Developer's Guide

The PostalMethods Web-to-Postal API allows developers to easily send postal letters (snail mail) from applications. The service may be accessed from all common development environments through standard SOAP libraries. Native SOAP libraries, as well as third-party libraries, are available for Java, .NET, ASP, PHP, Perl, ColdFusion, etc.

This developer's guide will go through through the steps required to send out your first web-to-postal letter. It's assumed that you are acquainted with a development environment, and have a good grasp of building and testing applications in that environment.

Production and Development Work Modes

PostalMethods offer two optional Work Modes

1. Production Work Mode

Unsurprisingly, this work mode is meant for production use. Letters and postcards are fully processed, i.e. PostalMethods prints the mail item, prepares it to be mailed, delivers it to the postal agency and charges your account.

2. Development Work Mode

This work mode should be use while developing. This mode simulates a letter's workflow, so you can make sure your application is ready for real life. Your letter is accepted in the same environment as a production letter and goes through the same flow, but doesn't get physically created or handled. Feedback and errors are handled just as they are handled in *Production Work Mode*.

Differences between Production and Development Work Modes

1. Mail sent in *Development Work Mode* goes through the same process as those in *Production Work Mode* but are not printed and delivered to the postal agency. After being processed, the mail item's status is set to *Successfully Completed Development Work Mode (-1002)*. Since failures, as of this point, are very rare, you can assume your mail would have been delivered if sent as *Production Work Mode*. You can assume that if your mail was successfully sent in *Development Work Mode*, there is a good chance it would be processed successfully in *Production Work Mode*
2. You are not charged for mail items submitted in *Development Work Mode*. The system displays a price estimate but this amount is not deducted from the account balance
3. Mail sent in *Development Work Mode* might not go through all stages of *Address Validation*, which means the final recipient address may change

Setting Work Mode

- **Setting a default work mode for a user**
  Login to the PostalMethods Control Panel, click *User Settings -> Posting* and set the user's default Work Mode. This is most useful when users send mail using email messages and the QuickSend web form
- **Setting a work mode for a specific mail item**
- o **Via Email:** It is possible to override the user's default Work Mode by using a subject line switch
- o **Via Web Service:** It is possible to override the user's default Work Mode by setting its Work Mode as part of the Web Service request

Working With Multiple Users

Each account can hold multiple users. There is no additional cost involved in having multiple users. To control the account's users, click on *Account* and go to the *Users* tab.

When in production, we recommend adding an additional user and setting it to *Development Work Mode*. When you make a change to your documents, application or environment, send a few test letters and postcards using the development user's credentials and make sure everything is in order.

Identifying User's Work Mode

Once you are logged-in to the Control Panel, look at the top-right corner of the website, where the user's work mode setting is displayed.

Resend Mail Items Sent In Development As Production

Send mail in *Development Work Mode*; login to the PostalMethods Control Panel; view and verify it; and use the **[Resend Live]** option in the Control Panel Activity section to re-send it as *Production Work Mode*.

Best Practices In Designing With PostalMethods

Things To Notice When Using The PostalMethods Web Service

1. **Updating letter status:** You may use the status query methods to check on your letters' status and you may have PostalMethods contact you whenever a status changes, by using "Push" Feedback. Also read Feedback By "Push" vs. "Pull". We recommend implementing the push feedback because (a) you are notified of changes as they occur; and (b) less resources are wasted. In addition, we recommend polling for statuses in low frequency, just as a fail-safe mechanism.
2. **Status codes may be added:** Status codes may be added when new features become available so, in case you add codes and descriptions to your application, make sure it can handle unfamiliar codes.
3. **Rendering documents to PDF is a lengthy operation:** Documents sent to PostalMethods are rendered to PDF format (even if the document was originally a PDF document). In case you automatically try to GetPDF, note that the rendering process is relatively lengthy and depends on the type of document, its size, remote images to download and current system load.
4. **Test using Development Work Mode:** When sending mail items in Development Work Mode, they are only simulated and are not sent to the postal agency. This is a great way for testing during the development process. The Work Mode can be set as a user default or for every mail item in the Web Service method.
5. **It is not always possible to cancel the delivery of a letter:** Cancel Delivery is only possible before the letter was printed. Make sure your application is ready to handle failure codes when trying to cancel a delivery.
6. **Sending to international addresses:** When sending letters internationally, the last address line must include only the country name. Please check the valid names of countries.

