

# SUPPLIER INTEGRATION SPECIFICATION

## eSettlements Flat File Invoice Integrations



## Flat File Invoices and Credit Memos

The University of Michigan uses PeopleSoft version 9.1 eSettlements and eSupplier modules and has the ability to process Flat File Invoices and Credit Memos for Purchase Orders and Non-PO ShortCode orders.

The university supports files in the fixed-length format as listed in this document.

In order to set up Flat File Invoices with the University of Michigan, a supplier must work with Procurement Services and Information and Technology Services (ITS) to set up and configure the integration specifications listed in this document, the eSettlements Enablement Functional Specification document, the Flat File Layout document, and the Sample Flat File.

Both the supplier and the university, 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 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 uploaded during the hours of 6am to Midnight M-F, 6am to 11pm on Saturday. Support for file upload issues will be available during normal U-M business hours of 8 am to 5 pm ET.

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

USER TYPE	FUNCTION	FUNCTIONAL ROLE
SUPPLIER ADMINISTRATOR	<ul style="list-style-type: none"> <li>•Agreements</li> <li>•Create additional Users</li> <li>•Supplier Dashboard</li> <li>•Review Invoices and Payments</li> <li>•Review PO's</li> <li>•Add, Update, Inactivate Addresses &amp; Contacts</li> </ul>	This user will be responsible for creating and managing supplier user
SUPPLIER USER	<ul style="list-style-type: none"> <li>•Upload Invoices</li> <li>•Receives file upload email</li> <li>•Receives Invoice Status Report email</li> <li>•Supplier Dashboard</li> </ul>	This user will be responsible for uploading flat files and correcting errors

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

The University has also created a Flat File creation tool for suppliers if they choose to use it. The tool is an MS Excel workbook with a macro that will create a Flat File in the correct fixed length format. Suppliers who would like to use the tool should request access to the tool during the integration set up and configuration process.

All files created for upload into the University of Michigan eSettlements application will be required to be a .dat file type.

The eSettlements application is configured to prevent duplicate invoices and will include enforcing unique file names and duplicate invoice checking based on invoice id provided by supplier (combination of invoice ID and vendor ID).

## URL for uploading invoices and credit memo flat files

The supplier uploads flat files via the MSupplier Portal using the following URL:  
<http://www.finance.umich.edu/procurement/msupplier>.

After uploading a file the supplier will receive one of the following Response Messages::

- Success – The file was uploaded successfully.
- Error - There was a problem with the file upload and it was not received successfully.

After a file or files have been uploaded, 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 lines processed successfully. If there is an error with any one line within an invoice, the entire invoice will be rejected.

The University is planning to run this “mini” batch process twice a day, around noon and in the evening. If the supplier uploaded a file in the morning hours, they should expect to see an email early afternoon and if the files were uploaded during afternoon hours, they should expect to see an email later in the evening.

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

If multiple files are submitted during the same day, files are processed in order of date time stamp of when the file was received.

## Flat File 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. 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” level may be submitted with a line number of 0.

The University of Michigan can accept an electronic invoice flat file that references multiple original PO's, Non-PO ShortCode orders, or credit memos in the same file as long as the correct fields in the line are populated.

At the start of the integration process the supplier must provide the University of Michigan with a list of all Unit of Measure (UOM) values that may be passed by the supplier in a Flat File. The University of Michigan is only able to accept established Units of Measure. If the supplier needs to add a new unit of measure, they need to contact the university before submitting it in a Flat File.

## 1 PO Invoices

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

Shipping/Freight & Misc/Handling - can be added per line or in a separate line by using a PO line number of zero (0). Charges must be recorded in the “Shipping Charges” or “Handling Charges” fields.

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.

Field Name	Start	End	Length	Type	Format	Description	PO Invoice
Vendor ID	1	10	10	Char	Format is 10 character numeric-ONLY (ex. 0000000001)	University of Michigan unique vendor number that is issued to all suppliers	Optional
Invoice ID	11	40	30	Char	Format is 30 character alpha numeric mixed case (ex. UM123456789)	Invoice number assigned by vendor	Required
Invoice Date	41	50	10	Date	Format is MM/DD/YYYY	Invoice date assigned by vendor	Required
Purchase Order ID	51	60	10	Char	Format is 10 character numeric-ONLY	Purchase order number received from the University	Required

