Microsoft Dynamics® AX

Country-specific updates for Mexico – Electronic invoices

White Paper

This white paper describes the country-specific updates to electronic invoicing that are released for Mexico in Cumulative Update 3 (CU-3) for Microsoft Dynamics AX 2012. See Microsoft Knowledge Base article 2655441 for hotfix download information.

May 2013

Microsoft Dynamics

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Introduction

This white paper describes the Microsoft Dynamics AX features released in Cumulative Update 3 (CU-3) that are specific to users in Mexico.

For more information about other features that apply to Mexico, see the Help system on TechNet. Information that is specific to Mexico includes (MEX) in the title.

Electronic invoices: Comprobantes fiscales digitales por Internet

About electronic invoices

An electronic invoice is a legally accepted digital tax receipt that your organization submits to the Servicio de Administración Tributaria (SAT). By using Microsoft Dynamics AX to generate electronic invoices, you help make sure that the electronic invoices that your organization generates are secure, confidential, authentic, and legally acceptable. You can also make sure that international standards are applied to your electronic invoices.
You can generate an electronic invoice for the following documents:

- Sales order
- Free text invoice
- Credit note
- Return order
- Project invoice
- Project sales order

Methods for generating electronic invoices

You can use the following methods to generate electronic invoices:

- **Comprobantes fiscales digitales (CFD)** – Electronic invoices are generated by using Microsoft Dynamics AX. The invoices are then verified and certified by using a government website. Finally, the invoices are submitted to the SAT by your organization.

- **Comprobantes fiscales digitales por internet (CFDI)** – Electronic invoices are generated by using Microsoft Dynamics AX. The invoices are then verified and certified by a digital signature service provider (PAC). Finally, the invoices are submitted to the SAT.

  Before you can use the CFDI method to generate electronic invoices, your organization must set up a web service connection to an authorized PAC. You send invoices to the PAC. The PAC validates each invoice, assigns a folio number, and then incorporates the digital stamp that is provided by the service tax authorities. After the PAC has validated the invoice, the invoice can be submitted to the SAT.

📝 **Note:**

For information about how to set up a web connection with a PAC, see the "Set up the PAC web service" procedure later in this document.

Requirements for using electronic invoices

To use electronic invoices, your organization must complete the following tasks:

- Obtain authorization from the SAT to use the CFD method.
- Obtain a Registro Federal del Contribuyentes (RFC) number, a Clave Única de Registro de Población (CURP) number, and a state inscription number from the SAT.
- Obtain the folio numbers from the Sistema de comprobantes fiscales digitales CFD Plus (SICOFI) program. A folio number is an invoice number that consists of the series, number sequences, and authorization numbers in an invoice.
- Make sure that .pdf and .xml files meet SAT requirements. These files are sent to a customer as email attachments. The .xml file that is generated must be based on the XML schema definition (XSD) that is provided by the SAT. You must archive the .xml file of each electronic invoice.
- Generate a monthly report of all the electronic and paper invoices that are generated for the month. The report must use the layout that is specified by the SAT. You can use the SICOFI program to submit this report to the SAT as a .txt file.

Information that is included in electronic invoices

An electronic invoice includes the following details:

- The name, address, and tax registration numbers of the organization and customer
- The invoice number, the date, and the name of the city where the invoice was generated
- The serial number of the digital certificate, the authorization number, and the year in which the certificate was authorized
- The description and quantity of each item that is included in the invoice
- The unit price of each item
- The amount that was withheld for the Impuesto sobre la renta (ISR) and the value-added tax (VAT) amount
- The total amount of the invoice transaction
- The name, number, and date of the customs document that is generated for imported items
- The registration number of the property if the invoice transaction includes leasing services
- The digital stamp of the organization

Set up a sales tax code for an electronic invoice

Use the **Sales tax codes** form to set up a sales tax code and select the type of sales tax for an electronic invoice. The sales tax code is included in the electronic invoice to indicate the type of sales tax that you must calculate, collect, and pay to the SAT.

1. Click **General ledger** > **Setup** > **Sales tax** > **Sales tax codes**.

2. Create a sales tax code for an electronic invoice.

   📝 **Note:**

   For more information about how to create a sales tax code, see [Create various kinds of sales tax codes](#).

3. On the **General** FastTab, in the **Tax type** field, select the sales tax type:

   - **<Blank>**
   - **ISR** – Income tax
   - **IVA** – Value-added tax
   - **IEPS** – Special product and service tax

4. Close the form.

Set up email parameters for an electronic invoice

Use the **E-mail parameters** form and the **Set up batch processing** class form to set up email parameters for an electronic invoice. In the **Print destination settings** form, in the **File format** field, select **PDF** so that you can generate the electronic invoice as a .pdf file and send the file to a customer as an email attachment.
Set up the following email parameters to send an electronic invoice:

- Set up Simple Mail Transfer Protocol (SMTP) to send email messages. Use the **E-mail parameters** form to set up an SMTP server and port, local computer name, user name, and password to send email messages to customers.