7. **More To Come...**

8. Writing Your Code

9. Code samples are available for a variety of development environments.

10.   **See the Code Samples page.**

11. The samples are a good starting point for creating custom code adapted to your requirements.

"Address Inside" or "Address Outside"?

PostalMethods differentiates between two types of messages:

1. Messages in which the destination address is present in the document ("address inside").
2. Messages in which the destination address is not present in the document. Instead, the address is provided in the Web Service call that transports the document to PostalMethods ("address outside").

> **When sending letters by email, you must use "address inside"**
> **Web Service users - when in doubt, use "address outside"**

Address Inside

In this mode, the destination address is printed on the first page of the sent document. This mode is normally used when a document is generated from an application in which you cannot cause the Web Service call to include the destination address. It is also used when submitting messages by Email. For example, you may be sending letters from these shrink-wrapped applications.

The SendLetter() method is used for this mode, and the call looks like this (in meta-code):

```
SendLetter(Username      => "myuser",
        Password       => "mypass",
        MyDescription  => "Sending a letter with Address Inside",
        FileExtension  => "DOC",
        FileBinaryData => $base64Letter,  /* this letter contains a
                            destination address on the first page */
        WorkMode       => "Default")); /* defines the user's Work Mode setting */
```
Limitations: When using "Address Inside", the document containing the delivery address must be in either MS-Word (doc, docx), textual PDF or HTML formats.

Address Outside

In this mode, the destination address block on the first page of the sent document is left empty, and the destination address is transferred to PostalMethods within the Web Service call. This mode gives better control for performing address verification, and should be your default choice, if possible.

The SendLetterAndAddress() method is used for this mode, and the call looks like this (in meta-code):

```
SendLetterAndAddress(Username       => "myuser",
                  Password       => "mypass",
                  MyDescription  => "Sending a letter with Address Inside",
                  FileExtension  => "DOC",
```

```
                   FileBinaryData => $base64Letter /* this letter contains an
                           empty destination block on the first page */
                   WorkMode       => "Default" /* defines the user's Work Mode
setting */
                   AttentionLine1 => "Andrea Smith
                   AttentionLine2 => "Accounting Dept.
                   Company        => "ACME Inc."
                   Address1       => "100 Flower Street."
                   Address2       => "Suite 100"
                   City           => "Los Angeles"
                   State          => "CA"
                   PostalCode     => "90010"
                   Country        => "USA"));
```

How To Place Content In Letters

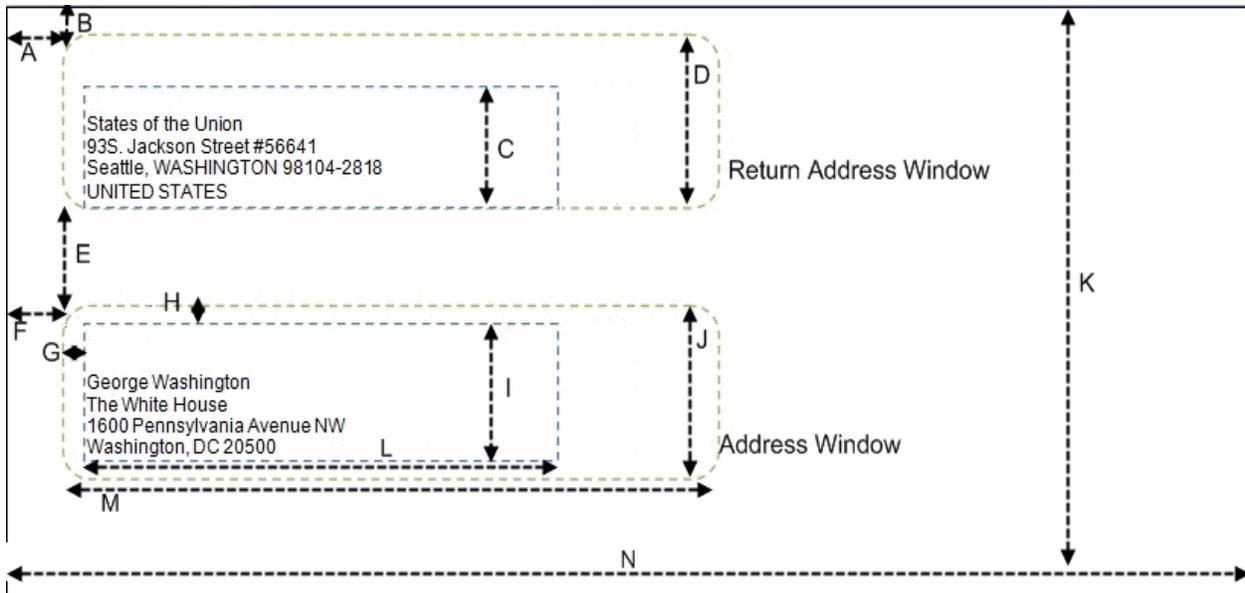When designing your document, make sure you follow these guidelines.

