



ISF (Internet Shipment Format) for Shops ver. 2.0

Technical Specification

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Language used in this document: English (en-GB)

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Contents of this document

Scope

This document describes the Internet Shipment Format (ISF) in 2.0 version. It was developed by IAI S.A. and is its sole property.

Terms and Conditions of using ISF for Shops

Every version of ISF is a product of IAI S.A. and is distributed on the terms of [Creative Commons Attribution-NoDerivatives 4.0 International](https://creativecommons.org/licenses/by-nd/4.0/) (CC BY-ND 4.0) licence.

Changelog

Version	Date	Changelog
1.0	2016-08-26	Creating ISF, version 1.0
1.1	2016-07-22	<ol style="list-style-type: none"> 1. Changed attribute /set/@generated to format compliant with ISO-8601. 2. Changed the standard of attribute @id, adding attributes @type and @sequence: <ul style="list-style-type: none"> • /event/ before: <event id="order-7777"> now: <event id="7777" type="order"> • /event/shipment/ before: <shipment id="7220-01" courier="PL-UPS"> now: <shipment id="7220" sequence="1" courier="PL-UPS"> • /event/shipment/package/ before: <package id="01"> now: <package sequence="1"> 3. Minor bug fixes in editing.
1.2	2017-12-20	<ol style="list-style-type: none"> 1. Adding pickup points handling in your own pickup point chain with: <ul style="list-style-type: none"> • opening hours locations/pickup_point/operating_hours/weekday • a name of the pickup point locations/pickup_point/name 2. Forwarding information about the chosen pickup point in the shipment order 3. Handling general errors has been added to the /error/ node 4. Handling a courier label format has been added 5. Indicating a parcel dispatch point has been added 6. In the /shipment/ node the name of the @carrier has been changed to @courier
2.0	2019-31-01	<ol style="list-style-type: none"> 1. Adding the possibility to enter your own structure of additional parameters in the /set/event/ap:additionalParams node 2. Adding the manifest.xml file

General description of the ISF Format

ISF (Internet Shipment Format) is a universal format that can be applied to any e-commerce system to manage information about shipments. It associates e-commerce events (orders and returns) with single- or multi-package shipments and enables to associate created shipment labels with those events. Thus, it simplifies communication between online shops and couriers and expands the choices available for online shops owners.

This format is designed for both couriers and brokers who offer services from different couriers. It includes detailed description of packages, couriers services and parties included in the delivery process (sender, receiver and payer). What is more, error handling has been introduced to increase the communication safety and customer satisfaction.

Descriptive conventions and issues

To enable efficient use of the ISF format the XPath Syntax is used throughout the document to describe particular nodes. Node names are written in lower case, with multiple words separated by underscores to facilitate human readability.

Every file must contain attributes of version and format (placed inside the main /set/ tag). For version 2.0 the following tags are compulsory:

1. @file_format="ISF"
2. @version="2.0"
3. @generated – contains the generation time in the ISO-8601 format, e.g.:
@generated="2017-10-18T11:08:51+01:00"
4. @author – identifies the author of the file, e.g.
@author="Very-Good-Shop"

Common issues:

1. Standards of passing data

Following standards are used in ISF:

- a. currency - ISO 4217 (e.g. PLN, USD, EUR):

http://en.wikipedia.org/wiki/ISO_4217#Active_codes

- b. language - ISO 639-2 (e.g. pol, eng, ger):

http://www.loc.gov/standards/iso639-2/php/code_list.php

- c. country - ISO 3166-1 alpha-2 (e.g. PL, US, DE):

http://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#Officially_assigned_code_elements

(this two-character code is coherent with currency and subdivision codes)

- d. subdivision (state, province, region) - ISO 3166-2 (e.g. PL-ZP, US-DC, DE-BB):

http://en.wikipedia.org/wiki/ISO_3166-2#Current_codes

and subdivisions for one particular country, e.g. Poland:

http://en.wikipedia.org/wiki/ISO_3166-2:PL#Current_codes

e. generated – ISO 8601 (e.g. 2016-05-25T11:08:51+01:00)

https://en.wikipedia.org/wiki/ISO_8601

f. pickup points geolocation given as

- latitude in decimal degrees (e.g. 53.4175191)
- longitude in decimal degrees (e.g. 14.5324166)

g. pickup points opening hours - ISO-8601standard (e.g. 08:00)

i. pickup points closing hours - ISO-8601standard (e.g. 18:00)

https://en.wikipedia.org/wiki/ISO_8601

2. Defining languages

To define the language use the ISO 639-2 Code representing the language of your choice. You can find the appropriate codes on the [List of Codes for the Representation of Names of Languages with ISO 639-2 Code](#).

In ISF version 1.2 the attribute @language is used to choose the language of particular parties of the delivery process (sender, receiver, payer) to enable communication in the language of the party.

3. Separators

Separators are used to clarify the use of fractions and mixed numerals. In ISF version 1.2 there are following separator types:

- a. point (.) - whenever there is a float number (e.g. amount of money), the point separator is used,
- b. zero separator – whenever there is a weight or dimension unit specified (e.g. kg or cm) no separator is used and an integer is required.

4. Courier names

Couriers are named differently in particular e-commerce systems. Therefore a predefined list has been created to facilitate unified communication between users of the ISF format. It can be found at the end of this specification in the Attachments section.

Each courier name used in ISF consists of two parts connected with a hyphen:

- a. country of operation defined in the ISO 3166-1 alpha-2 standard (e.g. PL, US, DE):

http://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#Officially_assigned_code_elements

- b. name of the company or brand the courier operates under (e.g. DPD, TBA, PACZKOMATY)

Structure of the /event/ node

The /event/ is the main part of the /set/ of events included in each ISF file. It describes an e-commerce event, which in ISF version 1.2 is an order or a return.

Each event contains the @id attribute (number which is unique for the author of the file), and the @type attribute (event type “order” or “return”) and e.g.:

```
<event id="7777" type="order">
```

or

```
<event id="7220" type="return">
```

/Event/ node may occur many times.

