



Specialized. Recognized. Preferred.

The right partner makes all
the difference.

Shake Off the E-Business Suite Attachment Blues – Automatically Convert EBS Attachments into WebCenter

By: Timothy J. Brocker, Patrice Carrere, Chandrasekar Thangeswaran

AST Corporation & LA Metro

April 4, 2014

Contents

INTRODUCTION	1
BACKGROUND	1
KEY REQUIREMENTS.....	1
TECHNICAL DISCUSSIONS AND EXAMPLES.....	2
ATTACHMENTS EASE OF USE IN E-BUSINESS SUITE	2
ACCESS SUPPORT DOCUMENTS FROM OTHER MODULES....	2
ELIMINATE UNNECESSARY KEYING	4
E-BUSINESS SUITE ATTACHMENT STRUCTURE	4
WEBCENTER CONTENT STRUCTURE.....	5
THE DATA CONVERSION PROCESS	7
AUTOMATICALLY ATTACH DOCUMENTS RECEIVED VIA OTHER METHODS	7
ADD DOCUMENT AND RECORDS MANAGEMENT FUNCTIONALITY	9
APPENDICES.....	10
#1 – WEBCENTER AP AUTOMATION ADAPTOR FOR E-BUSINESS SUITE IN JDEVELOPER.....	10
#2 – MODIFICATIONS IN JDEVELOPER TO THE ADAPTOR INVOICE SYNCHRONIZATION COMPOSITE.....	11
SUMMARY	11

Introduction

This paper presents the details of how to convert, and automatically index all types of attachments stored in the E-Business Suite Attachments Framework into WebCenter Content. It also provides an overview of how E-Business Suite and WebCenter can be integrated with each other.

At the end of the paper, the reader will be able to:

- Explain the E-Business Suite Attachment Architecture
- Identify the limitations of E-Business Suite Attachments
- Explain WebCenter Content Profiles
- Identify WebCenter Content Search Options
- Follow steps to convert documents daily
- Share the benefits derived from WebCenter and E-Business Suite integration

Background

When a user creates transactions in E-Business Suite (EBS), such as a requisition, purchase order, inventory receipt, GL transaction, or AP Invoice, there is a requirement to associate supporting documentation with each transaction. Many times the supporting documents are saved for future reference as “search only” files, and other times supporting documents must be reviewed during an approval process. Either way, using attachments in E-Business Suite is a way of life.

This session explores and provides a case study example of why and how LA Metro decided to continue to use the E-Business Suite User Interface to create attachments and then automatically convert them into WebCenter Content, still providing attachment functionality in E-Business Suite, but adding the full life-cycle management features of an enterprise content management system as well.

KEY REQUIREMENTS

The following requirements were identified as imperative for LA Metro:

- Maintain the ease of use provided by E-Business Suite Attachments functionality.

- Expand access to supporting documentation from other modules.
- Eliminate unnecessary keying.
- Automatically attach documents received via a variety of methods or systems.
- Expand functionality to include Document Management and Records Management.

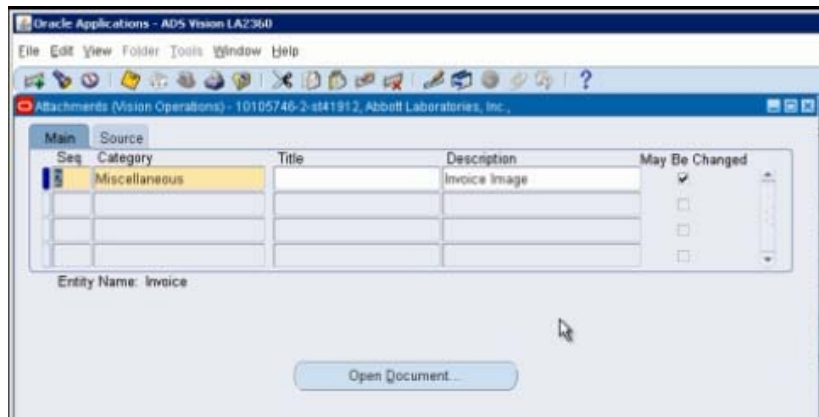
Technical Discussions and Examples

ATTACHMENTS EASE OF USE IN E-BUSINESS SUITE

E-Business Suite users are able to create a transaction in E-Business Suite then navigate to the attachment / paperclip functionality and browse, cut or paste content to create attachments very easily in the form of a Short Note, Long Note, Microsoft Office Document, Scanned Image, or other type of document.

