

Extending the Enterprise

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Cardinal Solutions Group

Premium Partners:



Microsoft

About Cardinal Solutions (www.cardinalsolutions.com)

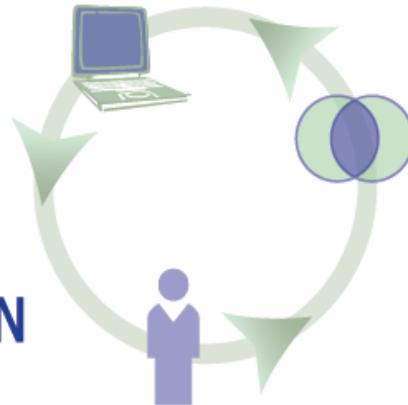
OUR FOCUS

Quick to market
Best of breed
Training

OUR EXPERTISE

Technical knowledge
Industry understanding
Intelligent solutions

POWERFUL
SOLUTIONS
FOR THE MOST
IMPORTANT
BUSINESS.
YOURS.



BUSINESS
PROCESS
MANAGEMENT

ELECTRONIC
CONTENT
MANAGEMENT

INTELLIGENT
DOCUMENT
PROCESS

PRODUCT
LIFECYCLE
MANAGEMENT

OUR ORGANIZATION

Hire the best
Motivation and training
Great culture and people
Support systems

partners: **Business Objects** **Microsoft**
GOLD CERTIFIED
Partner

Microsoft
.net

FILENET

IBM

Rational software



UGS
The PLM Company

ORACLE

JAVA

Adobe

Why are we here?

The PDF format can extend the Teamcenter product by addressing the requirements that are difficult to satisfy without 3rd party products:

- Synchronization of Bulk Data with Metadata
- Complex Document Creation Processes
- Integrating with Paper Based Processes
- Electronic Document Security

Synchronization of Bulk Data with Metadata

Requirement:

Bulk data needs to be synchronized with metadata in the Teamcenter application

Solution 1: Metadata Stamping
(1-way exchange)

Solution 2: Adobe Forms
(bi-directional exchange)

Metadata Stamping

Why is metadata stamping useful?

- Printing Requirements for Regulated Industries
- Distribution of documents outside of Teamcenter application

3rd Party Solutions that provide PDF Stamping:

- Adobe Document Server
- Appligent StampPdf
- Big Faceless PDF Library
- pdf-tools.com “Pdf Batch Stamp Tool”

Metadata Stamping

- Metadata information can be seen without accessing the Teamcenter application.
- All necessary information is available when the document is viewed.

GetInfo Component

Name: CYL 1,A,1,1

Part Number: CYL 1

Rev: A

Sec: 1

Owner: super user

Responsible Party: super user

Project Name:

Check Out User/Vault:

Life Cycle State: Working

Nomenclature: CYL 1

Description:

Part Type: Design

Program: Training

Organization Name: Organization1

Buttons: Close, Print..., Help

Adobe Acrobat 3D - [D5UCustomizations.pdf]

RELEASED

Document Filename & Version:	Update D5U Customization to support F18 Naming Conventions		
Effective Date:	04/11/2006		
Document Originator or Owner:	Jason Enzweiler		
Description of change (Current Version):			
V1- Initial Release			
Document Distribution:			
Document Approvals:			
Name (print / type)	Signature*	Date*	Disposition (✓)
Arthur Zrodlo			<input type="checkbox"/> Approve <input type="checkbox"/> Reject
			<input type="checkbox"/> Approve <input type="checkbox"/> Reject
			<input type="checkbox"/> Approve <input type="checkbox"/> Reject
			<input type="checkbox"/> Approve <input type="checkbox"/> Reject

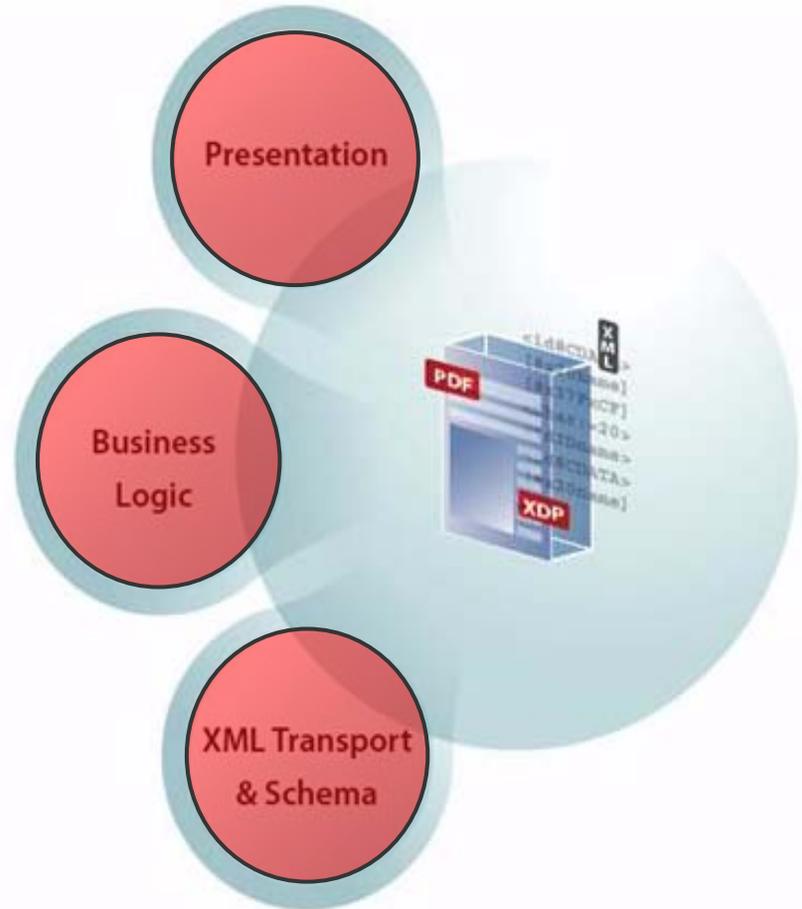
*Note: Hardcopy signature and date are filed with team Document Coordinator.

State: Working Part Number: Cyl 1

Adobe Intelligent Document Forms

Contain three layers:

- A **presentation layer** based on Adobe PDF that supports rich content including text, graphics, photos, and multimedia.
- A **business logic layer** that can perform calculations such as currency conversions and data validations.
- An **XML data layer** with the ability to capture XML data and move it between users and enterprise business systems.

