

SUPPLIER INTEGRATION SPECIFICATION

eSettlements cXML Invoice INTEGRATIONS



cXML Invoices and Credit Memos

The University of Michigan is using PeopleSoft version 9.2 eSettlements and eSupplier modules and has the ability to process cXML Invoices and credit memos for Purchase Orders (POs) and Non-PO orders.

The University of Michigan can support standard cXML invoices and credit memo messages.

In order to setup cXML Invoices with the University of Michigan a supplier must work with Procurement Services and Michigan Administrative Information Services to setup and configure the integration specifications listed in this document and the eSettlements Enablement Functional Specification document.

Both the supplier and the University of Michigan, at their own expense, are responsible for providing and maintaining their own equipment, software, services and necessary testing to effectively and reliably meet the system requirements.

The supplier and the University of Michigan must review mailboxes and other electronic receptacles of data and information, maintain logs and files and send control confirmations and other notifications at times, with a frequency and under circumstances as each may determine necessary to document communications, detect errors or respond to reasonably anticipated inquiries or information needs regarding the system. The supplier must timely bring to the university's attention any discrepancy or problem with the electronic communications.

Electronic communications between the supplier and University of Michigan through this system are as valid and enforceable as if exchanged through authenticated paper documents.

Once configured, a supplier can submit invoices as often as they like and are not limited to monthly invoice files. Invoice files can be posted during the hours of 6 am to Midnight, M-F, 6 am to 11 pm on Saturday. Support for posting or connection issues are available during normal University of Michigan business hours of 8 am to 5 pm ET.

The University of Michigan provides suppliers with login credentials during the integration set up and configuration process. Suppliers receive login credentials for an administrator role and will be able to create additional role-based users. There are three roles that supplier administrators can assign supplier users.

| USER TYPE | FUNCTION | FUNCTIONAL ROLE |
|------------------------|--|--|
| SUPPLIER cXML USER | <ul style="list-style-type: none"> •System ID user to post cXML invoice messages | This user ID will only have access to post cXML invoice messages and must only be used by the supplier to post invoice messages. |
| SUPPLIER ADMINISTRATOR | <ul style="list-style-type: none"> •Agreements •Create additional Users •Supplier Dashboard •Review Invoices and Payments •Review PO's •Add, Update, Inactivate Addresses & Contacts | This user will be responsible for creating and managing supplier user. |
| SUPPLIER USER | <ul style="list-style-type: none"> •Receives Invoice Status Report email •Supplier Dashboard •Review Invoices and Payments •Review PO's •Review Addresses & Contacts | This user will be responsible for invoice status reports and correcting errors. |

| USER TYPE | FUNCTION | FUNCTIONAL ROLE |
|------------------|--|---|
| SUPPLIER AR USER | <ul style="list-style-type: none"> •User who will receive remittance advice e-mail •Review Invoices and Payments •Review PO's •Review Addresses & Contacts | The accounts receivable user normally has the responsibility of reconciling customer payments within the supplier's accounts receivable system. |

The eSettlements application is configured to prevent payment for duplicate invoices. The application will not allow duplicate invoice numbers to be used based on invoice id provided by supplier (combination of invoice ID and supplier ID).

URL for accessing web portal

The supplier has access to the University of Michigan Supplier Portal via the following URL:
<http://procurement.umich.edu/supplier-resources/supplier-portal/electronic-settlements>.

URLs for posting the invoices and credit memos

The supplier posts invoice and credit memo cXML messages to the following URLs:

| | |
|----------------|---|
| Test URL | https://finqa92ib.dsc.umich.edu/PSIGW/HttpListeningConnector?From=M_FN_ESETTLE&Operation=M_PR_EM_LOAD_INV.v1&OperationType=sync |
| Production URL | https://finprodib.dsc.umich.edu/PSIGW/HttpListeningConnector?From=M_FN_ESETTLE&Operation=M_PR_EM_LOAD_INV.v1&OperationType=sync |

Suppliers need to have the following basic parameter setup on http header in their HTTP post tool when use above URL.

Content-type: text/xml; charset=UTF8

The University of Michigan will only process cXML messages posted to the URL with the correct Deployment Mode in the cXML message under the Invoice Header section. The URL the invoice or credit memo is posted to along with the Deployment Mode will dictate whether it will be processed in "test" or "production".

Suppliers will be required to pass the following Credentials in the cXML Message Header:

FromIdentity - This will be the University of Michigan supplier ID number and will be provided by the University of Michigan.

SendIdentity – This will be a user id provided to the supplier by the University of Michigan.

SenderSharedSecret - This will be a password provided to the supplier by the University of Michigan.

Upon posting a message to these URLs the supplier will receive a Response Messages with one of the following response codes:

| Return Code | Status | Meaning | Response Message |
|-------------|--------|------------------------------------|--|
| 200 | OK | Success. Invoice has been accepted | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="200" text="Success">Acknowledged</Status></Response></cXML> |

| Return Code | Status | Meaning | Response Message |
|-------------|---|--|--|
| 400 | Edit Error (for all types of invoices) | cXML Invoicing has been processed before and cannot post again | <?xml version="1.0"?> <cXML payloadID="IDT-6400032" timestamp="2009-10-14T00:00:00"><Response><Status code="400" text="Message had errors : This cXML Invoicing has been processed before and cannot post again.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | payloadID is missing | <?xml version="1.0"?><cXML payloadID="" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : payloadID is missing from cXML">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | timestamp is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp=""><Response><Status code="400" text="Message had errors : timestamp is missing from cXML.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | Supplier ID is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : supplier id is missing from cXML: Header.From.Identity.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | Invoice ID is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : invoice id is missing from cXML: InvoiceDetailRequestHeader.invoiceID.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | Invoice Date is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : invoice date is missing from cXML: InvoiceDetailRequestHeader.invoiceDate.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | PO ID or Short Code is either missing or invalid | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : PO ID or Short Code is either missing or invalid from cXML: InvoiceDetailOrder.InvoiceDetailOrderInfo.OrderReference.OrderID.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | PO Line number on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : PO Line number on invoice line 2 is missing from cXML: InvoiceDetailItemReference.lineNumber.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | PO Line number on invoice line # is zero | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : PO Line number on invoice line 2 cannot be zero from cXML: InvoiceDetailItemReference.lineNumber.">>Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Quantity on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Quantity on invoice line 2 is missing from cXML: InvoiceDetailItem.quantity.">>Acknowledged</Status></Response></cXML> |