1. /shipment/

It is an **obligatory** node to describe a particular shipment, containing one or more packages. It includes tracking details (number and URL), the label or labels, chosen courier services, pickup details and costs.

2. /sender/

It is an **obligatory** node to describe the sender of the shipment. It includes address data (where the package is sent from and where it should be returned if delivery is impossible), notification preferences and optionally an ID for external courier systems.

3. /receiver/

It is an **obligatory** node to describe the receiver of the shipment. It includes address data (where the package should be delivered), details about the contact person, notification preferences and optionally an id for external courier systems.

4. /payer/

It is an **obligatory** node to describe the party due to pay for the shipment. It includes address data with tax ID and optionally an id for external courier systems.

5. /return_shipment/

A node about shipments sent back from the receiver to the sender. It can be used in two scenarios:

- a. An order event generates a shipment with the possibility to create a return label at the same time (if the customer decides to return the package in the future). The node /return_shipment/ is **optional** in this scenario.
- b. A return event generates a shipment when the customer has decided to return their order and wants to get the return label. The node /return_shipment/ is **obligatory** in this scenario.

6. /ap:additionalParams/

The node in which nodes defined by the developer are placed - filled with data from the relevant variables. This node is generated automatically based on the structure contained in the /manifest / additional_parameters node in the manifest.xml file.

7. /errors/

An **optional** node that returns errors encountered while interpreting the original ISF file with their types (priorities), codes, descriptions and positions (nodes) in the structure.

For more details go to the Structure of the /errors/ node chapter.

Structure of the /shipment/ node

The /shipment/ is the main part of the /event/ node. It contains one or more packages connected with the event.

Each shipment contains the @id attribute with the event's internal number. Additionally, the courier of the shipment is specified in the **obligatory** @courier attribute, and **obligatory** @sequence attribute (the subsequent shipment number - "1" for the first shipment) e.g.:

```
<shipment id="7220" sequence="1" courier="PL-UPS">
```

or

```
<shipment id="2345" sequence="2" courier="DE-DHL">
```

For a comprehensive list of couriers visit the Attachments section at the end of this document.

Each /shipment/ in the file is divided into several nodes:

1. /tracking_number/ (obligatory)

The shipment tracking number will be assigned by the courier and returned in the ISF reply. If the customer is allowed to generate shipment tracking numbers from a range assigned by the courier, then it is possible to put the tracking number here.

There are two scenarios to use both the shipment and the package tracking number:

- a. If the courier uses only package tracking numbers, the number for a particular package will be written into both /shipment/tracking_number/ and /shipment/package/tracking_number/.
- b. If the courier uses both shipment and package tracking numbers, the numbers for particular packages will be written into /shipment/package/tracking_number/ and the number for the shipment will be written into /shipment/tracking_number/.

2. /tracking_url/ (obligatory)

The /tracking_url/ node holds the direct URL for tracking purposes. Usually it is returned in the ISF reply. However, if the user generates tracking numbers from a predefined range and knows the link structure for a particular courier then a link may be included in the ISF request (and returned automatically without changes).

3. /package/ (obligatory)

The node /package/ contains the detailed package description and its tracking number. Multiple packages are possible for each shipment included as separate /package/ nodes within the /shipment/ node.

Each /package/ node requires the @sequence attribute with the subsequent number of the package ("1" for the first one).

There are two nodes within the /package/ node:

a. /tracking_number/ (**obligatory**) for the unique package tracking number

b. /description/ (**obligatory**) for the package parameters:

- /packaging/ (**obligatory**) - defines the shape and material of the packaging. Possible values are:

1. "bag" (made of plastic),
2. "envelope" (made of paper),
3. "box" (made of cardboard),
4. "tube" (made of plastic or cardboard),
5. "pallet" (made of wood or plastic),
6. "other" (packaging of any irregular or non-standard type)

- /weight/ (**obligatory**) for the package weight (including the @unit attribute)

- /dimensions/ (**optional**) for the package dimensions (including the @unit attribute):

- /length/,

- /width/,

- /height/

- /content_description/ (**optional**) for couriers who require a detailed description of the package contents

- /reference/ (**optional**) for reference or references held in this node, which will be divided/separated according to the requirements of specific couriers by the courier or broker. /Reference/ node may occur many times.

4. /label/ (**optional**)

This node is designed for labels associated with the shipment. Multiple instances of this node are allowed.

The following nodes contain details about the label expected in the XML reply. If nothing is defined, a standard A4 PDF is assumed. The label itself will be returned within the /base64/ node, encoded to BASE64.

The following nodes may be used to define the expected label:

- /type/ (**optional**) - a "standard" or "thermal" label might be chosen

- /format/ (**optional**) - the expected format of the returned label, possible values are:

1. PDF,



2. A6P,
3. DPL,
4. EPL,
5. ZPL.

- /size/ (**optional**) - the size of the expected label may be described using the following value types:

1. standard sizes (e.g. A4),
2. dimensions (with /height/ and /width/) in units defined in /size@unit (e.g. mm),
3. resolution using units defined in /size@unit (e.g. dpi),

- /labels_per_page/ (**optional**) - number of labels included on the returned page,

- /base64/ (**obligatory**) - placeholder for the label returned in the XML reply.

5. /service/ (**obligatory**)

This node describes how the package should be delivered. It contains the customer's decisions about priority and time to enable mapping to the couriers specific products in the following nodes:

- /priority/ (**obligatory**) - defines the service type to be chosen from the couriers products: "same day", "express", "standard",

- /time_definite/ (**optional**) - defines the latest time of day for the delivery as guaranteed by the courier. If no time is specified - until the end of day is assumed. A particular time should be given in 4 digits, in the 24-hour format (e.g. 0900, 1030, 1200, 1500). The XML reply may contain the time specific for the courier in this node.