The end users at LA Metro did not want to lose this easy-to-use method of attaching documents and wanted to avoid keying more information when attaching documents (e.g. double keying information).

Attachments Screen in EBS



ACCESS SUPPORT DOCUMENTS FROM OTHER MODULES

AP Invoices entered in EBS at LA Metro are subject to an

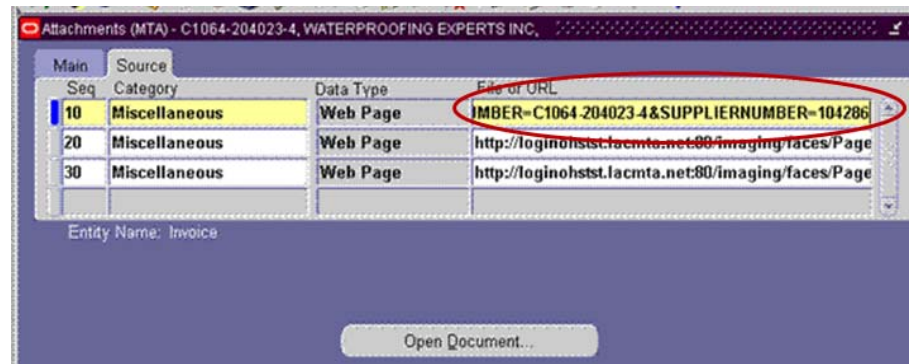
approval process. This involves sending an email notification to Approvers that can be used to approve or reject each invoice. This email also includes a single hyperlink to electronically view supporting documentation. If there are multiple attachments, the preferred approach was to send only one hyperlink to access all related attachments.

Rather than populating the attachment web URL with a call directly to a single document, a search URL was provided which returns related documents in a Result Set. The Result Set describes each document type that has been returned, providing one-click access to any supporting document.

EBS Attachment Screen (Main Tab)



EBS Attachment Screen (Source Tab)



Notice the Source is a search URL rather than a document ID.

Search Result Set showing all related documents

CLASSIFICATION	STATUS	INVOICENUMBER	SUPPLIERNAME	SUPPLIERNUMBER
Packing List	Received	C1064-204023-4	WATERPROOFING...	104286
Requisition	Received	C1064-204023-4	WATERPROOFING...	104286
OFR	Received	C1064-204023-4	WATERPROOFING...	104286

Select a document to view in the viewer.

**Metropolitan Transportation Authority
Contract Payment Estimate**

C1004-204023-4

Contractor: C1004 - 204023 Contractor: WATERPROOFING EXPERTS, INC Description: HEAVY MAINT. MAINTENANCE OF WYAY ROOF REPLACEMENT		Work to: WATERPROOFING EXPERTS, INC 7736 DEERING AVE. CAROLINA PARK, CA 91304		Pay Estimate # 12/31/2013 Contract Award 7/8/2013
Contract Award Value		Previous	Current	To Date
Unit Price Adjustments	\$0.00			
Approved Change Orders				
ADJUSTED CONTRACT AMOUNT				
Less: Payment to Date				
CONTRACT BALANCE				

I HEREBY CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THIS ESTIMATE REPRESENTS A CORRECT AND JUST STATEMENT OF THE WORK PERFORMED. FURTHERMORE, I CERTIFY THAT THE WORK COMPLETED TO DATE, UNDER THIS CONTRACT, IS IN FULL ACCORDANCE WITH THE TERMS OF THE CONTRACT DOCUMENTS. PLEASE ACCEPT THIS AS A FULLY EXECUTED AGREEMENT THAT ALL SUBCONTRACTORS AND/OR SUPPLIERS WHO HAVE PERFORMED ANY WORK ON THE PROJECT TO DATE HAVE BEEN PAID

ELIMINATE UNNECESSARY KEYING

The key to eliminating unnecessary data entry, or keying is, understanding the layout and file structure of the E-Business Suite Attachment Framework (to automatically pick up transactional information) and understanding WebCenter Content (to automatically index the data values read from E-Business Suite).

In E-Business Suite the concept is simple. There are three header-level tables that provide information and allow us to understand how the system works.