- Create a batch group to print an electronic invoice. Use the **Batch group** form to create a batch group to send email messages by using a batch process. You must assign the batch group to the batch server that is set up to print electronic invoices. For more information, see [Create a batch group](#).

- Set up a batch process to send email messages for electronic invoices. Use the **Set up batch processing** form to process the email tasks that were previously ordered and added to the batch group.

- Create an email template for an electronic invoice. Use the **E-mail templates** form to create a predefined email message for a customer. You can set up a priority and assign a batch group to the email message. You can also enter a predefined subject for your email message in the **Subject** field. When you post an electronic invoice, the subject of the email message is updated by using the predefined text from the **Subject** field and the posted invoice number. For example, if you enter **Electronic invoice submitted** in the **Subject** field and post invoice A-11122222, the subject of the email message is displayed as **Electronic invoice submitted - A-11122222**.

- Send email messages by using a batch process. Use the **E-mail distributor batch** form to send email to customers by using the batch process.

Set up parameters and authorization codes for an electronic invoice

Use the **Electronic invoice parameters** form to set up parameters for generating electronic invoices. You can select the digital certificate, XSD version, and email template to use to generate electronic invoices and issue them to the SAT. You can also select the algorithm to use to generate the digital stamp.

Use the **Authorization numbers** form to set up folio numbers for an electronic invoice. A folio number is an invoice number that consists of the series, number sequences, and authorization numbers of the electronic invoice. You can obtain a list of folio numbers from the SICOFI program. The SAT uses the folio numbers to identify the issuers of electronic invoices. You can also define a range of invoice numbers that the series, number sequences, and authorization numbers are assigned to. The range of invoice numbers can contain gaps, but the numbers cannot overlap.

Enable the CFD parameters

If your organization uses Microsoft Dynamics AX to generate electronic invoices and then validates them manually on a government website, use this procedure to set up parameters for electronic invoices.

1. Click **Organization administration** > **Setup** > **EInvoice** > **Electronic invoice parameters**. In the left pane, click **CFD**, and then select the **Enable CFD (electronic invoices)** check box.

2. In the **CFD version** field, select the XSD version to use to generate and issue an electronic invoice:
   - **<Blank>** – Do not specify an XSD version to use to generate and issue the electronic invoice.
   - **2.0** – Use XSD 2.0 to generate and issue the electronic invoice.
   - **2.2** – Use XSD 2.2 to generate and issue the electronic invoice.

3. In the **CFD XML schema file** field, specify the path of the XML schema file that was provided by the SAT.

4. In the **Certificate** field, select the digital certificate to use to generate and issue an electronic invoice.

   📝 **Note:**
   You must import the digital certificate to the computer where Application Object Server (AOS) is running.

5. In the **CFD digest algorithm** field, select the algorithm method:
   - **<Blank>** – Do not use an algorithm.
   - **SHA-1** – Use the SHA-1 algorithm.

6. In the **E-mail ID** field, select the identification code of the email template.

   📝 **Note:**
   You can view the status of an outgoing email message in the **E-mail sending status** form.

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7. Select the **Send report file - PDF** check box to attach the .pdf file of an electronic invoice to the email message when the invoice is posted.

📝 **Note:**
> The .pdf file is attached to the email message only if you select **PDF** in the **File format** field in the **Printer setup** form.

8. Set up authorization numbers. See the "Set up authorization numbers" procedure later in this document.

Enable the CFDI parameters

If your organization generates electronic invoices by using Microsoft Dynamics AX and then sends the invoices to be verified and certified by a digital signature service provider (PAC), use this procedure to set up parameters for electronic invoices.

1. Click **Organization administration** > **Setup** > **EInvoice** > **Electronic invoice parameters**. In the left pane, click **CFDI**, and then select the **Enable CFDI (electronic invoice)** check box.

2. In the **Certificate** field, select the digital certificate to use to generate and issue an electronic invoice.

3. In the **CFDI version** field, select **3.2**. This is the XSD version that is used to generate and issue an electronic invoice.

4. In the **CFDI XML schema file** field, enter the path of the XML schema file that was provided by the SAT.

5. In the **PAC certificate** field, select the certificate to use to establish a secure connection between Microsoft Dynamics AX and the PAC web service.

