

Invoice / PREQ / CM Technical Document

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Purpose

OLE has a very robust financial module thanks to its KFS roots. It can handle invoices to process vendor billing. The invoice document can handle multiple Purchase Orders (POs) in a single transaction as long as the POs are from a single Vendor. It also handles credit memos from vendors. A Payment Request document is auto generated after every successful Invoice document.

This document discusses the various technical aspects of the Invoice documents. It also discusses aspects relevant to the Credit Memo and Payment Request documents.

Dependencies (db tables)

Tables used in Invoices

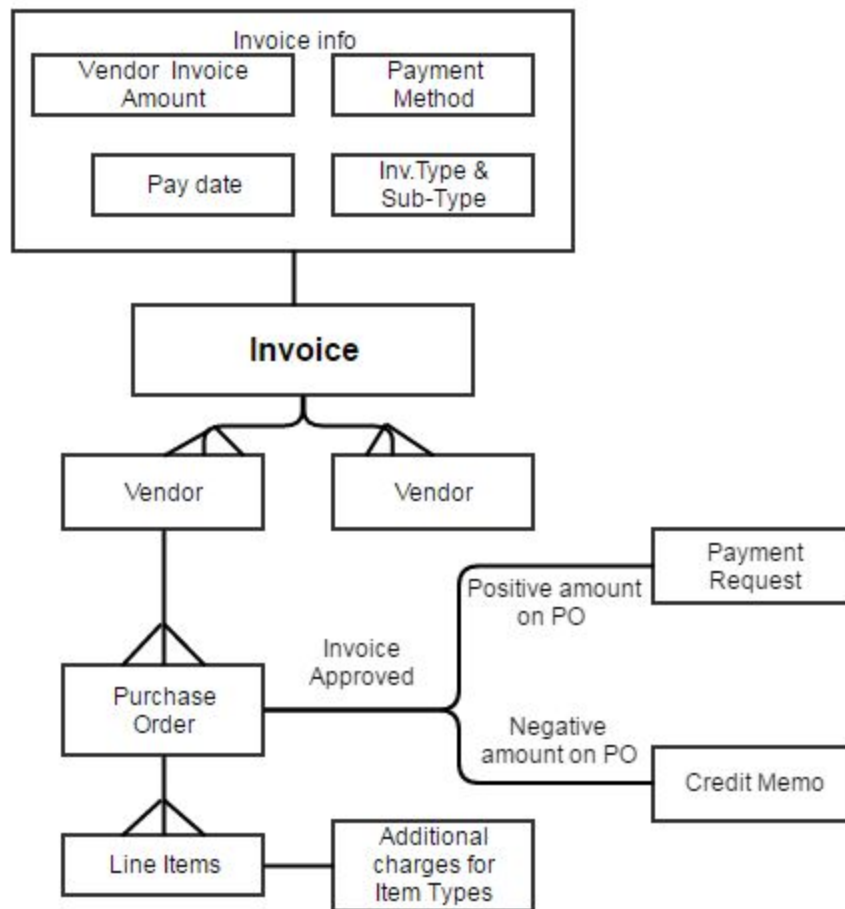
OLE_AP_INV_T	Invoice
OLE_AP_INV_ITM_NTE_T	Invoice Item Notes
OLE_INV_TYP_T	Invoice Types
OLE_INV_SUB_TYP_T	Invoice Subtypes
AP_CRDT_MEMO_T	Credit Memo Document
AP_PMT_RQST_T	Payment Request Document
AP_SUM_ACCT_T	Accounts Payable Summary Account

Tables where Invoice effects a change

OLE_AP_INV_ACCT_T	Invoice Account
OLE_AP_INV_PO_ITM_T	Invoice Item
OLE_AP_INV_ACCT_CHG_T	Invoice Account Revision
OLE_AP_INV_SUM_ACCT_T	Invoice Accounts Payable Summary Account
AP_CRDT_MEMO_ACCT_T	Credit Memo Account
AP_CRDT_MEMO_ITM_T	Credit Memo Item
AP_CRDT_MEMO_ACCT_CHG_T	Credit Memo Account Revision
AP_PMT_RQST_ACCT_T	Payment Request Account
AP_PMT_RQST_ITM_T	Payment Request Item