| Return Code | Status | Meaning | Response Message |
|-------------|---|---|--|
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Unit of Measure on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Unit of Measure on invoice line 2 is missing from cXML: InvoiceDetailItem.UnitOfMeasure.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Unit Price on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Unit Price on invoice line 2 is missing from cXML: InvoiceDetailItem.UnitPrice.Money.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Item Description on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Item Description on invoice line 2 is missing from cXML: InvoiceDetailItemReference.Description.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Supplier Item Id on invoice line # is missing | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Supplier Item Id on invoice line 2 is missing from cXML: InvoiceDetailItemReference.ItemID.SupplierPartID.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Agreement hasn't been accepted between the buyer and the supplier | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Supplier id 0000000040 on cXML: Header.From.Identity doesn't have an accepted eSettlement agreement.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | Supplier ID hasn't been registered | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : Supplier id 0000000048 on cXML: Header.From.Identity hasn't been registered as an eSettlement supplier.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for PO invoice and Non-PO invoice, not include Credit Memo) | DeploymentMode doesn't match URL | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : DeploymentMode=production does not match the Test URL. ">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | User id on SenderIdentity is not associated with supplier id in UofM System | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="400" text="Message had errors : User id on SenderIdentity is not associated with supplier id in Mpathways. ">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for all types of invoices) | Invoice Date should be in correct format | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2009-12-21T01:00:00"><Response><Status code="400" text="Message had errors : Invoice Date should be in format YYYY-MM-DD or YYYY-MM-DDThh:mm:ss-hh:mm on cXML: InvoiceDetailRequestHeader.invoiceDate.">Acknowledged</Status></Response></cXML> |

| Return Code | Status | Meaning | Response Message |
|-------------|--|---|---|
| 400 | Edit Error (for all types of invoices) | Invoice Date outside of University's defined accounting period | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2014-10-06T13:33:18-05:00"><Response><Status code="400" text="Message had errors : The invoice date is outside the University's defined accounting period from 2008-01-01 to 2019-09-30">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for header level credit memo invoices) | Gross Amount should be populated as a negative amount | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2009-12-21T01:00:00"><Response><Status code="400" text="Message had errors : Gross Amount should be populated as a negative amount for the Header level Credit Memo Invoice from cXML: InvoiceDetailRequest.InvoiceDetailSummary.GrossAmount.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for header level credit memo invoices) | SubtotalAmount should be populated as a negative amount | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2009-12-21T01:00:00"><Response><Status code="400" text="Message had errors : SubtotalAmount should be populated as a negative amount for the Header level Credit Memo Invoice from cXML: InvoiceDetailRequest.InvoiceDetailSummary.SubtotalAmount.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for header level credit memo invoices) | Gross Amount should equal to the sum of subtotal, special handling charges and shipping charges | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2009-12-21T01:00:00"><Response><Status code="400" text="Message had errors : Gross Amount should equal to the sum of subtotal, special handling charges and shipping charges for the Header level Credit Memo Invoice from cXML: InvoiceDetailRequest.InvoiceDetailSummary.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for header level credit memo invoices) | Sum of Subtotal Amount for all the invoice lines on InvoiceDetailOrderSummary should equal to the Subtotal Amount on InvoiceDetailSummary | <?xml version="1.0"?><cXML payloadID="CRM0018720@2009-12-21T01:00:00" timestamp="2009-12-21T01:00:00"><Response><Status code="400" text="Message had errors : Sum of Subtotal Amount for all the invoice lines on InvoiceDetailOrderSummary should equal to the Subtotal Amount on InvoiceDetailSummary from cXML: InvoiceDetailHeaderOrder.InvoiceDetailOrderSummary.">Acknowledged</Status></Response></cXML> |
| 400 | Edit Error (for header level credit memo invoices) | Line level credit memo with invalid purpose=creditMemo | <cXML payloadID="CRM0018722@2009-12-12T00:00:00" timestamp="2009-12-12T00:00:00"><Response><Status code="400" text="Message had errors: PO ID or Short Code is either missing or invalid from cXML:InvoiceDetailHeaderOrder.InvoiceDetailOrderInfo.OrderReference.OrderID.">Acknowledged</Status></Response></cXML> |
| 401 | Unauthorized | Authorization Error - UserID/Password incorrect | <?xml version="1.0"?><cXML payloadID="2008-07-09T00:00:00@127.0.1.1" timestamp="2008-07-09T00:00:00"><Response><Status code="401" text="Message had errors : Credentials provided in the cXML (the Sender element) were not recognized by the server.">Acknowledged</Status></Response></cXML> |

After an invoice or invoices message has been posted, a daily scheduled University "mini" batch process will perform invoice load and validation. Once this batch process is completed, suppliers will get an email listing all

errors and information about cXML messages that were successfully posted. If there is an error with any one line within an invoice, the entire invoice will be rejected.

The invoice validation process will run at 4:00am, 12:30pm and 6:00pm Monday – Friday and at 12:30pm and 6:00pm on Saturday. The validation process will pick up and process all invoices successfully uploaded since the last validation. Upon completion of each validation process an invoice status report email will be sent to users with the SUPPLIER USER role.

For additional information on error messages please see Section Four below: Error Handling.

If multiple messages are submitted during the same day they are processed in order of date time stamp of when the message was received.

cXML Invoice Types

The University of Michigan only supports invoices with charges at the line level. The lines from the invoice will be matched to the lines from the original PO using the LINE_NBR and QTY_VCHR attribute.

The University of Michigan supports credit memos with charges at the line level or in total as a Header Level credit memo. For line level credit memos, the credit memo will be matched to the lines from the original PO using the “Order Line Number” and “Quantity Invoiced” fields. Credit memos applied against a PO or ShortCode order at the “header” will need to be submitted as a Credit Memo Header Level Invoice.

The University of Michigan is not able to accept an electronic invoice that references multiple original POs.

At the start of the integration process the supplier must provide the University of Michigan with a list of all Unit of Measure values that may be passed by the supplier in a cXML message. The University of Michigan will only be able to accept established Unit of Measures. If the supplier needs to add a new Unit of Measure, they need to contact the University before submitting it on a cXML message.

Invoices

Invoice charges have to be at the line level. All sections below are required sections of the cXML message and are applicable to line level invoices.

If you paste together sections 1.1, 1.2, 1.3, and 1.4 you will have a sample line level PO Invoice cXML message.

1 PO Invoices

PO Invoice charges have to be at the line level. The table and sample cXML message listed below is the layout that must be followed when submitting PO invoices via a cXML message. All required fields/tags must be populated and in the correct format. In addition to the required fields/tags, there are optional fields/tags that suppliers may submit in the cXML message.

Shipping/Freight & Misc/Handling - must be submitted in the Invoice Detail Summary section of the cXML message (see section 1.4 below).

If a line for an invoice is invalid, the University of Michigan will reject all lines for that invoice.

The Unit Price cannot be a negative value/amount.