Postal Addresses

Address (Bottom) Window

To make sure the recipient address will fully appear through the bottom window, however the paper may shift inside the envelope (see explanation below), make sure it is placed in a rectangle which top-left corner is placed 0.5" from the left paper margin and 2.042" from the top paper margin. The size of the rectangle must not exceed height 0.875" or width 3.5".

Return Address (Top) Window

To make sure the return address will fully appear through the top window, however the paper may shift inside the envelope (see explanation below), make sure it is placed in a rectangle which top-left corner is placed 0.5" from the left paper margin and 0.5" from the top paper margin. The size of the rectangle must not exceed height 0.792" or width 3.5".

The following image shows the measurements of correctly-placed address blocks in a document. These measurements assume the letter is located at the bottom-left part of the envelope. In case the letter shifts upwards or sideways, the postal agency machinery and the postal delivery worker will still be able to read the address.

States of the Union
93S. Jackson Street #56641
Seattle, WASHINGTON 98104-2818
UNITED STATES

Return Address Window

George Washington
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

Address Window

|			
A.	0.375"	H.	0.125"
B.	0.167"	I.	0.875"
C.	0.792"	J.	1.125"
D.	1.125"	K.	3.667"
E.	0.625"	L.	3.5"
F.	0.375"	M.	4.5"
G.	0.125"	N.	8.5"

Content

Paper Margings

Content should be limited to 0.5 inch margins on the top, left and bottom and to 0.6 inch on the right. Anything outside these margins might not be printed.

It is best to start writing the body of the letter 3 3/8" from the top of the page and 0.5" from the left.

Bar Codes and LetterIDs

Two types of identification marks are printed by PostalMethods. Address marks (marked as E and F in the picture below) are printed on the first page of the letter only. Page marks (marked as G and H in the picture below) are printed on every sheet of paper (which means only on odd pages in duplex printing). These marks are required for document fulfillment and customer support.