AP_PMT_RQST_ACCT_CHG_T	Payment Request Account Revision
OLE_INV_ING_DET_T	Invoice Ingest Load Report
OLE_PMT_MTHD_T	Payment Method
FP_DV_DOC_T	Disbursement Voucher document
OLE_PAID_COPY_T	Paid Copy

Logical Data Model (Class Structure)



Invoice documents allow the user to record invoices received from vendors raised against delivered / to be delivered merchandise. Thus an invoice document can be created prior to or post the receiving document. When a paid for item is returned or when there are other instances (discount, etc.) when the vendor pays back to the customer, a Credit Memo is sent. OLE has provisions to record such credit memos received from Vendors too.

There are different ways in which the invoice documents are created in OLE. In general, manual process of creating the Invoice document is through the Select/Acquire menu. Multiple invoice documents can also be created and processed through batch jobs by uploading relevant vendor delivered EDI files. The Vendor Information such as Vendor number, Address, Postal Code, etc along with the stub notes(data to be passed along to whatever system the library uses to print checks) and payment terms information are captured. The invoice related information such as vendor invoice number, invoice date, type, payment method, vendor invoice amount are also captured.

The Invoice document also retrieves Item information from the Purchase Order documents where all the information about the titles that needs to be paid are available. On selecting the required purchase order the process titles for that order can be automatically attached. Details on the individual titles such as the subscription date, no.of copies, invoice price, discounts, etc are displayed. Additional charges pertaining to that items can also be added. Freight, Shipping and Handling, Minimum Order, and Miscellaneous or Overhead are the available additional charges headers. The charges can also be prorated based on price, quantity, manual or without proration.

The total of all invoice amounts on line items must equal the value entered into Vendor Invoice Amount otherwise a negative amount for a PO will generate a Credit Memo instead of a Payment Request. The Fiscal officer approves the invoice document which generates the Payment Requests for relieving encumbrances as appropriate.

The Vendor Credit Memo(CM) for vendor refunds can be processed against any one of the following,

- Payment Request
- Purchase Order
- Vendor ID

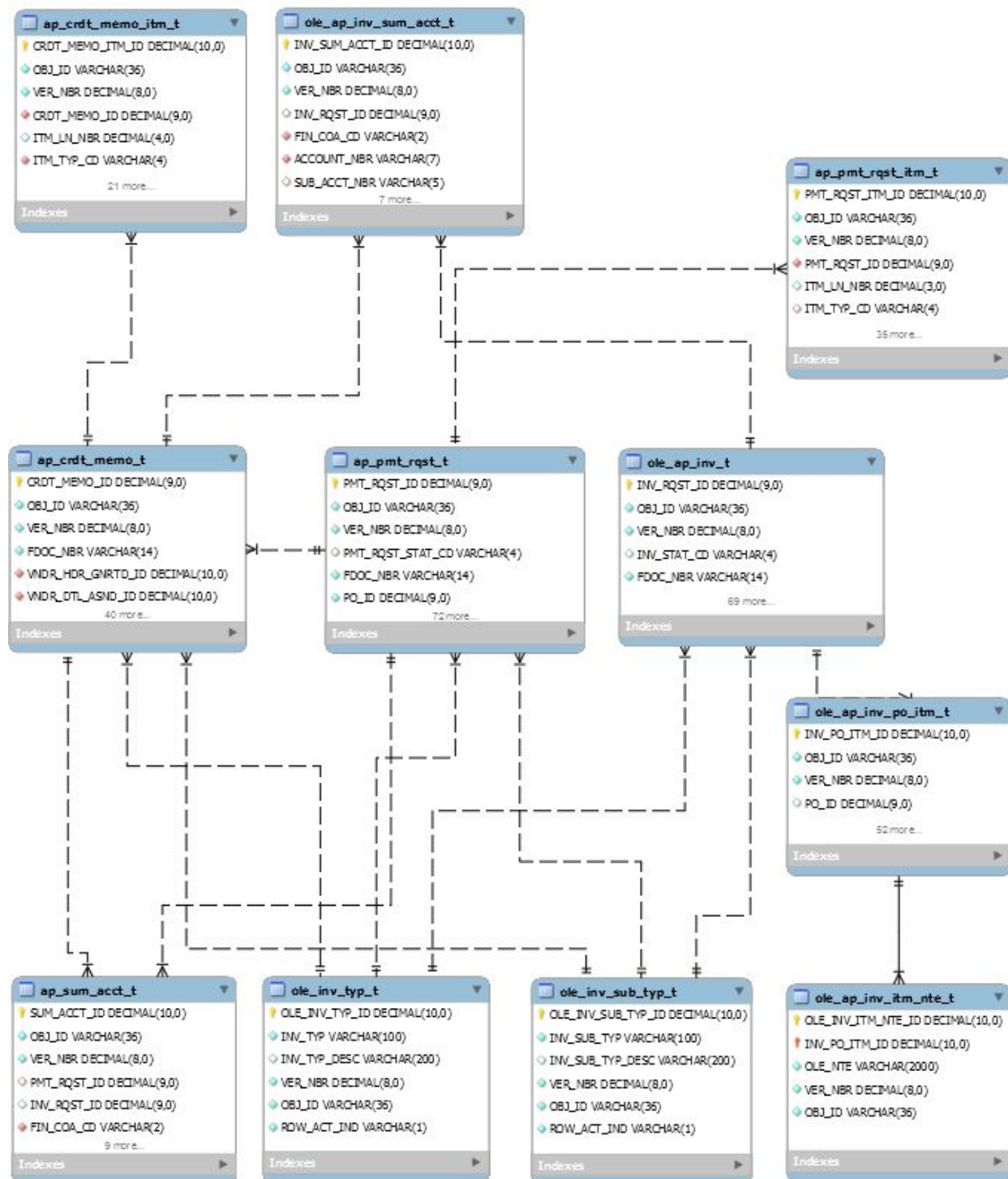
The Payment Request either can be automated through the invoice process or manually through the Payment Request Initiation with the same process carried out in the invoice document.