1.1 cXML Message Header

Suppliers will be required to pass the following Credentials in the cXML Message Header:

- FromIdentity - This will be the University of Michigan supplier ID number and will be provided by the University of Michigan.
- SendIdentity – This will be a user id provided to the supplier by the University of Michigan.
- SenderSharedSecret - This will be a password provided to the supplier by the University of Michigan.

| Variable / Tag Name | Description | Format | cXML PO Invoice | PO Tag | U-M System Field |
|---|--|---|-----------------|-------------------------------|-------------------------|
| DOCTYPE | The DTD for cXML invoices is "InvoiceDetail.dtd". This is different from the DTD used for cXML purchase orders | N/A | Required | N/A | N/A |
| <Header> <From> | Populate Credential domain with "DUNS" and the <Identity> with the University of Michigan unique supplier number that is issued to all suppliers | Format is 10 character numeric-ONLY (ex. 0000000001) | Required | N/A | Supplier ID |
| <Header> <To> <Credential domain="DUNS"> <Identity>XXXXXX</Identity> </Credential> </To> | Name of the person who placed the order | Format is 30 characters alpha numeric uppercase-Only (ex. JOHN DOE) | Optional | <Extrinsic name="UniqueName"> | Requestor |
| <Header> <Sender> <Credential domain="DUNS"> <Identity>XXXXXXXX</Identity> | SendIdentity - This will be a user id provided to the supplier by the University of Michigan. | N/A | Required | N/A | USER ID |
| Sender> <Credential domain="DUNS"> <SharedSecret>XXXXXX</SharedSecret> ><Header> <Sender> | SenderSharedSecret - This will be a password provided to the supplier by the University of Michigan. | N/A | Required | N/A | SharedSecret / Password |

*** cXML HEADER ***

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE cXML SYSTEM "http://xml.cXML.org/schemas/cXML/1.2.009/InvoiceDetail.dtd">
<cXML timestamp="2008-07-09T00:00:00" payloadID="2008-07-09T00:00:00@127.0.1.1">
```

```

<Header>
  <From>
    <Credential domain="DUNS">
      <Identity>0000000024</Identity>
    </Credential>
    <Credential domain="pgrd_gr">
      <Identity>0000189054</Identity>
    </Credential>
    <Credential domain="internalsupplierid">
      <Identity>0000189054</Identity>
    </Credential>
  </From>
  <To>
    <Credential domain="DUNS">
      <Identity>dajdejji</Identity>
    </Credential>
  </To>
  <Sender>
    <Credential domain="DUNS">
      <Identity>jilliedke</Identity>
      <SharedSecret>abracadabrada</SharedSecret>
    </Credential>
    <UserAgent>IDTDNA Ariba Service</UserAgent>
  </Sender>
</Header>

```

1.2 Invoice Header

| Variable / Tag Name | Description | Format | cXMLPO Invoice | PO Tag | U-M System Field |
|--|--|---|----------------|-------------------------------|--------------------------------|
| <Request deploymentMode="test"> | The type of Invoice being sent. The University of Michigan will only process cXML messages posted to the correct URL and the matching Deployment Mode in the cXML message. | Format is character "test" or "production" | Required | N/A | Supplier ID |
| <InvoiceDetailRequestHeader purpose="standard" operation="new" invoiceID= invoiceDate= | Standard cXML invoice information, purpose, operation, invoice ID (Invoice number assigned by supplier), and Invoice Date | Format is 30 character alpha numeric mixed case (ex. UM123456789) | Required | N/A | Invoice ID Invoice Date |
| <InvoiceDetailShipping> <Contact role="shipTo" addressID="1000815"> | Ship To | University of Michigan ShipTo code (ex. 1000815) | Optional | <Shipto> addressID="1008096"> | Ship To ID |

| | | | | | |
|--|-------------------|---|-----------------|---|---------------------|
| <pre><InvoiceDetailShipping> <Name xml:lang="EN">U OF M - ANN ARBOR</Name></pre> | <p>Deliver To</p> | <p>University of Michigan Attention To 30 Chars</p> | <p>Optional</p> | <pre><PostalAddress name="default"> <DeliverTo> U OF M - ANN ARBOR </DeliverTo></pre> | <p>Attention To</p> |
|--|-------------------|---|-----------------|---|---------------------|

*** INVOICE HEADER ***

```
<Request deploymentMode="test">
  <InvoiceDetailRequest>
    <InvoiceDetailRequestHeader purpose="standard" operation="new" invoiceID="8000006-PO-10072008"
invoiceDate="2008-07-09T00:00:00">
      <InvoiceDetailHeaderIndicator />
      <InvoiceDetailLineIndicator />
      <InvoicePartner>
        <Contact role="remitTo" addressID="1">
          <Name xml:lang="en">Integrated DNA Technologies Inc</Name>
          <PostalAddress>
            <Street>P.O. Box 201548</Street>
            <City>Dallas</City>
            <State>TX</State>
            <PostalCode>75320-1548</PostalCode>
            <Country isoCountryCode="US"> US </Country>
          </PostalAddress>
        </Contact>
      </InvoicePartner>
      <InvoiceDetailShipping>
        <Contact role="shipTo" addressID="1000815">
          <Name xml:lang="EN">U OF M - ANN ARBOR</Name>
          <PostalAddress>
            <Street></Street>
            <City>ANN ARBOR</City>
            <State>MI</State>
            <PostalCode>48109</PostalCode>
            <Country isoCountryCode="USA" />
          </PostalAddress>
        </Contact>
        <Contact role="shipFrom">
          <Name xml:lang="EN">AAA MIKRO</Name>
        </Contact>
      </InvoiceDetailShipping>
    </InvoiceDetailRequestHeader>
```

1.3 Invoice Detail Order / Invoice Lines

| Variable / Tag Name | Description | Format | cXML PO Invoice | PO Tag | U-M System Field |
|--|--|--|-----------------|-------------------------------------|-------------------|
| <OrderReference orderID> | Purchase order number received from the University of Michigan | Format is 10 character numeric-ONLY (ex. 3000000001) | Required | <orderID> | Purchase Order ID |
| <InvoiceDetailItemReference lineNumber="1"> | Purchased order line number | Numeric value of 5 digits (ex. 00001) | Required | <lineNumber> | Order Line Number |
| <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID> | Supplier item number | Format is 50 character alphanumeric mixed case (ex. 123456789A) | Required | <SupplierPartID> | Supplier Item ID |
| InvoiceDetailItem quantity="1" | Quantity invoiced by supplier | Numeric value of 15,4 (ex. 9999999999999999.9999) | Required | <ItemOut quantity> | Quantity Invoiced |
| <UnitPrice> <Money currency="USD">200</Money> </UnitPrice> | Unit price of item | Numeric value of 15,5 (ex. 9999999999999999.99999) | Required | <Unit Price> <Money currency="USD"> | Unit Price |
| <UnitOfMeasure> | Unit of Measure (UOM) - all UOMs must be pre-established with the University of Michigan. If service or good provided does not have a UOM use EA | Format is MAX 3 characters uppercase ONLY (ex. EA) | Required | <UnitOfMeasure> | Unit of Measure |
| <Description xml:lang="en">ITEM-1</Description> | Item Description | Format is 30 character alpha numeric mixed case (ex. 1720 1-BLK TONER CTG) | Required | <Description> | Line Description |
| <SerialNumber>45993876</SerialNumber> | Serial Number | Format is 25 characters alpha numeric mixed case (ex. 277MSF1a) | Optional | N/A | Serial Number |
| <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName> | Manufacturer Name | Format is 30 characters alpha numeric uppercase-ONLY (ex. DELL) | Optional | N/A | Manufacturer Name |
| <ManufacturerPartID>Part#12394303</ManufacturerPartID> | Model Number | Format is 30 character alpha numeric mixed case (ex. WST3400b) | Optional | N/A | Model Number |

| Variable / Tag Name | Description | Format | cXML PO Invoice | PO Tag | U-M System Field |
|---|--|--|-----------------|-----------------------------------|-------------------------------|
| <Extrinsic name="DeptRefNum">10808</Extrinsic> | University of Michigan Department Reference Number | Format is 30 characters alpha numeric mixed case (ex. TA04082008A) | Optional | <Extrinsic name="DeptRefNum">> | Departmental Reference Number |
| <Extrinsic name="CategoryCD">76111501</Extrinsic> | UNSPSC | Format is 8 characters numeric-ONLY (ex. 10101505) | Optional | <Classification domain="UNSPSC">> | Category/ UNSPSC |
| </OrderReference> <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo> | Supplier Order Number | Format is 20 characters alpha numeric mixed case (ex. A123456789b) | Optional | N/A | Supplier Order Number |

*** INVOICE DETAIL ORDER ***

