

# Address Verification Best Practices for Germany

## Abstract

This document tells you how to connect the elements in a Germany address to the appropriate address elements in Informatica Address Verification. This document also describes best practices that you can implement when you verify addresses in Germany.

## Supported Versions

- Informatica Address Verification 3.0 and later
- Informatica Address Verification (On-Premises) 5.x

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## Introduction

Informatica Address Verification can validate and enhance addresses from Germany. This how-to article provides you with configuration information and best practices that you can follow to get the most from the addresses. The best practices include advice on how to select the appropriate XML elements for Germany address data.

To verify the quality of an input address, Address Verification compares the address information to the data in one or more reference data files. You can configure Address Verification to identify the different types of address information in the input data.

When you select the input address elements, you must ensure that the elements are correct for the different types of input information. The country that the address identifies determines the elements that you need.

An address in Germany can contain different types of information, including street information and locality information. You must map each item of address information to an appropriate element in Address Verification.

## Process Modes

Informatica Address Verification supports the following process modes for Germany addresses:

- BATCH
- ADDRESS CODE LOOKUP
- COUNTRY RECOGNITION

- FAST COMPLETION
- INTERACTIVE
- PARSE

## Character Set

Germany reference address databases store address data in the Latin-1 script. By default, Informatica Address Verification returns the verified Germany addresses in the Latin-1 script.

The Latin-1 script includes ü, ä, ö, and ß characters.

## Address Format and Address Structure

You improve the performance of Address Verification when you define the input address in the format that the postal service expects.

The Germany postal service recognizes the following structure for a postal address:

```
Line 1: RECIPIENT OR CONTACT NAME
Line 2: [BUILDING INFORMATION] [SUB-BUILDING INFORMATION]
Line 3: STREET HOUSE NUMBER
Line 4: POSTAL CODE CITY
Line 5: COUNTRY
```

The following sample address illustrates the structure:

```
Röntgenstr. 9
67133 MAXDORF
GERMANY
```

The following table shows the address lines with sample data from a Germany address:

Information Type	Example
Street, House Number	Röntgenstr. 9
Postal Code	67133
City	MAXDORF
Country	GERMANY

## Key Address Elements

Address Verification is unlikely to verify an address successfully if one of the following items is absent from the address:

- House Number
- Street
- Locality
- Postal Code

## Mapping Input Address Data to Address Elements

To verify an address, map the input address information to appropriate elements in Address Verification.

The following table shows how you can map the input address to the address elements:

Address Elements	Address Information	Information Type
Street	Röntgenstr.	Street Name
HouseNumber	9	House Number
PostalCode	67133	Postal Code
Locality	MAXDORF	City
Country	GERMANY	Country

### Input and Result XML in Address Verification (On-Premises)

The following example shows how you can map the address information to the XML address elements in Address Verification (On-Premises).

Note the following parameter values in the input XML:

- The `FormatWithCountry` parameter value is ON.
- The `GlobalPreferredDescriptor` parameter value is LONG.

You enter the following input address:

```
<InputData>
  <AddressElements>
    <Country Item="1" Type="NAME">Germany</Country>
    <Locality Item="1" Type="COMPLETE">Maxdorf</Locality>
    <PostalCode Item="1" Type="UNFORMATTED">67133</PostalCode>
    <Street Item="1" Type="COMPLETE">Röntgenstr</Street>
    <Number Item="1" Type="COMPLETE">9</Number>
  </AddressElements>
</InputData>
```