- /time_range/ (**optional**) - defines the preferred delivery time or range, as chosen by the customer. It's not mandatory for the courier and/or it may require additional fees for the customer.

- /shipment_date/ (**optional**) - defines if the package should be sent on a specific date (in the future). If it is sent empty, the XML reply may contain the actual shipment date.

6. /additional_services/ (**optional**)

This node contains choices about most common services that can be added to the shipment (all nodes are **optional**):

- /insurance/ - If the package is to be insured, this node must be present. If the courier accepts or requires the value for insurance purposes it will be given in the node together with the @currency in the [ISO 4217 format](#).

- /value/ - defines the value of the package (together with the @currency in the [ISO 4217 format](#)) to meet courier requirements,

- /nonstandard/ - contains the value "yes" if the package is not possible to be sorted

automatically or has got unusual shape or elements.

- /fragile/ - enables to send packages that need careful handling because of contents that get broken easily.

- /bring_up/ - contains the value "yes" for heavy or big packages that need to be brought into higher floors.

- /carbon_neutral/ - contains the value "yes" when the customer wants to neutralise the influence of the package on the climate.

- /dutiabale/ - contains information required for international shipments. The value of the shipment is given in the /customs_value/ node together with the @currency in the [ISO 4217 format](#).

7. /pickup/ (optional)

This node contains details of services connected with the pickup of the shipment (all nodes are **optional**):

- /cod/ - contains details about the service cash on delivery (the payment for the ordered good occurs at the moment of delivery or later) with the following subnodes:

- /amount/ - contains the amount of money due together with the @currency in the [ISO 4217 format](#).

- /reference/ - contains the reference to be included with the transfer of the money

- /account_type/ - enables to choose between a traditional wire transfer ("transfer") or a Paypal payment ("paypal")

- /paypal_account_id/ - paypal id for Paypal

- /transfer_account_id/ - bank account number for the wire transfer

- /priority/ - describes how quickly the customer wants to get his money back. Possible values are "standard", "express" and "fastest".

- /rod/ - contains details about the return on delivery service (also known as return of documents) with the following nodes:

- /reference/ - the reference for the ROD shipment

- /receiver_id/ - user ID of the receiver in the courier system

- /tracking_number/ - The ROD tracking number will be assigned by the courier after delivery - it will not be returned in the XML reply. However, when the customer is able to generate tracking numbers from a range assigned by the courier, then it is possible to put the tracking number here.

- /confirmation/ - defines the kind of confirmation that is required. Possible values are:

1. no_signature (no signature of the customer will be obtained),



2. signature (a signature of any person will be obtained),
3. personal (a personal signature of the recipient will be obtained),
4. adult (a signature of an adult will be obtained),
5. telephone (a courier representative will confirm the delivery over the phone).

- /self_pickup/ - defines whether the customer in *picks* the package up from the courier warehouse or courier pickup point network/ *courier pickup point* (with “yes” or “no” as possible values)

8. /cost/ (obligatory)

This node defines the cost of the shipment that the shop owner pays to the courier (together with the @currency in the [ISO 4217 format](#)) with the following nodes:

- /net/ - net value (in case of no refund, 0.00 value may be used)
- /vat_percent/ - VAT rate as percentage (equals 0 for both the 0% and the exempt rate)
- /gross/ - gross value (in case of no refund, 0.00 value may be used)

8. /dispatch_point/ (optional)

This node defines the place where the shipment is dispatched. Indication of the dispatch point may be required by some carriers, such as Poczta Polska (all nodes are **optional**):

- /id/ - dispatch point ID
- /name/ - dispatch point name
- /address/ - includes the dispatch point address data, including the following nodes:
 - /postcode/ - the postal code
 - /city/ - the name of the city
 - /country/ - the name of the country in the ISO 3166-1 alpha-2 format (e.g. PL, US, DE)

/shipment/ - example code for one one-package shipment

```
<shipment id="7220" sequence="1" courier="PL-UPS">
  <tracking_number>tn000324551</tracking_number>
  <tracking_url>https://tracking-service.com/package/tn000324551</tracking_url>
  <package sequence="1">
    <tracking_number>tn000324551</tracking_number>
    <description>
      <weight unit="g">15000</weight>
      <reference>ref 1</reference>
      <reference>ref 2</reference>
      <reference>ref 3</reference>
      <packaging>box</packaging>
      <dimensions unit="cm">
        <height>30</height>
```



```
<width>30</width>
<length>120</length>
</dimensions>
<content_description>Gift. Order no.31642</content_description>
</description>
</package>
<label>
  <type>standard</type>
  <base64>base64</base64>
</label>
<service>
  <priority>standard</priority>
</service>
<cost currency="PLN">
  <net>10.00</net>
  <vat_percent>23</vat_percent>
  <gross>12.30</gross>
</cost>
</shipment>
```

Parties in the delivery process - /sender/, /receiver/ and /payer/

There are three parties that are included in ISF for each delivery process, described in the following nodes (all three nodes are **obligatory**):

- /sender/ - describes from whom the shipment will be dispatched
- /receiver/ - describes to whom the package will be delivered
- /payer/ - describes who will pay for the packages

each with optional attributes:

- @id for internal identification (e.g. sender-123, customer-62 or payer-68),
- @language for notification purposes.