Reserved areas on a letter size (8.5"x11") paper

Return Address

Recipient Address
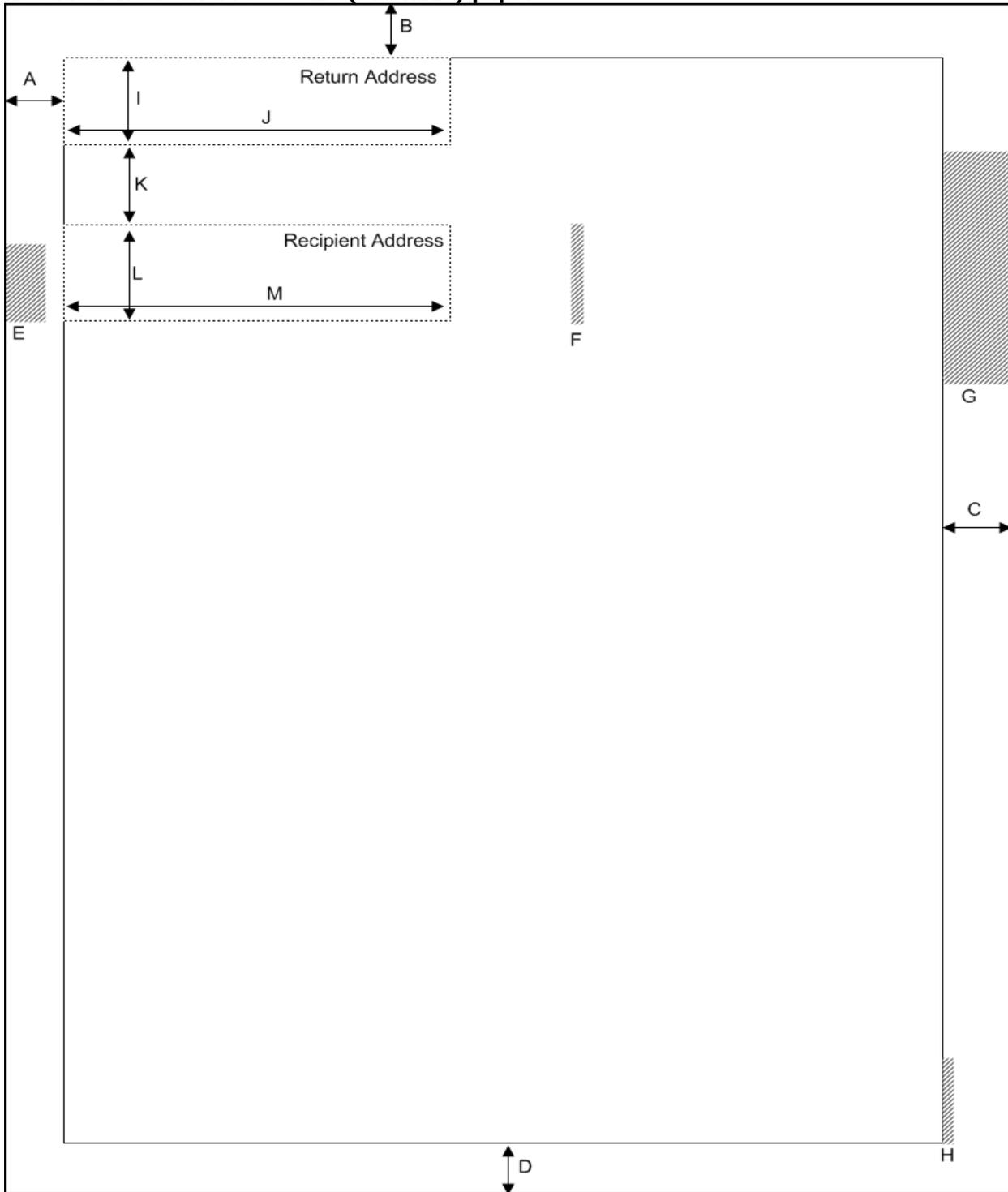
A. 0.5"	H. Page LetterID - appearing on every sheet of paper
B. 0.5"	I. 0.79"
C. 0.6"	J. 3.25"
D. 0.5"	K. 0.752"
E. Address bar code - appearing on the first page only	L. 0.88"

F. Address LetterID - Appearing at the rightmost side of the address window G. Page bar code - appearing on every sheet of paper	M. 3.25"

Why are there limitations at all?

Number 10 envelopes are 4.125" high and 9.5" wide. Letter size paper is 11" high and 8.5" wide. A letter size folded in three is 11"/3 = 3.667" high. According to these measurements, a letter size paper, folded in three, inserted into a number 10 envelope - may shift inside this bigger envelope. There is a full inch (9.5" – 8.5") possible horizontal movement and 0.458" (4.125" minus 3.667") possible vertical movement.

Furthermore, postal agencies require that the recipient address appear in full through the bottom window and that there would be a margin of at least 0.125" between the address and the window borders.

How To Place Content In Postcards

The PostalMethods postcard has - prepare for a big surprise - two sides:

Image Side: a.k.a front side or non-address side. the side that does not contain the address.

Address Side: the side where the address is placed.

Definitions

Image Side

This is the side on which you would usually find colorful images of ski slopes, tigers in the savanna, the Eiffel tower or Niagara Falls. Another definition is the side on which the address and stamp are NOT located. Textual and/or image content may be placed anywhere on this side of the postcard.

Multiple postcards are printed on a large sheet of paper and are later cut to their final size. The cutting knives might deviate slightly and miss the intended cutting line. To make sure your postcard looks at its best in any scenario, use the following design instructions:

- **Trim Line**

  Indicates the line aimed at by the cutting knives. When accurate, the postcard size is exactly **4.25 inch high and 6 inch wide**.

- **Bleed Line**

  Indicates the maximum "outbound" deviation. The maximum size of the postcard may be **4.5 inch high and 6.25 inch wide**. For this reason, the image designed to be placed on the Image Side should have this physical size. If the image is smaller, the original white color of the postcard may be visible.