6. In the **Environment** field, select the environment to use to integrate Microsoft Dynamics AX and the PAC service.

7. In the **PAC account** field, select the PAC name to use to request the digital stamp.

8. Select the **Send mail** check box to let other users to send electronic invoice documents by email after the invoices have been approved by the PAC.

9. Select the type of email message to use when you send electronic invoices by email.

10. Select the **Send report file - PDF** check box to include the electronic invoice as a .pdf file when the invoice is sent by email.

11. Set up authorization numbers. See the "Set up authorization numbers" procedure that follows.

Set up authorization numbers

Use this procedure to set up authorization numbers for electronic invoices. This procedure applies whether you use the CFD method or the CFDI method to generate electronic invoices.

1. Click **Organization administration** > **Setup** > **EInvoice** > **Electronic invoice parameters**.

2. In the **Electronic invoice parameters** form, click **Authorization numbers**.

3. In the **Authorization numbers** form, create a new line.

4. In the **Authorization code** field, enter the authorization code that was assigned by the SAT for each set of electronic invoices.

5. In the **Year** field, enter the year in which the SAT assigned the authorization code for the set.

6. In the **Series** field, enter the series for the set of electronic invoices.

7. In the **Number sequence code** field, select the number sequence code for the set. You can set up a number sequence code in the **Number sequences** form.

8. In the **From number** and **To number** fields, enter the starting sequence number and the ending sequence number for the set.

Set up the PAC web service

If you enabled the CFDI parameters, use this procedure to set up the PAC web service to use to integrate Microsoft Dynamics AX and the PAC service provider.

1. Click **Organization administration** > **Setup** > **EInvoice** > **Electronic invoice parameters**.

2. In the **Electronic invoice parameters** form, in the left pane, click **CFDI**, and then click **PAC web service**.

3. In the **Method name** field, select the name of the method to use to generate the XML message.

4. In the **Web service** field, select to request a digital stamp.

5. In the **Internet address** field, enter the web address for the PAC service.

6. Click **Generate** to generate references to the PAC web service.

    A reference to the PAC web service is also created in **AOT** > **References** to enable Microsoft Dynamics AX to connect to the web service.

Set up print management options for an electronic invoice

Use the **Print management setup** and **Print destination settings** forms to set up print management options for an electronic invoice. You can also set up print management options for a customer or vendor to override the print management destination setup for different modules.

1. Click **Accounts receivable** > **Setup** > **Forms** > **Form setup**.

2. Click **Print management setup**.

3. Right-click a module name, and then click **Expand all**. The document types for the selected module are displayed.

4. Select an original record of an invoice type (sales order invoice, free text invoice, or project invoice). Then, in the right pane, click the **Destination** lookup button, and then click **Printer setup**.

5. In the **Print destination settings** form, in the left pane, select **File**. Then, in the **File name** field, type **Invoice**.

6. In the **File format** field, select **PDF**, and then click **OK**.

    📝 **Note:**
    Verify that the **Destination** field in the **Print management setup** form is updated to **File: Invoice.pdf**.

7. Close the forms.

Customize Microsoft Dynamics AX to include the XML addenda element for a customer

You can customize Microsoft Dynamics AX to include the XML **addenda** element for a customer. The **addenda** element is an optional element in the XSD that is provided by the SAT. The **addenda** element contains open syntax that you can use to include specific commercial information in electronic invoices, based on the customer's requirements. Because no specific format is defined for the **addenda** element, it is not validated by the SAT.

You can customize the **EInvoiceXMLFormat_MX** class to include the **addenda** element, and you can set the addenda attribute that contains specific commercial information based on the customer's requirements. The **EInvoiceXMLFormat_MX** class designates the nodes, subnodes, and attributes that the XSD must have to generate the .xml files of electronic invoices.

On the menu bar, click **Windows**, and then click **New Development Workspace**. On the toolbar, click the **Project** button, and then click **Shared Projects** > **MX_Einvoice** to open the **EInvoiceXMLFormat_MX** class. This class retrieves the electronic invoice information from two classes: **EInvoiceJourBaseMap_MX** (the electronic invoice header) and **EInvoiceTransBaseMap_MX** (the electronic invoice lines). To retrieve this information, the **EInvoiceXMLFormat_MX** class interacts with a set of abstract classes.

The electronic invoices are generated from the CustInvoiceJour and ProjInvoiceJour tables. Therefore, you must include the **newNode** attribute in the following classes to enable the **EInvoiceXMLFormat_MX** class to retrieve the electronic invoice information:

- **EInvoiceJourBaseMap_MX**
- **CustInvoiceJourEInvoiceJourMap_MX**
- **ProjInvoiceJourEInvoiceJourMap_MX**

Note:

Before you customize these classes, verify that the **newNode** attribute is not included in them.

