CorrectAddress®
Web Services

Reference Guide

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Table of Contents

Chapter 1 - General Information

PRODUCT INFORMATION

The CorrectAddress® software engine is CASS™-certified by the United States Postal Service and SERP-certified by Canada Post to perform address correction, standardization and validation. The product is designed to overcome wide variations in address data, fix misspellings and erroneous information, fill in omitted components and normalize incorrect formatting. The output contains postal data records, in which components are separated into individual fields.

WEB SERVICE AND OBJECT MODEL INFORMATION

Web services allow client-side programs to invoke certain methods exposed by a server and receive any processed data back. Web services provide a standard means of interaction between different software applications, running on a variety of platforms and/or frameworks.

Communication between the client and server modules is done via Extensible Markup Language (XML) that allows for efficient data parsing in web-enabled applications. Most application frameworks provide predefined modules that aid with parsing XML documents. Furthermore, popular frameworks provide a mechanism through which the XML communication is entirely transparent to the developer – s/he simply deals with 'objects'. The underlying framework translates the objects to an XML stream (known as serialization). Similarly, the data returned back from the server is translated from XML to more easily manageable objects (known as deserialization) by the framework.

Before we take a look at exactly how one would invoke a web service, a few terms need to be understood.

eXtensible Markup Language (XML): Language to describe data and control flow in a generic, platform independent fashion

Web Service Description Language (WSDL): XML based language which provides a model for describing web services. The server uses WSDL to provide the following information:

1. Enumerate the various services/methods it offers
2. Name and type of arguments that these methods operate upon
3. Name and type of values (if any) returned by the server as a result of calling these methods

Simple Object Access Protocol (SOAP): Once you know what services are offered by the server, SOAP is a means through which the client communicates with the server to actually invoke those services

Serialization: The process of converting an object or a data type (e.g, int, string, etc) into a generic XML equivalent

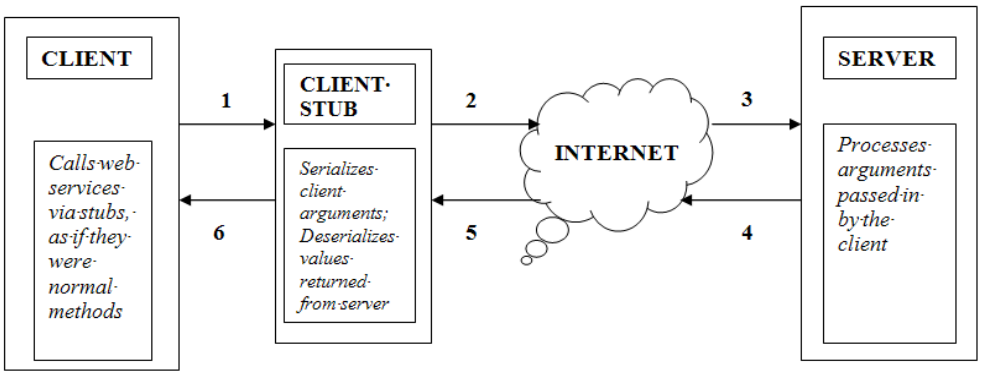
Deserialization: The process of converting an XML representation of an object or data type into a more framework specific form

In order to call a web service, one must:

1. Obtain the URL to the WSDL
2. Point the application framework to this URL – the framework will create *stubs* that handle communication with the server
3. Write the client program that uses the stubs generated above to call the web services

The above steps will be evident in the demo programs described in **Chapter 3: Web Service Integration** later in this manual.

The following figure depicts a typical client/server interaction via web services



1. The Client calls web service methods like any other regular method, 'thinking' that the client stub offers these methods
2. The Client stub serializes the method arguments and creates a SOAP request that it sends over to the server
3. The server receives the SOAP request, deserializes it and calls the requested method with the arguments provided by the client
4. The server serializes the return values from the methods into a SOAP response that it sends back to the client
5. The client stub receives the SOAP response and deserializes it into a more useful object
6. The returned object is then sent over to the Client module

WHAT'S NEW

- In November 2009, Intelligent Search Technology introduced a new set of web services utilizing an enhanced XML object model. Among the changes are:
- Improved speed
- Improved code efficiency
- Improved programmer's interface – no more parsing XML responses. The new web services return result objects that have the information parsed and ready for use
- Code has been refactored, leading to deprecation of some outdated services and packing additional functionality into existing methods

If you need help transitioning from the old-style web services to the new object model, please refer to Appendix A, or contact IST Technical Support Team.