All of these three nodes have a similar structure, the similarities and differences are described in this chapter. The following nodes are used:

1. /external_id/ (**optional**) - contains a user ID that is used in an external courier system

2. /address/ (**obligatory**) - contains address data for the current party including the following nodes:

- /name/ - the name of the recipient or the contact person for companies
- /company/ - the name of the company
- /country/ - the name of the country in the [ISO 3166-1 alpha-2 format](#) (e.g. PL, US, DE)
- /subdivision/ - the name of the subdivision (region, province, state, etc.) in the [ISO 3166-2 format](#) (e.g. PL-ZP, US-DC, DE-BB)
- /postcode/ - the postal code
- /city/ - the name of the city
- /address/ - one node for the name of the street, the house/building number, the floor/department/room number to be divided by the courier/broker if necessary
- /telephone/ - the telephone number (**only for** /sender/ and /payer/, the recipient telephone will be passed in /receiver/contact/)
- /type/ - enables the distinction between “private” (houses and flats) and “business” (companies and pickup points) addresses

3. /notifications/ (optional)

There are three types of notifications included in ISF - text (SMS), e-mail and voice (audio) messages. The language used in the notifications depends on the language setting for the /sender/ and the /receiver/ in the particular nodes. The following nodes are designed to facilitate those notifications:

- /text/ - enables text (SMS) messages with the following options:

- use the optional /text/@number attribute to specify a telephone number for notifications (other than the obligatory number in /receiver/contact/telephone/)
- if the courier enables defining the contents of the text notification, the expected text should be passed directly in the /text/ node
- use the optional /text/@type attribute to choose the types of events that result in messages being sent:

- @type="create" - The shipment has been created in the courier system

- @type="ship" (default for /receiver/) - The shipment is on the way (has been picked up by the courier or delivered to his facility)

- @type="courier" - The shipment has been picked up by the delivering driver in the destination city

- @type="delivery" (default for /sender/) - The shipment has been delivered

- @type="exception" - There has been an issue with the package which requires customer's attention

- /email/ - enables e-mail notifications with the following options:

- use the optional /email@address attribute to specify an e-mail address for notifications (other than the address in /receiver/contact/email/)

- if the courier enables defining the contents of the e-mail notification, the expected text should be passed directly in the /email/ node

- use the optional /email@type attribute to choose the types of events that result in messages being sent:

- @type="create" - The shipment has been created in the courier system

- @type="ship" (default for /receiver/) - The shipment is on the way (has been picked up by the courier or delivered to his facility)

- @type="courier" - The shipment has been picked up by the delivering driver in the destination city

- @type="delivery" (default for /sender/) - The shipment has been delivered

- @type="exception" - There has been an issue with the package which requires customer's attention

- use the /bounce/ node to define the e-mail address for undeliverable notifications in the @address attribute

- /voice/ - enables voice notifications (automated or human) with the optional /voice@number attribute to specify a telephone number for notifications (other than the obligatory number in /receiver/contact/telephone/)

Additional nodes are available for the particular parties:

a. /sender/:

- /return_address/ (**optional**) - the address for undeliverable packages with the following nodes:

- /name/ - the name of the recipient or the contact person for companies

- /company/ - the name of the company

- /country/ - the name of the country in the [ISO 3166-1 alpha-2 format](#) (e.g. PL, US, DE)

- /subdivision/ - the name of the subdivision (region, province, state, etc.) in the [ISO 3166-2 format](#) (e.g. PL-ZP, US-DC, DE-BB)

- /postcode/ - the postal code

- /city/ - the name of the city

- /address/ - one node for the name of the street, the house/building number, the floor/department/room number to be divided by the courier/broker if necessary

- /telephone/ - the telephone number

- /type/ - enables the distinction between “private” (houses and flats) and “business” (companies and pickup points) addresses

b. /receiver/:

- /contact/ (**obligatory**) - contains details about the person responsible for receiving the package with the following nodes:

- /name/ (**optional**) - name of the contact person

- /telephone/ (**obligatory**) - telephone number of the recipient, used as the default number for notifications (if not otherwise specified in /receiver/notifications/)

- /email/ (**optional**) - e-mail address

- /pickup_point/ (**optional**) - contains details for pickup points owned by the courier (e.g. own warehouse, service point, paketshop) or owned externally (e.g. a pickup in a shop, or a stationary branch of an online shop) with the following nodes:

- /id/ - contains the unique identification number of the location

- /country/ - the name of the country in the [ISO 3166-1 alpha-2 format](#) (e.g. PL, US, DE)



- /subdivision/ - the name of the subdivision (region, province, state, etc.) in the [ISO 3166-2 format](#) (e.g. PL-ZP, US-DC, DE-BB)

- /postcode/ - the postal code

- /city/ - the name of the city

- /address/ - one node for the name of the street, the house/building number, the floor/department/room number to be divided by the courier/broker if necessary.

c. /payer/:

- /address/tax_id/ - enables passing tax identification number (e.g. NIP, Steuer-IdNr.).

/sender/ - example code for one sender

```
<sender>
  <address>
    <name>John Smith</name>
    <company>Very Good Shop</company>
    <country>PL</country>
    <subdivision>PL-ZP</subdivision>
    <postcode>71-043</postcode>
    <city>Szczecin</city>
    <address>Piaستow 4d / Warehouse 1 / Section G</address>
    <telephone>48 91 43 33 881</telephone>
    <type>business</type>
  </address>
  <notifications>
    <email address="office1@test.pl" type="create"/>
    <email address="office2@test.pl" type="delivery"/>
    <email address="office3@test.pl" type="exception"/>
    <bounce address="office@verygoodshop.pl" />
  </notifications>
</sender>
```

/receiver/ - example code for one receiver

```
<receiver>
  <address>
    <name>Eve Blackwell</name>
    <company>Poznan City Council</company>
    <country>PL</country>
    <subdivision>PL-WP</subdivision>
    <postcode>61-841</postcode>
    <city>Poznan</city>
    <address>Plac Kolegiacki 17 / Administrative Department / Reception</address>
    <type>business</type>
  </address>
  <contact>
    <name>Eve Blackwell</name>
    <telephone>48 609 150 286</telephone>
    <email>ebl-poz@gmail.com</email>
```

```

</contact>
<notifications language="pol">
  <email address="jankowalski@iai-sa.com" type="create"/>
  <email address="jankowalski@iai-sa.com" type="ship"/>
</notifications>
<pickup_point>
  <id>pp_59c3b289d9208</id>
  <country>PL</country>
  <subdivision />
  <postcode>71-670</postcode>
  <city>Szczecin</city>
  <address>Dubois 9</address>
</pickup_point>
</receiver>

```

/payer/ - example code for one payer

```

<payer>
  <address>
    <company>Poznan City Council</company>
    <country>PL</country>
    <subdivision>PL-WP</subdivision>
    <postcode>61-841</postcode>
    <city>Poznan</city>
    <address>Plac Kolegiacki 17</address>
    <tax_id>NIP: 777-11-22-333</tax_id>
  </address>
</payer>

```

Structure of the /return_shipment/ node

There are two scenarios when a return shipment might be generated:

1. An **order** generates a shipment with the possibility to create a return label at the same time (if the customer decides to return the package in the future). The node "return_shipment" is optional in this scenario.