Physical Data Model (Database Schema)

All the invoice documents information is maintained in the invoice table (*ole_ap_inv_t*).The invoice type and subtype are captured by the (*ole_inv_typ_t*) and (*ole_inv_sub_typ_t*) for the different types of invoices such as Prepay, Pro Forma, Regular, etc.

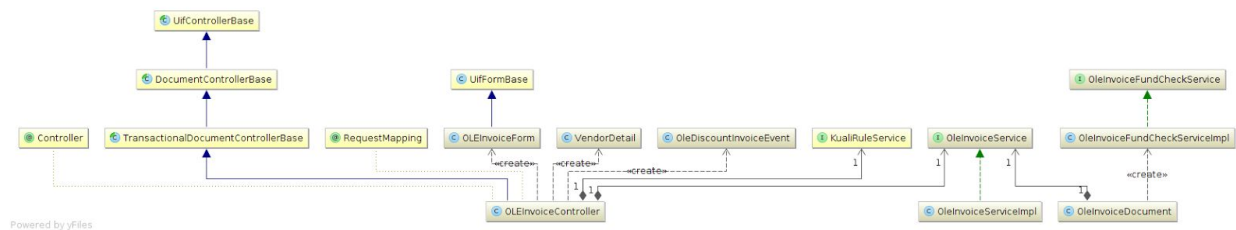
For the Positive amount of invoices, Payment request is initiated for which information such as vendor details, payment request date, payment terms, invoice information, invoice approval date, PO ID, etc are captured under the (*ap_pmt_rqst_t*). All the item list pertaining to the Payment request information is maintained under the (*ap_pmt_rqst_itm_t*)

Once the credit memo has been generated for all the negative amount of invoices all the information such as the vendor information, credit memo amount, credit memo invoice type, payment request id ,etc are all captured under the (*ap_crdt_memo_t*) that is extended by the credit memo line items table(*ap_crdt_memo_itm_t*) where all the items information for which the credit memo is generated is maintained.



The summary of the Invoice Accounts Payable Summary is maintained under the (*ole_ap_inv_sum_acct_t*) where the accounts information for invoice is maintained. The entire Accounts payable summary including the payment request, invoice, credit memo are all captured under the (*ap_sum_acct_t*).

