DGF Global Customer Applications

Functional Design Specification

LTC Lead Time Calculator

Web service interfaces

Version History

Ver.	Date	Approved on	Author	Remarks/Comments
1.6				Last existing verion
1.7	26.6.2017		Michal Chlubný	EURAPID enhancements - 2 new web services
1.8	13.10.2017		Marlon Cruz	Added result description in web service leadtime and added more info in committed delivery date result description
1.9	08.11.2017		Michal Chlubný	Project BMW enhancements - New version of leadtimes committed delivery web service - New web service for BMW - Product availability
2.0	08.01.2018		Michal Chlubný	Project FDD enhacements - Updated committed delivery ws - New FDD validator ws

Table of Contents

1.0 Introduction

This document describes all implemented LTC interfaces, their input parameters and format of response message.

Structure of description

- Short description of service logic
- Request structure
- Response structure
- Example messages
- Error handling

All URL links contains variable part [LTC-HOSTNAME], which depends on application environment. Following table lists of hostnames, this is up to date to date of creation of this document and may change.

Application environment	Inside of DHL network	Outside of DHL network
TEST environment	ltc-test.prg-dc.dhl.com	ltc-test.dhl.com
TEST2 environment	ltc-test2.prg-dc.dhl.com	ltc-test2.dhl.com
DEV environment	ltd-dev.prg-dc.dhl.com	ltc-dev.dhl.com
PROD environment	ltc.prg-dc.dhl.com	ltc.dhl.com

Domain name ***prg-dc.dhl.com*** is commonly used to access LTC internally within DHL network while domain name ***dhl.com*** is used to access LTC externally.

2.0 Solution

2.1. GET api/leadtimes

Obsolete interface – please use /v2/leadtime-committed-delivery or newer instead. This web service will be decommissioned.

Returns a collection of all lead time objects that fulfil specified criteria. Result set ordering is not specified.

2.1.1. Potential purpose:

Default interface of LTC
Should be performed for the final process step

2.1.2. Resource URL

`https://[LTC-HOSTNAME]/api/leadtimes.json`

2.1.3. Resource Information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/leadtimes (id = 4)

2.1.4. Parameters

Name	Format	Description	Mandatory	Examples
country_from	CC (two character country code)	The country where the shipment shall come from	Yes	DE
zipcode_from	String	The zip code of the pick-up address.	Yes	24980
country_to	CC (two character country code)	The country where the shipment shall go to.	Yes	AT
zipcode_to	String	The zip code of the destination address.	Yes	2755
product_code	CCC (three character product code)	if specified only lead time for this product will be returned. If no product code is specified, response will contain calculated leadtime for all available products (see Product availability).	No	ABC
pickup_date	YYYY-MM-DD	If present, particular week day is determined and lead times only for this specific week day will be returned. Pickup date must be a valid working day (not a weekend). If there is a bank holiday on given pickup date, LTC will calculate next possible pickup date and return this date as a calc_pickup_date. In this case leadtime calculation will start on this new date.	No	2016-05-30

2.1.5. Result

Name	Format	Description	Mandatory	Examples
product_code	String	Product code	Yes	ECE ERA DTM

Description	string	Description	Yes	":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments",
leadtimes	String	Day of the week and lead time in working days. Lead time result is considering bank holidays but NOT weekend days. If pickup_date is entered, only leadtime for that one week day is returned. Example: Mon:3 > delivery on Thursday Fri:2 > delivery on Tuesday	Yes	"mon":3, "tue":3, "wed":3, "thu":3, "fri":3
Holidays	String	Holiday in destination terminal	No	"date":"05/07/2016", "country":"CZ", "terminal":""
calc_pickup_date	Date	New calculated pickup date considering bank holiday and weekend. New pickup date is calculated only in case if pickup on given date is not possible (bank holidays) and leadtime calculation starts on this new calculated pickup date.	No	2016-07-07

2.1.6. Example request

https://[LTC-HOSTNAME]/api/leadtimes.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755

2.1.7. Error handling

???