WEB SERVICE LOCATION (URL)

https://www.intelligentsearch.com/CorrectAddressWS/CorrectAddressWebService.asmx

MAIN FUNCTIONS

The following is a list of currently supported CorrectAddress® web service functions.

Function	Description
wsCorrectA	Validates and CASS-standardizes input address with Delivery Point Validation (DPV) and LACSLink™ processing. Verifies and corrects Canadian addresses. All near matches are returned when applicable. Number of remaining transactions is returned in the *SearchesLeft* output field.
wsTigerCA	Validates, CASS-standardizes and geo-codes input address with Delivery Point Validation (DPV) and LACSLink™ processing. All near matches are returned when applicable. Number of remaining transactions is returned in the *SearchesLeft* output field.
wsFindCityCounty	Accepts ZIP code as input. Returns preferred city name, state, county information. Number of remaining transactions is returned in the *SearchesLeft* output field.
wsFindZipCity	Accepts city and state as input. Returns all corresponding ZIP codes. Number of remaining transactions is returned in the *SearchesLeft* output field.
wsFindCityState	Accepts ZIP code as input. Returns all valid mailing city names, state, county information. Number of remaining transactions is returned in the *SearchesLeft* output field.
wsStreetSearch2	Accepts street information with city or ZIP code Returns matches based on similar street records in the area. The matches are unsorted and contain street number ranges and secondary number ranges (if applicable).Number of remaining transactions is returned in the *SearchesLeft* output field.

ACCOUNT MANAGEMENT FUNCTIONS

The following functions are used to access or modify user account information

Function	Description
wsGetAccountAccess	Returns information about account access privileges.
wsGetAccountInfo	Returns account related information. Currently, it is used to retrieve remaining number of transactions. Return codes are: 0 – information retrieved successfully 1 – invalid account 2 – account is disabled 3 – account does not have access to CorrectAddress® XML web services 4 – unspecified error
wsCreateBatch	Creates user batch space. The batch space stores all settings necessary to produce a USPS Postal Form 3553 (CASS report) upon completion of a batch job. The following functions allow users to append current transaction to a specific batch space by passing its name in the "batch name" parameter: wsCorrectA, wsTigerCA. Note: The batch space only stores job statistics, *not* the actual output address data. Storing address data returned by web services is users' responsibility.
wsDeleteBatch	Empties and removes specified user batch space.
wsGetBatchList	Returns all current batch spaces under user's account.
wsGetPS3553form	Retrieves current batch job statistics necessary to generate USPS Postal Form 3553 (CASS report). Data is returned in the XML format.

OUTPUT DATA DEFINITIONS

The following data fields are contained in the web service response string. Keyword **"Any"** is used to designate fields that may contain any valid ASCII characters. Note that numeric fields may contain leading zeros.

OUTPUT DATA	FIELD TYPE	MAXIMUM FIELD SIZE
StreetNumber	Alphanumeric, Fractions	**10 (21 for wsStreetSearch2 service)**
PreDirectional	Alpha	**2**
StreetName	Alphanumeric	**28**
StreetSuffix	Alpha	**4**
PostDirectional	Alpha	**2**
SecondaryDesignation	Alpha, #	**4**
SecondaryNumber	Alphanumeric, Fractions	**8 (17 for wsStreetSearch2 service)**
City/Municipality(US/Canada)	Alphanumeric	**28**
State/Province (US/Canada)	Alpha	**2**
ZipAddon/Postal Code	Numeric, -	**10**
Zip/Postal Code	Numeric	**5**
Addon	Numeric	**4**
LOTNumber	Numeric	**5**
DPCCheckdigit	Numeric	**3**
RecordType	Numeric	**1**
DeliveryLine1	Any	**64**
DeliveryLine2	Any	**64**
LastLine	Alphanumeric	**64**
LACS	Alpha	**1**
CarrierRoute	Alphanumeric	**4**
PMBDesignator	Alphanumeric, #	**12**
FirmRecipient	Any	**40**
Urbanization	Alpha	**28**
CountyName	Alpha	**25**