Informatica Address Verification (On-Premises) returns the following result:

```
<Result ProcessStatus="V3"
  ModeUsed="INTERACTIVE"
  Count="1"
  CountOverflow="NO"
  CountryISO3="DEU"
  PreferredScript="DATABASE"
  PreferredLanguage="DATABASE">

<ResultData ResultNumber="1"
  MailabilityScore="5"
  ResultPercentage="100.00"
  ElementResultStatus="F0F080E0F000000000E0"
  ElementInputStatus="60600050600000000060"
  AddressResolutionCode="00000000000000000000"
  ExtElementStatus="0000500000000000000000"
  ElementRelevance="101000101000000000010"
  AddressType="S"
  LanguageISO3="DEU">
  <AddressElements>
    <Country Type="NAME_EN" Item="1">GERMANY</Country>
    <Locality Item="1">Maxdorf</Locality>
    <PostalCode Item="1">67133</PostalCode>
    <Province Item="1">Rheinland-Pfalz</Province>
```

```

        <Street Item="1">Röntgenstraße</Street>
        <Number Item="1">9</Number>
    </AddressElements>
    <AddressLines>
        <DeliveryAddressLine Line="1">Röntgenstraße 9</DeliveryAddressLine>
        <CountrySpecificLocalityLine Line="1">67133 Maxdorf</CountrySpecificLocalityLine>
        <FormattedAddressLine Line="1">Röntgenstraße 9</FormattedAddressLine>
        <FormattedAddressLine Line="2">67133 Maxdorf</FormattedAddressLine>
        <FormattedAddressLine Line="3">GERMANY</FormattedAddressLine>
    </AddressLines>
    <AddressComplete>Röntgenstraße 9
    67133 Maxdorf
    GERMANY</AddressComplete>
</ResultData>
</Result>

```

## Input and Result XML in Address Verification

The following example shows how you can verify a Germany address in a SOAP call to Address Verification.

You submit the following request:

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:v4="http://
validator5.AddressDoctor.com/Webservice5/v4">
  <soapenv:Header/>
  <soapenv:Body>
    <v4:Process>
      <v4:login>*****</v4:login>
      <v4:password>*****</v4:password>
      <v4:parameters>
        <v4:ProcessMode>BATCH</v4:ProcessMode>
        <v4:ServiceParameters>
          </v4:ServiceParameters>
        <v4:ValidationParameters>
          </v4:ValidationParameters>
      </v4:parameters>
      <v4:addresses>
        <v4:Address>
          <v4:Street>
            <v4:string>Röntgenstr</v4:string>
          </v4:Street>
          <v4:HouseNumber>
            <v4:string>9</v4:string>
          </v4:HouseNumber>
          <v4:Locality>
            <v4:string>Maxdorf</v4:string>
            <v4:string></v4:string>
          </v4:Locality>
          <v4:PostalCode>
            <v4:string>67133</v4:string>
          </v4:PostalCode>
          <v4:Country>
            <v4:string>DEU</v4:string>
          </v4:Country>
        </v4:Address>
      </v4:addresses>
    </v4:Process>
  </soapenv:Body>
</soapenv:Envelope>
</soapenv:Envelope>

```

Informatica Address Verification returns the following response:

```

<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://
www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v4">
      <ProcessResult>
        <StatusCode>100</StatusCode>
        <StatusMessage>OK</StatusMessage>
        <Results>
          <Result>

```