2. A **return** generates a shipment when the customer has decided to return their order and wants to get the return label. The node "return_shipment" is obligatory in this scenario.

Return shipments are described using the following nodes:

1. /label_type/ - determines the way of delivering the return shipment label, with the following possible values:

- a. "print" – the shop prints the label and sends it to the customer,
- b. "email" – the courier generates a link and it is passed to the customer (by the shop or by the courier),

c. “collection” – the label is not generated online, because the courier picks up the shipment from the customer (and the label is printed by the courier).

2. /service/ (**optional**)- describes how the return shipment should be delivered. It contains the customer's decisions about priority and time to enable mapping to the couriers specific products in the following nodes:

a. /priority/ - defines the service type to be chosen from the courier's products, possible values are: “standard” or “express”

b. /time_definite/ - defines the latest time of day for the delivery as guaranteed by the courier. If no time is specified - until the end of day is assumed. A particular time should be given in 4 digits, in the 24-hour format (e.g. 0900, 1030, 1200, 1500). The XML reply may contain the time specific for the courier in this node.

3. /base64/ (**optional**) - placeholder for the BASE64-encoded label (if “print” is chosen in /label_type/)

4. /tracking_number/ (**optional**) - placeholder for the tracking number which will be assigned by the courier and returned in the ISF reply (if “print” is chosen in /label_type/).

5. /link/ (**optional**) - placeholder for the URL to the label (if “email” is chosen in /label_type/)

6. /return_address/ (**optional**, possible only in scenario 1.) - the address data when the return shipment should be delivered to a different address (e.g. particular warehouse or external service facility) with the following nodes:

- /name/ - the name of the recipient or the contact person for companies

- /company/ - the name of the company

- /country/ - the name of the country in the [ISO 3166-1 alpha-2 format](#) (e.g. PL, US, DE)

- /subdivision/ - the name of the subdivision (region, province, state, etc.) in the [ISO 3166-2 format](#) (e.g. PL-ZP, US-DC, DE-BB)

- /postcode/ - the postal code

- /city/ - the name of the city

- /address/ - one node for the name of the street, the house/building number, the floor/department/room number to be divided by the courier/broker if necessary

- /telephone/ - the telephone number

- /type/ - enables the distinction between “private” (houses and flats) and “business” (companies and pickup points) addresses

Additionally, the /return_shipment/ node might have the optional attribute @courier to define the courier dedicated for the return shipment (e.g. “PL-DPD” or “DE-DHL”).



/return_shipment/ - example code for one return shipment (scenario 1.)

```
<return_shipment>  
  <label_type>email</label_type>  
  <service>  
    <priority>standard</priority>  
  </service>  
  <base64></base64>  
</return_shipment>
```

Structure of the /errors/ node

It is possible to return the error in several places. As the main node for returning general errors such as an incorrect structure, service unavailability, etc. the /error/ node placed over the /event/ node is used. To return detailed errors, the /event/@errors/ node is used.

The ISF format distinguishes between two types of errors that are handled in the delivery process:

a. **critical** - errors that result in a shipment not being delivered or causing substantial losses to the online shop. They include for example following cases:

1. A service is not available, e.g. COD for international shipments
2. An incorrect address or an address out of the courier's range

Such errors are to be handled within the shop.

b. **noncritical** - errors that make the delivery more difficult, but possible. They include for example:

1. receiving an inquiry about a courier's service that is available with lower parameters
2. delivering a return shipment label in a different way than expected by the customer (e.g. by e-mail and not as a link)

Such errors are to be handled by the courier/broker according to settings defined by the customer who signs the contract with the courier/broker.

For example, a broker does not offer a delivery type expected by the customer, but offers a different one with a longer delivery time. It may be:

- a. a different service of the same courier or
- b. a service of a different courier

In such a situation the courier/broker should ask the customer whether he wants to get a cheaper delivery with a different service or receive an error that a delivery is not possible.

The errors are described in separate /error/ nodes with the following subnodes each:

1. /priority/ - severity of the error, either "critical" (known as errors) or "noncritical" (known as warnings)
2. /code/ - alphanumeric code to distinguish the error, e.g. E001. A list of possible errors is given in the Attachment section at the end of this specification.
3. /short_description/ - a brief summary of the error, e.g. "COD unavailable for international shipments"

4. /description/ - detailed information about the error and its consequences, e.g. “The service COD is unavailable for shipments outside Europe. Because of safety regulations it is not possible to accept shipments with COD.”

5. /node/ - XPath to the node where the error occurs, e.g. “/event/shipment/pickup/cod/”

/errors/ - example code for one error and one warning

```
<errors>
  <error>
    <priority>critical</priority>
    <code>E001</code>
    <short_description>COD unavailable for international shipments</short_description>
    <description>The service COD is unavailable for shipments outside Europe. Because of safety regulations
it is not possible to accept shipments with COD.</description>
    <node>/event/shipment/pickup/cod/</node>
  </error>
  <error>
    <priority>noncritical</priority>
    <code>W001</code>
    <short_description>Type of shipment not available</short_description>
    <description>The chosen shipment type is not available with this courier. Another type has been chosen in
exchange, which means lower costs but slower delivery.</description>
    <node>/event/shipment/service/</node>
  </error>
</errors>
```

A comprehensive list of error and warning codes will be made available after the first implementation of ISF.