- **Safe Area**

  Indicates the maximum "inbound" deviation. The minimal size of the postcard may be **4 inch high and 5.75 inch wide**. For this reason, important content that must be visible to the recipient should not be placed outside the Safe Area. To be on the safe side, it is recommended to add another 1/8 of an inch on each side, making the safe area **3.75 inch high and 5.5 inch wide**.

Address Side

This is the side on which the address and stamp are placed. Typically, the recipient postal address appears at the bottom-right area and the stamp at the top-right area. Textual or image content may be placed at the left side of the Address Side.

The bottom area of the postcard is reserved for the postal barcode and may not be used for placing content. The main content area on this size begins on the top left corner, 0.375" from both the left and top borders of the card. Its size is **3.375 inch high and 3.125 inch wide**.

The size of the provided document should be the full size (4.5" x 6.25") of the card and include the content that goes in the content portion (3.375" x 3.125"). PostalMethods prints the document on the card and then covers the reserved areas - barcode, postal address and indicia (postage). The recipient address that was provided in the Web Service call is then printed in its designated area.

Consider using the provided postcard templates.

Address Verification and Correction

Letters sent to the United States

Recipient addresses of mail items delivered within the United States are verified and updated by CASS-certified software to meet official USPS standards. CASS verification includes DPV as well.

Address verification corrects spelling mistakes, changes text case to uppercase, uses USPS abbreviations, completes missing information such as secondary address and ZIP+4. Most important it decreases the overall delivery time and increases the chances of successful delivery.

The corrected address automatically replaces the address provided by the user.

In case of a failure in address verification, re-check the address you provided and make sure all address details are provided. You may either send your mail again with the correct address or use the *Fix & Resend* feature in the Control Panel Activity section to fix the address.

Letters sent outside the United States

For letters destined to other countries, no address verification is currently applied. Text case is changed to uppercase.

In case the destination country was not specified in the last line of the address, the user's country is added to the address. You may change your user's country in PostalMethods' Control Panel -> User Settings -> General -> Country.

Using Documents, Images, Pre-Uploaded Files And Templates

There are three options for handling files when sending letters and postcards using the PostalMethods Web Services: uploading documents and images per request; pre-uploading file and using them by a reference and templates with placeholders for merging data.

OPTION 1: Upload A Document or Image Per Request

With each Web Service request, send a file as binary data. The file is converted to a PDF format and used to create your letter or postcard. See either one of the "Send" methods for specific details.

This option is the most resources consuming and should be used when sending letters or postcards that are completely different from one another.

OPTION 2: Use Pre-Uploaded Files

You may pre-upload documents and images for future use by using the UploadFile method. Provide the uploaded file a name so you could refer to it when you want to use that file for sending.

When sending a letter or a postcard, refer to the pre-uploaded file by the name you provided. Your file is converted to a PDF format and used to create your letter or postcard. See either one of the "Send" methods for specific details.

This option is most useful when sending multiple letters containing the exact same content to multiple recipients. This option is especially efficient when using postcard images. The relatively large image is uploaded once and is referred to for each postcard sent.

OPTION 3: Use A Pre-Uploaded Template To Merge Data

Use the UploadFile method to pre-upload an HTML or MIME HTML (MHT) file to be used as a template. When sending a letter or postcard, refer to this template and send only the data fields to be merged into this template. The data is merged into the template and converted to a PDF format.
See "SendLetterAndAddress" and "SendPostcardAndAddress" for specific details.

- **How To Design Your HTML or MIME HTML (MHT)**

Your HTML or MHT files must be designed according to the page size or postcard size used. To indicate a placeholder where data is to be merged, use this format: **{|field name|}**

Example: "Please reconcile your debt of ${|Amount|} no later than {|PayDay|}."
Possible merge result: "Please reconcile your debt of $10,442.99 no later than May 11th."

Use the MHT format to include images, such as your logo.

- ## How To Construct Your XML
  - XML must be encoded as UTF8
  - XML special characters cannot be included in the content itself. Replace Less-than(<) with `<`, Greater-than (>) with `>`, Ampersand (&) with `&`, Double-quote (") with `"` and Single-quote (') with `'`

- ## How To Design Your Merge Data (XML)

  Provide an XML file containing the data to be merged into the referred template.