2.1.8. Examples of response

https://[LTC-HOSTNAME]/api//leadtimes.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755


```
[{
    "product":"ECE",
    "description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments",
    "leadtimes":{
      "mon":3,
      "tue":3,
      "wed":3,
      "thu":3,
      "fri":3
    },
    "holidays":null
  }]
```


GET

https://ltc.dhl.com/leadtimes.json?country_from=CZ&country_to=TR&zipcode_from=10219&zipcode_to=01&pickup_date=2016-07-05


```
[{
    "product":"ECE",
```

```
    "description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network
offering for Groupage (LTL) shipments",
    "leadtimes":{
      "tue":11
    },
    "holidays":[
      {  "date":"05/07/2016",
        "country":"CZ",
        "terminal":""
      },
      {  "date":"06/07/2016",
        "country":"CZ",
        "terminal":""
      },
      {  "date":"07/07/2016",
        "country":"TR",
        "terminal":""
      },
      {  "date":"08/07/2016",
        "country":"TR",
        "terminal":""
      },
      {  "date":"09/07/2016",
        "country":"TR",
        "terminal":""
      }
    ],
    "calc_pickup_date":"2016-07-07"
  }]
```


2.1.9. Additional Example:

ECE

https://czchols3186-2.prg-dc.dhl.com/api/leadtimes.json?country_from=SE&zipcode_from=61014&country_to=IT&zipcode_to=24051&pickup_date=2017-10-18


```
[{
    "product": "ECE",
    "description": "DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network
offering for Groupage (LTL) shipments",
    "leadtimes": {
        "wed": 3
    },
    "calc_pickup_date": "2017-10-19",
    "holidays": []
}, {
    "product": "ERA",
    "description": "DHL EURAPID: DHL Freight's international Door-to-Door premium network for
Groupage (LTL) shipments, offering a daily, day definite priority service",
    "leadtimes": {
        "wed": 3
    },
    "calc_pickup_date": "2017-10-19",
```

```
    "holidays": []
}]
```

2.2. GET api/leadtimes-commited-delivery

Obsolete interface – please use /v2/leadtime-committed-delivery or newer instead. This web service will be decommissioned.

Current leadtime calculation implementation works the way, that it returns leadtimes (working days needed for delivery) count for specific pick-up weekdays. In this case, we have to return specific date, so pick-up date field has to be mandatory in this case.

This API method returns a collection of committed delivery object(s) (for each product one object) that fulfill specified criteria, incl. all related data, like bank holidays considered during calculation and feasible pick-up date based on request parameters.

This API for lead time calculation calculates data for ERA product only. In case of missing ERA product in given ZIP code/country, API returns error message. On given ZIP codes will be applied specific validation logic (see chapter **Error! Reference source not found.**~~4.3~~ - **Error! Reference source not found.Error! Reference source not found.**~~ZIP-code validation~~).

2.2.1. Resource URL

Standard encoded URL:

https://[LTC-HOSTNAME]/api/leadtimes-committed-delivery.json

2.2.2. Resource information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/leadtimes-committed-delivery (id = 5)

2.2.3. Parameters

Name	Format	Description	Mandatory	Examples
country_from	CC (two character country code)	The country where the shipment shall come from	Yes	DE
zipcode_from	String	The zip code of the pick-up address.	Yes	24980
country_to	CC (two character country code)	The country where the shipment shall go to.	Yes	AT
zipcode_to	String	The zip code of the destination address.	Yes	2755
pickup_date	YYYY-MM-DD	Represents date, when shipment should be picked up.	Yes	2016-05-30

2.2.4. Example request

https://[LTC-HOSTNAME]/api/leadtimes-committed-delivery.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755&pickup_date=2016-05-30

2.2.5. Response message definition

Field	Rule / description
product	Product code (always ERA)
description	Product description
holidays [{ date, country, terminal }]	List of holidays during transportation. Array of all dates (format YYYYMMDD) with country codes and terminal codes. If there are no holidays, service will return an empty array.

calc_pickup_date	Optional field filled and returned only if for given pickup_date is pick-up not possible (due to weekends or holidays).Value format: YYYYMMDD Also means, new calculated pick up date is considering weekends and holidays
commited_delivery_date	Commited delivery date is considering bank holiday and weekend Value format: YYYYMMDD
same_day_pickup_12	Field contains true/false, if there is "same_day_pickup_12" feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature "same_day_pickup_12" is in import data file identified with feature code "order booking <12 pm".
same_day_pickup_15	Field contains true/false, if there is "same_day_pickup_15" feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature "same_day_pickup_15" is in import data file identified with feature code "order booking <15 pm".
pre12	Field contains true/false, if there is "pre12" or "pre10" or booth features for commited_delivery_date possible (related to ZIPCODE_TO on commited delivery date for ERA product) Feature "Pre12" is in import data file identified with feature code "pre 12". Feature "Pre10" is in import data file identified with feature code "pre 10". Booth features "Pre12" and "Pre10" are in import data file identified with feature code "pre 10, pre 12"

