

White Paper





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The FTC Safeguard Rules require Financial, Insurance, Medical and Education professionals to protect their customer's private information or Non Public Information (NPI). Updated regulations like HIPAA 2013 and Consumer Financial Protection Bureau (CFPB) rules along with other Federal and State laws makes it very clear that all electronic communications among third parties must be safeguarded. This requires special handling of electronic information specific to Email on the public Internet. Email messages must be encrypted before releasing them on the Internet. Many organizations have deployed solutions securing their internal domain traffic but either send in clear text to their trading partners or share their proprietary interface. Trading partners cannot effectively use Email and meet compliance. Paperclip proposes a compliant Email service that can address interoperability, compliance, ease of use and necessary auditing.

# Adoption 2019

Since 2007, eM<sup>4</sup> Compliant Email Service has been widely adopted and proves that the industry advisors who designed the service got it right. We're excited about the future of eM<sup>4</sup> and its evolution into a dynamic capture tool that meets the needs of efficiency while maintaining compliance. New services like eM<sup>4</sup> Proof of Agreement, eM<sup>4C</sup> Cloud and eM<sup>4XO</sup> CrossOver will continue eM<sup>4</sup> Compliant Email as a leading solution solving today's challenges.



Since 2007, eM<sup>4</sup> Compliant Email Service was intended to be more than just an encryption service. Paperclip recognized the utility of email as a communications tool capable of more value added to the business environment. Paperclip offers two enhancements. First: eM<sup>4</sup> can be deployed as a cloud client, no software required to install. Second: eM<sup>4</sup> Proof of Agreement (POA), and Electronic Signature (E- Sign) experience with no setup required, wallet authentication, click and sign and thirdparty archiving. POA supports many file types to include Microsoft Office, video, audio and many image types (i.e. PDF, TIF, PNG, JPEG, etc.).

To the end goal of Paperclip's Vision of "Authorized Data", POA is a great step forward. Users can replace attachments requiring wet signatures with POA which can be as simple as the email itself. Just put the content in the body of the email for E-Signing and upon return, store the email within your Paperclip VCF system or your choice of email repository/EDMS.

- No Login or Passwords Required
- B2B and B2C Functionality
- Simple Email Encryption Rules
- Three Deployment Options
- B2C Mailbox Portal Options
- B2C Large Attachment Support
- B2C Email Recall
- Proof of Delivery
- Proof of Readability
- Proof of Agreement / E-Signing
- Disinterested Third Party Audit (D3P)
- Annual Subscription No tick charges
- B2B Cloud Client Store
- eM<sup>4</sup> Actions, Outlook Add-In

The Internet has dramatically changed the way we conduct business today. The ability to deliver information, answer questions, and exchange ideas has benefited all who participate. One significant use of the Internet is electronic mail. The ability to replace a letter, fax or phone call with a simple electronic message has won the day. Storing and quickly retrieving these messages allows organizations to streamline communications processes. By today's business standards, Email has become a cornerstone of every business' operations.



In recent years, the United States Federal Government has passed new initiatives targeted at the way personal information must be handled on the public Internet. The major acts are Financial Services Modernization Act (GLB), Identity Theft Prevention Act of 2000, Health Insurance Portability and Accountability Act of 1996 (HIPAA 2013) and the Consumer Financial Protection Bureau (CFPB). These acts focus on different aspects of personal information, but all have the same mandate: protecting customer's personal information from unwarranted access and the accountability for its use. Some of the strongest rules concern maintaining a six year audit of those who had access to the protected information. Further, technology providers hosting third party NPI (HIPAA 2013) are liable to these same agencies and subject to penalties and fines.

eM<sup>4</sup> is annually audited by a third party for SOC2 Type 2 and HIPAA compliance and reports are available upon request. Paperclip has adopted the Cloud Security Alliance (CSA) security community as a corporate sponsor.