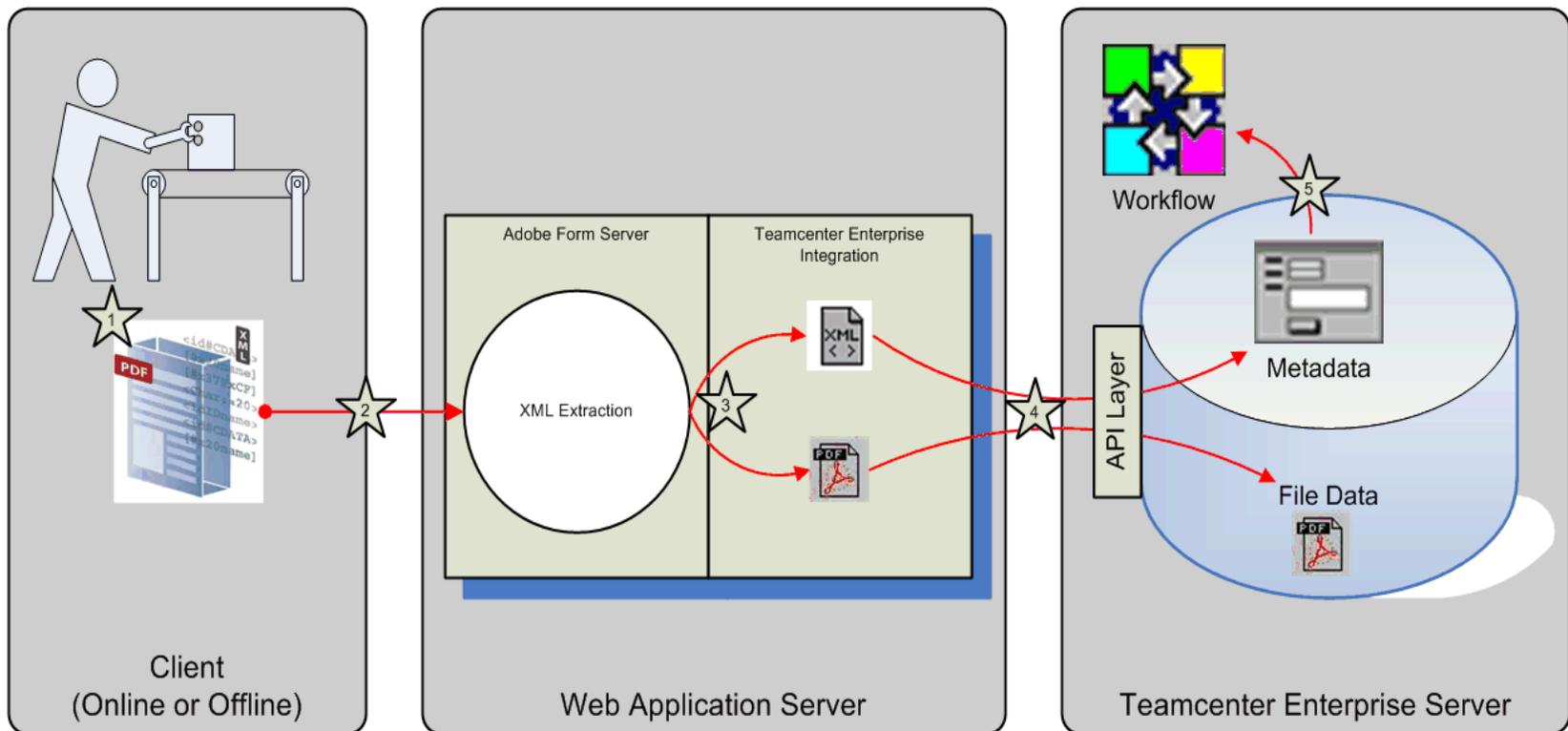


Why use PDF forms?

- PDF forms can be designed to look exactly like existing paper forms
- Provide offline access to user interface
- High-fidelity printing capabilities
- Can be accessed from PDA devices
- Business logic can be applied to the form with Javascript
- No Teamcenter code changes required for presentation layer (Uses Adobe Form Designer)
- Data can be easily extracted from the form or imported into the form in XML format

PDF Forms (Continued)

How do PDF forms interact with Teamcenter?



PDF Forms (Continued)

Other features of PDF forms:

- Data can be bound to any XML schema
(Schema can be custom or derived from Teamcenter)
- Form display can be dynamic, allowing you to show/hide sections of the form, add/remove rows of data, etc.
- PDF Forms can have Web Service connectivity
(Can be used to get data from Teamcenter or other systems)
- PDF Forms support digital signature capabilities

Complex Document Creation Processes

- Synchronization of Bulk Data with Metadata
- **Complex Document Creation Processes**
- Integrating with Paper Based Processes
- Electronic Document Security

Complex Document Creation Processes

What factors make up a complex document creation process?

- Management of very large or complex documents
- Change control of individual components is needed
- Document components are being authored/edited in parallel by multiple users

Complex Document Creation Processes

Requirement:

User needs to manage documents as assembly of document components

Solution 1: Appending PDF's

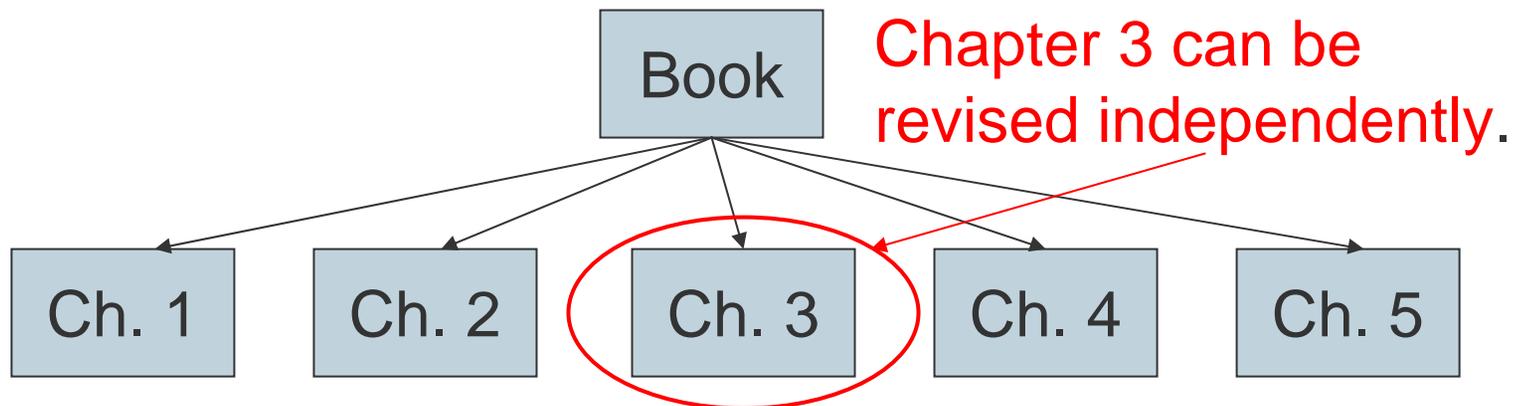
- Each document section is rendered to PDF and merged

Solution 2: PDF forms

- Can merge xml data from multiple forms

Structured Document Approach

All solutions to solve the Complex Document Creation process requirement will involve a Structured Document approach. This will allow for changes on an individual component of a complex document without reevaluation of complete document.