OUTPUT DATA	FIELD TYPE	MAXIMUM FIELD SIZE
CountyNumber	Numeric	**3**
Filler[2]	Alphanumeric	**260 (see sample output for wsCorrectA function call)**
GeoTLID (TLID)[1]	Numeric	**10 * 20**
(Tigerstcode) [1]	Numeric	**2**
(Tigercroute) [1]	Alphanumeric	**4**
(Tigercounty) [1]	Numeric	**3**
GeoMatchFlag (MatchFlag) [1]	Alpha	**1 * 20**
GeoTract (Tract) [1]	Numeric	**6 * 20**
GeoBlock (Block) [1]	Numeric	**4 * 20**
GeofLat (fLat) [1]	Decimal with + sign	**11 * 20**
GeotLat (tLat) [1]	Decimal with + sign	**11 * 20**
GeofLong (fLong) [1]	Decimal with – sign	**12 * 20**
GeotLong (tLong) [1]	Decimal with – sign	**12 * 20**
GeoAddonStart(AddonStart)[1]	Numeric	**4 * 20**
GeoAddonEnd(AddonEnd) [1]	Numeric	**4 * 20**
GeoErrCodes (Tigererrcode)[1]	Numeric	**30**
GeoRetCode (tigerRet) [1]	Numeric	**10**
ReturnCodes	Numeric	**10**
ErrorCodes[3]	Alphanumeric	**30**
ErrorDesc[4]	Alphanumeric	**n/a**
SearchesLeft[5]	**Numeric**	**n/a**

---

[1] Output field for geo-coding only. The name in parentheses is used by *TigerCA* function call only.

[2] Output field for *wsCorrectA* and *wsTigerCA* function calls only.

[3] ErrorCodes
This node lists all codes relevant to the input address. In case of an incorrect username/password combination *ErrorCodes* is set to **xx**. *ErrorCodes* also equals **xx** when an account has no remaining transactions or has been deactivated.

[4] ErrorDesc
This node lists detailed messages for each error code in *ErrorCodes*.

[5] SearchesLeft
This node returns the number of transactions remaining on user account.

Please note that when *wsCorrectA* or *wsTigerCA* return multiple near-match records, only the first record will contain data for DeliveryLine1, DeliveryLine2, LastLine, LOTNumber, DPCCheckdigit, PMBDesignator, ReturnCodes, Error Codes, and ErrorDesc.

Complete list of CorrectAddress® fields, record types and error codes (U.S. and Canada) is available at:

https://www.intelligentsearch.com/Hosted/User/CACodes.aspx (web account required to access).

Chapter 2 - Function Specifications

wsCorrectA

Description

Validates and CASS-standardizes input address with Delivery Point Validation (DPV) and LACSLink™ processing.

Verifies and corrects Canadian addresses.

All near matches are returned when applicable.

Number of remaining account transactions is returned in the *SearchesLeft* output field.

XML template

```
<username>string</username>
<password>string</password>
<firmname>string</firmname>
<urbanization>string</urbanization>
<delivery_line_1>string</delivery_line_1>
<delivery_line_2>string</delivery_line_2>
<city_state_zip>string</city_state_zip>
<ca_codes>string</ca_codes>
<ca_filler>string</ca_filler>
<batchname>string</batchname>
```

Parameters

username
: account username

password
: account password

firmname
: (Optional) firm or recipient name for input address

urbanization
: (Optional) urbanization name (Puerto Rico addresses only)

delivery_line_1
: input address line 1 information

delivery_line_2
: (Optional) input address line 2 information

city_state_zip
: input address city, state, ZIP information
(municipality, province, postal code for Canada)

ca_codes
: (Optional) additional codes for address parsing (see Remarks)

ca_filler
: (Optional) internal use (see Remarks)

batchname
: (Optional) name of batch space, if one exists, to which the specified address belongs to (this option is enabled for ability to produce *ps3553* USPS forms).

Remarks

By default, output address is returned in capital letters. To enable mixed case output, pass "**Mc**" in the leftmost two available characters of *ca_codes*.

To enable street address parsing for no-match addresses, pass "**Ry**" in the leftmost two available characters of *ca_codes*.