XML Scheme	Example

`<MergeData>`
 `<Field(n)>string</Field(n)>`
`</MergeData>`
	`<MergeData>`
	 `<CustomerName>Roy</CustomerName>`
	 `<Amount>10,442.99</Amount>`
	 `<PayDay>May 11th</PayDay>`
	`</MergeData>`

Test and make sure that the merged data does not alter your template design and does not cause adding additional pages.

In case the XML contains data for a merge field that does not exist in the template, the request is failed. However not all merge fields in the template must be referred to in the XML.
Example:

Fields in HTML	Fields in XML	Result
`<HTML><BODY>` `Dear {|Value1|}, ` `Your company,` `{|Value2|}, was` `nominated for the` `{|Value3|}` `award!` `</BODY></HTML>`	`<MergeData>` `<Value1>string</Value1>` `<Value2>string</Value2>` `</MergeData>`	Not a problem. The missing "Value3" merge field is ignored and nothing is merged into that placeholder.
`<HTML><BODY>` `Dear {|Value1|}, ` `Your company,` `{|Value2|},` `is just awesome!` `</BODY></HTML>`	`<MergeData>` `<Value1>string</Value1>` `<Value2>string</Value2>` `<Value3>string</Value3>` `</MergeData>`	The merge fails since the merge data XML contains a field ("Value3") that does not exist in the HTML.

Setting System Preferences

You can set default behaviors and preferences by logging into your PostalMethods account at https://cp.postalmethods.com/ and clicking *User Settings*. Some values you may wish to set are described below.

General

Time Zone

Set the time zone in which you wish all dates and times to appear. All date and time values provided by PostalMethods are in the user's local time.

Security

Allowed Email Senders

If you wish to submit your letters via email (SMTP) enter any email addresses which are allowed to send letters through the current username.

Letters

Set your letter stationery preferences, such as: Envelope, paper size and more. Currently, you can control whether your document is printed in black or in color and whether it is printed on one side of the page (simplex) or both sides (duplex).

Feedback

These settings relate to feedback "pushed" back to you. They have no effect on status retrieved by "pull".
(See Feedback By "Push" vs. "Pull" for more on these two feedback modes.)

Get Feedback By

Determines whether feedback will be returned to you by email or Web Service call (SOAP XML or HTTP POST). If your message is submitted by email, feedback will be returned to the *Reply-To* address, or if unavailable, to the *From* address.

When To Send

Determines the events that will trigger a feedback call.

Advanced Settings/Default Feedback Email

Feedback email will always be sent to the set email address. Use this setting in case you send letters using Web Service and want to received feedback by email or in case you prefer to always receive feedback to the same email.

Advanced Settings/Authentication

This string will be added to every feedback email header. You may validate this string to make sure the feedback is coming from PostalMethods. If not populated, this X-header will not appear in the message header.

Note On Date Formats

There is no online setting to determine how dates & times are displayed. Here's how it works.

Dates displayed in your browser

The format of dates displayed in your browser is set by your browser's *language* preferences. If this is set to *en* the display will default to MM/DD/YYYY HH:MM:SS. To change this to UK convention of DD/MM/YYYY HH:MM:SS, for example, set your browser's highest-priority language to *en-gb*.

Dates returned in web service feedback

These are always YYYY-MM-DD**T**HH:MM:SS, for example 2008-05-31T10:46:17.

Dates returned in email feedback

These are DD/MM/YYYY HH:MM:SS, for example 30/06/2008 13:20:18.

Feedback By "Push" vs. "Pull"

Determining the status of a letter can be achieved by "pull" or by "push":

Feedback by "pull"

In "pull" feedback, the client system (your server) initiates a call to query the status of a letter. PostalMethods is contacted with one of the query methods and responds accordingly. The client system needs to poll PostalMethods until a final status is returned. This may require multiple attempts.

"Pull" Feedback Retrieval Methods

- GetStatus()

Feedback by "push"

In "push" feedback, the PostalMethods system initiates a call to the client system only when the status of a letter changes. The developer can decide whether to receive feedback by HTTP POST, by SOAP callback, or by email confirmation. In each case, the developer can also indicate to which URL, endpoint, or email address, respectively, feedback should be sent. In "push" feedback, the PostalMethods system does not need to be polled repeatedly, and only one call is placed back to the client for each change of status.

"Push" feedback is defined through the control panel (and not set through a Web Service call). The following events can be set to trigger a callback.