Service Interface Design (Java)



The class *OLEInvoiceController* extends *TransactionalDocumentControllerBase* and it overrides the necessary methods. The *OLEInvoiceDocument* class is the business object and the *OLEInvoiceForm* class retrieves data from the UI for processing. The *VendorDetail* class takes care of all the related vendor detail in the Invoice. The *OLEDiscountInvoiceEvent* class takes care of calculation of discounts.

Similarly for the Credit memo the class *VendorCreditMemoDocumentPresentationController* extends *PurchasingAccountsPayableDocumentPresentationController* and for the Payment request the class *PaymentRequestDocumentPresentationController* extends *PurchasingAccountsPayableDocumentPresentationController*.

Maintenance Documents are primarily used for creating and maintaining data elements. The methods *addPolItems* and *addPOAccountingLine* from the *OLEInvoiceController* are used for adding the necessary items and additional charges to the invoices. Also the method *validateInvoiceAmount* is used for validating the invoice amount with the vendor amount.

For more information, Javadocs can be found here.

Service Interface Design (SOAP)

Not Available

User Interface Design

The Invoice document uses KRAD's UIF (User Interface Framework). A very good guide on this can be found here. The Spring Beans XML used in the case of Invoice, Credit Memo and Payment Request is given by the *OLEInvoiceDocument.xml*,

OleVendorCreditMemoDocument.xml and *PaymentRequestDocument.xml* under the data dictionary folder, respectively.

Data Importing

Not Applicable

Data Exporting

OLE uses a RDBMS backend and hence any data can be exported using simple SQL queries. Currently there is no direct way in which Patrons can be exported directly from OLE.

Workflow

Invoice document doesn't have any workflow defined by default. However, if needed, it can be defined at *OleOptionalModulesParentDocuments.xml* file.

System Parameters

Namespace Code	Parameter Name	Description
OLE-PURAP	ADDITIONAL_CHARGES_ITEM_TYPES	Allowed Item Type code(s) for below the line items on Invoice documents.
OLE-PURAP	ADDITIONAL_CHARGES_ITEM_TYPES	Allowed Item Type code(s) for below the line items on Payment Request documents.
OLE-PURAP	ADDITIONAL_CHARGES_ITEM_TYPES	Allowed Item Type code(s) for below the line items on Credit Memo documents.
OLE-PURAP	ALLOW_BACKPOST_DAYS	The number of days after fiscal year-end that a Payment Request is allowed to post to the previous fiscal year if the PO was created in the previous fiscal year.
OLE-PURAP	CANCEL_NOTE	Note generated when a Payment Request document is cancelled during pre disbursement processing
OLE-PURAP	CANCEL_NOTE	Note generated when a Credit Memo document is cancelled during pre disbursement processing

OLE-PURAP	DEFAULT_POS_APRVL_LMT	Default amount above which positive payment request approval is required.
OLE-PURAP	INITIAL_COLLAPSE_SECTIONS	Allows these sections to be collapsed when Opening the Payment Request Document
OLE-PURAP	INITIAL_COLLAPSE_SECTIONS	Allows these sections to be collapsed when Opening the Vendor Credit Memo Document
OLE-PURAP	INVALID_OBJECT_LEVELS_BY_OBJECT_TYPE	Restricted object levels by object type for use on a Credit Memo document. Format of list is object type 1=object level 1, object level 2;object type 2=object level 3,object level 4,object level 5.
OLE-PURAP	ITEM_TYPES_ALLOWING_NEGATIVE	Item type code(s) that allow for negative amounts on below the line items in the Payment Request document.
OLE-PURAP	ITEM_TYPES_ALLOWING_POSITIVE	Item type code(s) that allow for positive amounts on below the line items in the Payment Request document.
OLE-PURAP	ITEM_TYPES_ALLOWING_POSITIVE	Item type code(s) that allow for positive amounts on below the line items in the Credit Memo Document created from a Payment Request.
OLE-PURAP	ITEM_TYPES_ALLOWING_ZERO	Item type code(s) that allow for zero amounts on below the line items in the Payment Request document.
OLE-PURAP	ITEM_TYPES_ALLOWING_ZERO	Item type code(s) that allow for zero amounts on below the line items in the Credit Memo Document created from a Payment Request.
OLE-PURAP	ITEM_TYPES_REQUIRING_USER_ENTERED_DESCRIPTION	Item type code(s) that require the description field to be completed on below the line items in the Payment Request document.
OLE-PURAP	ITEM_TYPES_REQUIRING_USER_ENTERED_DESCRIPTION	Item type code(s) that require the description field to be completed on below the line items in the Credit Memo