2.2.6. Error handling

Issue	Error code	Error message
Mandatory parameter "Zipcode from" is missing	1	"Zipcode from" parameter must be set.
Mandatory parameter "Zipcode to" is missing	2	"Zipcode to" parameter must be set.
Mandatory parameter "Country_from" is missing	3	"Country from" parameter must be set.
Mandatory parameter "Country_to" is missing	4	"Country to" parameter must be set.
Invalid value format of provided pickup date.	5	Given pickup date is invalid. Enter valid date with format YYYY-MM-DD.
Provided pickup date is Saturday or sunday.	6	Given pickup date is Saturday or Sunday, please specify working day.
Provided ZIP FROM is not valid	-1	Zipcode %z1 in country %s1 is missing.
Provided ZIP_TO is not valid	-2	Zipcode %z2 in country %s2 is missing.
ERA product is not available in given ZIP CODE FROM (COUNTRY FROM)	-11	ERA product is not available in country %s1.
ERA product is not available in given ZIP CODE TO (COUNTRY TO)	-12	ERA product is not available in country %s2.
ERA product is not available in given ZIP CODE FROM and TO (COUNTRY FROM/TO)	-13	ERA product is not available in both countried %s1 / %s2.

2.3. GET api/v2/leadtime-committed-delivery

This API method returns a collection of committed delivery object(s) (for each product one object) that fulfil specified criteria, incl. all related data, like bank holidays considered during calculation and feasible pick-up date based on request parameters.

This API for lead time calculation calculates data for any available product (see Product availability). On given ZIP codes will be applied specific validation logic (see chapter **Error! Reference source not**

found.~~4.3~~ - Error! Reference source not found.Error! Reference source not found.~~ZIP code validation~~).

2.3.1. Resource URL

Standard encoded URL:

https://[LTC-HOSTNAME]/api/v2/leadtimes-committed-delivery.json

2.3.2. Resource information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/v2/leadtimes-committed-delivery (id = 6)

2.3.3. Parameters

Column ID	Type / format	Mandatory / Optional	Description
country_from	Char(3)	Mandatory	Country code of origin country. In case of calculation should start from inbound terminal, country code of inbound terminal should be entered.
zip_from	Varchar	Mandatory	Zip code in origin country. In case of calculation should start from inbound terminal, zip code of inbound terminal should be entered.
country_to	Char(3)	Mandatory	Country code of destination country
zip_to	Varchar	Mandatory	Zip code in destination country
customer_pickup_date	yyyy-mm-dd	Optional	Shipment pickup date. If inbound_scan_date/time is entered, customer_pickup_date will be ignored.
customer_pickup_time	HH:MM	Optional	Shipment pickup time. This parameter is optional for pickup_date. If inbound_scan_date/time is entered, customer_pickup_time will be ignored.
inbound_scan_date	yyyy-mm-dd	Optional	Exact date, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_time.
inbound_scan_time	HH:MM	Optional	Exact time, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_date.
product_code	Char(3)	Optional	Product code. If product code is not defined, all available products (see Product availability) will be calculated.

2.3.4. Example request

https://<server>/api/v2/ leadtimes-committed-delivery.json?country_from=CZ&zip_from=62500&country_to=CZ&zip_to=28166&customer_pickup_date=2017-11-01&customer_pickup_time=17:00

2.3.5. Response message definition

Name	Format	Description
product_code	char(3)	Product code
description	string	Product description
calc_pickup_date	yyyy-mm-dd	This element is optional and will be returned only if pick-up on given pick-up date is not possible. In that case LTC will find next possible pick-up date and this value will be returned in the element. If this element is missing, the pick-up on entered pick-up date is possible.
delivery_date	yyyy-mm-dd	Calculated delivery date
holidays [{ date, country, terminal }]	 yyyy-mm-dd char(2) char(3)	List of holidays during transportation. Array of all dates with country codes and terminal codes. If there are no holidays, service will return an empty array.
expected_arrival [{ date, time, terminal_id }]	 yyyy-mm-dd hh:mm char(3)	This element contains calculated expected arrival date, time and terminal ID on first terminal on the route. If there is an inbound scan date/time specified, this expected arrival date/time is related to next (2^{nd}) terminal on the route. Detailed description of calculation of expected arrival is below this table.

available_at_terminal [{ date, time, terminal_id }]	 yyyy-mm-dd hh:mm char(3)	This element contains calculated availability date, time and terminal ID on first terminal on the route. If there is an inbound scan date/time specified, this expected arrival date/time is related to next (2nd) terminal on the route. Availability time includes handling time on that exact terminal. Detailed description of calculation of availability is below this table.
Product_features [{ same_day_pickup_12, same_day_pickup_15, pre12 }]	 true/false true/false true/false	List of product specific features. If there are no specific product features, service will return an empty array. Detailed description of all features see bellow this table.