**Non Public Information (NPI)** is defined as personal information, which by itself or with other information could allow access to private assets or health information. Items listed below are a representation of NPI:

- 1. Social Security Number (9 digits)
- 2. Address
- 3. Demographic Information
- 4. Phone Number
- 5. Age
- 6. Date of Birth
- 7. Race
- 8. Sex /gender
- 9. Religion
- 10. Mother's maiden name
- 11. Driver's License Number
- 12. Passport Number (9 digits)
- 13. State identification card number
- 14. Personal identification numbers
- 15. Information commonly provided on an application for an insurance product or service.
- 16. Logon IDs and Account passwords
- 17. Digitized or other electronic signatures
- 18. Employer assigned employment identification number – AESC assigned ID (9 digits)
- 19. Unique electronic identification number or routing code
- 20. Government issued identification number
- 21. Bank Account Number
- 22. Debit Card Number (16 digits)
- 23. Credit Card Number (15-16 digits)

- 24. Payment History
- 25. Account Balance
- 26. Fund (investments) value/balance
- 27. Factors around customer's income or assets
- 28. Fact that person is a customer of a financial institution
- 29. Fact that the customer is or has obtained insurance policy Financial account number or credit card or debit card number
- 30. Information obtained when requesting or getting, collecting, or servicing a loan
- 31. Information from a consumer or credit report
- 32. Height or Weight
- 33. Other medical specifics such as blood type
- 34. Medical Conditions, Medical Diagnosis, Medical Test Results, Medications Used
- 35. Past, present, or future physical, mental, or behavioral health
- 36. Health care being provided
- 37. Health-related policy premiums
- 38. Health policy numbers
- 39. Biometric data, such as fingerprints, retina, iris images or DNA profile

Paperclip believes any chance to overcome the current market solution shortcomings and gain wide adoption is to change the paradigm. Twenty years ago, Paperclip's Internet eXpress was a new paradigm and its success today is measured with 500 plus customers (1,300+ nodes) exchanged over 70 million documents in 2018. Paperclip's approach is to climb outside of the box and integrate unstructured email to structured Internet eXpress (Project Crossover).

Starting with some simple user requirements, a proven encryption algorithm, a vendor service track record with our eye on the target, a new paradigm is created -  $eM^4$  (called Email for – pronounced M4).

#### The new eM<sup>4</sup> approach resolves the many problems created in a diverse compliant industry:

- ✓ Encrypts Emails and their attachments, firewall to firewall
- ✓ Disinterested third party recording of Email transactions for auditing access
- Email infrastructure independent, multiple deployment options
- ✓ Ease of use accomplished Subscriber's users don't have to learn something new
- ✓ Commodity pricing, affordable by organizations of any size



*Emails do not pass through the Paperclip Central Office. The Central Office serves only to manage encryption keys, subscribers and collect auditing information.* 

The eM<sup>4</sup>Service has two deployment options, encryption enabled or disabled. These two options adhere to specific rules regarding how to encrypt Emails.

**Encryption Enabled** follows six rules as described below:

- 1. If an Email recipient's address domain is an eM<sup>4</sup>Subscriber.
- 2. If one or more Email recipients' address domains are eM<sup>4</sup>Subscribers, Email is encrypted to all recipients (Subscribers & Non Subscribers)
- 3. If the wild card Email address (flag@em4relay.smtp) appears as a recipient.
- 4. Microsoft Outlook Add-In Secure choice displaying a green ribbon.
- 5. If the wild card Email address (pass@em4relay.smtp) appears as a recipient, the Email will not be encrypted but audited as an exception.
- 6. Microsoft Outlook Add-In Force Not Secure choice displaying a red ribbon.

Encryption Disabled follows two rules described below:

- 1. If the wild card Email address (flag@em4relay.smtp) appears as a recipient then encrypt the Email to all recipients.
- 2. Microsoft Outlook Add-In Force Secure choice displaying a green ribbon.

# **Force Secure**

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**Force Not Secure** 

# Note:

The Email addresses "flag@em4relay.smtp" and "pass@em4relay.smtp" can be supported with friendly names such as Secure and Not Secure supporting Email type ahead feature.

The receiver of a decrypted eM<sup>4</sup>Service Email will see appended to the bottom of the original Email a tag line – "Content protected by Paperclip eM<sup>4</sup> Compliant Email System".

The eM<sup>4</sup> Relay Server has two basic On-Premise configurations: Serial and Parallel. Serial configuration is the simplest configuration, requiring all Emails to pass through. In Parallel mode, eM<sup>4</sup> Relay becomes a subsystem to your Email server. The host's Email rules decide what Emails are directed to the eM<sup>4</sup> Relay for encrypting. Multiple eM<sup>4</sup> Relays can be deployed to handle the largest traffic demands.

eM<sup>4</sup> Relay installed as a "**Serial**" process maintains locally a list of compliant receivers' domains and Desktop subscribers maintained by the eM<sup>4</sup> Central Office.