Appending PDFs

Solution 1: All documents will be rendered to PDF and then appended together according to Structured Document business rules.

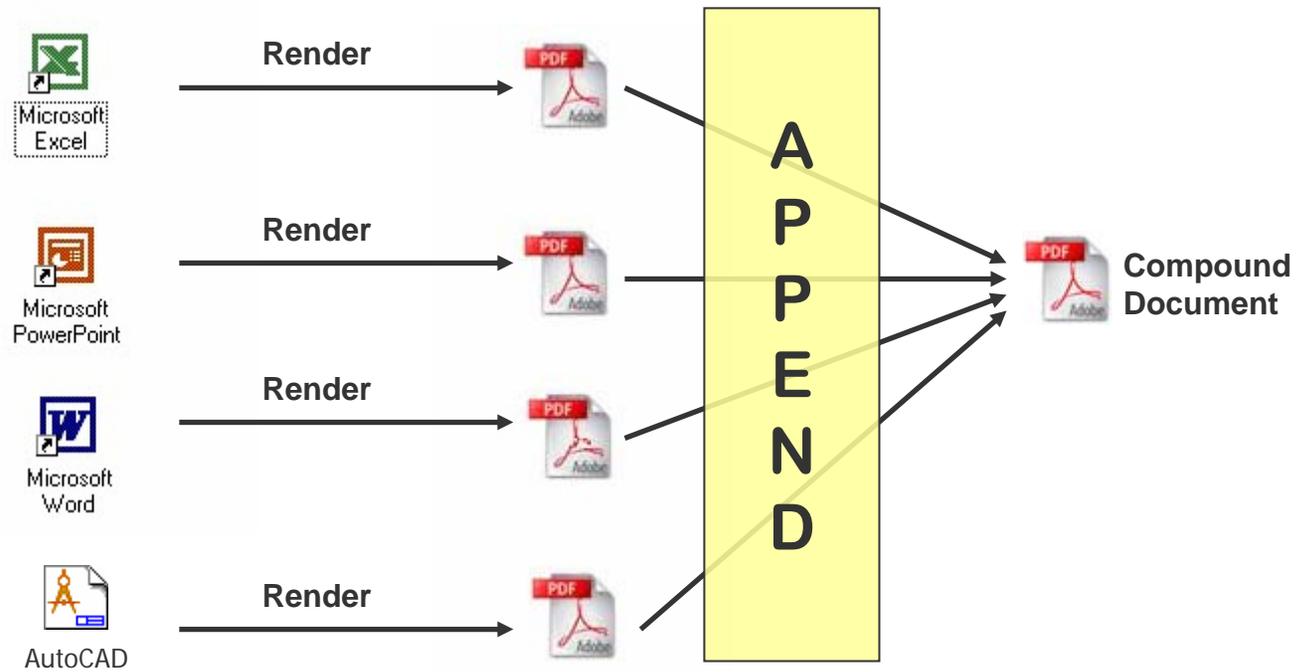
Advantages:

- Table of contents can automatically be generated
- Multiple document formats can be easily merged into a single complex document
- Does not require change of authoring application (Users can continue to use Word, Excel, etc...)

3rd Party Solutions:

- Adobe Document Server
- Appligent AppendPDF
- Big Faceless PDF Library

Appending PDFs



PDF Forms – Compound Documents

Solution 2: XML data from multiple forms is extracted and merged into a single PDF template in order to generate a final compound document.

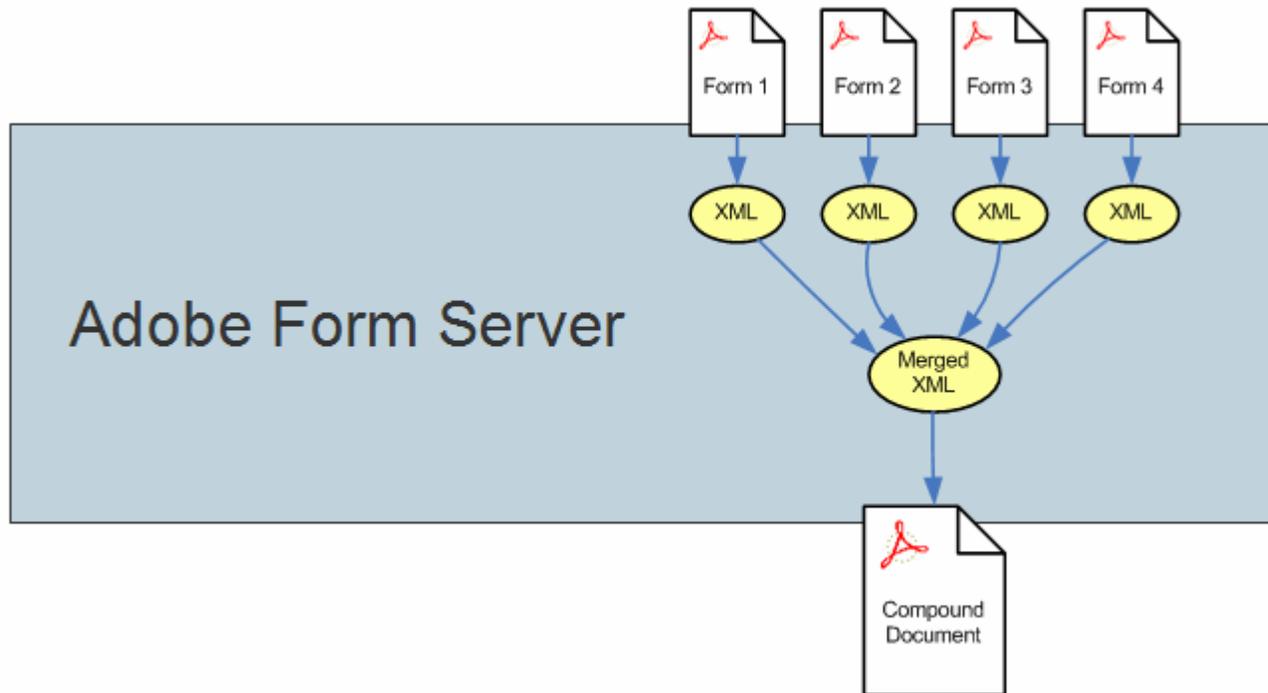
Advantages:

- Good for aggregating data input from multiple forms
- Different business units or organizations can utilize their own form layout, with the same underlying XML schema
- Can be used as a reporting solution

3rd Party Solutions:

- Adobe Form Server

PDF Forms – Compound Documents



Complex Document Creation Processes

- Synchronization of Bulk Data with Metadata
- Complex Document Creation Processes
- **Integrating with Paper Based Processes**
- Electronic Document Security

Integrating Paper Processes

Requirement:

Metadata must be obtained from paper documents and stored in Teamcenter.