Expected arrival time (ETA) will be calculated as following:

- If there is not defined pick-up time: standard outbound cutoff time will be considered as expected arrival time and arrival date will be considered according to LTR (current logic)
- If there is defined pick-up time, the expected arrival time will be calculated as following: if the LTR value is equal 0, then it will be considered latest possible pick-up time and used for calculation of expected arrival time. If LTR value is not equal 0, standard availability using outbound cutoffs and LTR will be considered as arrival date/time.

Example: pickup date=1.10.2017, pickup time=<not defined>, outbound cutoff=18:00, LTR=0
ETA = 1.10.2017 18:00
Availability time = ETA + handling = 1.10.2017 18:00 + 60mins = 1.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=<not defined>, outbound cutoff=18:00, LTR=1
ETA = 2.10.2017 18:00
Availability time = ETA + handling = 2.10.2017 18:00 + 60mins = 2.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=16:00, LPT=17:00, outbound cutoff=18:00, LTR=0
Drive back time = 18:00 – 17:00 = 1:00
Arrival time = 16:00 + 1:00 (drive back time) = 17:00 <= 18:00 (outbound cutoff)
ETA = 1.10.2017 18:00
Availability time = ETA + handling = 1.10.2017 18:00 + 60mins = 1.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=17:30, LPT=17:00, outbound cutoff=18:00, LTR=0
Drive back time = 18:00 – 17:00 = 1:00
Arrival time = 17:30 + 1:00 (drive back time) = 18:30 > 18:00 (outbound cutoff)
ETA = 1.10.2017 18:30
Availability time = ETA + handling = 1.10.2017 18:30 + 60mins = 1.10.2017 19:30

Example: pickup date=1.10.2017, pickup time=17:30, outbound cutoff=18:00, LTR=1
ETA = 2.10.2017 18:00
Availability time = ETA + handling = 2.10.2017 18:00 + 60mins = 2.10.2017 19:00

Following table contain list of possible product features for specific product_code.

Product	Feature name	Value
ERA	same_day_pickup_12	Field contains true/false, if there is “same_day_pickup_12” feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature “same_day_pickup_12” is in import data file identified with feature code “order booking <12 pm”.
ERA	same_day_pickup_15	Field contains true/false, if there is “same_day_pickup_15” feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature “same_day_pickup_15” is in import data file identified with feature code

		"order booking <15 pm".
ERA	pre12	Field contains true/false, if there is "pre12" or "pre10" or booth features for committed_delivery_date possible (related to ZIPCODE_TO on committed delivery date for ERA product) Feature "Pre12" is in import data file identified with feature code "pre 12". Feature "Pre10" is in import data file identified with feature code "pre 10". Booth features "Pre12" and "Pre10" are in import data file identified with feature code "pre 10, pre 12"
ECE	available_delivery_dates [{ yyyy-mm-dd, yyyy-mm-dd, … }]	Field contains list of feasible fixed delivery dates after calculated delivery date. Number of returned dates is defined in configuration table (parameter "final_delivery_dates_num"). - List of calculated FDD starts on delivery date + 1 day - FDD cannot be on weekend or bank holidays Bank holidays on destination terminal must be considered (shipment cannot be departure on bank holidays)

2.3.6. Example response

[{"product_code":"ECE",
"description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments",
"delivery_date":"2017-11-02",
"holidays":[],
"expected_arrival ":[{"date":"2017-11-01","time":"17:00","terminal_id":"BRQ"}],
"available_at_terminal ":[{"date":"2017-11-01","time":"18:00","terminal_id":"BRQ"}],
"product_features":["availablefixed delivery_dates":[{2017-11-03,2017-11-06,2017-11-07,...}]]},
{"product_code":"ERA",
"description":"DHL EURAPID: DHL Freight's international Door-to-Door premium network for Groupage (LTL) shipments, offering a daily, day definite priority service",
"delivery_date":"2017-11-04",
"holidays":[],
"expected_arrival":[{"date":"2017-11-01","time":"18:00","terminal_id":"BRQ"}],
"available_at_terminal":[{"date":"2017-11-01","time":"19:00","terminal_id":"BRQ"}],
"product_features":{"same_day_pickup_12":true,"same_day_pickup_15":false,"pre12":false}
}]

2.4. GET api/v2/bmw-delivery

This API method is implemented especially for BMW customer/products. Its logic and implementation is same as api/v2/leadtimes-committed-delivery web service, except configuration of product availability (see Product availability). And this moment for this web service are only following products available: BMW, BMD (BMW Domestic). But this can be change anytime in DB configuration table.