In **Serial** operations the Sending Email server delivers the Email to the eM<sup>4</sup> Relay. eM<sup>4</sup> Relay applies the Serial Rules and encrypts or not. eM<sup>4</sup> Relay then delivers the Email to the Smart Host for delivery across the Internet directly to the receiving Email Server. Receiving Emails start at the Smart Host and are forwarded to eM<sup>4</sup> Relay(s) for decrypting as necessary. eM<sup>4</sup> Relay then releases the Email to the internal Email Server.

eM<sup>4</sup> Relay deployed as a **"Parallel"** process to your Email Server allows your Email Server's rules engine to decide what Emails get encrypted going out. This method provides a centralized administration for more complex rules management leveraging existing resources. In this mode of operation, eM<sup>4</sup> Relay adheres to the following rule:

1. All outgoing Email is encrypted.



In **Parallel** operations, the Sending Email Server decides what Emails are delivered to the eM<sup>4</sup> Relay. eM<sup>4</sup> Relay applies the Parallel Rules and encrypts all Emails. eM<sup>4</sup> Relay then delivers the Email to the Smart Host for delivery across the Internet. Receiving Emails start at the Smart Host and are forwarded to the Internal Email Server. Internal Email Server rules identify it as an eM<sup>4</sup> Relay encrypted Email and forward it on to the eM<sup>4</sup>Relay(s) for decrypting. eM<sup>4</sup> Relay(s) then releases the Email back to the Internal Email Server

# eM<sup>4</sup> in the Cloud

The Cloud can take on different forms depending on the services engaged. One approach is to "forklift" your key servers including the eM<sup>4</sup> Relay and co-locate them with a data center provider. Another approach is to replace your servers with data center provided applications or services. Paperclip's Cloud solution addresses both models.

- Comcast
- Verzion
- Optimum
- Time Warner Cable
- Cox Communications
- AT&T

# SaaS

# **3rd Party Private Cloud Services**

Private Cloud Services are Email providers that host your email server dedicated to your organization. Many will also host the eM<sup>4</sup> Relay Server but, for those who will not, Paperclip has Software as a Service (SaaS) eM<sup>45</sup> Relay Service. This service offers eM<sup>4</sup> access where the private email provider connects to the SaaS eM<sup>45</sup> Relay Server via TLS. In this model, filtered emails can be directed to the eM<sup>45</sup> Relay Server.

Whether you're with a Private Hosting company or services such as Google Apps or Microsoft 365, the SaaS model seamlessly integrates.

The eM<sup>4S</sup> Service is available as a Full Subscription. This provides access to all Auditing features and Non Subscriber support.



# **3rd Party Shared Cloud Service Providers**

Email Cloud vendors today are considered closed systems and do not entertain integration with other third-party services. Some can provide webmail encryption services where all secured email require access via a browser with login and password. This "one too many" model and associated user experience has not been well accepted. Remember, eM<sup>4</sup> was designed by your peers who wanted most of all, one mail client and no passwords.

eM<sup>4</sup> solution for this Cloud environment leverages the eM<sup>4</sup> Cloud solution. The User uses the same Email Client used for the third-party Cloud provider and the User's proper Email address is maintained so no new addressing is required.

The user's Email address (user@yahoo.com) is leveraged by the eM<sup>4</sup> Cloud. The new eM<sup>4C</sup> (Cloud) solution is designed to integrate with the user's Email Client as an eM<sup>4</sup> Email Secure Account. This Account provides for secure tunnel transmission with the eM<sup>4C</sup> Servers where Email encryption and decryption are performed. In support of the Email Client Account configuration, Paperclip provides an install for Microsoft Outlook for easy setup. Email Client Accounts can be setup manually with configuration information found in the User's eM<sup>4</sup> WebMail Mailbox. In addition, the User has access to their eM<sup>4C</sup> Mailbox where they can access eM<sup>4</sup> sent and received Emails.



When the User wants to send an encrypted Email to an eM<sup>4</sup> Subscriber or Non Subscriber, they simply select the eM<sup>4C</sup> Cloud Account as the sending account. Microsoft Outlook users have the option to install the Outlook Add-In for a simple visual selecting to send encrypted or not. If compliance requires all Emails to go secure, simply select the eM<sup>4C</sup> Cloud Account as your default Email account.