E-Business Suite Attachment Structure

Major E-Business Suite Attachment Tables:

- **FND_Documents** – Provides generic attachment properties including a media type such as Web Page or Short Text, along with any document path or URL to access the document.
- **FND_Attached_Documents** – Provides the primary key to the transactional table to which the attachment is associated such as the AP Invoice ID or PO ID. This allows access to the data in the transaction table.
- **FND_Document_Entities** – Provides a list of the Document Entities or transaction types such as AP_INVOICES or PO_HEADERS. This table also identifies the table of the primary key found in the FND_Attached_Documents such as AP_Invoices_All.

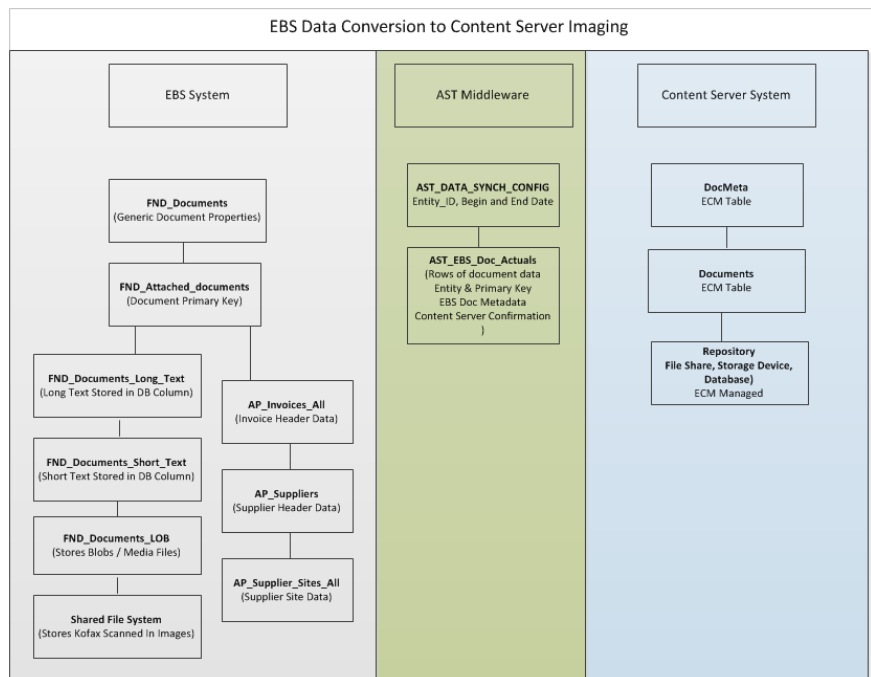
An attached document can be one of the following types:

- **Short Text** – Text stored in the database containing less

than 2,000 characters. These documents are found in the FND_Documents_Short_Text table in E-Business Suite.

- **Long Text** – Text stored in the database containing 2,000 characters or more. These documents are found in the FND_Documents_Long_Text table in E-Business Suite.
- **Image** – An image that Oracle Forms can display, including: bmp, cal, jfif, jpeg, gif, pcd, pcx, pict, ras, and tif. These documents are found in the FND_Documents_TL table in E-Business Suite.
- **OLE Object** – An OLE Object that requires other OLE server applications to view, such as Microsoft Word or Microsoft Excel. These documents are found in the FND_Documents_LOB table in E-Business Suite.
- **Web Page** – A URL reference to a web page which you can view with your web browser (such as WebCenter Content). When using a URL or Document File Path the document is accessed by calling the URL or browsing to the file path.

EBS Accounts Payable Attachments Logical Model



WebCenter Content Structure

In WebCenter Content the model is user-definable and straightforward. LA Metro used WebCenter Imaging which allows you to either import your profile structure or manually type one in. The setup is performed in WebCenter Content UCM where the index values, profiles and profile rules are

stored.

WebCenter Imaging Application (Profile)

ORACLE WebCenter Content: Imaging Logged in as BROCKER

Invoices: Application Summary

General Properties

- Application Id: 25
- Application Name: Invoices
- Description:
- Repository: mtawcctst005
- Full-Text Option: None

Field Definitions

Type	Name	Length	Scale	Required	Indexed	Default Value
Abc	CLASSIFICATION	80			✓	
Abc	SCANARCHIVEID	80				
Abc	SCANBATCHID	80				
Abc	SCANDOCUMENTID	80				
	SCANDATE				✓	
Abc	STATUS	80				
Abc	ORGANIZATION	80				METROPOLITAN.
Abc	PROCESSINGGROUP	80			✓	
Abc	TRANSACTIONID	80			✓	
Abc	ATTACHED	80				
Abc	SUPPLIERNUMBER	80			✓	
Abc	SUPPLIERNAME	80				
Abc	SUPPLIERSITENU..	80			✓	
Abc	SUPPLIERSITENAME	80				

WebCenter Content Index Fields are automatically created by the Imaging Application.