Solution: Barcoded Forms

- Uses 2-D Barcodes based on PDF417 standard
- Where wet signatures are still required
- Electronic input, but can be signed and faxed
- Eliminates data entry effort and errors
- Alternative to OCR solutions

PDF Barcode Functionality

Adobe Reader - [Quarterly Report.pdf]

File Edit View Document Tools Window Help

82%

Do more with Adobe PDF

Bookmarks Signatures Layers Pages



Air Emissions Quarterly Report

DISTRICT: 2974 - Northern California	DATE DUE: 2/10/04
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FACILITY INFORMATION

License to be issued to: Global Corp.		
Mailing Address: 9999 Industrial Way		
City: San Jose	State: CA	Zip Code: 95337
Nature of Business: Commercial Refinery	SIC Code: 2911	
Contact Person: Conrad Simms, Project Manager Global Corp. Refinery Division	Phone Number: 408-536-6000	Fax Number: 408-537-6000
	Email: csimms@GlobalCorp.com	

DEPT. OF ENVIRONMENTAL RESOURCES USE ONLY

If received by mail: Scan barcode and send via intra-office.	 Signature of Responsible Official	Transaction No. 123456789-0
		
Office Code: _____		
Employee Number: _____		

8.5 x 11 in

1 of 2

Captured XML Data.xml

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

```
<?xml version="1.0" encoding="UTF-8" ?>
- <xfdf xmlns="http://ns.adobe.com/xml/"
  xml:space="preserve">
- <fields>
- <field name="Address">
  <value>9999 Industrial Way</value>
</field>
- <field name="Business type">
  <value>Commercial Refinery</value>
</field>
- <field name="City">
  <value>San Jose</value>
</field>
- <field name="Company">
  <value>Global Corp.</value>
</field>
- <field name="Contact">
  <value>Conrad Simms, Project Manager
  Global Corp. Refinery Division</value>
</field>
```

Complex Document Creation Processes

- Synchronization of Bulk Data with Metadata
- Complex Document Creation Processes
- Integrating with Paper Based Processes
- **Electronic Document Security**

Why is Document Security Important

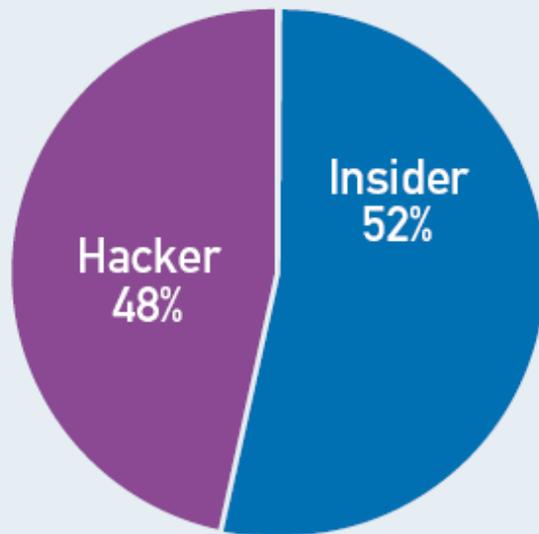
Three main reasons companies typically need to address electronic data security

1. Regulatory and Legal Requirements
 - Sarbanes-Oxley Act (Any Public Company)
 - SAFE Initiative (Pharmaceutical)
 - 21 CFR Part 11 (FDA)
 - ITAR (DOD)
2. Information Security
 - Companies will lose their competitive advantage if they fail to protect their intellectual property
 - Negative publicity from security breaches can jeopardize customer relationships
3. Return on Investment
 - The full value of electronic business processes cannot be realized until adequate data security mechanisms are in place
 - Many companies still utilize paper within their electronic processes (e.g. web signature)

Security Breaches

Insider vs. The Hacker

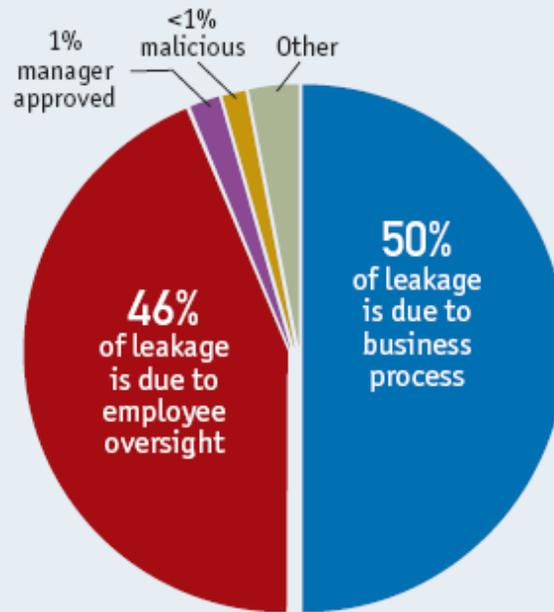
2005 Data Security Breaches



Data compiled from industry sources including EPIC.org and PerkinsCoie.com.

Inadvertent vs. Malicious

96% of leaks are due to faulty processes or oversight



Source: Vontu risk assessment findings.

Digital Signatures

Digital Signatures address the following security requirements:

- Allow for a secure form of approval for electronic documents
- Ensure that an individual who has signed the document cannot deny the signature (non-repudiation)
- Ensure that the content has not been altered after a signature is applied (integrity)
- Ensure that the document is coming from the actual person who sent it (authenticity)

Digital Signatures - Message Digest

- A message digest (or hash value) is a fixed-length value that acts as a unique “fingerprint” for a document.
- When a document is signed, a message digest is generated and attached to the document. This message digest is encrypted so it cannot be altered.
- A recipient of the document can recompute the message digest and compare it with the original to determine if the message was altered.