Force Secure	Force Not Secure	Capture	Clear Overrides	Send secure override active
Force Secure	Force Not Secure	Capture	Clear Overrides	Send not secured override active

eM<sup>4</sup> Emails sent to the user will arrive at the eM<sup>4C</sup> Cloud Servers, be decrypted, audited and securely delivered to the user's Email Client as clear text mail in their Inbox. Users requiring eM<sup>4</sup> Emails to rest on their third party Cloud Servers can simply configure their Email Rules to forward eM<sup>4</sup> Email to the same.

Service	Relay	SaaS	Cloud	WebMail
eM4 Subscriber	Serial Parallel	/	>	
Non Subscriber				1

# B2C "Subscriber to Non-Subscribers"

The eM<sup>4</sup>Service can manage Non-Subscribers (NonSubs) via Paperclip's eM<sup>4</sup> Webmail hosted by Paperclip. Subscribers have the option to deploy eM<sup>4</sup> Webmail requiring receiver authentication.

Recipient Validation (RV) is the preferred method of authentication by Subscribers ensuring the person accessing the email is the correct person and still not require logins or

#### No Logins

- ✓ No Passwords
- Decrypt Incoming Emails
- ✔ Reply To: Supported
- Revocation
- ✓ Audited

passwords. RV method is designed to stop the notice from being hijacked and illegally used to view emails on the Paperclip Webmail servers. With no authentication required, the receiver can select the link and view the Email in a secure browser.

Users will receive their normal notice with a link to click on. This link will present a Captcha Code entry screen requiring the user to enter the Captcha Code. The page will refresh indicating a new email will arrive immediately with the link to open the email. Two principals are used to grant access to the Webmail, same location and same device. All validation data is recorded to the D3P audit. When Registration and Recipient Validation are used together, Two Factor authentication is achieved.

Choosing authentication will require receivers to create and maintain credentials. Non-Subscribers have the ability when registering to setup their eM<sup>4</sup> Webmail account. Non-Subscribers will receive an Email with the appropriate link directing them back to the eM<sup>4</sup> Service Webmail host.

Non-Subscribers will then have to login with their Email address or alias and authenticate with their password they registered with. The hosted eM<sup>4</sup> Webmail Email will secure the Internet "pipe or tunnel" via SSL. Non-Subscribers will have the ability to save the Email and, if desired, "Reply to" the sender securely. Non-Subscriber Emails will remain within the hosted environment for thirty days after receipt then they will be purged.

Non-Subscribers do not have access to eM<sup>4</sup> Service portal. Non-Subscribers will be able to manage their own eM<sup>4</sup> Webmail accounts as necessary (i.e., change password). Non-Subscribers have the option to freely initiate encrypted Emails to the sponsoring Subscriber at any time. There is no registration requirement and Non-Subscribers can have more than one sponsor.

Subscribers can control the content of the Email body with relevant compliance notices. In addition, they can brand their browser presentation with a custom banner or logo.

# TLS

Transport Layer Security is an encryption method whereby the connection between the mail servers is encrypted, otherwise known as a secure tunnel. Paperclip utilizes Opportunistic TLS when delivering Webmail Notices to Non- Subscribers. This method will secure the tunnel to the receiving mail server and the notice is secure from outside criminal activities. Receiving mail servers not configured to support TLS will force a connection downgrade to unsecure. Most email cloud providers (Microsoft, Google, Yahoo, etc.) enable TLS on their servers; therefore, notices sent to these providers travel through an encrypted tunnel.

# eM<sup>₄</sup> Clear Text Email Notice



# eM<sup>₄</sup> Clear Text Email Notice

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Subscriber administrators have access to the eM<sup>4</sup>Service portal via a browser. The portal provides user functions for analyzing Subscriber's metadata (Auditing), sender and Email revocation and reporting.