Advanced handling of external pickup points – pickup-points.xml

The ISF format handles external pickup points as a basis for e-commerce solutions responsible for:

- a. downloading and updating information about locations
- b. storing and displaying to customers up-to-date delivery destinations
- c. passing chosen locations to shipments in the ISF format

The information about pickup points is to be prepared by the courier or broker within the pickup-points.xml, with the main node /locations/ and multiple instances of /pickup-point/ node.

The following nodes are available to describe each pickup-point within the /pickup-point/ node:

a. /id/ (**obligatory**) - contains the unique identification number of the location. This identifier is passed in the dispatch order in the node /receiver/pickup_point/id

b. /name/ (**obligatory**) – the name of the pickup-point. Possible to set different name for the various languages. See example in the request example code below.

c. /country/ (**obligatory**) - the name of the country in the [ISO 3166-1 alpha-2 format](#) (e.g. PL, US, DE)

d. /subdivision/ - the name of the subdivision (region, province, state, etc.) in the [ISO 3166-2 format](#) (e.g. PL-ZP, US-DC, DE-BB)

e. /postcode/ (**obligatory**) - the postal code

f. /city/ (**obligatory**) - the name of the city

g. /address/ (**obligatory**) - one node for the name of the street, the house/building number, the floor/department/room number

h. /latitude/ - (**obligatory**) the latitude in decimal degrees (e.g. 53.4175191)

i. /longitude/ - (**obligatory**) the longitude in decimal degrees (e.g. 14.5324166)

j. /status/ - current status of the pickup point, with the following possible values:

1. available – the pickup point is operating and available within the operating hours
2. out_of_service – the pickup point is temporarily unavailable and will be available in the future
3. removed – the pickup point is permanently unavailable
4. planned – the new pickup point is unavailable and will be made available in the future

If no status is sent, the status is set to out_of_service

k. /operating_hours/weekday/ - when the pickup point is available. Contains following attributes:

1. @day - available values: monday, tuesday, wensday, thursday, friday, saturday, sunday
2. @mode - available values: closed, open_in, 24h
3. @opening – opening hour in ISO-8601standard e.g. 08:00 (only if @mode="open_in" has been sent)
4. @closing - closing hour in ISO-8601standard e.g. 18:00 (only if @mode="open_in" has been sent)

Not sending working hours of a pickup point sets the status to closed.

l. /description/ - how to find the pickup point. Possible to set different description for the various languages. See example in the request example code below.

m. /payment_forms/ - list of payment forms that are available for the pickup point in COD (cash on delivery) scenario, with the possible nodes:

- /cash/ - cash payment
- /card/ - card payment
- /pay_by_link/ - pay-by-link payment
- /instalments/ - payment in instalments

Not sending information about accepted forms of payment for COD will result in the inability to select a particular point for COD orders.

request example code

```
<?xml version="1.0" encoding="UTF-8"?>
<locations author="IAI S.A." file_format="ISF" generated="2017-09-27T16:20:43+0200" version="1.2">
  <pickup_point>
    <id>pp_59c3b289d9208</id>
    <status>available</status>
    <payment_forms>
      <card>yes</card>
    </payment_forms>
    <address>Dubois 9</address>
    <postcode>71-670</postcode>
    <city>Szczecin</city>
    <country>PL</country>
    <subdivision />
    <longitude>14.578447</longitude>
    <latitude>53.466194</latitude>
    <opickup_hours>
      <weekday closed="14:00" day="monday" mode="open_in" opening="08:30" />
    </opickup_hours>
  </pickup_point>
</locations>
```



```
<weekday closed="18:00" day="tuesday" mode="open_in" opening="09:00" />
<weekday closed="18:00" day="wednesday" mode="open_in" opening="11:00" />
<weekday closed="18:00" day="thursday" mode="open_in" opening="09:00" />
<weekday day="friday" mode="closed" />
<weekday day="saturday" mode="24h" />
<weekday day="sunday" mode="closed" />
</operating_hours>
<name>
  <item language="eng">Newsstand</item>
  <item language="pol">Kiosk</item>
</name>
<description>
  <item language="eng">Next to the shopping mall</item>
  <item language="pol">Obok centrum handlowego</item>
</description>
</pickup_point>
</locations>
```

Additional parameters defined by the manifest.xml file

The ISF format from version 2.0 allows you to send your own custom nodes that can be used by the courier to generate a label. To supplement them, you can use variables defined by the developer in the manifest.xml file.

The manifest.xml file contains information about the endpoint where the ISF is to be sent, the structure of the additionalParams node in the ISF, and the configuration of individual variables. In ISF 2.0 it is a key element of correct integration.

Structure:

/manifest/ - (required) root node

/manifest/url/ - (required) endpoint of courier API

/manifest/additional_parameters/ - (required) any XML structure defined by the developer

/manifest/config/ - (optional) configuration of variables defined by the developer

/manifest/config/option/ - (required)

/manifest/config/option/@type/ - (required) variable typej

values: "input" / "radio" / "select"

/manifest/config/option/@id/ - (required) name of the variable declared in the additional_parameters

/manifest/config/option/@name/ - (required) – name present in the panel

/manifest/config/option/values/ - (required) only ifi @type = "radio" / "select"

/manifest/config/option/values/value/ - (required) the value of this node is the value changed for the variable in additional_parameters

/manifest/config/option/values/value/@name/ - (required) the name of the option visible in the panel

manifest.xml example code

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest type="isf" version="1548698901">
  <url>https://endpoint.com/isf/test</url>
  <additional_parameters>
    <products>
      [jai:foreach_products_list-begin]
    <pickup_hour>[courier:pickupHour]</pickup_hour>
    <is_radioactive>[courier:isRadioactive]</is_radioactive>
    <referenceField>[courier:referenceField]</referenceField>
  </additional_parameters>
  <config>
    <option type="select" id="pickupHour" name="Pickup hour">
      <values>
        <value name="8 am">10</value>
        <value name="4 pm ">12</value>
      </values>
    </option>
```