```

<InvoiceDetailOrder>
  <InvoiceDetailOrderInfo>
    <OrderReference orderID="3000671968">
      <DocumentReference payloadID="" />
    </OrderReference>
    <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo>
  </InvoiceDetailOrderInfo>
  <InvoiceDetailItem invoiceLineNumber="1" quantity="1">
    <UnitOfMeasure>EA</UnitOfMeasure>
    <UnitPrice>
      <Money currency="USD">200</Money>
    </UnitPrice>
    <InvoiceDetailItemReference lineNumber="1">
      <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID>
      <Description xml:lang="en">ITEM-1</Description>
      <SerialNumber>45993876</SerialNumber>
      <ManufacturerPartID>Part#12394303</ManufacturerPartID>
      <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName>
    </InvoiceDetailItemReference>
    <Extrinsic name="DeptRefNum">10808</Extrinsic>
    <Extrinsic name="CategoryCD">76111501</Extrinsic>
  </InvoiceDetailItem>
  <InvoiceDetailItem invoiceLineNumber="2" quantity="1">
    <UnitOfMeasure>EA</UnitOfMeasure>
    <UnitPrice>
      <Money currency="USD">300</Money>
    </UnitPrice>
    <InvoiceDetailItemReference lineNumber="2">
      <ItemID><SupplierPartID>JXZ-ITM2</SupplierPartID></ItemID>
      <Description xml:lang="en">ITEM-2</Description>
      <SerialNumber>45993877</SerialNumber>
    </InvoiceDetailItemReference>
  </InvoiceDetailItem>
</InvoiceDetailOrder>

```

```

    <ManufacturerPartID>Part#12394304</ManufacturerPartID>
    <ManufacturerName xml:lang="en">ABC Warehouse II</ManufacturerName>
  </InvoiceDetailItemReference>
  <Extrinsic name="DeptRefNum">10808</Extrinsic>
  <Extrinsic name="CategoryCD">76111501</Extrinsic>
</InvoiceDetailItem>
</InvoiceDetailOrder>

```

1.4 Invoice Order Summary / Shipping & Handling

| Variable / Tag Name | Description | Format | cXMLPO Invoice | PO Tag | UofM System Field |
|---|---|---|----------------|--------|-------------------|
| <SubtotalAmount> | The University of Michigan will ignore the subtotal and will calculate the subtotal by multiplying Quantity x Unit Price and adding the sum of the lines. | N/A | Optional | N/A | N/A |
| ShippingAmount <Money Currency="USD">20</Money> </ShippingAmount> | Shipping or Freight charges - A freight ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999 9999999999 9999.99) | Optional | N/A | Shipping Charges |
| <SpecialHandlingAmount> <Money currency="USD">30</Money> </SpecialHandlingAmount> | Misc or Handling charges - A handling ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999 9999999999 9999.99) | Optional | N/A | Handling Charges |

*** INVOICE ORDER SUMMARY ***

```

<InvoiceDetailSummary>
  <SubtotalAmount>
    <Money currency="USD">500</Money>
  </SubtotalAmount>
  <ShippingAmount>
    <Money currency="USD">20</Money>
  </ShippingAmount>
  <SpecialHandlingAmount>
    <Money currency="USD">30</Money>
  </SpecialHandlingAmount>

```

```

<GrossAmount>
  <Money currency="USD">550</Money>
</GrossAmount>
<NetAmount>
  <Money currency="USD">550</Money>
</NetAmount>
</InvoiceDetailSummary>
</InvoiceDetailRequest>
</Request>
</cXML>

```

2 Non-PO ShortCode Invoice

Non-PO ShortCode Invoice charges have to be at the line level. The table and sample cXML message listed below is the layout that must be followed when submitting Non-PO ShortCode invoices via a cXML message. All required fields/tags must be populated and in the correct format. In addition to the required fields/tags, there are optional fields/tags that suppliers may submit in the cXML message.

Shipping/Freight & Misc/Handling - must be submitted in the Invoice Detail Summary section of the cXML message (see section 2.3 below).

If a line for an invoice is invalid, the University of Michigan will reject all lines for that invoice.

The Unit Price cannot be a negative value/amount.

The cXML specifications require that the Non-PO Invoice messages have a ShortCode number in the <OrderReference orderID> field/tag.

If you paste together sections 1.1 (message header from above), 2.1, 2.2, and 2.3 you will have a sample line level Non-PO ShortCode Invoice cXML message.

Note: The cXML format for a Non-PO ShortCode invoice is the same as the cXML format for PO Invoice. The only difference is a ShortCode in the <OrderReference OrderID>field/tag instead of a PO ID.

2.1 Non-PO ShortCode Invoice Header

| Variable / Tag Name | Description | Format | cXML Non-PO Invoice | U-M System Field |
|---|--|--|---------------------|----------------------------|
| <Request deploymentMode="test"> | The type of Invoice being sent. The University of Michigan will only process cXML messages posted to the correct URL and the matching Deployment Mode in the cXML message. | Format is character "test" or "production" | Required | Supplier ID |
| <InvoiceDetailRequestHeader purpose="standard"> | Standard cXML invoice information, purpose, operation, invoice ID | Format is 30 character alpha numeric mixed | Required | Invoice ID Invoice Date |

| Variable / Tag Name | Description | Format | cXML Non-PO Invoice | U-M System Field |
|--|---|--|---------------------|------------------|
| operation="new" invoiceID= invoiceDate= | (Invoice number assigned by supplier), and Invoice Date | case (ex. UM123456789) | | |
| <InvoiceDetailShipping> <Contact role="shipTo" addressID="1000815"> | Ship To | University of Michigan ShipTo code (ex. 1000815) | Optional | Ship To ID |
| <InvoiceDetailShipping> <Name xml:lang="EN">U OF M - ANN ARBOR</Name> | Deliver To | University of Michigan Attention To 30 Chars | Optional | Attention To |

*** INVOICE HEADER ***

```

<Request deploymentMode="test">
  <InvoiceDetailRequest>
    <InvoiceDetailRequestHeader purpose="standard" operation="new" invoiceID="8000006-PO-10072008"
invoiceDate="2008-07-09T00:00:00">
      <InvoiceDetailHeaderIndicator />
      <InvoiceDetailLineIndicator />
      <InvoicePartner>
        <Contact role="remitTo" addressID="1">
          <Name xml:lang="en">Integrated DNA Technologies Inc</Name>
          <PostalAddress>
            <Street>P.O. Box 201548</Street>
            <City>Dallas</City>
            <State>TX</State>
            <PostalCode>75320-1548</PostalCode>
            <Country isoCountryCode="US"> US </Country>
          </PostalAddress>
        </Contact>
      </InvoicePartner>
      <InvoiceDetailShipping>
        <Contact role="shipTo" addressID="1000815">
          <Name xml:lang="EN">U OF M - ANN ARBOR</Name>
          <PostalAddress>
            <Street></Street>
            <City>ANN ARBOR</City>
            <State>MI</State>
            <PostalCode>48109</PostalCode>
            <Country isoCountryCode="USA" />
          </PostalAddress>
        </Contact>
        <Contact role="shipFrom">
          <Name xml:lang="EN">AAA MIKRO</Name>
        </Contact>
      </InvoiceDetailShipping>
    </InvoiceDetailRequestHeader>
  </InvoiceDetailRequest>
</Request>

```