2.4.1. Resource URL

Standard encoded URL:

https://[LTC-HOSTNAME]/api/v2/bmw-delivery.json

2.4.2. Resource information

Response formats	JSON

Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/v2/bmw-delivery (id = 7)

2.4.3. Parameters

Column ID	Type / format	Mandatory / Optional	Description
country_from	Char(3)	Mandatory	Country code of origin country. In case of calculation should start from inbound terminal, country code of inbound terminal should be entered.
zip_from	Varchar	Mandatory	Zip code in origin country. In case of calculation should start from inbound terminal, zip code of inbound terminal should be entered.
country_to	Char(3)	Mandatory	Country code of destination country
zip_to	Varchar	Mandatory	Zip code in destination country
customer_pickup_date	yyyy-mm-dd	Optional	Shipment pickup date. If inbound_scan_date/time is entered, customer_pickup_date will be ignored.
customer_pickup_time	HH:MM	Optional	Shipment pickup time. This parameter is optional for pickup_date. If inbound_scan_date/time is entered, customer_pickup_time will be ignored.
inbound_scan_date	yyyy-mm-dd	Optional	Exact date, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_time.
inbound_scan_time	HH:MM	Optional	Exact time, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_date.
product_code	Char(3)	Optional	Product code. If product code is not defined, all available products (see Product availability) will be calculated.

2.4.4. Example request

https://<server>/api/v2/ bmw-delivery.json?country_from=CZ&zip_from=62500&country_to=CZ&zip_to=28166&customer_pickup_date=2017-11-01&customer_pickup_time=17:00

2.4.5. Response message definition

Name	Format	Description
product_code	char(3)	Product code
description	string	Product description
calc_pickup_date	yyyy-mm-dd	This element is optional and will be returned only if pick-up on given pick-up date is not possible. In that case LTC will find next possible pick-up date and this value will be returned in the element. If this element is missing, the pick-up on entered pick-up date is possible.
delivery_date	yyyy-mm-dd	Calculated delivery date
holidays [{ date, country, terminal }]	yyyy-mm-dd char(2) char(3)	List of holidays during transportation. Array of all dates with country codes and terminal codes. If there are no holidays, service will return an empty array.
expected_arrival [{ date, time, terminal_id }]	yyyy-mm-dd hh:mm char(3)	This element contains calculated expected arrival date, time and terminal ID on first terminal on the route. If there is an inbound scan date/time specified, this expected arrival date/time is related to next (2nd) terminal on the route. Detailed description of calculation of expected arrival is below this table.
available_at_terminal [{ date, time, terminal_id }]	yyyy-mm-dd hh:mm char(3)	This element contains calculated availability date, time and terminal ID on first terminal on the route. If there is an inbound scan date/time specified, this expected arrival date/time is related to next (2nd) terminal on the route. Availability time is estimated arrival time plus handling time. Detailed description of calculation of arrival time is below this table.
Product_features [{ same_day_pickup_12, same_day_pickup_15, pre12 }]	true/false true/false true/false	List of product specific features. If there are no specific product features, service will return an empty array. Detailed description of all features see bellow this table.

Estimated arrival time (ETA) will be calculated as following:

- If there is not defined pick-up time: standard outbound cutoff time will be considered as expected arrival time and arrival date will be considered according to LTR (current logic).
- If there is defined pick-up time, the expected arrival time will be calculated as following: if the LTR value is equal 0, then it will be considered latest possible pick-up time and used for calculation of expected arrival time. If LTR value is not equal 0, standard availability using outbound cutoffs and LTR will be considered as arrival date/time.

Example: pickup date=1.10.2017, pickup time=<not defined>, outbound cutoff=18:00, LTR=0
ETA = 1.10.2017 18:00
Availability time = ETA + handling = 1.10.2017 18:00 + 60mins = 1.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=<not defined>, outbound cutoff=18:00, LTR=1
ETA = 2.10.2017 18:00
Availability time = ETA + handling = 2.10.2017 18:00 + 60mins = 2.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=16:00, LPT=17:00, outbound cutoff=18:00, LTR=0
Drive back time = 18:00 – 17:00 = 1:00
Arrival time = 16:00 + 1:00 (drive back time) = 17:00 <= 18:00 (outbound cutoff)
ETA = 1.10.2017 18:00
Availability time = ETA + handling = 1.10.2017 18:00 + 60mins = 1.10.2017 19:00