```

<ProcessStatus>V3</ProcessStatus>
<CountryISO3>DEU</CountryISO3>
<ResultDataSet>
  <ResultData>
    <ResultNumber>1</ResultNumber>
    <MailabilityScore>5</MailabilityScore>
    <ResultPercentage>100.00</ResultPercentage>
    <ElementInputStatus>60600050600000000060</ElementInputStatus>
    <ElementResultStatus>F0F080E0F000000000E0</ElementResultStatus>
    <ElementRelevance>10100010100000000010</ElementRelevance>
    <ExtElementStatus>00005000000000000000</ExtElementStatus>
    <AddressResolutionCode>00000000000000000000</AddressResolutionCode>
    <AddressType>S</AddressType>
    <LanguageISO3>DEU</LanguageISO3>
    <Address>
      <Street>
        <string>Röntgenstr.</string>
      </Street>
      <HouseNumber>
        <string>9</string>
      </HouseNumber>
      <Locality>
        <string>Maxdorf</string>
      </Locality>
      <PostalCode>
        <string>67133</string>
      </PostalCode>
      <Province>
        <string>Rheinland-Pfalz</string>
      </Province>
      <Country>
        <string>GERMANY</string>
      </Country>
      <DeliveryAddressLines>
        <string>Röntgenstr. 9</string>
      </DeliveryAddressLines>
      <CountrySpecificLocalityLine>
        <string>67133 Maxdorf</string>
      </CountrySpecificLocalityLine>
      <FormattedAddress>
        <string>Röntgenstr. 9</string>
        <string>67133 Maxdorf</string>
        <string>GERMANY</string>
      </FormattedAddress>
      <AddressComplete>Röntgenstr. 9;67133 Maxdorf;GERMANY</AddressComplete>
    </Address>
  </ResultData>
</ResultDataSet>
</Result>
</Results>
</ProcessResult>
</ProcessResponse>
</soap:Body>
</soap:Envelope>

```

## Address Enrichments

You can configure Informatica Address Verification to add enrichments to verified Germany addresses.

The following table lists the type of enrichments that you can add to a Germany address:

Enrichment Type	Description
CAMEO	You can retrieve CAMEO profiles as enrichments for valid Germany addresses. CAMEO profiles are consumer classification systems that provide socio-economic and demographic indicators about the residents at the address.
Country-Specific Address Enrichments	You can retrieve the following enrichments for valid Germany addresses: <ul style="list-style-type: none"> <li>- DEU_LOCALITY_ID. Identifies a German locality.</li> <li>- DEU_STREET_ID. Identifies a German street address.</li> <li>- DEU_AGS. Identifies a municipality in Germany.</li> <li>- DEU_STREET_CODE. Identifies a street in Germany.</li> </ul> The DEU_LOCALITY_ID, DEU_STREET_ID, and DEU_AGS are variable-length codes and the DEU_STREET_CODE is a three-digit code.
Standard Geocoding	You can retrieve the standard, interpolated geocoordinates for valid Germany addresses.
Arrival Point Geocoding	You can retrieve the arrival point geocoordinates for valid Germany addresses.
Parcel Centroid Geocoding	You can retrieve the parcel centroid geocoordinates for valid Germany addresses.

## Address Verification Tips and Best Practices

Note the following points when you verify Germany addresses:

- Address Verification does not support address information in FormattedAddressLine or DeliveryAddressLine elements in fast completion mode for Germany addresses.
- The building and sub-building information in a Germany address follows the house number information. An address in Germany uses a forward-slash symbol to separate building or sub-building information from house number information. For example, `Bahnhofstr. 12/3`.
- Address Verification verifies alphanumeric house number information such as `5 A` and `8 C` in a Germany address.

**Note:** Each alphanumeric house number is based on a numeric house number. For example, a street with a house number `6 A` also has a house number `6`.

Address Verification returns a V4 status for both of the following addresses in batch and interactive modes:

```
Fahrenkuhl 6
Kronsborg
Kiel 24145
Schleswig-Holstein

Fahrenkuhl 6A
Kronsborg
Kiel 24145
Schleswig-Holstein
```

## Frequently Asked Questions

**Does Address Verification return the province or city information when you set the PreferredLanguage attribute to ENGLISH?**

When you set the `PreferredLanguage` attribute to ENGLISH, Address Verification returns some of the locality and province information in English language. For example, Address Verification returns the locality information `Köln` as `Cologne` and the province information `Bayern` as `Bavaria`.

Address Verification does not offer complete coverage for locality and province names in English. Address Verification does not return street names in English.

When you set the `PreferredLanguage` attribute to ENGLISH, Address Verification returns ENG as the `LanguageISO3` value.

#### Why does the sub-locality information not appear in the Formatted Address Line output?

Deutsche Post does not require sub-locality information in a printed address. Address Verification omits sub-locality information from the Formatted Address Line output if the input address contains the sub-locality information.

For example, consider the following input elements, which include sub-locality information:

```
Street: Krakauer Dorfstr. 2
Postcode: 06868
Locality 1: Coswig (Anhalt)
Locality 2: Krakau
Country: Deutschland
```

Address Verification returns the postal address information in the following format on an envelope or label:

```
Krakauer Dorfstr. 2
06868 Coswig (Anhalt)
Deutschland
```

#### What special characters can appear in locality, sub-locality, and province information?

The following table shows the special characters that Address Verification can read and write in locality, sub-locality, and province information:

Character	Sample Example
/	Auerbach/Vogtl. in Saxony (Sachsen)
-	Auma-Weidatal in Thüringen
( and )	Coswig (Anhalt) in Saxony-Anhalt

#### Why does Address Verification abbreviate the street descriptor (Straße) to Str.?

Deutsche Post requires the use of `Str.` as an abbreviation for the street names in Germany. For example, `Bahnhofstr.`

By default, Address Verification returns the abbreviated form of the street descriptor.

If you set the `GlobalPreferredDescriptor` parameter to LONG, Address Verification returns the expanded form of the element descriptor. For example, Address Verification returns `straße` for the input element `Str.`

#### Can Address Verification return updated street information for non-current street names in Germany?

Yes, Address Verification can return updated street information for addresses in Germany.

For example, when you enter the following address:

```
Karl-Marx-Allee 42
99086 Erfurt
Germany
```

Address Verification returns the following output address with updated street information:

```
Magdeburger Allee 42
99086 Erfurt
Germany
```



### How does the Address Verification measure extended characters when it applies the ElementAbbreviation attribute?

The `ElementAbbreviation` attribute measures character lengths in UTF-8.

If the string contains non-extended ASCII characters in a range from 42 through 127, Address Verification treats each character as a single character. If the string contains extended ASCII characters such as ü, ö, ß, or €, Address Verification treats each character as double characters.

For example, the street name `Dorfstr.` contains eight characters `Freiherr von Hüppelsträßerweg` contains 32 characters, where 26 are single characters and 3 are double characters.

### Are the "Packetstationen" and "Großempfänger" addresses available in Germany for delivery of parcels, letters, and mails?

Yes.

The following examples show some of the "Packetstationen" and "Großempfänger" addresses to deliver parcels, letters, and mails in Germany:

```
Packstation 150  
13465 Berlin
```

```
PORTICA GmbH Marketing Support  
Von-Galen-Str. 35  
47904 Kempen
```

```
Packstation 106-107  
50823 Köln
```

```
AOK Rheinland/Hamburg-Die Gesundheitsk. Regionaldirektion Kreis Wesel  
Bahnhofstr. 54  
47493 Rheinberg
```

```
Allessa Chemie GmbH  
Alt-Fechenheim 34  
60382 Frankfurt am Main
```

### How can I ensure that my output address includes country information in the AddressLines and AddressComplete elements?

To return the country information, set the `FormatWithCountry` parameter to ON.

## Reference Address Databases

Informatica updates the Germany reference address databases monthly. You can download the latest database packages from the Informatica Database Download portal. For news about reference address databases and software updates for Address Verification, subscribe to the UpData newsletter from Informatica.

Informatica Address Verification provides the following reference databases for Germany:

- `DEU5BI.MD`. Batch and interactive modes.
- `DEU5FC.MD`. Fast completion mode.
- `DEU5AC.MD`. Address code lookup mode.
- `DEU5GC.MD`. Standard geocoding.
- `DEU5GCAP.MD`. Arrival point geocoding.
- `DEU5GCPC.MD`. Parcel centroid geocoding.
- `DEU5E1.MD`. Supplementary data.
- `DEU5CA.MD`. CAMEO.

**Note:** You download databases for Informatica Address Verification (On-Premises). You do not need to download databases for Informatica Address Verification, as Informatica Address Verification runs on Informatica Cloud.

## Additional Documentation Resources

To view the latest documentation for Informatica Address Verification, click the following links:

[https://network.informatica.com/community/informatica-network/products/data\\_quality/data-as-a-service/address-doctor](https://network.informatica.com/community/informatica-network/products/data_quality/data-as-a-service/address-doctor)

[https://network.informatica.com/community/informatica-network/products/data\\_quality/data-as-a-service/address-doctor-cloud](https://network.informatica.com/community/informatica-network/products/data_quality/data-as-a-service/address-doctor-cloud)

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