		Document created from a Payment Request.
OLE-PURAP	OBJECT_CONSOLIDATIONS	Object Consolidation(s) restricted from use on a PaymentRequest document.
OLE-PURAP	OBJECT_CONSOLIDATIONS	Object Consolidation(s) restricted from use on a Credit Memo document.
OLE-PURAP	OBJECT_LEVELS	Object Level(s) restricted from use on a PaymentRequest document.
OLE-PURAP	OBJECT_LEVELS	Object Level(s) restricted from use on a Credit Memo document.
OLE-PURAP	OBJECT_SUB_TYPES	Object Sub-Type(s) restricted from use on a PaymentRequest document.
OLE-PURAP	OBJECT_SUB_TYPES	Object Sub-Type(s) restricted from use on a Credit Memo document.
OLE-PURAP	OBJECT_TYPES	Object Type(s) restricted from use on a PaymentRequest document.
OLE-PURAP	OBJECT_TYPES	Allowed object type code(s) for use on a Credit Memo document.
OLE-PURAP	OVERRIDE_DOCUMENT_TITLE_IND	Indicator related default document titles. Set to "N" if accepting the Kual default document title, related to Payment Request, as listed in the Document Search results.
OLE-PURAP	OVERRIDE_DOCUMENT_TITLE_IND	Indicator related default document titles. Set to "N" if accepting the Kual default document title, related to Credit Memo, as listed in the Document Search results.
OLE-PURAP	REQUIRE_ATTACHMENT_IND	Indicates whether or not an attachment is required on a Payment Request to route for fiscal approval.
OLE-PURAP	REQUIRE_ATTACHMENT_IND	Indicates whether or not an attachment is required in order for a Credit Memo to route for fiscal approval.
OLE-PURAP	RESET_NOTE	Note generated when a Payment Request document is reset during pre disbursement processing

OLE-PURAP	RESET_NOTE	Note generated when a Credit Memo document is reset during pre disbursement processing
OLE-PURAP	VALID_OBJECT_LEVELS_BY_OBJECT_TYPE	Allowed object levels by object type for use on a PaymentRequest document. Format of list is object type 1=object level 1, object level 2;object type 2=object level 3,object level 4,object level 5.
OLE-PURAP	VALID_OBJECT_LEVELS_BY_OBJECT_TYPE	Allowed object levels by object type for use on a Credit Memo document. Format of list is object type 1=object level 1, object level 2;object type 2=object level 3,object level 4,object level 5.
OLE-PURAP	ALLOW_BACKPOST_DAYS	The number of days after fiscal year-end that an Invoice is allowed to post to the previous fiscal year if the PO was created in the previous fiscal year.
OLE-PURAP	CANCEL_NOTE	Note generated when a Payment Request document is cancelled during pre disbursement processing
OLE-PURAP	COLLAPSE_SECTIONS_ON_PO_ADD	Allows these sections to be collapsed while adding the PurchaseOrder Documents in the Invoice Document
OLE-PURAP	DEFAULT_POS_APRVL_LMT	Default amount above which positive payment request approval is required.
OLE-PURAP	INITIAL_COLLAPSE_SECTIONS	Allows these sections to be collapsed when Opening the Invoice Document
OLE-PURAP	ITEM_TYPES_ALLOWING_NEGATIVE	Item type code(s) that allow for negative amounts on below the line items in the Invoice document.
OLE-PURAP	ITEM_TYPES_ALLOWING_POSITIVE	Item type code(s) that allow for positive amounts on below the line items in the Invoice document.
OLE-PURAP	ITEM_TYPES_ALLOWING_ZERO	Item type code(s) that allow for zero amounts on below the line items in the Invoice document.