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eM<sup>4</sup> Auditing captures and maintains information regarding Email transactions and administration. Auditing starts with the data collected every time a request is made to encrypt or decrypt. Sender's eM<sup>4</sup> Relay connects (SSL) to the eM<sup>4</sup> Central Office (eM<sup>4</sup> CO) and updates the eM<sup>4</sup> CO in an asynchronous manner. The initial Sender's request message file includes:

- eM<sup>4</sup> Client Metrics
- eM<sup>4</sup> Transaction ID
- 3DES Session Key
- Sender Email address
- Receiver(s) Email address
- Request Date/Time Stamps
- Subject Line
- Attachment Names

Receiver's eM<sup>4</sup> Relay connects to the eM<sup>4</sup> CO (SSL) and completes the data record, closing the transaction. eM<sup>4</sup> Relay connects to the eM<sup>4</sup> CO in an asynchronous manner to update. This update passes the following metadata recorded by the eM<sup>4</sup> CO:

- eM<sup>4</sup> Client Metrics
- eM<sup>4</sup> Transaction ID
- Sender Email address
- Receiver Email address
- Request Date/Time Stamps

Non-Subscriber's eM<sup>4</sup> Add-In or eM<sup>4</sup> Webmail connects to the eM<sup>4</sup> CO (SSL) and updates the transaction data in an asynchronous manner. This update passes the following metadata recorded by the eM<sup>4</sup> CO:

- eM<sup>4</sup> Add-In Metrics
- eM<sup>4</sup> Transaction ID
- Sender Email address
- Receiver Email address
- Request Date/Time Stamps

Auditing allows for the isolation of an eM<sup>4</sup> transaction and all associated events. Filter on Email senders or receivers drilling deeper with date and time ranges as needed. Auditing reports or data can be exported to Subscribers for continued reconciliation.

Proof of Delivery provides the means where document providers can send a secure email with attachments to a receiver where compliance requires a confirmation that the person did receive the mail and documents (e.g., Voice Signature, Disclosures, etc.).

Receiver clicks on the link provided and authenticate by answering a combination of simple questions of shared personal information (last four of SSN, Birth Date, etc.).

Paperclip Where comparise learn that dramatic improvement does not require dramatic change.	? Smbridges@paperclip.com
Delivery       Consent       Message       Readability       Document(s)       Agreement         Image: Consent       Image: Consent <td></td>	
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Outlook Add-In provides the ability for Ad-Hoc questions and answers. Create a question using the Add-In and re-use it from a drop-down list, then provide the answer(s) to the questions and submit. Receiver, when receiving the mail, will be asked to answer the questions and upon success, the mail and attachments are presented.

Proof of Readability ensures that the attachment sent to the receiver can be opened and read. A PDF attachment would open a PDF file containing a number. The user is required to type that number into the screen. If they match, the event, POR is recorded in the auditing portal and the process moves to the next event.

consent Message Readability Document(s) Agreem	ent
Readability Check	n.pdf - Adobe Acrobat
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# POR supports the following file formats:

PDF	TIFF	BMP	GIF	JPG	PNG
DOC	DOCX	XLS	XLSX	РРТ	ΡΡΤΧ
AVI	MP3	MP4	WAV	WMV	WMF

Proof of Agreement (POA) is the E-Signing event that is equivalent to a handwritten signature. Paperclip implemented a simple "Click & Sign" mechanism to avoid the pitfalls of other schemes that require signing document setup and preparations, installing client-side software or browser requirements/ limitations. The Case Law today judges the process, not the type of signature (i.e., Ink, facsimile or location). The measure is, "did the signer know this is an electronic signing event" executing a contract or authorizing an approval.

	require dramatic change.	
	Delivery Consent Message Readability Document(s) Agreement	
	Review document(s) to sign	
	<ul> <li>Loan Application.TIF</li> <li>I have read and understand the content of the attached document</li> <li>Agree</li> </ul>	9
	<ul> <li>Loan Agreement.doc</li> <li>I have read and understand the content of the attached document</li> </ul>	Igree
	<ul> <li>our call.mp4</li> <li>I have read and understand the content of the attached document</li> </ul>	gray
	I understand that selecting AGREE constitutes a legal signature confirming that I acknowledge and agree to the Terms and Conditions the subject attachment contains.	mit

At the end of the E-Signing process the Attestation Document is created confirming required information representing the signing event. The email and attestation are returned to the participants (Sender, Receivers, Carbon Copy) for filing as their original copy.