Field Name	Start	End	Length	Type	Format	Description	PO Invoice
					(ex. 3000000001)	of Michigan	
Order Line Number	61	65	5	Num	Numeric value of 5 digits (ex. 00001)	Purchased order line number	Required
Vendor Item ID	66	115	50	Char	Format is 50 character alphanumeric mixed case (ex. 123456789A)	Vendor item number	Required
Short Code	116	121	6	Char	Format is 6 character numeric-ONLY (ex. 123456 )	University of Michigan ShortCode	Optional
Quantity Invoiced	122	141	20	Num	Numeric value of 15,4 (ex. 9999999999999999 9.9999)	Quantity invoiced by vendor	Required
Unit Price	142	162	21	Num	Numeric value of 15,5 (ex. 9999999999999999 9.99999)	Unit price of item	Required
Merchandise Amount	163	191	29	Num	Numeric value of 26,2 (ex. 9999999999999999 99999999999.99 )	This is the extended price. It will be calculated by the University of Michigan by multiplying INV_QTY by UNIT_PRICE	Optional
Unit of Measure	192	194	3	Char	Format is MAX 3 characters uppercase ONLY (ex. EA)	Unit of Measure (UOM)- all UOM's must be pre-established with the University of Michigan. If service good provided does not have a UOM use EA	Required
Line Description	195	224	30	Char	Format is 30 character alpha numeric mixed case (ex. 1720 1-BLK TONER CTG)	Item description - Required for substituted items	Required
Requestor	225	254	30	Char	Format is 30 characters alpha numeric uppercase-Only	Name of the person who placed the order	Optional

<b>Field Name</b>	<b>Start</b>	<b>End</b>	<b>Length</b>	<b>Type</b>	<b>Format</b>	<b>Description</b>	<b>PO Invoice</b>
					(ex. JOHN DOE)		
Serial Number	255	279	25	Char	Format is 25 characters alpha numeric mixed case (ex. 277MSF1a)	Serial Number	Optional
Manufacturer Name	280	309	30	Char	Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell)	Manufacturer Name	Optional
Model Number	310	339	30	Char	Format is 30 character alpha numeric mixed case (ex. WST3400b )	Model Number	Optional
Departmental Reference Number	340	369	30	Char	Format is 30 characters alpha numeric mixed case (ex. TA04082008A)	University of Michigan Department Reference Number	Optional
Deliver To	370	399	30	Char	Format is 30 characters alpha numeric mixed case (ex. 1st Floor Suite 1040 )	Delivery Information	Optional
Ship To ID	400	409	10	Char	Format is 10 characters numeric-ONLY (ex. 1000815)	Deliver To Code	Optional
Category/ UNSPSC	410	417	8	Char	Format is 8 characters numeric-ONLY (ex. 10101505)	UNSPSC	Optional
Shipping Charges	418	446	29	Num	Numeric value of 26,2 (ex. 9999999999999999 999999999999.99 )	Shipping or Freight charges - A freight ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field.	Optional
Handling Charges	447	475	29	Num	Numeric value of 26,2 (ex. 9999999999999999 999999999999.99 )	Misc or Handling charges - A handling ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in	Optional

Field Name	Start	End	Length	Type	Format	Description	PO Invoice
						this field.	
Vendor Order Number	476	495	20	Char	Format is 20 characters alpha numeric mixed case (ex. A123456789b)	Vendor Order Number	Optional

## 2 Credit Memos

The University of Michigan supports credit memos with charges at the line level or in total. The table listed below is the file layout that must be followed when submitting credit memos via a Flat File upload. All required fields must be populated and in the correct format. In addition to the required fields there are optional fields that suppliers may submit in the Flat File. Credit Memos are subject to the duplicate prevention and will include enforcing unique file names and duplicate invoice checking based on invoice id provided by supplier (combination of invoice id and vendor id). Thus suppliers must use a unique invoice number for credit memos and can't reference the original invoice directly in the "Invoice ID" field 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 Flat File and credits must be submitted with a PO line number of 0 (zero).

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

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

Shipping/Freight & Misc/Handling can be submitted on a credit memo per line or in a separate line by using a line number of zero (0). Charges must be recorded in the "Shipping Charges" or "Handling Charges" fields.

Field Name	Start	End	Length	Type	Format	Description	Credit Memo
Vendor ID	1	10	10	Char	Format is 10 character numeric-ONLY (ex. 0000000001)	University of Michigan unique vendor number that is issued to all suppliers	Optional
Invoice ID	11	40	30	Char	Format is 30 character alpha numeric mixed case (ex. UM123456789)	Invoice number assigned by vendor	Required
Invoice Date	41	50	10	Date	Format is MM/DD/YYYY	Invoice date assigned by vendor	Required
Purchase Order ID	51	60	10	Char	Format is 10	Purchase order	Required - For