```

</InvoiceDetailShipping>
</InvoiceDetailRequestHeader>

```

2.2 Non-PO ShortCode Invoice Detail Order / Invoice Lines

| Variable / Tag Name | Description | Format | cXML Non-PO Invoice | U-M System Field |
|--|--|--|---------------------|-------------------------------|
| <OrderReference orderID> | ShortCode number received from the University of Michigan | Format is 6 character numeric-ONLY (ex. 945562) | Required | ShortCode |
| <InvoiceDetailItemReference lineNumber="1"> | Purchased order line number | Numeric value of 5 digits (ex. 00001) | Required | Order Line Number |
| <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID> | Supplier item number | Format is 50 character alphanumeric mixed case (ex. 123456789A) | Required | Supplier Item ID |
| InvoiceDetailItem quantity="1" | Quantity invoiced by supplier | Numeric value of 15,4 (ex. 99999999999999.9999) | Required | Quantity Invoiced |
| <UnitPrice> <Money currency="USD">200</Money> </UnitPrice> | Unit price of item | Numeric value of 15,5 (ex. 99999999999999.9999) | Required | Unit Price |
| <UnitOfMeasure> | Unit of Measure (UOM) - all UOMs must be pre-established with the University of Michigan. If service or good provided does not have a UOM use EA | Format is MAX 3 characters uppercase ONLY (ex. EA) | Required | Unit of Measure |
| <Description xml:lang="en">ITEM-1</Description> | Item Description | Format is 30 character alpha numeric mixed case (ex. 1720 1-BLK TONER CTG) | Required | Line Description |
| <SerialNumber>45993876</SerialNumber> | Serial Number | Format is 25 characters alpha numeric mixed case (ex. 277MSF1a) | Optional | Serial Number |
| <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName> | Manufacturer Name | Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell) | Optional | Manufacturer Name |
| <ManufacturerPartID>Part#12394303</ManufacturerPartID> | Model Number | Format is 30 character alpha numeric mixed case (ex. WST3400b) | Optional | Model Number |
| <Extrinsic name="DeptRefNum">10808</Extrinsic> | University of Michigan Department Reference Number | Format is 30 characters alpha numeric mixed case (ex. TA04082008A) | Optional | Departmental Reference Number |

| Variable / Tag Name | Description | Format | cXML Non-PO Invoice | U-M System Field |
|---|-----------------------|--|---|-----------------------|
| <Extrinsic name="CategoryCD">76111501</Extrinsic> | UNSPSC | Format is 8 characters numeric-ONLY (ex. 10101505) | Optional | Category/ UNSPSC |
| </OrderReference><SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo> | Supplier Order Number | Format is 20 characters alpha numeric mixed case (ex. A123456789b) | Optional | Supplier Order Number |
| <Extrinsic name="RequestorID">ABCDEFGH</Extrinsic> | Requestor Id | Format is requestor's valid UNIQUE NAME | This field may be required based on the supplier setup. | Requestor Id |

*** INVOICE DETAIL ORDER ***

```

<InvoiceDetailOrder>
  <InvoiceDetailOrderInfo>
    <OrderReference orderID="945562">
      <DocumentReference payloadID="" />
    </OrderReference>
    <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo>
  </InvoiceDetailOrderInfo>
  <InvoiceDetailItem invoiceLineNumber="1" quantity="1">
    <UnitOfMeasure>EA</UnitOfMeasure>
    <UnitPrice>
      <Money currency="USD">200</Money>
    </UnitPrice>
    <InvoiceDetailItemReference lineNumber="1">
      <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID>
      <Description xml:lang="en">ITEM-1</Description>
      <SerialNumber>45993876</SerialNumber>
      <ManufacturerPartID>Part#12394303</ManufacturerPartID>
      <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName>
    </InvoiceDetailItemReference>
    <Extrinsic name="DeptRefNum">10808</Extrinsic>
    <Extrinsic name="CategoryCD">76111501</Extrinsic>
  </InvoiceDetailItem>
  <InvoiceDetailItem invoiceLineNumber="2" quantity="1">
    <UnitOfMeasure>EA</UnitOfMeasure>
    <UnitPrice>
      <Money currency="USD">300</Money>
    </UnitPrice>
    <InvoiceDetailItemReference lineNumber="2">
      <ItemID><SupplierPartID>JXZ-ITM2</SupplierPartID></ItemID>
      <Description xml:lang="en">ITEM-2</Description>
      <SerialNumber>45993877</SerialNumber>
      <ManufacturerPartID>Part#12394304</ManufacturerPartID>
      <ManufacturerName xml:lang="en">ABC Warehouse II</ManufacturerName>
    </InvoiceDetailItemReference>
    <Extrinsic name="DeptRefNum">10808</Extrinsic>
    <Extrinsic name="CategoryCD">76111501</Extrinsic>
  </InvoiceDetailItem>
</InvoiceDetailOrder>

```

```

    <Extrinsic name="RequestorID" >ABCDEFGH</Extrinsic>
  </InvoiceDetailItem>
</InvoiceDetailOrder>

```

2.3 Non-PO ShortCode Invoice Order Summary / Shipping & Handling

| Variable / Tag Name | Description | Format | cXML Non-PO Invoice | U-M System Field |
|--|---|---|---------------------|------------------|
| <SubtotalAmount> | The University of Michigan will ignore the subtotal and will calculate the subtotal by multiplying Quantity x Unit Price and adding the sum of the lines. | N/A | Optional | N/A |
| ShippingAmount> <Money Currency="USD">20 </Money> </ShippingAmount> | Shipping or Freight charges - A freight ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999999999999999999999999) | Optional | Shipping Charges |
| <SpecialHandlingAmount> <Money currency="USD">30 </Money> </SpecialHandlingAmount> | Misc or Handling charges - A handling ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999999999999999999999999) | Optional | Handling Charges |

*** INVOICE ORDER SUMMARY ***