1. In the **EInvoiceXMLFormat_MX** class, create a **create_AddendaElement** element that returns an XML element, and then set the **newNode** attribute. You can use the following source code to create the element and set the attribute.

```
protected XmlElement create_AddendaElement()

{

    XmlElement addendaElement;

    addendaElement  = this.createElement('Addenda');

    addendaElement.setAttribute('newNode',
eInvoiceJourMap.addendanewNodeInformation());

// Note how the information is retrieved.


    return addendaElement;

}
```

2. Add the **create_AddendaElement** element to the **createXmlDocumentInvoiceJour** method. This method creates the .xml file of the electronic invoice. You can use the following source code to customize the **createXmlDocumentInvoiceJour** method.

```
protected XmlElement createXmlDocumentInvoiceJour()

{

    XmlElement      comprobanteElement;

    XmlElement      emissorElement;

    XmlElement      receptorElement;

    XMLElement      addendaElement;

    ;

    comprobanteElement  = this.create_ComprobanteElement();

    emissorElement      = this.create_EmisorElement();

    receptorElement     = this.create_ReceptorElement();


    comprobanteElement.appendChild(emissorElement);

    comprobanteElement.appendChild(receptorElement);


    this.createLines(comprobanteElement);


    this.createTaxesLines(comprobanteElement);


    addendaElement      = this.create_AddendaElement();

    comprobanteElement.appendChild(addendaElement);


    return comprobanteElement;

}
```

3. In the **EInvoiceJourBaseMap_MX** class, create a **newNodeInformation** abstract method. You can use the following source code to create the abstract method.

```
/// <summary>

/// Returns the newNode information related to the posted document.

/// </summary>

/// <returns>

/// Returns the newNode information related to the posted document.

/// </returns>

public abstract str newNodeInformation()
```

```
    {

    }
```

4. In the **CustInvoiceJourEInvoiceJourMap_MX** class, include the **newNodeInformation** abstract method. You can use the following source code to include the abstract method.

```
/// <summary>

/// Returns the newNode information related to CustInvoiceJour.

/// </summary>

/// <returns>

/// Returns newNode information related to CustInvoiceJour.

/// </returns>

public str newNodeInformation()

{

    return custInvoicejour. newNodeInformation;

}
```

5. In the **ProjInvoiceJourEInvoiceJourMap_MX** class, include the **newNodeInformation** abstract method. You can use the following source code to include the abstract method.

```
/// <summary>

/// Returns the newNode information related to ProjInvoiceJour.

/// </summary>

/// <returns>

/// Returns the newNode information related to ProjInvoiceJour.

/// </returns>

public str newNodeInformation()

{

    return projInvoiceJour. newNodeInformation;

}
```

After you customize Microsoft Dynamics AX, you can generate the following .xml file that includes the addenda element.

```
<?xml version="1.0" encoding="UTF-8"?>
<Comprobante
    …
    <Emisor
    ...
    </Emisor>
    <Receptor
    ...
    </Receptor>
    <Conceptos>
        <Concepto
        ...
```

```
        </Concepto>
    </Conceptos>
    <Impuestos
    ...
    </Impuestos>
    <Addenda newNode=""
    </Addenda>
</Comprobante>
```

Configure the digital certificate in Microsoft Windows Server 2008

You must configure and grant access to the digital certificate to sign the generated XML message for a batch of electronic invoices. To grant access to the digital certificate private key and configure the Windows Communication Foundation (WCF) client to use the certificate as authentication, you must import the digital certificate to the computer where AOS is running.

📝 **Note:**

Before you begin the import process, convert the digital certificate that is provided by the SAT to a Personal Information Exchange (.pfx) file, and then save the .pfx file to your computer. For information about how to convert the digital certificate private key, visit the DICTAMEX website.

To grant an AOS user access to the digital certificate private key in the Windows Server 2008 operating system, follow these steps:

1. On the taskbar, click **Start** > **Run**, and then type **System 32**.

2. Double-click the **certmgr** file.

3. Right-click the **Certificates** folder, and then click **All tasks** > **Import** to open the Certificate Import Wizard.

   📝 **Note:**

   The Certificate Import Wizard is an .msc file.

4. Close the wizard.

COUNTRY-SPECIFIC UPDATES FOR MEXICO – ELECTRONIC INVOICES

Microsoft Dynamics is a line of integrated, adaptable business management solutions that enables you and your people to make business decisions with greater confidence. Microsoft Dynamics works like and with familiar Microsoft software, automating and streamlining financial, customer relationship and supply chain processes in a way that helps you drive business success.

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