Field Name	Start	End	Length	Type	Format	Description	Credit Memo
					character numeric-ONLY (ex. 3000000001)	number received from the University of Michigan	PO based credits
Order Line Number	61	65	5	Num	Numeric value of 5 digits (ex. 00001) Value must be >=0	Line number associated to the PO/ShortCode order that the supplier is crediting. A line number of 0 can be used for general credits.	Required
Vendor Item ID	66	115	50	Char	Format is 50 character alphanumeric mixed case (ex. 123456789A)	Vendor item number	Optional
Short Code	116	121	6	Char	Format is 6 character numeric-ONLY (ex. 123456 )	University of Michigan ShortCode	Required - For Non-PO ShortCode credits
Quantity Invoiced	122	141	20	Num	Numeric value of 15,4 (ex. 99999999999999 9.9999)	Quantity credited by vendor - VALUE MUST BE <0	Required - Must be <0
Unit Price	142	162	21	Num	Numeric value of 15,5 (ex. 99999999999999 9.9999)	Unit price of item being credited - VALUE MUST BE >0	Required - Must be >0
Merchandise Amount	163	191	29	Num	Numeric value of 26,2 (ex. 99999999999999 9999999999.99 )	This is the extended price. It will be calculated by the University of Michigan by multiplying INV_QTY by UNIT_PRICE	Optional
Unit of Measure	192	194	3	Char	Format is MAX 3 characters uppercase ONLY (ex. EA)	Unit of Measure (UOM)- all UOM's must be pre- established with the University of Michigan. If service good provided does not have a UOM use EA	Required
Line Description	195	224	30	Char	Format is 30	Item description -	Required



Field Name	Start	End	Length	Type	Format	Description	Credit Memo
					character alpha numeric mixed case (1720 Toner Cartridge Black)	Required for substituted items	
Requestor	225	254	30	Char	Format is 30 characters alpha numeric uppercase-Only (ex. JOHN DOE)	Name of the person who placed the order	Optional
Serial Number	255	279	25	Char	Format is 25 characters alpha numeric mixed case (ex. 277MSF1a)	Serial Number	Optional
Manufacturer Name	280	309	30	Char	Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell)	Manufacturer Name	Optional
Model Number	310	339	30	Char	Format is 30 character alpha numeric mixed case (ex. WST3400b )	Model Number	Optional
Departmental Reference Number	340	369	30	Char	Format is 30 characters alpha numeric mixed case (ex. TA04082008A)	University of Michigan Department Reference Number	Optional
Deliver To	370	399	30	Char	Format is 30 characters alpha numeric mixed case (ex. 1st Floor Suite 1040 )	Delivery Information	Optional
Ship To ID	400	409	10	Char	Format is 10 characters numeric-ONLY (ex. 1000815)	Deliver To Code	Optional
Category/ UNSPSC	410	417	8	Char	Format is 8 characters numeric-ONLY (ex. 10101505)	UNSPSC	Optional
Shipping Charges	418	446	29	Num	Numeric value of 26,2 (ex. 99999999999999 999999999999.99 )	Shipping or Freight credit, must be <0	Optional
Handling Charges	447	475	29	Num	Numeric value of	Misc or handling	Optional

Field Name	Start	End	Length	Type	Format	Description	Credit Memo
					26,2 (ex. 9999999999999999 999999999999.99 )	credit, must be <0	
Vendor Order Number	476	495	20	Char	Format is 20 characters alpha numeric mixed case (ex. A123456789b)	Vendor Order Number	Optional

### 3 Non-PO ShortCode Invoices

Non-PO ShortCode Invoice charges have to be at the line level. The table listed below is the file layout that must be followed when submitting Non-PO ShortCode Invoices via a Flat File upload. All required fields must be populated and in the correct format. In addition to the required fields, there are optional fields that suppliers can submit in the Flat File.

Shipping/Freight & Misc/Handling can be added per line or in a separate line that has a line number of zero (0). Charges must be recorded in the "Shipping Charges" or "Handling Charges" fields.

If a line for an invoice is invalid, the university rejects reject all lines for that invoice.

The Unit Price cannot be a negative value/amount.

Field Name	Start	End	Length	Type	Format	Description	Non-PO Invoice
Vendor ID	1	10	10	Char	Format is 10 character numeric-ONLY (ex. 0000000001)	University of Michigan unique vendor number that is issued to all suppliers	Optional
Invoice ID	11	40	30	Char	Format is 30 character alpha numeric mixed case (ex. UM123456789)	Invoice number assigned by vendor	Required
Invoice Date	41	50	10	Date	Format is MM/DD/YYYY	Invoice date assigned by vendor	Required
Purchase Order ID	51	60	10	Char	Format is 10 character numeric-ONLY (ex. 3000000001)	Purchase order number received from the University of Michigan - If a value exists in PO_ID the invoice	Not Required - Should be null on a Non-PO invoice