DPV and LACSLink™ output data is returned through *Filler* output field (see sample output for *wsCorrectA* function call)

[Ex. CA_CODES = McRy]

Output:

Output is an array of objects of type WsCorrectAddress:

```
class WsCorrectAddress{
string StreetNumber;
string PreDirectional;
string StreetName;
string StreetSuffix;
string PostDirectional;
string SecondaryDesignation;
string SecondaryNumber;
string City;
string State;
string ZipAddon;
string Zip;
string Addon;
string LOTNumber;
string DPCCheckdigit;
string RecordType;
string DeliveryLine1;
string DeliveryLine2;
string LastLine;
string LACS;
string CarrierRoute;
string PMBDesignator;
string FirmRecipient;
string Urbanization;
string CountyName;
string CountyNumber;
string Filler;
string GeoTLID;
string GeoMatchFlag;
string GeoTract;
string GeoBlock;
string GeofLat;
string GeotLat;
string GeofLong;
string GeotLong;
string GeoAddonEnd;
string GeoAddonStart;
string GeoRetCode;
string GeoErrCodes;
string ReturnCodes;
string ErrorCodes;
string ErrorDesc;
int SearchesLeft;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<firmname>Intelligent Search Technology</firmname>
<urbanization> </urbanization>
<delivery_line_1>445 Hamilton Ave 608</delivery_line_1>
<delivery_line_2> </delivery_line_2>
<city_state_zip>White Plains, NY</city_state_zip>
<ca_codes>Mc                    </ca_codes>
<ca_filler> </ca_filler>
<batchname> </batchname>
```

The DPV and LACSLink™ output data is returned through *Filler* output field.

***Filler* Output Field**		
Start Position (Index-1)	**Length**	**Description**
1	1	**DPV Confirmation**
2	1	**DPV CMRA**
3	1	**DPV False Positive**
4	1	**DPV NoStat**
5	12	**DPV Footnotes**
17	1	**DPV Vacant Indicator**
255	1	**LACSLink™ Code**
256	2	**LACSLink® RetCode**

wsTigerCA

Description

Validates, CASS-standardizes and geo-codes input address with Delivery Point Validation (DPV) and LACSLink™ processing.

All near matches are returned when applicable.

Number of remaining account transactions is returned in the *SearchesLeft* output field.

XML template

Same as in wsCorrectA Function.

Parameters

Same as in wsCorrectA Function.

Output:

Same as in wsCorrectA Function.

Example

Input:

```
<username>username</username>
<password>password</password>
<firmname>Intelligent Search Technology, Ltd</firmname>
<urbanization> </urbanization>
<delivery_line_1>445 Hamilton Ave 608</delivery_line_1>
<delivery_line_2> </delivery_line_2>
<city_state_zip>White Plains, NY</city_state_zip>
<ca_codes>Mc                    </ca_codes>
<ca_filler> </ca_filler>
<batchname> </batchname>
```

wsFindCityCounty

Description

Accepts ZIP code as input.

Returns city, state, county information.

Number of remaining account transactions is returned in the *SearchLeft* output field.

XML template

```
<username>string</username>
<password>string</password>
<zip>string</zip>
```

Parameters

username
account username

password
account password

zip
input ZIP code

Output:

Output is an object of type WsCityCounty:

```
class WsCityCounty{
string Zip;
string City;
string State;
string CountyName;
string CountyNum;
int SearchLeft;
string ErrorDesc;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<zip>10509</zip>
```

wsFindZipCity

Description

Accepts city and state as input.

Returns all corresponding ZIP codes.

Number of remaining account transactions is returned in the *SearchLeft* output field.

XML template

```
<username>string</username>
<password>string</password>
<city>string</city>
<state>string</state>
```

Parameters

username
account username
password
account password
city
input city name
state
input state abbreviation

Output:

Output is an array of objects of type WsZipCity:

```
class WsZipCity{
string City;
string State;
string Zip;
int SearchLeft;
string ErrorDesc;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<city>Ridgefield</city>
<state>CT</state>
```

wsFindCityState

Description

Accepts ZIP code as input.

Returns all valid mailing city names, state, county information.

Number of remaining account transactions is returned in the *SearchLeft* output field.