```

<InvoiceDetailSummary>
  <SubtotalAmount>
    <Money currency="USD">500</Money>
  </SubtotalAmount>
  <ShippingAmount>
    <Money currency="USD">20</Money>
  </ShippingAmount>
  <SpecialHandlingAmount>
    <Money currency="USD">30</Money>
  </SpecialHandlingAmount>
  <GrossAmount>
    <Money currency="USD">550</Money>
  </GrossAmount>
  <NetAmount>
    <Money currency="USD">550</Money>
  </NetAmount>
</InvoiceDetailSummary>
</InvoiceDetailRequest>
</Request>
</cXML>

```

3 Credit Memos

The University of Michigan supports credit memos with charges at the line level or in total. The table and sample cXML messages listed below is the layout that must be followed when submitting a Credit Memo via a cXML message. All required fields/tags must be populated and in the correct format. In addition to the required fields/tags, there are optional fields/tags that suppliers may submit in the cXML message.

Credit Memos are subject to the duplicate prevention. Duplicate invoice checking based on invoice id provided by supplier (combination of invoice id and supplier id). Thus suppliers must use a unique invoice number for credit memos and can't reference the original invoice directly in the "InvoiceID" field/Tag due to duplicate invoice checking.

For line level credit memos the credit memo will be matched to the lines from the original "Order Line Number" and "Quantity Invoiced" fields.

For general or order total credit memos the supplier must provide either a Purchase Order Number or ShortCode in the <OrderReference orderID> tag and submit the credit amount in the <InvoiceDetailSummary> section 3.4 below.

All credits must be submitted with a negative "Quantity Invoiced" and a positive "Unit Price".

If a line for a Credit Memo invoice is invalid, the University of Michigan will reject all lines for that Credit Memo invoice.

If the supplier is submitting a PO credit memo, the credit memo invoice must be submitted within 30 days of the original invoice.

Shipping/Freight & Misc/Handling - must be submitted in the Invoice Detail Summary section of the cXML message (see section 3.3 below).

Line Level Credit Memos

Note: The cXML format for line level CreditMemo format is same the cXML format for the PO/ShortCode Invoice. The only difference is that the quantity attribute on <InvoiceDetailItem> tag should be a negative quantity invoiced.

If you paste together sections 1.1 (message header from above), 3.1, 3.2 and 3.3 you will have a sample line level Credit Memo cXML message.

3.1 Credit Memo/Invoice Header

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | UofM System Field |
|--|--|---|------------------|--|----------------------------|
| <Request deploymentMode="test"> | The type of Invoice being sent. The University of Michigan will only process cXML messages posted to the correct URL and the matching Deployment Mode in the cXML message. | Format is character "test" or "production" | Required | N/A | Supplier ID |
| <InvoiceDetailRequestHeader purpose="standard" operation="new" invoiceID= invoiceDate= | Standard cXML invoice information, purpose, operation, invoice ID (Invoice number assigned by supplier), and Invoice Date | Format is 30 character alpha numeric mixed case (ex. UM123456789) | Required | N/A | Invoice ID Invoice Date |
| <InvoiceDetailShipping> <Contact role="shipTo" addressID="1000815"> | Ship To | University of Michigan ShipTo code (ex. 1000815) | Optional | <Shipto> addressID="1008096"> | Ship To ID |
| <InvoiceDetailShipping> <Name xml:lang="EN">U OF M - ANN ARBOR</Name> | Deliver To | University of Michigan Attention To 30 Chars | Optional | <PostalAddress name="default"> <DeliverTo> U OF M - ANN ARBOR </DeliverTo> | Attention To |

*** CREDIT MEMO/INVOICE HEADER ***

```

<Request deploymentMode="test">
  <InvoiceDetailRequest>
    <InvoiceDetailRequestHeader purpose="standard" operation="new" invoiceID="8000006-PO-10072008"
invoiceDate="2008-07-09T00:00:00">
      <InvoiceDetailHeaderIndicator />
      <InvoiceDetailLineIndicator />
      <InvoicePartner>
        <Contact role="remitTo" addressID="1">
          <Name xml:lang="en">Integrated DNA Technologies Inc</Name>
          <PostalAddress>
            <Street>P.O. Box 201548</Street>
            <City>Dallas</City>
            <State>TX</State>
            <PostalCode>75320-1548</PostalCode>
            <Country isoCountryCode="US"> US </Country>
          </PostalAddress>
        </Contact>
      </InvoicePartner>
      <InvoiceDetailShipping>
        <Contact role="shipTo" addressID="1000815">
          <Name xml:lang="EN">U OF M - ANN ARBOR</Name>

```

```

    <PostalAddress>
      <Street></Street>
      <City>ANN ARBOR</City>
      <State>MI</State>
      <PostalCode>48109</PostalCode>
      <Country isoCountryCode="USA" />
    </PostalAddress>
  </Contact>
  <Contact role="shipFrom">
    <Name xml:lang="EN">AAA MIKRO</Name>
  </Contact>
</InvoiceDetailShipping>
</InvoiceDetailRequestHeader>

```

3.2 Credit Memo/Invoice Detail Order (Header Level Credit Memo)

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|--|--|---|------------------|--|------------------------------|
| <OrderReference orderID> | Purchase order number or Short Code received from the University of Michigan | Format is 10 character for Purchase order or 6 character for Short Code numeric-ONLY (ex. 3000000001, 876325) | Required | <orderID> | Purchase Order ID/Short Code |
| <InvoiceDetailItemReference lineNumber="1"> | Purchased order line number | Numeric value of 5 digits (ex. 00001) | Required | <lineNumber> | Order Line Number |
| <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID> | Supplier item number | Format is 50 character alphanumeric mixed case (ex. 123456789A) | Required | <SupplierPartID> | Supplier Item ID |
| InvoiceDetailItem quantity="1" | Quantity invoiced by supplier | Numeric value of 15,4 (ex. 99999999999999999.9999) | Required | <ItemOut quantity> | Quantity Invoiced |
| <UnitPrice> <Money currency="USD">200</Money> </UnitPrice> | Unit price of item | Numeric value of 15,5 (ex. 99999999999999999.99999) | Required | <Unit Price> <Money currency="USD"> | Unit Price |
| <UnitOfMeasure> | Unit of Measure (UOM) - all UOMs must be pre-established with the University of Michigan. If service or good provided does not have a UOM use EA | Format is MAX 3 characters uppercase ONLY (ex. EA) | Required | <UnitOfMeasure> | Unit of Measure |
| <Description xml:lang="en">ITEM-1</Description> | Item Description | Format is 30 character alpha numeric mixed case (ex. 1720 1-BLK TONER CTG) | Required | <Description> | Line Description |

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|---|---|--|------------------|----------------------------------|-------------------------------|
| <SerialNumber>45993876</SerialNumber> | Serial Number | Format is 25 characters alpha numeric mixed case (ex. 277MSF1a) | Optional | N/A | Serial Number |
| <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName> | Manufacturer Name | Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell) | Optional | N/A | Manufacturer Name |
| <ManufacturerPartID>Part#12394303</ManufacturerPartID> | Model Number | Format is 30 character alpha numeric mixed case (ex. WST3400b) | Optional | N/A | Model Number |
| <Extrinsic name="DeptRefNum">10808</Extrinsic> | University of Michigan Department Reference Number | Format is 30 characters alpha numeric mixed case (ex. TA04082008A) | Optional | <Extrinsic name="DeptRefNum"> | Departmental Reference Number |
| <Extrinsic name="CategoryCD">76111501</Extrinsic> | UNSPSC | Format is 8 characters numeric-ONLY (ex. 10101505) | Optional | <Classification domain="UNSPSC"> | Category/UNSPSC |
| </OrderReference><SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo> | Supplier Order Number | Format is 20 characters alpha numeric mixed case (ex. A123456789b) | Optional | N/A | Supplier Order Number |
| <InvoiceDetailHeader Order><InvoiceDetailOrderSummary invoiceLineNumber="1"><SubtotalAmount><Money currency="USD">-500</Money></SubtotalAmount> | If SubtotalAmount is populated, the University of Michigan will calculate the sum of subtotal amount for all the invoice lines to check if it matches the Subtotal amount on <InvoiceDetailSummary> | Numeric value of 26,2 (ex. 99999999999999999999.99) | Optional | N/A | |

*** CREDIT MEMO/INVOICE DETAIL ORDER ***