Field Name	Start	End	Length	Type	Format	Description	Non-PO Invoice
						will be processes as a PO invoice. PO_ID supercedes SPEEDCHART_KEY (If a valid ShortCode value and an invalid PO_ID or ORDER_LINE_NBR are presented the invoice will be rejected). THIS FIELD SHOULD BE NULL ON A NON-PO INVOICE.	
Order Line Number	61	65	5	Num	Numeric value of 5 digits (ex. 00001). Value must be >=0	Line number the vendor assigned to a University of Michigan ShortCode order. Line number of 0 can be used for Freight/Handling ONLY invoices.	Required
Vendor Item ID	66	115	50	Char	Format is 50 character alphanumeric mixed case (ex. 123456789A)	Vendor item number	Required
Short Code	116	121	6	Char	Format is 6 character numeric-ONLY (ex. 123456 )	University of Michigan ShortCode	Required
Quantity Invoiced	122	141	20	Num	Numeric value of 15,4 (ex. 9999999999999999 9.9999)	Quantity invoiced by vendor	Required
Unit Price	142	162	21	Num	Numeric value of 15,5 (ex. 9999999999999999 9.99999)	Unit price of item	Required
Merchandise Amount	163	191	29	Num	Numeric value of 26,2 (ex. 9999999999999999 999999999999.99 )	This is the extended price. It will be calculated by the University of Michigan by multiplying INV_QTY by UNIT_PRICE	Optional

Field Name	Start	End	Length	Type	Format	Description	Non-PO Invoice
Unit of Measure	192	194	3	Char	Format is MAX 3 characters uppercase ONLY (ex. EA)	Unit of Measure (UOM)- all UOM's must be pre-established with the University of Michigan. If service good provided does not have a UOM use EA	Required
Line Description	195	224	30	Char	Format is 30 character alpha numeric mixed case (1720 Toner Cartridge Black)	Item description - Required for substituted items	Required
Requestor	225	254	30	Char	Format is 30 characters alpha numeric uppercase-Only (ex. JOHN DOE)	Name of the person who placed the order	Optional
Serial Number	255	279	25	Char	Format is 25 characters alpha numeric mixed case (ex. 277MSF1a)	Serial Number	Optional
Manufacturer Name	280	309	30	Char	Format is 30 characters alpha numeric uppercase-ONLY (ex. Dell)	Manufacturer Name	Optional
Model Number	310	339	30	Char	Format is 30 character alpha numeric mixed case (ex. WST3400b )	Model Number	Optional
Departmental Reference Number	340	369	30	Char	Format is 30 characters alpha numeric mixed case (ex. TA04082008A)	University of Michigan Department Reference Number	Optional
Deliver To	370	399	30	Char	Format is 30 characters alpha numeric mixed case (ex. 1st Floor Suite 1040 )	Delivery Information	Optional
Ship To ID	400	409	10	Char	Format is 10 characters numeric-ONLY	Deliver To Code	Optional

<b>Field Name</b>	<b>Start</b>	<b>End</b>	<b>Length</b>	<b>Type</b>	<b>Format</b>	<b>Description</b>	<b>Non-PO Invoice</b>
					(ex. 1000815)		
Category/ UNSPSC	410	417	8	Char	Format is 8 characters numeric-ONLY (ex. 10101505)	UNSPSC	Optional
Shipping Charges	418	446	29	Num	Numeric value of 26,2 (ex. 9999999999999999 99999999999999.99 )	Shipping or Freight charges - A freight ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field.	Optional
Handling Charges	447	475	29	Num	Numeric value of 26,2 (ex. 9999999999999999 99999999999999.99 )	Misc or Handling charges - A handling ONLY invoice would have an ORDER_LINE_NBR = 0 and a value in this field.	Optional
Vendor Order Number	476	495	20	Char	Format is 20 characters alpha numeric mixed case (ex. A123456789b)	Vendor Order Number	Optional

## 4 Error Handling

After a flat file is uploaded and the voucher build process is run, the suppliers are sent email notifications for any invoices that had an error. As noted above if any invoice line fails, the entire invoice is rejected and suppliers need to resubmit the corrected invoice for payment.

Suppliers are provided a list of error messages they could receive. This list includes actions to be taken in order to correct the error. Suppliers are also provided a list of university contacts that can provide assistance in error correction.

## 5 eSupplier Portal Information

Suppliers have the ability to log into the University of Michigan eSettlements and eSupplier applications via our MSupplier Portal. Within this portal suppliers 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 receive a remittance advice by email indicating the payment reference number /check number for the supplier paid via a check. This email lists all the invoices that were paid. This email is sent to the address established on the supplier eSettlements agreement. Suppliers are also able to reconcile their payment information based on inquiries provided via the MSupplier 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 calculates and takes the discount based on the contract terms. The discount taken is reflected as a credit memo invoice on the remittance advice. The discount percentage and date are reflected in the invoice ID. (for example the Invoice ID for the credit memo displays as 'DISCOUNT TAKEN 2.5% 2008/05/30'). The date in this invoice ID represents the date for the invoices received that were subjected to this discount and the total discount amount is included in the system remittance advice email.