Configuration Manager

Information Fields | Application Fields | Tables | Views | Relations | Profiles

Field Info Up Down

Name	Type	Enabled	Searchable	Order	Component
Comments	Memo	Yes	Yes	1	
ExternalDataSet	Long Text	No	No	5	
IdcProfile	Text	Yes	Yes	6	
IPM_APP_1_0	Long Text	Yes	Yes	50200	
IPM_APP_1_1	Long Text	Yes	Yes	50210	
IPM_APP_1_10	Long Text	Yes	Yes	50300	
IPM_APP_1_11	Long Text	Yes	Yes	50310	
IPM_APP_1_12	Long Text	Yes	Yes	50320	
IPM_APP_1_13	Long Text	Yes	Yes	50330	
IPM_APP_1_14	Long Text	Yes	Yes	50340	
IPM_APP_1_15	Decimal	Yes	No	50350	
IPM_APP_1_16	Integer	Yes	No	50360	
IPM_APP_1_17	Date	Yes	No	50370	
IPM_APP_1_18	Long Text	Yes	Yes	50380	
IPM_APP_1_19	Integer	Yes	No	50381	
IPM_APP_1_2	Long Text	Yes	Yes	50220	
IPM_APP_1_20	Long Text	Yes	Yes	50382	
IPM_APP_1_21	Decimal	Yes	No	50383	
IPM_APP_1_22	Decimal	Yes	No	50384	
IPM_APP_1_23	Long Text	Yes	Yes	50385	
IPM_APP_1_24	Long Text	Yes	Yes	50386	

Add... Edit Delete Edit values...

The Data Conversion Process

This section outlines the steps taken to convert data on a daily basis.

1. Select the documents that needed to be synchronized to WebCenter from E-Business Suite AP_Invoices. An example select statement is “Select document_id, PK1_value from fnd_attached_documents where entity_name = AP_INVOICES and document_id not in Content Server ebs_docid” After converting a document, store the ebs document id in the Content Server to prevent it from being converted again.
2. Create a temporary table called ast_ebs_doc_actuals to store the document ids of the documents being converted.
3. Retrieve the header information from the ap_invoices_all table using PK1_value retrieved earlier. An example select statement is “select invoice_number, invoice_date, invoice_amount, vendor_id, from ap_invoices_all where transaction id = PK1_Value”. These values are also written to the temporary table
4. Retrieve the supplier name from the ap_suppliers table and then write the supplier name to the temporary table.
5. Select all the documents being converted, along with the document index fields and path to the document stored in E-Business Suite, and call the update API in Content Server passing the proper field information for each document.
6. Upon successful completion of writing the document to the Content Server, call an update in the fnd_attachment system in E-Business Suite and change the URL to the WebCenter URL
7. Finally, mark the document as completed in the temporary table and save the data for a period of time as an audit trail.

This process eliminated the need to have an end user re-key any information into an upload form and only provided accurate, validated metadata to ensure the index values in the Content Server were complete.

AUTOMATICALLY ATTACH DOCUMENTS RECEIVED VIA OTHER METHODS

The E-Business Suite adaptor for WebCenter Imaging has a web service that calls the E-Business Suite procedure to create attachments. In WebCenter Imaging the procedure is called after

an AP transaction has been created in E-Business Suite. Once the AP transaction is created in E-Business Suite the attachment creation process inserts the proper information into E-Business Suite to associate the WebCenter URL with the transaction.

LA Metro required documents received days or weeks after the invoice to automatically be added to the system and be related to the existing invoice transaction. Other documents, including scanned, emailed or faxed items went to the Oracle Document Capture (ODC) index station to be indexed. As long as the new document had enough information to identify the E-Business Suite Attachment primary key, it could be sent through the existing integration process to be created as an attachment.

In ODC, two database lookups were created to assist in assigning the proper index values to the incoming documents. One database lookup was keyed off of the vendor name; allowing the user to index the vendor number and site. The other database lookup was keyed off of the invoice number and allowed the user to select the proper invoice number and voucher number for the supplier.