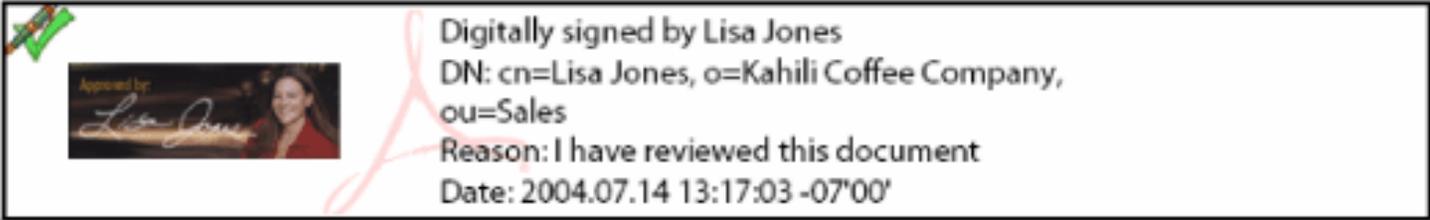
How Digital Signatures Work

- Digital signatures are created with digital certificates using asymmetric key cryptography (paired public/private keys)
- When the author signs the document, the message digest is encrypted with the private key.
- The public key can correctly decrypt the hash and use it to see if it matches a new hash of the document.
- Because the signature was applied with the private key, the recipient is assured that the document could only have been signed by the person in possession of that private key. (non-repudiation)

Digital Signature Appearance



 **Lisa Jones** Digitally signed by Lisa Jones
DN: cn=Lisa Jones, o=Kahili Coffee Company,
ou=Sales
Reason: I have reviewed this document
Date: 2004.07.14 13:17:03 -07'00'



  Digitally signed by Lisa Jones
DN: cn=Lisa Jones, o=Kahili Coffee Company,
ou=Sales
Reason: I have reviewed this document
Date: 2004.07.14 13:17:03 -07'00'

Digital Signatures contain the following information:

- The name of the signer
- An optional graphic associated with the signature
- The reason for signing
- A timestamp of when the signature was applied

Signature Validation



- Valid Signature: The signer is in the list of trusted identities and the certificate is valid and current



- Invalid Signature: The signer's certificate has expired or been revoked

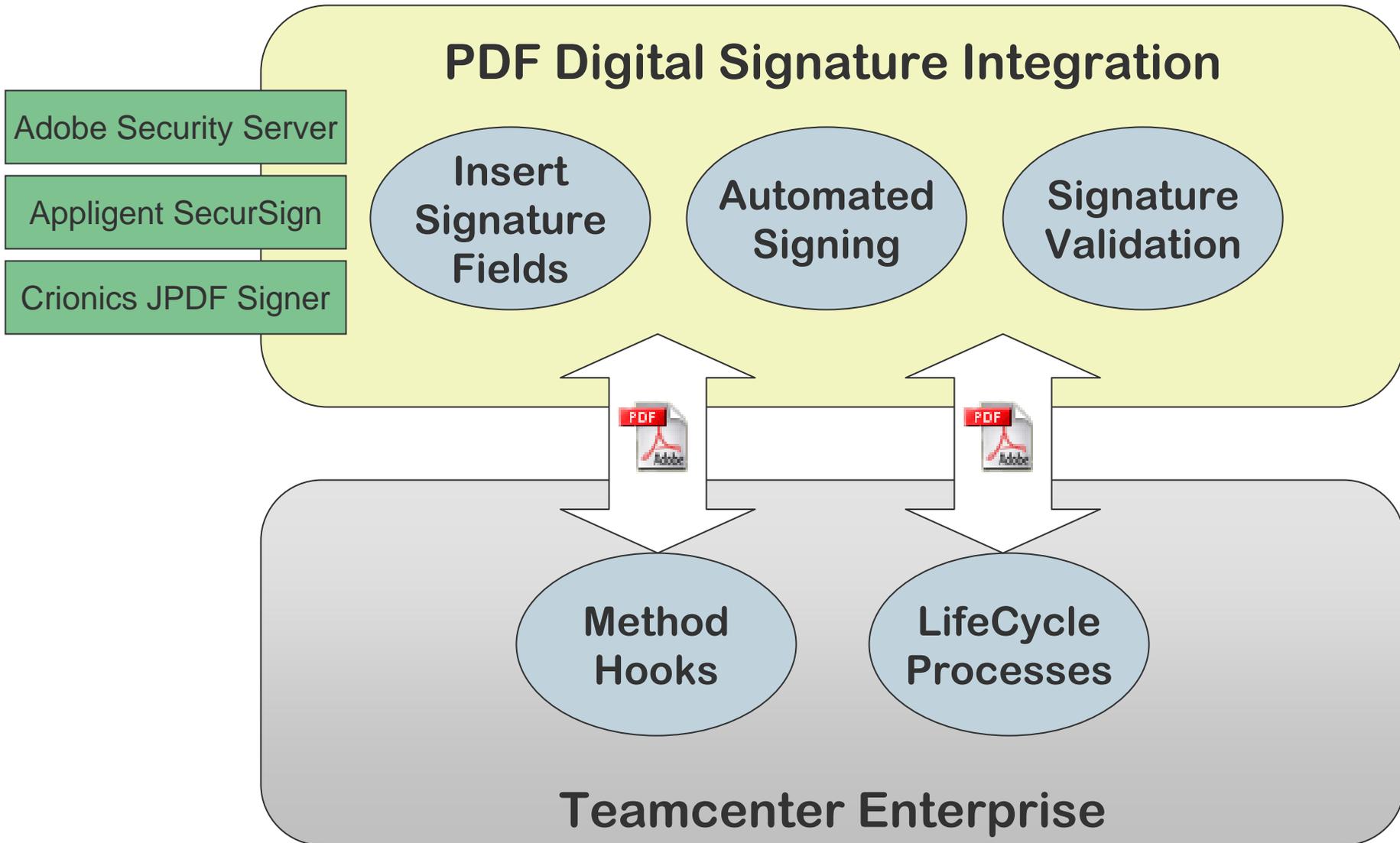


- Validity Unknown: The signer was not found in the list of trusted identities.



- Document Modified: Any of the above icons could contain a yellow warning triangle as part of the mark. This indicates that the document has been altered since that signature was applied