XML template

```
<username>string</username>
<password>string</password>
<zip>string</zip>
```

Parameters

username
account username

password
account password

zip
input ZIP code

Output:

Output is an array of objects of type WsCityState:

```
class WsCityState{
string Zip;
string City;
string State;
string CountyName;
int SearchLeft;
string ErrorDesc;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<zip>94707</city>
```

wsStreetSearch2

Description

Accepts street information with city or ZIP code

Returns matches based on similar street records in the area. The matches are unsorted and contain street number ranges and secondary number ranges (if applicable). The ranges are returned in the following form:

Street number: START_RANGE (10 bytes) + END_RANGE (10 bytes) + OEB CODE (Odd, Even or Both, 1 byte)

Secondary number: START_RANGE (8 bytes) + END_RANGE (8 bytes) + OEB CODE (Odd, Even or Both, 1 byte)

Number of remaining account transactions is returned in the *SearchLeft* output field.

XML template

```
<username>string</username>
<password>string</password>
<firmname>string</firmname>
<urbanization>string</urbanization>
<delivery_line_1>string</delivery_line_1>
<delivery_line_2>string</delivery_line_2>
<city_state_zip>string</city_state_zip>
<mixedcase>boolean</mixedcase>
<batchname >string</batchname>
```

Parameters

username
: account username

password
: account password

firmname
: (Optional) firm or recipient name for input address

urbanization
: (Optional) urbanization name (Puerto Rico addresses only)

delivery_line_1
: input address line 1 information

delivery_line_2
: (Optional) input address line 2 information

city_state_zip
: input address city, state, ZIP information

mixedcase
: set to **True** for mixed case output, **False** for capitalized output

batchname
: (Optional) name of batch space, if one exists, to which the specified address belongs to (this option is enabled for ability to produce *ps3553* USPS forms)

Output:

Output is an array of objects of type WsStreetSearch:

```
class WsStreetSearch{
string StreetNumber;
string PreDirectional;
string StreetName;
string StreetSuffix;
string PostDirectional;
string SecondaryDesignation;
string SecondaryNumber;
string City;
string State;
string ZipAddon;
string Zip;
string Addon;
string RecordType;
string CarrierRoute;
string FirmRecepient;
string Urbanization;
string FinanceNumber;
string ErrorDesc;
int SearchLeft;
string Score;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<firmname>Intelligent Search Technology</firmname>
<urbanization> </urbanization>
<delivery_line_1>Mill Town Road</delivery_line_1>
<delivery_line_2> </delivery_line_2>
<city_state_zip>NY 10509</city_state_zip>
```

wsGetAccountAccess

Description

Returns information about account access privileges.

XML template

```
<username>string</username>
<password>string</password>
```

Parameters

username
account username
password
account password

Example

Input:

```
<username>username</username>
<password>password</password>
```

Output:

Output is an object of type WsAccountAccess:

```
class WsAccountAccess {
bool Ca;
bool Geo;
bool Dpv;
bool LACSLink;
bool OfficeAddin;
bool WebClient;
string CurrentDate;
}
```

wsGetAccountInfo

Description

Returns account related information. Currently, it is used to retrieve remaining number of transactions. Return codes are:

0 – information retrieved successfully

1 – invalid account

2 – account is disabled

3 – account does not have access to CorrectAddress® XML web services

4 – unspecified error

XML template

```
<username>string</username>
<password>string</password>
```

Parameters

username
account username

password
account password

Example

Input:

```
<username>username</username>
<password>password</password>
```

Output:

Output is an object of type WsAccountInfo:

```
class WsAccountInfo {
int SearchesLeft;
int ReturnCode;
}
```

wsCreateBatch

Description

Creates user batch space. The batch space stores all settings necessary to produce a USPS Postal Form 3553 (CASS report) upon completion of a batch job. The following functions allow users to append current transaction to a specific batch space by passing its name in the "batch name" parameter: wsCorrectA, wsTigerCA.
Returns boolean 'true' if the batch was created successfully; otherwise boolean 'false' is returned.

Note: The batch space only stores job statistics, *not* the actual output address data. Storing address data returned by web services is users' responsibility.

XML template

```
<username>string</username>
<password>string</password>
<batchname>string</batchname>
```

Parameters

username
: account username

password
: account password

batchname
: batch space name

wsDeleteBatch

Description

Empties and removes specified user batch space. Like the CreateBatch function, a boolean 'true' is returned if the batch was deleted successfully; otherwise boolean 'false' is returned.

XML template

Same as in CreateBatch Function.

Parameters

Same as in CreateBatch Function.

wsGetBatchList

Description

Returns all current batch spaces under user's account as a string array.