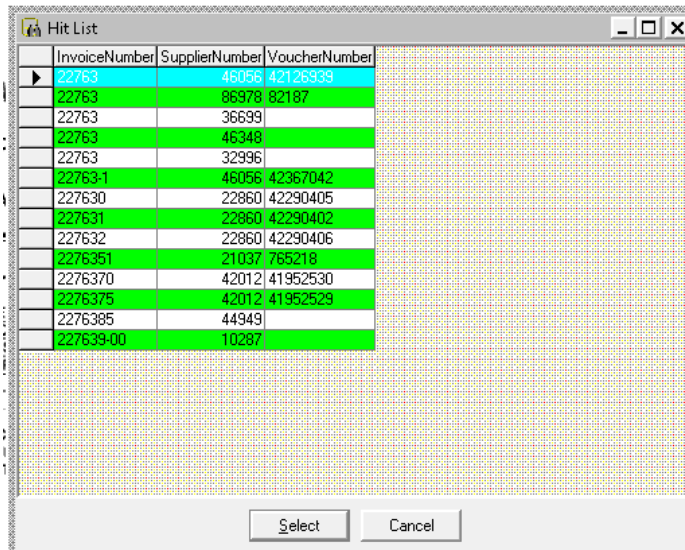
Example Document Capture Database Lookup

The screenshot shows the Oracle Document Capture interface. On the left, there are input fields for 'InvoiceNumber' (containing 22763), 'SupplierNumber', and 'VoucherNumber'. The main window displays a scanned invoice from L.A. Watts Times, Inc. The invoice includes a 'RECEIVED' stamp dated 2010 JAN 14 P 3:12. The invoice number is 22763. The customer is METRC- ACCOUNTS PAYABLE. The invoice details include a table with the following data:

Qty	Description	Unit Price	TOTAL
4	2 COL X 10 INCHES RUN DATE: 1/14, 1/21, 4/1, 4/8/10 IN THE WORKS	\$601.92	\$ 2,407.68

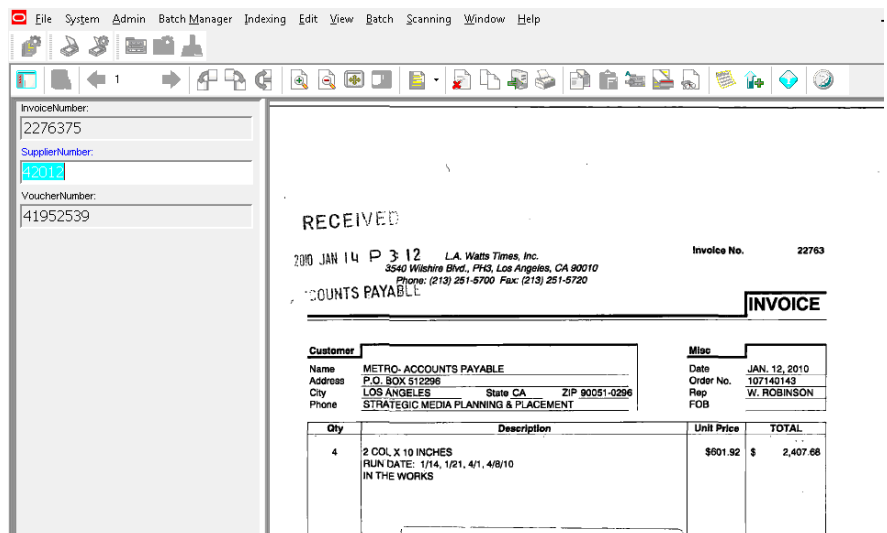
At the bottom of the invoice, there is a barcode with the number 42126939.

Example: Document Capture Lookup Hit List



InvoiceNumber	SupplierNumber	VoucherNumber
22763	46056	42126939
22763	86978	82187
22763	36699	
22763	46348	
22763	32996	
22763-1	46056	42367042
227630	22860	42290405
227631	22860	42290402
227632	22860	42290406
2276351	21037	765218
2276370	42012	41952530
2276375	42012	41952529
2276385	44949	
227639-00	10287	

Example: Document Indexed through a Database Lookup



File System Admin Batch Manager Indexing Edit View Batch Scanning Window Help

InvoiceNumber: 2276375
SupplierNumber: 42012
VoucherNumber: 41952539

RECEIVED
200 JAN 14 P 3 12 L.A. Watts Times, Inc.
3340 Wilshire Blvd., PK3, Los Angeles, CA 90010
Phone: (213) 251-5700 Fax: (213) 251-5720 Invoice No. 22763