"Push" Feedback Events

- **On Error:** an error which affects the whole request have occurred
- **Ready To Be Dispatched:** letters were processed and are now waiting to be delivered to the postal service
- **After Dispatch:** letters were delivered to the postal service

See Push Feedback specifications in the reference manual.

How Postalmethods Handles Postal Addresses

Address Outside

The address, provided by the user, is verified and corrected. If needed, the destination country name is added as well. The whole area of the address window is superimposed with a white rectangle, covering anything placed in that area. The corrected address is then placed in the address window, using font Arial size 9 (all uppercase), which allows six lines to fully appear through the address window. Return address is not touched.

Address Inside

PostalMethods searches for text appearing inside the address window and extracts it. The extracted text is parsed, verified and corrected. If necessary, the destination country name is added. In case a correction is needed, the whole are of the address window is superimposed with a white rectangle, covering anything placed in that area. The correct address is then placed inside the address window, using an Arial font of size 9 (all uppercase), which allows six lines to fully appear through the address window. The return address is not touched.

What Happens If The Address Block Is Misplaced?

Recipient Address Window

The address is extracted from the address window area. If parts of the address exceed the rectangle margins, the address may not be complete and so may fail verification.

In case the address has too many lines and cannot be fitted inside the recipient address window, PostalMethods adds an additional line at the top of the address. It may not be seen through the envelope, but since the postal scanners scans the address from bottom to top and only look for the address and not the attention lines, the letter should be delivered.

Return Address Window

The return address is used by the postal agency when the letter is undeliverable in order to return it to its sender. Since the return process is done manually by postal agency staff, the location of the return address is less strict. In case there is no valid address appearing in the return address window the letter is supposedly destroyed by the postal agency. It is highly recommended to provide a return address so that recipients would know who the sender is.

Country Name

Postal agencies require the destination country to be printed in the last line on its own, unless the mail is sent nationally, in which case the country name is not required. PostalMethods adds or removes the country name according to where the mail is sent from.

In case the last row does not contain a country name PostalMethods adds the user's country as the last row. Setting your country name allows you to not include it as part of the address when you send mail to a destination in your country.

You may set the user's country in the Control Panel -> User Settings -> General tab -> Country.

When sending international mail, the last line must contain the destination country name. See list of allowed country names.

How to enhance privacy when posting through PostalMethods (for HIPAA and other purposes)

Some users - such as US healthcare entities who are required to abide by HIPAA guidelines, and financial institutions worldwide - have enhanced privacy requirements from messaging providers, such as PostalMethods.

While PostalMethods does not fall into any of the HIPAA "covered entity" categories, as potential Business Associate we have implemented several privacy-enhancing features and procedures, and suggest that you apply the following measures:

Use SSL to send your message

We enable SSL-secured communication to our Web Service servers via https://api.postalmethods.com/PostalMain.asmx, so that sensitive information, such as potentially patient-identifying information, can be submitted securely.

Use the *Enhanced Privacy* feature

This setting may be selected through the control panel under *User Settings -> Security -> Advanced Settings*. It is intended to keep patient-identifying information on our servers no longer than is necessary to print a letter or to announce its failure (several minutes). When set, images of letters sent through the service, as well as temporary files, are immediately deleted from our servers upon completion.

Don't place patient-identifying, or otherwise confidential, information into any data fields

Make sure that confidential information is only present in the body of your outgoing mail. All other parts of a transaction are retained indefinitely for billing purposes, so don't insert confidential information anywhere except in the mail itself. For example, the email subject line and the *MyDescription* Web Service field, are also displayed as part of the Control Panel Activity and so are stored for long periods in our databases.

Glossary

This page describes concepts and terms mentioned in the Developer's Guide.

Request Item: represents the digital content and settings which will result in the fulfillment of a physical letter delivered to its recipient.

Request: a container for one or more Request Items. A successful execution of one of PostalMethods "Send" Webservices will result in a new Request with one or more Request Items.

Paper: refers to a physical sheet of paper.

Page: refers to a printed side of a sheet of paper.

Simplex: printing on a single side of a sheet of paper.

Duplex: printing on both sides of a sheet of paper.

For example: **duplex** printing on a single **paper** results in a count of two **pages**.

Address Verification: every delivery address mailed to the United States must be verified before being fulfilled. Verification is done according to the United States Postal Service's Coding Accuracy Support System (CASS) and Delivery Point Validation (DPV) standards.