XML template

```
<username>string</username>
<password>string</password>
```

Parameters

username
account username

password
account password

wsGetPS3553form

Description

Retrieves current batch job statistics necessary to generate USPS Postal Form 3553 (CASS report). Data is returned in an XML format.

XML template

Same as in wsCreateBatch Function.

Parameters

Same as in wsCreateBatch Function.

Output:

Output is an object of type WsPS3553:

```
class WsPS3553{
string CAdate;
string Company;
string Software;
string Configuration;
int RecordCount;
int ZipCount;
int AddonCount;
int CRouteCount;
int LOTCount;
int DPCCount;
int LACSCount;
int EWSCount;
int DPVCount;
int HDefaultCount;
int HExactCount;
int RRDefaultCount;
int RRExactCount
int RDICount;
string Message;
}
```

CADate records the date of the USPS data used for processing.

Company, **Software**, and **Configuration** record information about organization and the CASS™-certified software. The rest are counters based on input data. **RecordCount** records the overall number of records processed for this particular batch job.

The following are the fields in PS3553 that must be filled out with information returned by the web service:

Section A (Software):

1. [Company]
2. [Software]
3. [Configuration]
7. [Company]
8. [Software]
9. [Configuration]

Section B (List):

2a. Current date
2c. Current date
3a. [CADate]
3c. [CADate]

5. 1
6. [RecordCount]

Section C (Output):

1a. [AddonCount]
1b. 0
1c. [DPCCount]
1d. [ZipCount]
1e. [CRouteCount]
1f. [LOTCount]
2a. From [CADate] To [CADate + 180 days]
2c. From [CADate] To [CADate + 180 days]

2d. From [CADate] To [CADate + 365 days]
2e. From [CADate] To [CADate + 90 days]

2f. From [CADate] To [CADate + 90 days]
Section D (Mailer):

Section E (QSS):

High Rise Default = [HDefaultCount]
High Rise Exact = [HExactCount]
RR Default = [RRDefaultCount]
RR Exact = [RRExactCount]
LACS = [LACSCount]
EWS = [EWSCount]
DPV = [DPVCount]
RDI = [RDICount]

RDICount (Residential Delivery Indicator) is always set to 0. This functionality is currently not available via CorrectAddress® web services.

Message will return the name of the batch job if data retrieval is successful. Otherwise, it will return an error message.

Example

Input:

```
<username>username</username>
<password>password</password>
<city>testBatch</city>
```

GetMuniProv

Description

Accepts Canadian postal code as input.

Returns municipality and province information.

Number of remaining account transactions is returned in the *SearchLeft* output field.

Any errors are returned in the *ErrorDesc* output field.

XML template

```
<username>string</username>
<password>string</password>
<postalCode>string</postalCode>
```

Parameters

username
account username
password
account password
postalCode
input Canada Post postal code

Output:

Output is an object of type GetMuniProv:

```
class GetMuniProv{
string PostalCode;
string Province;
string Municipality;
int SearchLeft;
string ErrorDesc;
}
```

Example

Input:

```
<username>username</username>
<password>password</password>
<postalCode>T0J0A0</postalCode>
```

Chapter 3 - Web Service Integration

C#

1. Generate the C# stubs from the WSDL as follows:

   ```
   wsdl.exe /n:CorrectAddressWSDemo <WSDL/URL>
   ```

   The tool will indicate where the resultant file was created
2. Add a reference to `CorrectAddressWebService.cs` (which is the file created in the step above)
3. Ensure that the project references 'System.Web' and 'System.Web.Services'
4. Call the CorrectAddress web service

Example of calling **wsCorrectA**:

```
string username = "your username";
string password = "your password";
WsCorrectAddress[] caResultList = caWebService.wsCorrectA(username, password, "Intelligent
Search Technology Ltd.", " ","445 Hamilton Ave, ste 608", " ", "10601", " ", " ", " ");
```

Sample C# project and supplementary documentation is available at:

https://www.intelligentsearch.com/CorrectAddressWS/docs/CSharp/Example.zip

The example above uses the WSDL utility to generate client stubs. As an alternative, users may add a direct web reference to the web service by using the Add Web Reference tool in the Visual Studio project.