```

<InvoiceDetailOrder>
  <InvoiceDetailOrderInfo>
    <OrderReference orderID="3000671968">
      <DocumentReference payloadID="" />
    </OrderReference>
    <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo>
  </InvoiceDetailOrderInfo>
  <InvoiceDetailItem invoiceLineNumber="1" quantity="-1">
    <UnitOfMeasure>EA</UnitOfMeasure>
    <UnitPrice>
      <Money currency="USD">200</Money>
    </UnitPrice>
  </InvoiceDetailItem>
</InvoiceDetailOrder>
    
```


| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|---|--|---|------------------|--------|------------------|
| </SpecialHandlingAmount> | | be a negative number | | | |
| <GrossAmount> <Money currency="USD">-500</Money> </GrossAmount> | The University of Michigan will check if gross amount matches the sum of subtotal, special handling charges and shipping charges on InvoiceDetailSummary | Numeric value of 26,2 (ex. 9999999999999999999999999) | Required | N/A | Gross Amount |

*** INVOICE ORDER SUMMARY ***

```
<InvoiceDetailSummary>
  <SubtotalAmount>
    <Money currency="USD">-500</Money>
  </SubtotalAmount>
  <ShippingAmount>
    <Money currency="USD">-20</Money>
  </ShippingAmount>
  <SpecialHandlingAmount>
    <Money currency="USD">-30</Money>
  </SpecialHandlingAmount>
<GrossAmount>
  <Money currency="USD">-550</Money>
</GrossAmount>
<NetAmount>
  <Money currency="USD">-550</Money>
</NetAmount>
</InvoiceDetailSummary>
</InvoiceDetailRequest>
</Request>
</cXML>
```

Header Level Credit Memos

Note: The cXML format for order total CreditMemo is different from line level Credit Memo.

The differences are:

- Specify purpose="creditMemo" on <InvoiceDetailRequestHeader> tag
- The cXML specification dictates that credit memos must be header invoices. Therefore for credit memos, isHeaderInvoice should be "yes" on < InvoiceDetailHeaderIndicator>.
- Use <InvoiceDetailHeaderOrder> tag. no <InvoiceDetailOrder> and <InvoiceDetailItem> for Header Invoice type
- GrossAmount on <InvoiceDetailSummary> is required as the order total amount for credit memo.

If you paste together sections 1.1 (message header from above), 3.4, 3.5 and 3.6 you will have a sample order total Header Level Credit Memo cXML message.

3.4 Credit Memo/Invoice Header (Header Level Credit Memo)

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|---|---|--|------------------|--|--------------------------------|
| <Request deploymentMode="test"> | The type of Invoice being sent. The University of Michigan will only process cXML messages posted to the correct URL and the matching Deployment Mode in the cXML message. | Format is character "test" or "production" | Required | N/A | Supplier ID |
| <InvoiceDetailRequestHeader purpose="creditMemo" operation="new" invoiceID= invoiceDate= <InvoiceDetailHeaderIndicator isHeaderInvoice="yes" /> | Credit Memo cXML invoice information, purpose, operation, invoice ID (Invoice number assigned by supplier), and Invoice Date Must also include that the message is a HeaderInvoice | Format is 30 character alpha numeric mixed case (ex. UM123456789) HeaderInvoice="yes" | Required | N/A | Invoice ID Invoice Date |
| <InvoiceDetailShipping> <Contact role="shipTo" addressID="1000815"> | Ship To | University of Michigan ShipTo code (ex. 1000815) | Optional | <Shipto> addressID="1008096"> | Ship To ID |
| <InvoiceDetailShipping> <Name xml:lang="EN">U OF M - ANN ARBOR</Name> | Deliver To | University of Michigan Attention To 30 Chars | Optional | <PostalAddress name="default"> <DeliverTo> U OF M - ANN ARBOR </DeliverTo> | Attention To |

*** CREDIT MEMO/INVOICE HEADER ***

```

<Request deploymentMode="test">
  <InvoiceDetailRequest>
    <InvoiceDetailRequestHeader purpose="creditMemo" operation="new" invoiceID="8000006-PO-10072008" invoiceDate="2008-07-09T00:00:00">
      <InvoiceDetailHeaderIndicator isHeaderInvoice="yes"/>
      <InvoiceDetailLineIndicator />
      <InvoicePartner>
        <Contact role="remitTo" addressID="1">
          <Name xml:lang="en">Integrated DNA Technologies Inc</Name>
          <PostalAddress>
            <Street>P.O. Box 201548</Street>
            <City>Dallas</City>
            <State>TX</State>
            <PostalCode>75320-1548</PostalCode>
            <Country isoCountryCode="US"> US </Country>
          </PostalAddress>
        </Contact>
      </InvoicePartner>
    </InvoiceDetailRequestHeader>
  </InvoiceDetailRequest>
</Request>
    
```

```

</InvoicePartner>
<InvoiceDetailShipping>
  <Contact role="shipTo" addressID="1000815">
    <Name xml:lang="EN">U OF M - ANN ARBOR</Name>
    <PostalAddress>
      <Street></Street>
      <City>ANN ARBOR</City>
      <State>MI</State>
      <PostalCode>48109</PostalCode>
      <Country isoCountryCode="USA" />
    </PostalAddress>
  </Contact>
</InvoiceDetailShipping>
</InvoiceDetailRequestHeader>
    