Example: pickup date=1.10.2017, pickup time=17:30, LPT=17:00, outbound cutoff=18:00, LTR=0
Drive back time = 18:00 – 17:00 = 1:00
Arrival time = 17:30 + 1:00 (drive back time) = 18:30 > 18:00 (outbound cutoff)
ETA = 1.10.2017 18:30
Availability time = ETA + handling = 1.10.2017 18:30 + 60mins = 1.10.2017 19:30

Example: pickup date=1.10.2017, pickup time=17:30, outbound cutoff=18:00, LTR=1
ETA = 2.10.2017 18:00
Availability time = ETA + handling = 2.10.2017 18:00 + 60mins = 2.10.2017 19:00

Following table contain list of possible product features for specific product_code.

Product	Feature name	Value
ERA	same_day_pickup_12	Field contains true/false, if there is “same_day_pickup_12” feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature “same_day_pickup_12” is in import data file identified with feature code “order booking <12 pm”.
ERA	same_day_pickup_15	Field contains true/false, if there is “same_day_pickup_15” feature for given pickup or calculated pickup date possible (related to ZIPCODE_FROM on entered or calculated pickup date for ERA product). Feature “same_day_pickup_15” is in import data file identified with feature code “order booking <15 pm”.
ERA	pre12	Field contains true/false, if there is “pre12” or “pre10” or booth features for committed_delivery_date possible (related to ZIPCODE_TO on committed delivery date for ERA product) Feature “Pre12” is in import data file identified with feature code “pre 12”. Feature “Pre10” is in import data file identified with feature code “pre 10”. Booth features “Pre12” and “Pre10” are in import data file identified with feature code “pre 10, pre 12”
ECE	available_delivery_dates [{ yyyy-mm-dd,	This feature is not implemented yet and will be delivered as part of upcoming project RDD (Requested Delivery Date project).

	yyyy-mm-dd, … }]	

2.4.6. Example response

[{"product_code":"ECE",
"description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments",
"delivery_date":"2017-11-02",
"holidays":[],
"expected_arrival":[{"date":"2017-11-01","time":"17:00","terminal_id":"BRQ"}],
"available_at_terminal":[{"date":"2017-11-01","time":"18:00","terminal_id":"BRQ"}],
"product_features":[]},
{"product_code":"ERA",
"description":"DHL EURAPID: DHL Freight's international Door-to-Door premium network for Groupage (LTL) shipments, offering a daily, day definite priority service",
"delivery_date":"2017-11-04",
"holidays":[],
"expected_arrival":[{"date":"2017-11-01","time":"18:00","terminal_id":"BRQ"}],
"available_at_terminal":[{"date":"2017-11-01","time":"19:00","terminal_id":"BRQ"}],
"product_features":{"same_day_pickup_12":true,"same_day_pickup_15":false,"pre12":false}
}]

2.5. GET api/country-codes

Returns a collection of all available countries listed in LTC database + it also returns valid ZIP examples for each list. This response is being cached on server and also client side for 24 hours.

2.5.1. Potential purpose:

Populate country names to drop-down/selection lists at customer frontend

2.5.2. Resource URL

`https://[LTC-HOSTNAME]/api/country-codes.json`

2.5.3. Resource Information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	Not restricted

2.5.4. Parameters

None

2.5.5. Error handling

???