COLDFUSION

Example of calling **wsCorrectA**:

```
<cfscript>
	//variable definitions
	username = "your username";
	password = "your password";
	batchname = "test_batch";

	wsdl =
"https://www.intelligentsearch.com/CorrectAddressWS/CorrectAddressWebService.asmx?wsdl";

	//  create a webservice object
	ws = createObject("webservice", wsdl);

	// Sample wsCorrectA call
	ws_result = ws.wsCorrectA(username, password, "Intelligent Search Technology
Ltd.", "  ", "445 Hamilton Ave, Ste 608", " ", "10601", " ", " ", batchname);

	ca_results = ws_result.getWsCorrectAddress();

</cfscript>
```

Sample ColdFusion script and supplementary documentation is available at: https://

www.intelligentsearch.com/CorrectAddressWS/docs/ColdFusion/Example.zip

JAVA

1. Generate the Java stubs from the WSDL as follows:
   `wsimport -s src -d bin <url_to_wsdl>`
   This will create the source files in the /src directory and class files in the /bin directory.
2. Import the source files generated in step 1 into the project.
3. Call the CorrectAddress web service

Example of calling **wsCorrectA**:

```
// 1. Define an object of the 'web service' class
CorrectAddressWebService caWebServices;
// 2. Define an object of the 'soap' class
CorrectAddressWebServiceSoap soap;
// 3. Factory object to 'create' other objects
ObjectFactory factory;

// Account Specific info
final String username = "your username";
final String password = "your password";
final String batchName = "test_batch";
// 4. Create holder for the CorrectAddress Response
WsCorrectAResponse wsCorrectResult = factory.createWsCorrectAResponse();

// 5. Call the desired web service
wsCorrectResult.setWsCorrectAResult(soap.wsCorrectA(username, password, " ",
" ", "445 Hamilton Ave", "Ste 608", "10601", " ", " ", " "));
```

Sample Java script and supplementary documentation is available at:

https://www.intelligentsearch.com/CorrectAddressWS/docs/Java/

Example.zip

ORACLE

1. Create the PL SQL package as defined in soap_api.pls (located in the example package below) as follows:

   @soap_api.pls

2. Call the CorrectAddress web service
3. Use the SOAP API to parse the output fields, as necessary.

Sample Oracle script and supplementary documentation is available at:

https://www.intelligentsearch.com/CorrectAddressWS/docs/Oracle/

Example.zip

PHP

Example of calling **wsCorrectA**:

```
$wsdl="https://www.intelligentsearch.com/CorrectAddressWS/CorrectAddressWebService.asmx?WSDL";
$client=new nusoap_client($wsdl, 'wsdl');
$address_params=array(
        'username'=>'your username',
        'password'=>'your password',
        'firmname'=>'Intelligent Search Technology Ltd.',
        'urbanization'=>' ',
        'delivery_line_1'=>'445 Hamilton Ave, ste 608',
        'delivery_line_2'=>' ',
        'city_state_zip'=>'10601',
        'ca_codes'=>' ',
        'ca_filler'=>' ',
        'batchname'=>'test_batch'
        );
```

Sample PHP script and supplementary documentation is available at:

https://www.intelligentsearch.com/CorrectAddressWS/docs/PHP/

Note: The examples use a group of classes called NuSOAP that facilitate creation and consumption of SOAP web services. More information along with the actual PHP classes can be found at https://sourceforge.net/projects/nusoap/ NuSOAP can be replaced by any other SOAP API.

VB.NET

1. Generate the VB.NET stubs from the WSDL as follows:

   ```
   wsdl.exe /l:VB /n:CorrectAddressWSDemo <WSDL/URL>
   ```

   The tool will indicate where the resultant file was created
2. Add a reference to `CorrectAddressWebService.vb` (which is the file created in the step above)
3. Ensure that the project references 'System.Web' and 'System.Web.Services'
4. Call the CorrectAddress web service

Example of calling **wsCorrectA**:

```
Dim username As String = "your username"
Dim password As String = "your password"

Dim caResultList As WsCorrectAddress() = caWebService.wsCorrectA(username, password,
"Intelligent Search Technology Ltd.", " ", "445 Hamilton Ave, ste 608", " ", "10601", " ", "
", " ")
```

Sample VB.NET project and supplementary documentation is available at:

https://www.intelligentsearch.com/CorrectAddress_WS/docs/VB.NET/

The example above uses the WSDL utility to generate client stubs. As an alternative, users may add a direct web reference to the web service by using the Add Web Reference tool in the Visual Studio project.

