read a bar code (such as the guns used in department stores) occur in the 1 in 3 million range.

However, when we discuss bar codes in document imaging the story changes. Bar code recognition fails for the following reasons:

- Scanners stretch barcodes
- Dot matrix or ink jet printers are often used to create bar codes
- Ribbons and ink cartridges are not replaced as often as they should
- Bar codes are scanned from NCR forms
- Bar code specifications are not respected due to limited space on a form or document
- Quiet zones are often compromised
- Bar codes get torn or creased
- Scanned images are sometimes photocopies or faxes of an original
- Scanners get dirty and bulbs burn out
- Bar codes get stamped, written over, and damaged

The net result of the problems we face in scanning documents with bar codes is that we sometimes cannot control the generation, quality, or integrity of the bar codes we must scan; however, we can be sure to utilize the best recognition engine to reduce the amount of bar codes that are missed.

What is the measurable cost associated with missing bar codes and thus losing documents? Ultimately this depends on whether or not the document was a key piece of evidence in a legal action, the signature page of a contract, or a blank sheet of paper.

The harsh reality is that any missed bar code in a system utilizing bar codes for indexing or document separation can result in a lost image. Lost images are unacceptable. The Kofax Enhanced Bar Code engine is the most powerful, accurate and forgiving bar code recognition and decoding tool in the market.

Associated Costs of Missed Bar Codes

Many companies have implemented quality control procedures for dealing with poor quality images, OCR verification, index data verification, and bar code recognition. These quality control procedures cost valuable time, resources and money.

The question must be asked, what is the cost of a bar code error rate?

Enhanced Bar Code Engine

The Enhanced Bar Code engine from Kofax Image Products provides the next generation bar code recognition and decoding technology.

Key Features

Key features of the Enhanced Bar Code engine include:

(Continued on page 4)
President's Message

by David Taylor

Thank you one and all!

It has been a wonderful challenging year. It is with a sense of sorrow that I must wish you all adieu. Unfortunately my new job requires considerable time, which will take away from my duties with the San Diego Chapter. As a result you will have a new President, Susan Roberts, after June 19. The wonderful programs and association with all of you is what I will miss most.

This is a time of reflection for me. I'm proud of the accomplishments San Diego ARMA board members made towards our mission and goals. Our mission is:

To provide a forum where professionals can meet, participate and further their knowledge in Records and Information Management practices and principles in a social environment.

During this past year we hosted five great seminars:

• "A Trial Lawyer’s take on the admissibility of electronic records" presented by Mr. John J. Isaza, Esq.

• "How Long Should I Keep My Records?? Developing a Credible Retention Schedule" by Ms. Marti Fischer, CRM

• "How to Communicate with Anyone, Anywhere on Their Level" by Ms. Sheryl Roush

• "Managing Electronic Documents" our 1/2-Day Seminar with John T. Phillips, CRM, CDIA, FAI

And our upcoming finale, “Into the Future – A Perspective on the Future of RIM” by Juanita Skillman, President of ARMA International

The luncheon programs and 1/2-day seminar have been the flagship of our organization and special thanks go to Susan Comer and Richard Berlin for arranging the stellar events. The programs have stayed true to the theme originally set out: Managing Information as an Asset.

We have produced five quality newsletters this past year. A special thanks to Cynthia Lacy for making this 16-page newsletter happen. It is full of information, records management ads and reference material, which is vital to our organization’s communication lifeline with our members.

Trey Williams was instrumental in keeping us on target with our goal to increase our membership by 10%, which is 85 members. As of the end of May we are at 84 and I’m sure by the time of our meeting we will have made the goal. Congratulations.

Thanks!! Dave for all your hard work and leadership!
INTO THE FUTURE—A PERSPECTIVE ON THE FUTURE OF RIM

The San Diego Chapter of ARMA International is pleased to announce that Juanita Skillman, President of ARMA International will present our final program of the fiscal year. The Chapter is very fortunate to have Ms. Skillman, DTM, who is the Records Manager for the Orange County Sanitation District in Fountain Valley, California.

Ms. Skillman holds both B.S. and M.A. degrees from Western New Mexico University and received her Certified Records Manager (CRM) designation in 1986. Before her election as the President of ARMA International, she served four years as Treasurer of the Association.

An experienced speaker and trainer, she is a long time member of Toastmasters International and speaks frequently for ARMA and other business and professional groups. She has been published in The Information Manager's Toolkit, Records Management Quarterly, The Information Management Journal, The Records and Information Management? Now, as never before, RIM professionals need to be aware of government regulations and new laws that often shake up the "same old, same-old" RIM procedures we have used for years. How can we use these challenges to strengthen our profession? This session will raise your awareness of issues that require you to start planning for the future, NOW!

Now, as never before, RIM professionals need to be aware of government regulations and new laws that often shake up the "same old, same-old" RIM procedures we have used for years. How can we use these challenges to strengthen our profession? This session will raise your awareness of issues that require you to start planning for the future, NOW!

Juanita Skillman
President, ARMA International

Meeting: Thursday, June 19, 2003, 11:30 to 1:30
Location: Courtyard Marriott, 8651 Spectrum Center Blvd.
Reservations - Contact Trey Williams at (858) 748-1100 x209
On-line RSVP: http://www.sandiegoarma.org/arma_registration.htm
Door Prizes: To be Announced

MEETING AGENDA

11:30—12:00  Registration
12:00—1:00    Lunch & Keynote
1:00—1:30     Chapter Meeting

Join us on June 19th at our meeting location: Marriott Courtyard—Kearny Mesa!!
Lunch will feature a choice of Entries, Desert, Coffee and Iced Tea.
For information regarding vendor exhibit opportunities contact: Jennifer Ota: (858) 554-1529 x 240 or Jennifer.ot@ironmountain.com

Please register early as seating is limited.
RSVP to Trey Williams: (858) 748-1100 x209 or twilliams@corovan.com