2.5.6. Example request and response

https://[LTC-HOSTNAME]/api/country-codes.json

{
"fromCountries":{
"AT":"Austria",

```
    "BE":"Belgium",
    "BG":"Bulgaria",
    "CN":"China",
    "HR":"Croatia",
    "CZ":"Czech Republic",
    "DK":"Denmark",
    "EE":"Estonia",
    "FI":"Finland",
    "FR":"France",
    "DE":"Germany",
    "GB":"Great Britain",
    "GR":"Greece",
    "HK":"Hongkong",
    "HU":"Hungary",
    "IE":"Ireland",
    "IT":"Italy",
    "LV":"Latvia",
    "LT":"Lithuania",
    "MK":"Macedonia",
    "NL":"Netherlands",
    "NO":"Norway",
    "PL":"Poland",
    "PT":"Portugal",
    "RO":"Romania",
    "RS":"Serbia",
    "SG":"Singapore",
    "SK":"Slovak Republic",
    "SI":"Slovenia",
    "ES":"Spain",
    "SE":"Sweden",
    "CH":"Switzerland",
    "TR":"Turkey"
  },
  "fromCountriesZipExamples":{
    "AT":"1010",
    "BE":"1000",
    "BG":"3644",
    "CN":"201100",
    "HR":"10000",
    "CZ":"10219",
    "DK":"1050",
    "EE":"48415",
    "FI":"72630",
    "FR":"13140",
    "DE":"24980",
    "GB":"AB10",
    "GR":"10431",
    "HK":"HONGKONG",
    "HU":"4561",
    "IE":"ATHLONE",
    "IT":"65017",
    "LV":"1001",
    "LT":"80157",
    "MK":"1000",
    "NL":"7851",
    "NO":"1440",
```

```
    "PL":"86062",
    "PT":"1000",
    "RO":"107027",
    "RS":"11000",
    "SG":"SINGAPORE",
    "SK":"01001",
    "SI":"1000",
    "ES":"04728",
    "SE":"26234",
    "CH":"3785",
    "TR":"01"
  },
  "toCountries":{
    "AT":"Austria",
    "BE":"Belgium",
    "BG":"Bulgaria",
    "HR":"Croatia",
    "CZ":"Czech Republic",
    "DK":"Denmark",
    "EE":"Estonia",
    "FI":"Finland",
    "FR":"France",
    "DE":"Germany",
    "GB":"Great Britain",
    "GR":"Greece",
    "HU":"Hungary",
    "IE":"Ireland",
    "IT":"Italy",
    "LV":"Latvia",
    "LT":"Lithuania",
    "MK":"Macedonia",
    "NL":"Netherlands",
    "NO":"Norway",
    "PL":"Poland",
    "PT":"Portugal",
    "RO":"Romania",
    "RS":"Serbia",
    "SK":"Slovak Republic",
    "SI":"Slovenia",
    "ES":"Spain",
    "SE":"Sweden",
    "CH":"Switzerland",
    "TR":"Turkey"
  },
  "toCountriesZipExamples":{
    "AT":"1010",
    "BE":"1000",
    "BG":"3644",
    "HR":"10000",
    "CZ":"10219",
    "DK":"1050",
    "EE":"48415",
    "FI":"72630",
    "FR":"13140",
    "DE":"24980",
    "GB":"AB10",
```

```
    "GR":"10431",
    "HU":"4561",
    "IE":"ATHLONE",
    "IT":"65017",
    "LV":"1001",
    "LT":"80157",
    "MK":"1000",
    "NL":"7851",
    "NO":"1440",
    "PL":"86062",
    "PT":"1000",
    "RO":"107027",
    "RS":"11000",
    "SK":"01001",
    "SI":"1000",
    "ES":"04728",
    "SE":"26234",
    "CH":"3785",
    "TR":"01"
  }
}
```

2.6. GET api/zip-validator

Returns a collection of all available products for provided country+zip data (from+to), without to perform a lead time calculation. This product availability is based on existing product configuration in that area. Except this, application will check this availability only for those products, which are configured as available for use in this web service (see Product availability).

2.6.1. Potential purposes:

Validate country+zip data
Check if there are potential products available
Show the potential products at customer frontend
In case, that provided zip codes cannot be validated, error message will be returned in the format as it is described at the end of this document.

2.6.2. Resource URL

https://[LTC_HOSTNAME]/api/zip-validator.json

2.6.3. Resource Information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/zip-validator (id = 8)

2.6.4. Parameters

Name	Format	Description	Mandatory	Examples
country_from	String(2)	The country where the shipment shall come from	Yes	DE
zipcode_from	String	The zip code of the pick-up address.	Yes	24980
country_to	String(2)	The country where the shipment shall go to.	Yes	AT
zipcode_to	String	The zip code of the destination address.	Yes	2755

2.6.5. Example request

https://[LTC_HOSTNAME]/api//zip-validator.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755

2.6.6. Response message definicion

JSON Message	Data type	M/O	Description
[	<array>		
{	<object>		
"zipcode_from"	String	YES	ZIP code from
"zipcode_to"	String	YES	ZIP code to
"product_codelist": {	<array>	YES	Product code list
"AAA"	String	NO	Product code
}			
}			
]			

Example JSON message

```
https://[LTC-HOSTNAME]/api/zip-validator.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755

[
 {
  "zipcode_from": "24980",
  "zipcode_to": "2755",
  "product_codelist": {
   "AAA",
```

```
      "BBB",
      "CCC"
    }
]
```

2.6.7. Error handling

Issue	Code	Message
Requested ZIP code for entered COUNTRY code does not exist. <ZIP_CODE> and <COUNTRY_CODE> will be replaced with missing ZIP and COUNTRY code.	-1	Zip code <ZIP_CODE> in country <COUNTRY_CODE> is missing.