OLE-PURAP	ITEM_TYPES_REQUIRING_USER_ENTERED_DESCRIPTION	Item type code(s) that require the description field to be completed on below the line items in the Invoice document.
OLE-PURAP	OBJECT_CONSOLIDATIONS	Object Consolidation(s) restricted from use on an Invoice document.
OLE-PURAP	OBJECT_LEVELS	Object Level(s) restricted from use on an Invoice document.
OLE-PURAP	OBJECT_SUB_TYPES	Object Sub-Type(s) restricted from use on an Invoice document.
OLE-PURAP	OBJECT_TYPES	Object Type(s) restricted from use on an Invoice document.
OLE-PURAP	OVERRIDE_DOCUMENT_TITLE_IND	Indicator related default document titles. Set to "N" if accepting the Kualiti default document title, related to Invoice, as listed in the Document Search results
OLE-PURAP	REQUIRE_ATTACHMENT_IND	Indicates whether or not an attachment is required on an Invoice to route for fiscal approval.
OLE-PURAP	VALID_OBJECT_LEVELS_BY_OBJECT_TYPE	Allowed object levels by object type for use on an Invoice document. Format of list is object type 1=object level 1, object level 2;object type 2=object level 3,object level 4,object level 5.
OLE-PURAP	RESET_NOTE	Note generated when an Invoice document is reset during pre disbursement processing
OLE-PURAP	ADDITIONAL_CHARGES_ITEM_TYPES	Allowed Item Type code(s) for below the line items on Payment Request documents.
OLE-PURAP	ADDITIONAL_CHARGES_ITEM_TYPES	Allowed Item Type code(s) for below the line items on Credit Memo documents.
OLE-SELECT	INV_DESC	This parameter is for populating invoice document description, the value within the braces are pre-defined functions which returns a value based on the input value
OLE-SELECT	INVOICE_IMPORT_INV_DESC	This parameter is for populating invoice document description, the value within the

		braces are pre-defined functions which returns a value based on the input value
OLE-SELECT	INVOICE_ITEM_LIMIT	This is for configuring default limit to display in invoice item section

Roles, Permissions and Responsibilities

Permissions and Responsibilities are linked to roles which are in turn linked to Users to give them access to screens and functions.

Permission ID	Permission Name
OLE356	Initiate Document CM
OLE394	Initiate Document PRQS
OLE10015	Create Vendor
OLE80517	Initiate Document(Invoice)
OLE10053	Modify PREQ Account Accounting Lines
OLE10127	Modify PRQS Account Accounting Lines
OLE293	Use Transactional Document CM requestVendorCreditMemoHold
OLE294	Use Transactional Document CM vendorCreditMemoHoldRemoval
OLE367	OLE-PURAP – Purchasing/Accounts Payable
OLE368	Edit Document CM F
OLE395	Add Note / Attachment PRQS Invoice Image
OLE396	View Note / Attachment PRQS Invoice Image
OLE398	Use Transactional Document PRQS requestInvoiceCancel
OLE399	Use Transactional Document PRQS InvoiceHoldCancelRemoval
OLE400	Use Transactional Document PRQS requestInvoiceHold
OLE10050	Edit ENROUTE Payment Request Document
OLE10051	Edit PROCESSED Payment Request Document

OLE10052	Edit FINAL Payment Request Document
OLE10054	Cancel Payment Request
OLE97	Initiate Document PREQ
OLE325	Add Note / Attachment CM Credit Memo Image
OLE326	View Note / Attachment CM Credit Memo Image
OLE258	Add Note / Attachment PREQ Invoice Image
OLE260	View Note / Attachment PREQ Invoice Image

Role Id	Role Name	Permissions
OLE10020	OLE-Invoicing	OLE10044, OLE10045, OLE10047, OLE97, OLE10050, OLE10051, OLE10052, OLE10053, OLE10054, OLE10011, OLE10014, OLE10057, OLE10015, OLE10017, OLE10042, OLE10043, OLE325, OLE326, OLE356, OLE293, OLE294, OLE367, OLE368, OLE10124, OLE10125, OLE10126, OLE10127, OLE128, OLE10129, OLE394
OLE10021	OLE-Payment	OLE10053, OLE10054, OLE10056, OLE80157, OLE80162, OLE80161, OLE367, OLE368, OLE356, OLE10127, OLE10128
OLE41	Fiscal Officer	OLE10060, OLE10061, OLE10062, OLE10110, OLE10111, OLE10071, OLE190, OLE191, OLE198, OLE199, OLE212
OLE86	Payment Request Hold / Cancel Initiator	OLE399, OLE277, OLE294