ACCOUNTS PAYABLE INVOICE

Customer	Misc
Name: METRO- ACCOUNTS PAYABLE	Date: JAN. 12, 2010
Address: P.O. BOX 512296	Order No. 107140143
City: LOS ANGELES State CA ZIP 90051-0296	Rep: W. ROBINSON
Phone: STRATEGIC MEDIA PLANNING & PLACEMENT	FOB:

Qty	Description	Unit Price	TOTAL
4	2 COL X 10 INCHES RUN DATE: 1/14, 1/21, 4/1, 4/8/10 IN THE WORKS	\$601.92	\$ 2,407.68

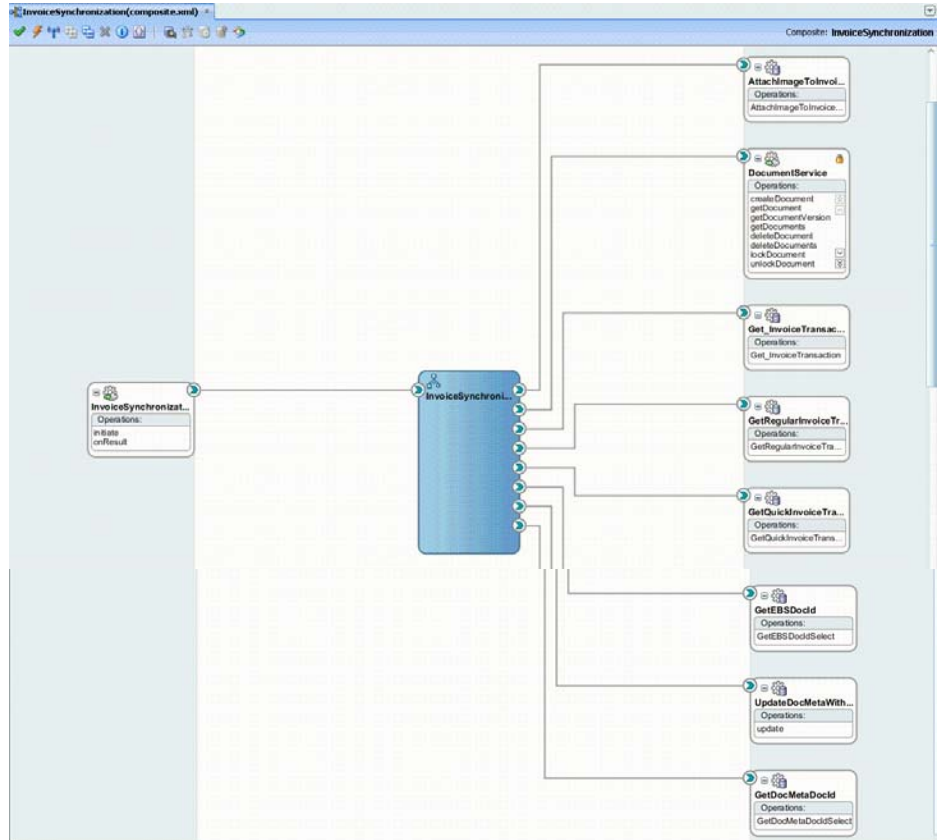
Once the information was indexed the document could be processed through the system and any subsequent attachments added automatically.

ADD DOCUMENT AND RECORDS MANAGEMENT FUNCTIONALITY

Once the documents are stored in the Oracle Content Server, all the standard features of Content Server can be used.

- **Document Management** – Check-in, check-out and versioning.

#2 – MODIFICATIONS IN JDEVELOPER TO THE ADAPTOR INVOICE SYNCHRONIZATION COMPOSITE



Summary

summary.

Please add



Shake Off the E-Business Suite Attachment Blues –
Automatically Convert EBS Attachments into WebCenter
April 4, 2014

AST Corporation
1755 Park Street, Suite 100
Naperville, Illinois 60563

Phone: 888-278-0002
Fax: 630-778-1179
www.astcorporation.com

Copyright © 2014 AST Corporation

AST Corporation is a privately held company founded in 1995 to serve commercial and public sector organizations in utilizing the full potential of their investment in Oracle Applications and Technologies. We have built our practice by providing top quality full life cycle and turn-key consulting services for Oracle Applications implementation and upgrade projects, among other specific services.

Our mission is to insure that you, as a valued client, receive the highest level of expertise and personalized service for your Enterprise Applications. We endeavor to help you realize the full benefit from your investment in software applications and integrate them seamlessly to your business processes.