Teamcenter Integration



Security Requirements

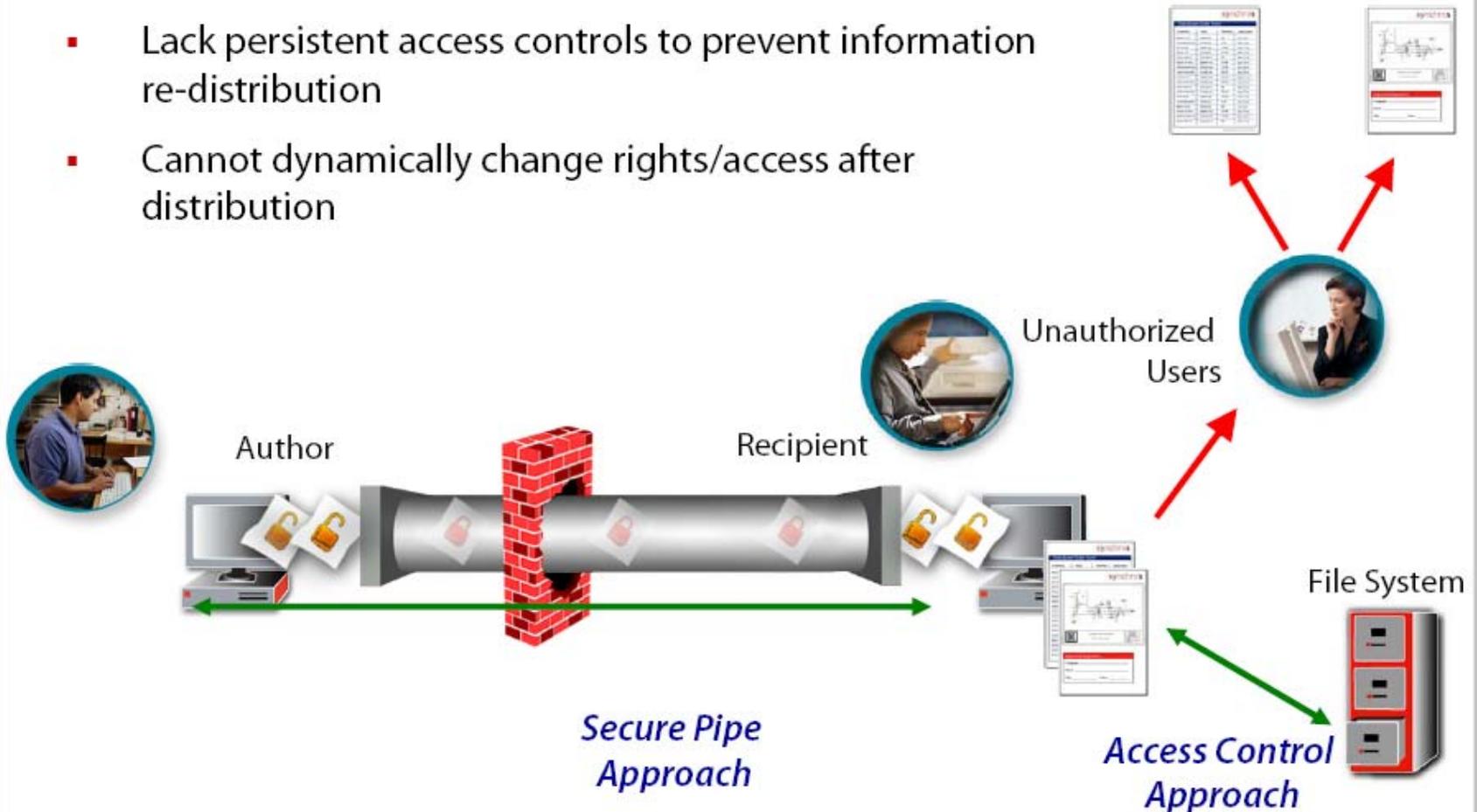
How can I help assure that...

- My organization is meeting all regulatory requirements?
- My organization is sufficiently protecting its intellectual capital?
- My data is secure while it is in the hands of my suppliers and vendors?

Is Teamcenter able to satisfy all of my security requirements?

Current Data Security Approaches

- Lack persistent access controls to prevent information re-distribution
- Cannot dynamically change rights/access after distribution



Persistent Document Control

- Adobe LiveCycle Policy Server provides the ability to control access and use of documents no matter where they are:
 - Online or offline
 - Inside or outside your organization
- The document control is persistent because the security is defined within a policy which travels with the document at all times

Policy Server Capabilities

- Encrypt documents to control user access and rights
- Control document access and use online, offline, and outside the firewall
- Apply expiration dates and validity periods to documents
- Always know when a document has been viewed, printed, or modified
- Revoke access to previously distributed documents
- Dynamic Watermark capabilities

Policy Creation

General Settings

Please fill in policy details, then click Save.

***Name:** Max. 50 characters

Description: Max. 250 characters

***Validity period:** This will set a limitation on how long a document can be accessed.

- Document will not be valid after days
- Document will not be valid after this date 
yyyy/mm/dd hh:mm:ss
- Valid from:  to 
yyyy/mm/dd hh:mm:ss yyyy/mm/dd hh:mm:ss
- Document is always valid

***Audit document:** Enable Adobe LiveCycle Policy Server to track document events such as viewing.

- Yes
 No

***Auto-Offline lease period:** Specify how long the document can be viewed offline before a user must synchronize with Adobe LiveCycle Policy Server.

days

Policy Creation

Users and Groups

Click on the appropriate icon below to add Users or Groups and set permissions. Click on a user / group name to view permission details. Once you add an anonymous user group, other users and groups cannot be added to your policy.

 Delete



	Name	Change	Copy	Print	Offline
	Document Publisher				
<input type="checkbox"/>	 All internal users				

2 items

Advanced Settings

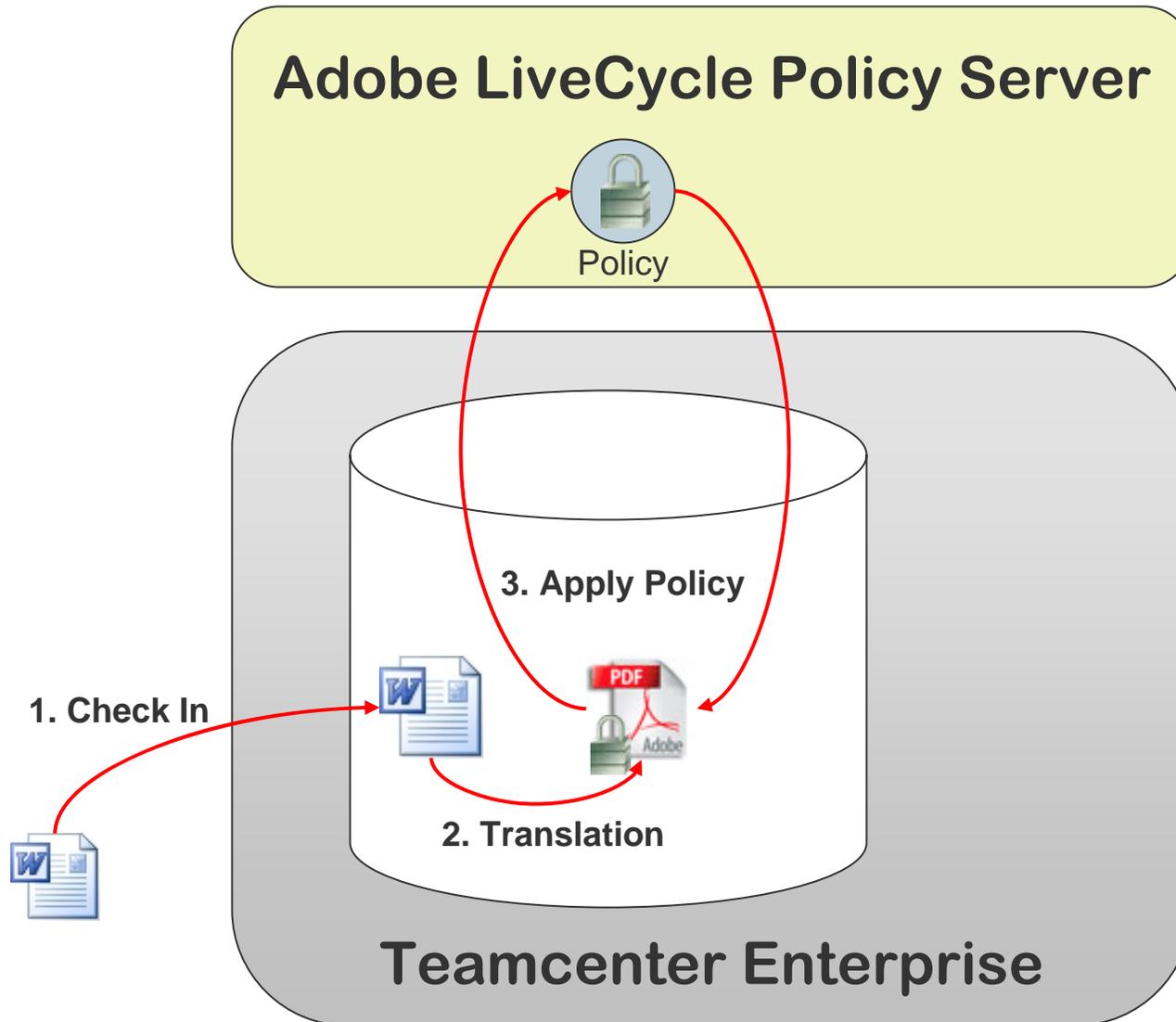
Document restriction: Select document components to encrypt.