CLASSIC ASP

Example of calling **wsCorrectA**:

```
<%
        Dim requestDoc
        Dim webXML
        Dim XMLresponse
        Dim objXMLHTTP
        Dim CARequest

        set requestDoc=Server.CreateObject("Microsoft.XMLDOM")
        requestDoc.async = false
        set objXMLHTTP = Server.CreateObject("Microsoft.XMLHTTP")

        webXML = "<username>USERNAME</username>" & _
                    "<password>PASSWORD</password>" & _
                    "<firmname>Intelligent Search Technology Ltd.</firmname>" & _
                    "<urbanization></urbanization>" & _
                    "<delivery_line_1>445 Hamilton Ave, Ste 608</delivery_line_1>" & _
                    "<delivery_line_2></delivery_line_2>" & _
                    "<city_state_zip>White Plains, NY 10601</city_state_zip>" & _
                    "<ca_codes>" & "McRy                          " & "</ca_codes>" & _
                    "<ca_filler>" & "" & "</ca_filler>" & _
                    "<batchname></batchname>"
        CARequest = ""
        CARequest = CARequest & "<?xml version=""1.0"" encoding=""utf-8""?>" & vbCrLf
        CARequest = CARequest & "<soap:Envelope xmlns:xsi=""https://www.w3.org/2001/XMLSchema-
instance"" xmlns:xsd=""https://www.w3.org/2001/XMLSchema""
xmlns:soap=""https://schemas.xmlsoap.org/soap/envelope/"">" & vbCrLf
        CARequest = CARequest & "<soap:Body>" & vbCrLf
        CARequest = CARequest & "<wsCorrectA
xmlns=""https://www.intelligentsearch.com/HostedWebServices/"">"
        CARequest = CARequest & webXML
        CARequest = CARequest & "</wsCorrectA>" & vbCrLf
        CARequest = CARequest & "</soap:Body>" & vbCrLf
        CARequest = CARequest & "</soap:Envelope>" & vbCrLf

        objXMLHTTP.open "post",
"https://www.intelligentsearch.com/CorrectAddressWS/CorrectAddressWebService.asmx", false
        objXMLHTTP.setRequestHeader "Content-Type", "text/xml; charset=utf-8"
        objXMLHTTP.setRequestHeader "Content-Length", Len(CARequest)
        objXMLHTTP.setRequestHeader "SOAPAction",
"https://www.intelligentsearch.com/HostedWebServices/wsCorrectA"
        objXMLHTTP.send CARequest
        requestDoc.loadXML objXMLHTTP.responseText
        XMLresponse = requestDoc.text
        response.write XMLresponse
%>
```

Sample Classic ASP script and supplementary documentation is available at: https://

www.intelligentsearch.com/CorrectAddress_WS/docs/ClassicASP/Example.zip

Appendix A - Transitioning to the New Object Model

This appendix provides guidance for users transitioning to the new web service model and those using one of the functions deprecated on or before January 1, 2010.

The latest version of the API incorporates a number of enhancements. To ensure smooth transition to the object-based model, several functions were renamed and a few were deprecated.

Below is the list of web service name changes in effect January 1, 2010 (two primary validation service names – **wsCorrectA** and **wsTigerCA** remain the same):

FORMER NAME	NEW NAME
CallFindCityCounty	wsFindCityCounty
CallFindZipCity	wsFindZipCity
CallFindCityState	wsFindCityState
CallStreetSearch2	wsStreetSearch2
getAccountInfo	wsGetAccountInfo
CreateBatch	wsCreateBatch
DeleteBatch	wsDeleteBatch
getBatchList	wsGetBatchList
getPS3553form	wsGetPS3553form

If the function you are currently using is no longer listed and has been deprecated, please refer to the table below for the new function name to use (see **Chapter 2: Functions Specifications** earlier in the document):

DEPRECATED FUNCTION NAME	NEW FUNCTION TO USE
callCA	wsCorrectA
callCA2	wsCorrectA
callCAstd	wsCorrectA
correctA	wsCorrectA
correctA2	wsCorrectA
CallStreetSearch	wsStreetSearch2
TigerCA	wsTigerCA
getPS3553form2	wsGetPS3553form