```

3.5 Credit Memo/Invoice Detail Header Order (Header Level Credit Memo)

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|---|--|---|------------------|--------------------|------------------------------|
| <InvoiceDetailHeader Order> <InvoiceDetailOrderInfo> <OrderReference orderID="3000671968"> | Purchase order number or Short Code received from the University of Michigan | Format is 10 character for Purchase order or 6 character for Short Code numeric-ONLY (ex. 3000000001, 876325) | Required | <orderID> | Purchase Order ID/Short Code |
| <InvoiceDetailItemReference lineNumber="0"> | Purchased order line number | Numeric value of 5 digits (ex. 00001) | Required | <lineNumber> | Order Line Number |
| <InvoiceDetailHeader Order> <InvoiceDetailOrderInfo> <SupplierOrderInfo orderID="D01234"> | Supplier Order Number | Format is 20 characters alpha numeric mixed case (ex. A123456789b) | Optional | N/A | Supplier Order Number |
| <InvoiceDetailHeader Order> <InvoiceDetailOrderSummary invoiceLineNumber="0"><SubtotalAmount <Money currency="USD">-500</Money></SubtotalAmount> | The University of Michigan will ignore the subtotal and will get the total amount of credit memo from the Gross Amount on <InvoiceDetailSummary> | N/A | Optional | N/A | |
| <ItemID><SupplierPartID>JXZ-ITM1</SupplierPartID></ItemID> | Supplier item number | Format is 50 character alphanumeric mixed case (ex. 123456789A) | Required | <SupplierPartID> | Supplier Item ID |
| InvoiceDetailItem quantity="1" | Quantity credited by supplier (must be negative value) | Numeric value of 15,4 (ex. 99999999999999999.9999) | Required | <ItemOut quantity> | Quantity Invoiced |

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|--|--|--|------------------|---|-------------------------------|
| <UnitPrice> <Money currency="USD">200 </Money> </UnitPrice> | Unit price of item | Numeric value of 15,5 (ex. 99999999999999999.99999) | Required | <Unit Price> <Money currency="USD"> | Unit Price |
| <UnitOfMeasure> | Unit of Measure (UOM) - all UOMs must be pre-established with the University of Michigan. If service or good provided does not have a UOM use EA | Format is MAX 3 characters uppercase ONLY (ex. EA) | Required | <UnitOfMeasure> | Unit of Measure |
| <Description xml:lang="en">ITEM-1</Description> | Item Description | Format is 30 character alpha numeric mixed case (ex. 1720 1-BLK TONER CTG) | Required | <Description> | Line Description |
| <SerialNumber>45993876</SerialNumber> | Serial Number | Format is 25 characters alpha numeric mixed case (ex. 277MSF1a) | Optional | N/A | Serial Number |
| <ManufacturerName xml:lang="en">ABC Warehouse</ManufacturerName> | Manufacturer Name | Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell) | Optional | N/A | Manufacturer Name |
| <ManufacturerPartID>Part#12394303</ManufacturerPartID> | Model Number | Format is 30 character alpha numeric mixed case (ex. WST3400b) | Optional | N/A | Model Number |
| <Extrinsic name="DeptRefNum">10808</Extrinsic> | University of Michigan Department Reference Number | Format is 30 characters alpha numeric mixed case (ex. TA04082008A) | Optional | <Extrinsic name="DeptRefNum"> | Departmental Reference Number |
| <Extrinsic name="CategoryCD">76111501</Extrinsic> | UNSPSC | Format is 8 characters alpha numeric-ONLY (ex. 10101505) | Optional | <Classification domain="UNSPSC"> | Category/UNSPSC |
| </OrderReference> <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo> | Supplier Order Number | Format is 20 characters alpha numeric mixed case (ex. A123456789b) | Optional | N/A | Supplier Order Number |

*** INVOICE DETAIL HEADER ORDER ***

```

<InvoiceDetailHeaderOrder>
  <InvoiceDetailOrderInfo>
    <OrderReference orderID="3000671968">
      <DocumentReference payloadID=""/>
    </OrderReference>
    <SupplierOrderInfo orderID="DO1234"></SupplierOrderInfo>
  </InvoiceDetailOrderInfo>
  <InvoiceDetailOrderSummary invoiceLineNumber="0">
    <SubtotalAmount>
      <Money currency="USD">-500</Money>
    </SubtotalAmount>
  </InvoiceDetailOrderSummary>
</InvoiceDetailHeaderOrder>
  
```

```

</InvoiceDetailOrderSummary>
</InvoiceDetailHeaderOrder>

```

3.6 Credit Memo/Invoice Order Summary (Header Level Credit Memo)

| Variable / Tag Name | Description | Format | cXML Credit Memo | PO Tag | U-M System Field |
|--|--|--|------------------|--------|------------------|
| <SubtotalAmount> | The University of Michigan will ignore the subtotal and will calculate the subtotal by multiplying Quantity x Unit Price and adding the sum of the lines. | N/A | Required | N/A | N/A |
| ShippingAmount> <Money Currency="USD">-20</Money> </ShippingAmount> | Shipping or Freight charges - A freight ONLY credit memo would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999999999999999999999999) | Optional | N/A | Shipping Charges |
| <SpecialHandlingAmount> <Money currency="USD">-30</Money> </SpecialHandlingAmount> | Misc or Handling charges - A handling ONLY credit memo would have an ORDER_LINE_NBR = 0 and a value in this field. | Numeric value of 26,2 (ex. 9999999999999999999999999999999) | Optional | N/A | Handling Charges |
| <GrossAmount><Money currency="USD">-500</Money></GrossAmount> | The University of Michigan will use gross amount for total amount for head level credit memo invoice. Gross Amount should be a negative amount. Gross amount is the sum of subtotal, special handling charges and shipping charges | Numeric value of 26,2 (ex. 99999999999999999999999999999999) | Required | N/A | Gross Amount |

*** INVOICE ORDER SUMMARY ***

```

<InvoiceDetailSummary>
  <SubtotalAmount>
    <Money currency="USD">-500</Money>
  </SubtotalAmount>
  <ShippingAmount>
    <Money currency="USD">-20</Money>
  </ShippingAmount>
  <SpecialHandlingAmount>
    <Money currency="USD">-30</Money>
  </SpecialHandlingAmount>
  <GrossAmount>
    <Money currency="USD">-550</Money>
  </GrossAmount>
  <DueAmount>
    <Money currency="USD">-550</Money>

```

```

    </DueAmount>
  </InvoiceDetailSummary>
</InvoiceDetailRequest>
</Request>
</cXML>

```

4 Error Handling

After an invoice message has been posted and the voucher build process has run, the suppliers will be sent email notifications for any invoices that had an error. As noted above if any invoice line fails the entire invoice will be rejected and suppliers will need to resubmit the corrected invoice for payment.

A list of error messages a supplier could receive can be found in the “Understanding eSettlements Invoices Status Report and Invoice Errors” how to document. This list includes actions to be taken in order to correct the error and a list of contact resources that can provide assistance in error correction.

5 eSupplier Portal Information

Suppliers will have the ability to log into the University of Michigan eSettlements and eSupplier applications via our Supplier Portal. Within this portal suppliers will have the ability to:

| |
|--|
| Review Invoices and Payments |
| Review Receivables Aging Balance |
| View reports in different Chart Styles |
| Inquire by Invoice, Invoice Status, and Payment Status |
| Custom sort results lists via 1st and 2nd sort drop down menus |
| View Invoice/Payment Details |

6 Payments

Suppliers will receive a remittance advice via e-mail indicating the Payment Reference Number, which is also the Check Number for those suppliers paid via Check. This email will list all the invoices/credit memos that were included in this payment. This email will be sent to the address established on the supplier eSettlements agreement. Suppliers will also be able to reconcile their payment information based on inquires provided via the Supplier Portal login.

Payment terms are established during the contracting stage and are not determined as part of the eSettlements enablement process.

If the supplier invoices are subject to a prompt payment discount, the University of Michigan will calculate and take this discount based on the contract terms. The discount taken will be reflected as a credit memo invoice on the remittance advice. The discount percentage and date will be reflected in the invoice id. (ie. Invoice id for the credit memo will display as ‘DISCOUNT TAKEN 2.5% 2008/05/30’. The date in this invoice id will represent the date for the invoices received that were subjected to this discount and the total discount amount will be included in the system remittance advice e-mail.

7 Sample cXML PO message

At the supplier’s request the University of Michigan can supply the supplier with a sample cXML PO message if the supplier has a catalog in our eProcurement application.