- Encrypt all document contents
- Encrypt all document contents except metadata
- Encrypt only file attachments

Dynamic watermark: Adobe LiveCycle Policy Server can apply a dynamic watermark.

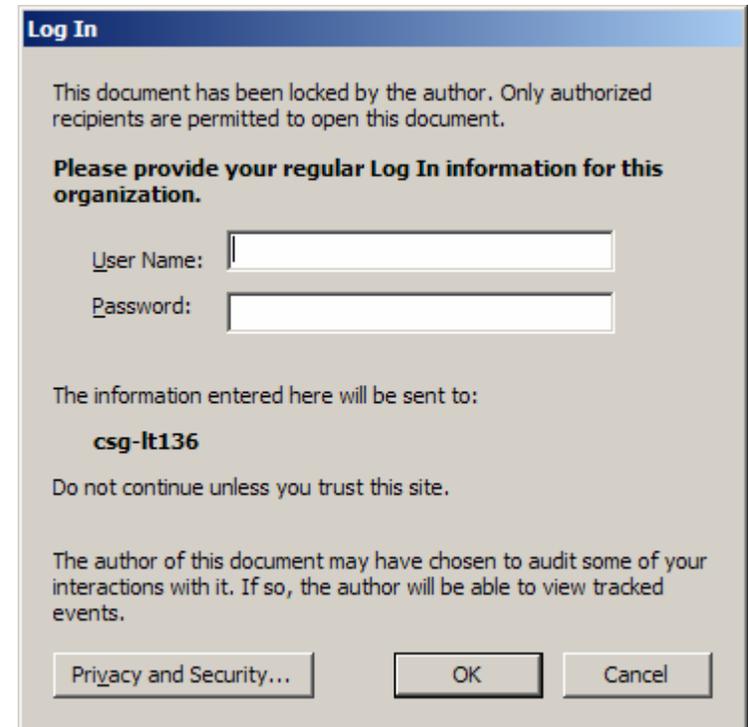
- Yes
- No

Applying a Policy



Opening a Protected Document

- Opening a policy-protected document for the first time requires you to log in
- Authentication is performed against the Policy Server
- Policy Server can be configured to use your company's LDAP



Log In

This document has been locked by the author. Only authorized recipients are permitted to open this document.

Please provide your regular Log In information for this organization.

User Name:

Password:

The information entered here will be sent to:

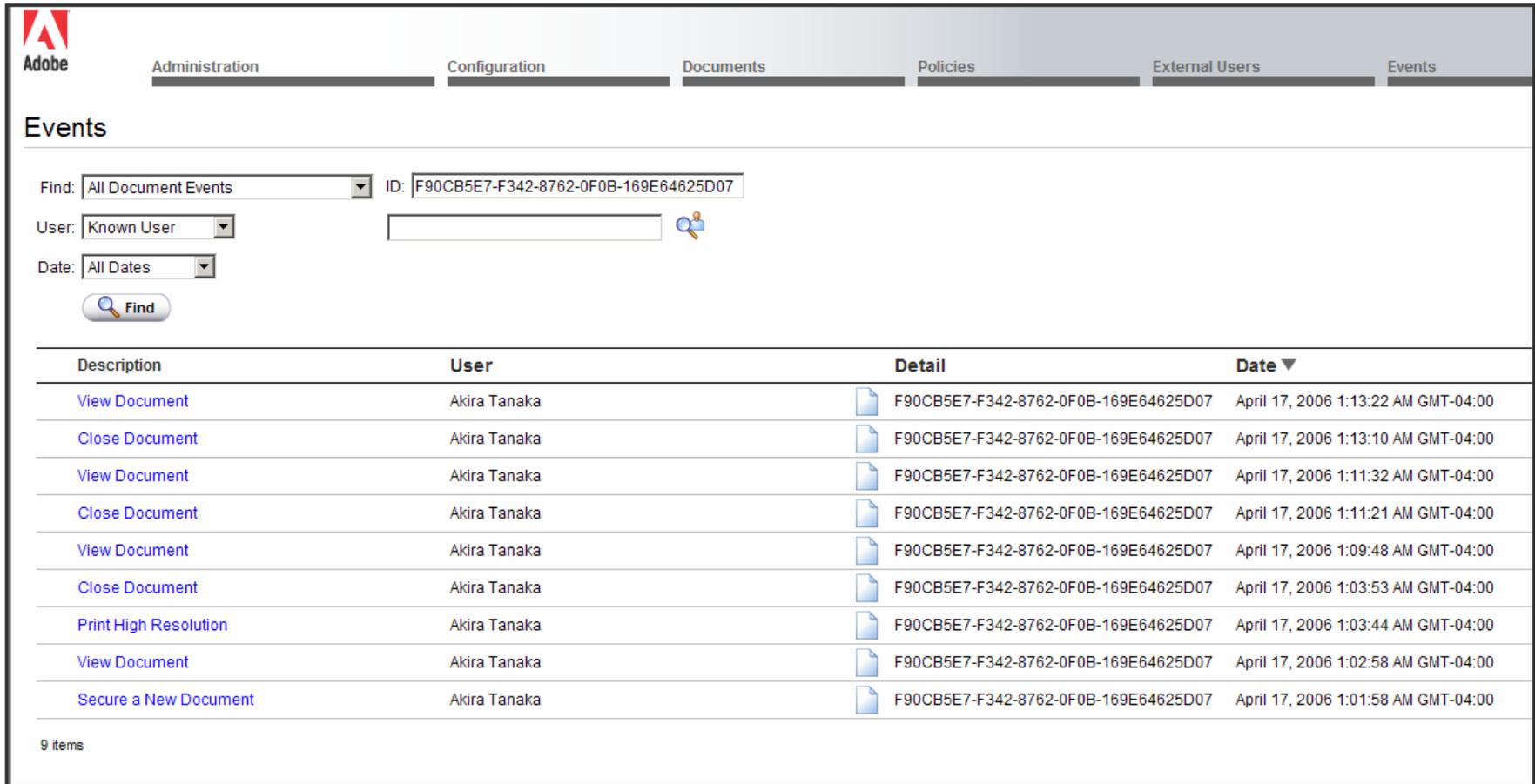
csg-lt136

Do not continue unless you trust this site.