```
<option type="radio" id="isRadioactive" name="Is package radioactive?">
  <values>
    <value name="Yes">yes</value>
    <value name="No">no</value>
  </values>
</option>
<option type="input" id="referenceField" name="Additional reference field"></option>
</config>
</manifest>
```

Example shipments – an ISF request and response

As a practical example of the ISF format a files with example shipments have been prepared (ISF-example-request.xml and ISF-example-response.xml).

request example code

```
<?xml version="1.0" encoding="UTF-8"?>
<set file_format="ISF" version="1.2" generated="2017-12-19T14:58:02+0100" author="IAI S.A.">
  <event id="31642" type="order">
    <shipment sequence="1" courier="PL-SHOPPICKUPPOINTS">
      <tracking_number>tn000324551</tracking_number>
      <tracking_url>https://szybki-kurier.pl/paczka/tn000324551</tracking_url>
      <package sequence="1">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <reference>referencja nr 1</reference>
          <reference>referencja nr 2</reference>
          <reference>referencja nr 3</reference>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meble -zam. 31642</content_description>
        </description>
      </package>
      <package sequence="2">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meble -zam. 31642</content_description>
        </description>
      </package>
      <package sequence="3">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meble -zam. 31642</content_description>
        </description>
      </package>
    </shipment>
  </event>
  <label>
    <format>PDF</format>
  </label>
</set>
```



```
<size>A4</size>
<labels_per_page>4</labels_per_page>
<base64>base64</base64>
</label>
<service>
  <priority>express</priority>
</service>
<additional_services>
  <value currency="PLN">4.00</value>
  <nonstandard>yes</nonstandard>
  <fragile>yes</fragile>
  <bring_up>yes</bring_up>
  <carbon_neutral>yes</carbon_neutral>
  <dutiable>
    <customs_value currency="PLN">400</customs_value>
  </dutiable>
  <insurance currency="PLN">400</insurance>
</additional_services>
<pickup>
  <cod>
    <amount currency="PLN">21.85</amount>
    <account_type>transfer</account_type>
    <reference>31642</reference>
    <transfer_account_id>44 1234 1324 1234 1234 1234</transfer_account_id>
    <priority>fastest</priority>
  </cod>
  <rod>
    <reference>referencja ROD 31642</reference>
  </rod>
  <confirmation>personal</confirmation>
  <self_pickup>yes</self_pickup>
</pickup>
<cost currency="PLN">
  <net>10.00</net>
  <vat_percent>23</vat_percent>
  <gross>12.30</gross>
</cost>
<dispatch_point>
  <id>UAKY-3232</id>
  <name>NADAWCA 20005</name>
  <address>
    <address>Dmytrivska 34</address>
    <postcode>00343</postcode>
    <city>Kijev</city>
    <country>UA</country>
  </address>
</dispatch_point>
</shipment>
<sender>
  <address>
    <company>IAI S.A.</company>
    <country>PL</country>
    <postcode>71-064</postcode>
    <city>Szczecin</city>
    <address>Piastow 30</address>
    <telephone>800304500500</telephone>
    <type>business</type>
  </address>
  <notifications language="eng">
```



```
<email address="iaitest-10@oo.pl" type="create" />
<email address="iaitest-11@oo.pl" type="delivery" />
<email address="iaitest-12@oo.pl" type="exception" />
</notifications>
</sender>
<receiver>
  <address>
    <name>Jan Kowal</name>
    <company>FIRMA</company>
    <country>UA</country>
    <postcode>00123</postcode>
    <city>Kijev</city>
    <address>Niska 3</address>
    <type>private</type>
  </address>
  <contact>
    <telephone>111222333</telephone>
    <email>jankowalski@iai-sa.com</email>
  </contact>
  <notifications language="pol">
    <email address="jankowalski@iai-sa.com" type="create" />
    <email address="jankowalski@iai-sa.com" type="ship" />
  </notifications>
  <pickup_point>
    <id>UA-KY-Volod45</id>
    <country>UA</country>
    <subdivision>Kijev</subdivision>
    <postcode>01034</postcode>
    <city>Kijev</city>
    <address>Volodymyrska 45</address>
  </pickup_point>
</receiver>
<payer>
  <address>
    <name>Jan Kowal</name>
    <country>UA</country>
    <postcode>00111</postcode>
    <city>Kijev</city>
    <address>Niska 3</address>
  </address>
</payer>
</event>
</set>
```



response example code

```
<?xml version="1.0" encoding="UTF-8"?>
<set file_format="ISF" version="1.2" generated="2017-12-19T14:58:02+0100" author="IAI S.A.">
  <event id="31642" type="order">
    <shipment sequence="1" courier="PL-SHOPPICKUPPOINTS">
      <tracking_number>tn000324551</tracking_number>
      <tracking_url>https://szybki-kurier.pl/paczka/tn000324551</tracking_url>
      <package sequence="1">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <reference>referencja nr 1</reference>
          <reference>referencja nr 2</reference>
          <reference>referencja nr 3</reference>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meblemeble -zam. 31642</content_description>
        </description>
      </package>
      <package sequence="2">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meblemeble -zam. 31642</content_description>
        </description>
      </package>
      <package sequence="3">
        <tracking_number>tn000324551</tracking_number>
        <description>
          <weight unit="g">15000</weight>
          <packaging>box</packaging>
          <dimensions unit="cm">
            <height>30</height>
            <width>30</width>
            <length>120</length>
          </dimensions>
          <content_description>meblemeble -zam. 31642</content_description>
        </description>
      </package>
      <label>
        <format>PDF</format>
        <size>A4</size>
        <labels_per_page>4</labels_per_page>
      </label>
    </shipment>
  </event>
</set>
<base64>VHV0YWogamVzdCDFgmFkbmEgZXR5a2lldGEgLSBkb2t1bWVudCBQREYgemFrb2Rvd2FueSB3IGJhc2U2
NC4</base64>
</label>
</service>
```