O <sup>1</sup> <sub>Delivery</sub> O <sup>2</sup> <sub>Conse</sub>	nt Message Readability Document(s) Agreemen	1	
⊠ Sender : mike@charlie.int	E-Sign Attestation Summary	Open Email	
Signer : Mike Shark - mbridges@paperclip.com			
	DOCUMENT AGREED TO		
	Loan Application.TIF		
Date	Time	Archived	
03/08/2019	10:31:19 AM	Yes	
	DOCUMENT NOT AGREED TO		
	Loan Agreement.doc		
Date	Time	Archived	
03/08/2019	10:31:20 AM	Yes	
	DOCUMENT AGREED TO		
	our_call.mp4		
Date	Time	Archived	
03/08/2019	10:31:20 AM	Yes	
Both Sender and Rec eM4 has sealed and a	velver will receive the above 5-Sign Attestation and 5-Sign Consent. archived the E-Signed email and its attachments for subscriber retention.	S	

The email, attachments and attestation attachment are then encrypted (AES 256) Hashed (SHA-2) and archived by Paperclip for three years as the D3P. At the end of three years, with 30 days' notice, Paperclip will purge the same.

iou to Lindate Your Records. It is vicur responsibility to o	nuide us with true, accurate and commilete e-mail ad	frees contact, and other information related to this Disclosure and you	ir account(s), and to maintain and undate recomptly any charges in this
nformation. You can update information (such as your e-	nail address) at our website, www.Chase.com, or by	contacting us at the phone number on the back of your card.	e vocounity), and to maintain and update promptly any changes in this
lardware and Software Requirements. In order to access	view, and retain electronic Communications that we	make available to you, you must have:	
in Internet browser that supports 128 bit encryption;			
sufficient electronic storage capacity on your computer's	hard drive or other data storage unit;		
Adobe(R) Acrobat(R) Reader(R) 6.1 or higher;			
in e-mail account with an internet service provider and e	mail software in order to participate in our electronic	Communications programs;	
personal computer (for PC's: Pentium 120 MHz or higher ither printing or storing Communications received from	; for Macintosh, Power Mac 9500, Power PC 604 proce as in electronic form via a plain text-formatted e-mail	issor 120-MHz Base or higher), operating system and telecommunication or by access to our web site using one of the browsers specified above	ons connections to the Internet capable of receiving, accessing, displaying,
tequesting Paper Copies. We will not send you a paper co nail you a paper copy, provided that such request is mad www.Chase.com and send a paper statement request usin ight, but assume no obligation, to provide a paper (instea	py of any Communication unless you request it or we within a reasonable time after we first provided the ig your Secure Inbox. We may charge you a reasonab id of electronic) copy of any Communication that you	otherwise deem it appropriate to do so. You can obtain a paper copy o electronic Communication to you. To request a paper copy, contact us is envice charge for the delivery of paper copies of any Communication have authorized us to provide electronically.	of an electronic Communication by printing it yourself or by requesting that by telephone at the phone number on the back of your card or log in to n provided to you electronically pursuant to this authorization. We reserve
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ederal Law. You acknowledge and agree that your conse ct, and that you and we both intend that the Act apply to	nt to electronic Communications is being provided in the fullest extent possible to validate our ability to c	connection with a transaction affecting interstate commerce that is su andict business with you by electronic means.	bject to the federal Electronic Signatures in Global and National Commerc
ermination/Changes. We reserve the right, at our sole dis facount for receiving Paperless Statements. We will prov the featured words and symbols used to identify the sour	cretion, to discontinue the provision of your electror de you with notice of any such termination or chang ce of goods and services may be the trademarks of th	ic Communications, or to terminate or change the terms and condition as required by law. eir respective owners.	ns on which we provide electronic Communications, including any applicat
Document	Agree ?	Signature Date	Archive 7

eM<sup>4</sup> RECALL and RECALL ALL will delete the email from the receiver's mailbox. When the receiver clicks on the Notice Email the return browser will explain the email was Recalled by the sender, no further action required. To recall an email, sender can send the same mail subject line and append to the end "em<sup>4</sup>-recall". A second option of Recall All will delete all emails in the receiver's mailbox from you (em<sup>4</sup>-Recallall). Sender will receive a confirmation of recall and if the email was opened or not before the recall was executed.

# Conclusion

The need to encrypt Emails and their attachments across the public Internet protecting NPI is an undisputed requirement. Current deployed market solutions suffer from industry interoperability, deviate and burden trading partners' workflow and require many IT resources not available to all. It's time to climb out of the box.

Paperclip's new paradigm meets compliance, is easy to use and adds the opportunity to reduce paper as original documents signed and agreed to by all parties.

This new paradigm or eM<sup>4</sup> Service can scale from one to thousands of users. It makes industry compliance affordable and uniform. It's simple.