The author of this document may have chosen to audit some of your interactions with it. If so, the author will be able to view tracked events.

[Privacy and Security...](#)

Audit Tracking



The screenshot displays the Adobe Audit Tracking interface. At the top, there is a navigation bar with tabs for Administration, Configuration, Documents, Policies, External Users, and Events. The 'Events' tab is selected. Below the navigation bar, the 'Events' section contains search filters: 'Find: All Document Events' (dropdown), 'ID: F90CB5E7-F342-8762-0F0B-169E64625D07' (text input), 'User: Known User' (dropdown), 'Date: All Dates' (dropdown), and a 'Find' button. Below the search filters is a table with 9 items. The table has four columns: Description, User, Detail, and Date. The events listed are: View Document, Close Document, View Document, Close Document, View Document, Close Document, Print High Resolution, View Document, and Secure a New Document, all performed by Akira Tanaka on April 17, 2006.

Description	User	Detail	Date ▼
View Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:13:22 AM GMT-04:00
Close Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:13:10 AM GMT-04:00
View Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:11:32 AM GMT-04:00
Close Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:11:21 AM GMT-04:00
View Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:09:48 AM GMT-04:00
Close Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:03:53 AM GMT-04:00
Print High Resolution	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:03:44 AM GMT-04:00
View Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:02:58 AM GMT-04:00
Secure a New Document	Akira Tanaka	 F90CB5E7-F342-8762-0F0B-169E64625D07	April 17, 2006 1:01:58 AM GMT-04:00

9 items

- Policy Server provides event handlers for each event
- Document events can trigger actions in Teamcenter

Revoking a Document



Revoke Documents

Please provide the reason you are revoking the document(s), then click OK. If a newer version is available, please also provide a URL.

The document(s) you have selected:

application.pdf

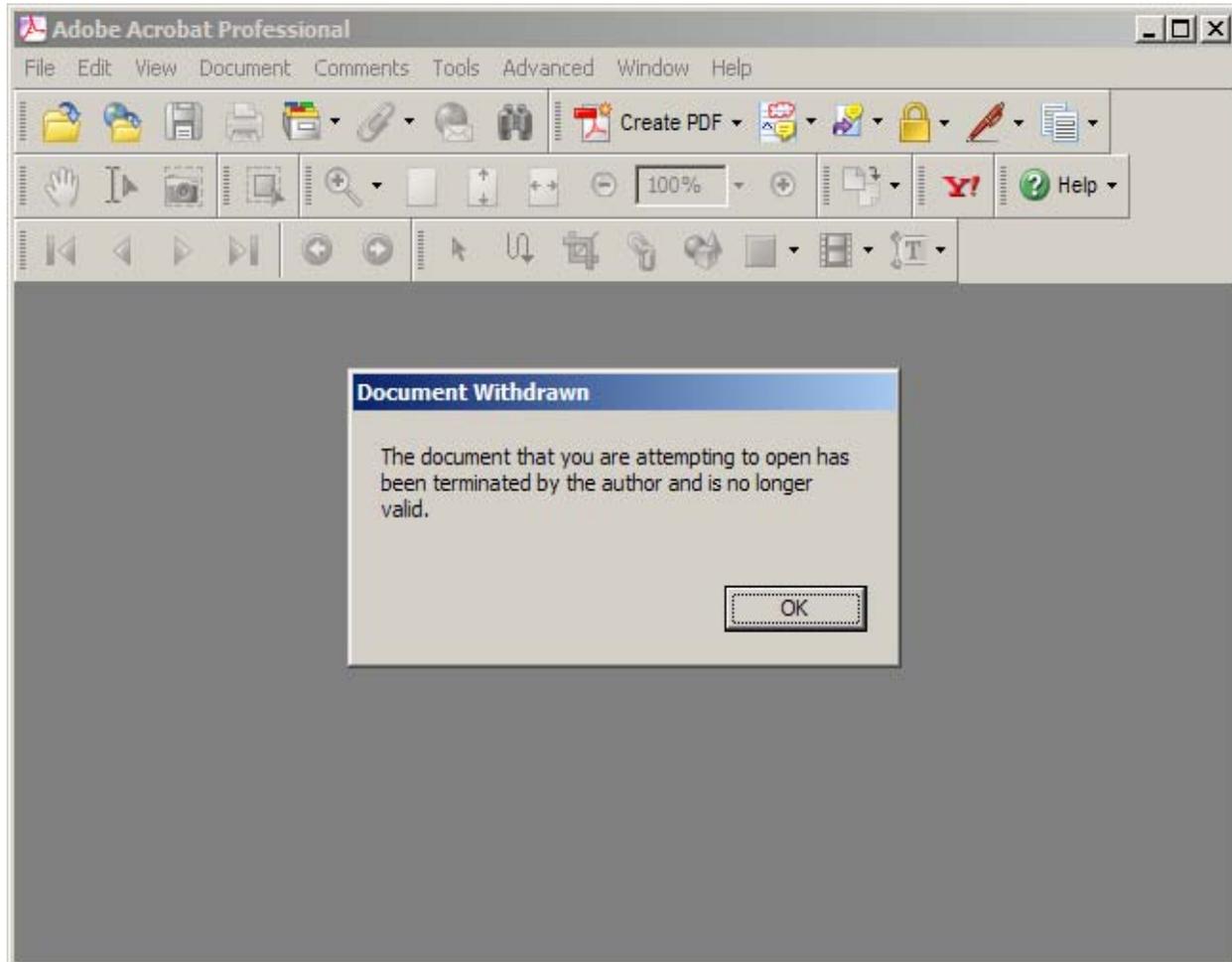
Document terminated ▾

The document that you are attempting to open has been terminated by the author and is no longer valid.

URL:

[Test URL](#)

Accessing a Revoked Document



Demonstration/Questions

Premium Partners:



Microsoft