```
<priority>express</priority>
</service>
<additional_services>
  <value currency="PLN">4.00</value>
  <nonstandard>yes</nonstandard>
  <fragile>yes</fragile>
  <bring_up>yes</bring_up>
  <carbon_neutral>yes</carbon_neutral>
  <dutiable>
    <customs_value currency="PLN">400</customs_value>
  </dutiable>
  <insurance currency="PLN">400</insurance>
</additional_services>
<pickup>
  <cod>
    <amount currency="PLN">21.85</amount>
    <account_type>transfer</account_type>
    <reference>za 31642</reference>
    <transfer_account_id>44 1234 1324 1234 1234 1234</transfer_account_id>
    <priority>fastest</priority>
  </cod>
  <rod>
    <reference>referencja ROD 31642</reference>
  </rod>
  <confirmation>personal</confirmation>
  <self_pickup>yes</self_pickup>
</pickup>
<cost currency="PLN">
  <net>10.00</net>
  <vat_percent>23</vat_percent>
  <gross>12.30</gross>
</cost>
<dispatch_point>
  <id>UAKY-3232</id>
  <name>NADAWCA 20005</name>
  <address>
    <address>Dmytrivska 34</address>
    <postcode>00343</postcode>
    <city>Kijev</city>
    <country>UA</country>
  </address>
</dispatch_point>
</shipment>
<sender>
  <address>
    <company>IAI S.A.</company>
    <country>PL</country>
    <postcode>71-064</postcode>
    <city>Szczecin</city>
    <address>Piastow 30</address>
    <telephone>800304500500</telephone>
    <type>business</type>
  </address>
  <notifications language="eng">
    <email address="iaitest-10@wp.pl" type="create" />
    <email address="iaitest-10@wp.pl" type="delivery" />
    <email address="iaitest-10@wp.pl" type="exception" />
  </notifications>
</sender>
```



```
<receiver>
  <address>
    <name>Jan Kowal</name>
    <company>FIRMA CENTRUM</company>
    <country>UA</country>
    <postcode>00123</postcode>
    <city>Kijev</city>
    <address>Niska 3</address>
    <type>private</type>
  </address>
  <contact>
    <telephone>111222333</telephone>
    <email>jankowalski@iai-sa.com</email>
  </contact>
  <notifications language="pol">
    <email address="jankowalski@iai-sa.com" type="create" />
    <email address="jankowalski@iai-sa.com" type="ship" />
  </notifications>
  <pickup_point>
    <id>UA-KY-Volod45</id>
    <country>UA</country>
    <subdivision>Kyiv</subdivision>
    <postcode>01034</postcode>
    <city>Kyiv</city>
    <address>Volodymyrska 45</address>
  </pickup_point>
</receiver>
<payer>
  <address>
    <name>Jan Kowal</name>
    <country>UA</country>
    <postcode>00111</postcode>
    <city>Kijev</city>
    <address>Niska 3</address>
  </address>
</payer>
</event>
</set>
```

Attachments

Attachment 1 – Couriers

In this Attachment we describe where within the format the courier names are used and we provide examples of particular companies.

Carrier names are possible to be defined in the following attributes:

1. /event/shipment@courier - to choose the courier for the delivery from the shop to the customer or for the return shipment from the customer to the shop (only for the **return** event).
2. /event/return_shipment@courier - to choose the courier for the return shipment (from the customer back to the shop) if it should be a different courier than the original one (only for the **order** event).

Each courier name used in ISF consists of two parts connected with a hyphen:

- a. country of operation defined in the ISO 3166-1 alpha-2 standard (e.g. PL, US, DE):

http://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#Officially_assigned_code_elements

- b. name of the company or brand the courier operates under (e.g. DPD, TBA, PACZKOMATY)

Example suggested names are:

PL-DPD	PL-K-EX	PL-PACZKOMATY	PL-DHL
PL-FEDEX	PL-GLS	PL-POCZTA	PL-TBA
PL-UPS	PL-INPOST	PL-RUCH	PL-SCHENKER
PL-SIODEMKA	PL-TNT	PL-X-PRESS	DE-POST
GB-ROYALMAIL	DE-HERMES	GB-INTERLINK	GB-UKMAIL
GB-WINCANTON	DE-ILOXX	PL-PATRONSERVICE	PL-JAG24
DE-DPD	DE-UPS	GB-UPS	GB-DPD

Attachment 2 – Error and warning codes

Any errors in the request are identified by the existence of the node /errors/ (set/event/errors). If you want to return an error, do so according to the structure described in: Structure of the / errors / node.

Suggested error codes

Critical errors that result in a shipment not being delivered or causing substantial losses to the online shop, starts with Exxx:

error code	description
E001	COD unavailable for international shipments
E002	COD unavailable for choosen service
E003	COD unavailable for customer currency
E010	<i>No dimensions of the package provided</i>
E011	<i>No weight of the package provided</i>
E012	No type of the package provided
E013	<i>No package content provided, required for the selected service</i>
E020	<i>No type of service provided</i>
E030	<i>No pickup point address provided</i>
E031	<i>No delivery address provided</i>
E032	<i>No recipient's phone number provided</i>
E032	<i>No payer data provided</i>
E040	<i>Country code incompliant with ISO 3166-1 alpha-2 standard</i>
E041	<i>Subdivision code incompliant with ISO 3166-2 standard</i>
E042	<i>Invalid postal code</i>

Noncritical errors that make the delivery more difficult, but possible, start with Wxxx:

error code	description
W001	Type of a shipment not available

Partners

The following companies and brands have taken part in preparing the ISF format specification. IAI would like to thank its Partners for their cooperation.

TBA Express

Apaczka.pl

10ka.pl

Goglobal24.com

Sheepla.com

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