2.7. GET api/zip-validator-eurapid

Returns possible/available products for specific zipcode combination. Additionaly are features returned too, if applicable for provided zipcodes combination. In this case is leadtime calculation skipped, for faster responses from API. Response must contain product codes in correct order : first ERA, second ECE, third DTM.

2.8. On given ZIP codes will be applied specific validation logic (see chapter 2.9~~2.7~~ - GET api/v2/fdd-validator

To fulfill this requirement LTC will offer a new web service. This web service will be used only to validate FDD. Response message of web service will contain result of validation, in case of validation error, there will be an error code and message and also calculated feasible FDD.

This API method validates entered fixed delivery date (FDD), returns result of validation. If given FDD is not valid, web service return also a new calculated feasible fixed delivery date.

This API for FDD validation can be used for any available product (see 2.11 Product availability). On given ZIP codes will be applied specific validation logic (see 2.10 ZIP-code validation).

Resource URL

Standard encoded URL:

https://[LTC-HOSTNAME]/api/v2/fdd_validator.json

Resource information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/v2/fdd-validator (id = 11)

Parameters

Column ID	Type / format	Mandatory / Optional	Description
country_from	Char(3)	Mandatory	Country code of origin country. In case of calculation should start from inbound terminal, country code of inbound terminal should be entered.
zip_from	Varchar	Mandatory	Zip code in origin country. In case of calculation should start from inbound terminal, zip code of inbound terminal should be entered.
country_to	Char(3)	Mandatory	Country code of destination country
zip_to	Varchar	Mandatory	Zip code in destination country
customer_pickup_date	yyyy-mm-dd	Optional	Shipment pickup date. If inbound scan date/time is entered, customer pickup date will be ignored.
customer_pickup_time	HH:MM	Optional	Shipment pickup time. This parameter is optional for pickup date. If inbound scan date/time is entered, customer pickup time will be ignored.
inbound_scan_date	yyyy-mm-dd	Optional	Exact date, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_time.
inbound_scan_time	HH:MM	Optional	Exact time, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_date.
product_code	Char(3)	Optional	Product code. If product code is not defined, all available products (see Product availability) will be calculated.
fixed_delivery_date	yyyy-mm-dd	Mandatory	Fixed delivery date.

Note: either customer pickup date or inbound scan must be entered

Example request

https://<server>/api/v2/leadtimes-committed-delivery.json?country_from=CZ&zip_from=62500&country_to=CZ&zip_to=28166&customer_pickup_date=2017-11-01&customer_pickup_time=17:00&fixed_delivery_date=2017-11-03

Response message definition

Name	Format	Description
product_code	char(3)	Product code
description	string	Product description
validation_result	Boolean	TRUE = given fixed delivery date is feasible FALSE = given fixed delivery date is not feasible
error_code	Integer	Optional, returned only if validation_result = false 10 .. FDD to early (FDD must be greater than calculated delivery date) 11 .. FDD outside limit value (error raised, when FDD is later then latest feasible FDD based on final_delivery_dates_num configuration value – see BRQ 1) 12 .. FDD on weekend (error raised when FDD is on weekend) 13 .. Unknown error 14 .. FDD on bank holidays (error raised when FDD is on bank holidays)
error_message	String	Optional, returned only if validation_result = false 10 .. Fixed delivery date to early 11.. Fixed delivery date to late 12 .. Fixed delivery date on weekend 13 .. Unknown error 14.. Fixed delivery date on bank holiday
Cal_fixed_delivery_date	yyyyy-mm-dd	Optional, returned only if validation_result = false Application will return earlier delivery date (before FDD), if possible. If earliest delivery date is not possible, application will calculate next feasible delivery date (after FDD). - Calculated FDD is always delivery date + 1 day - Cannot be on weekend or bank holidays - Bank holidays on destination terminal must be considered

Calculation examples

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 14.12.2017
Delivery date = 13.12.2017
Validation_result = TRUE

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 13.12.2017
Delivery date = 13.12.2017
Validation_result = FALSE
Error_code = 1 (too early)

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 16.12.2017
Delivery date = 13.12.2017
Validation_result = FALSE
Error_code = 3 (weekend)
Cal_fixeded_delivery_date = 15.12.2017

Arrival on destination terminal = 13.12.2017, LTR = 2, FDD = 16.12.2017
Delivery date = 15.12.2017
Validation_result = FALSE
Error_code = 3 (weekend)
Cal_fixed_delivery_date = 18.12.2017

Arrival on destination terminal = 4.12.2017, LTR = 2, FDD =14.12.2017, final_delivery_dates_num = 5
Latest feasible FDD = 13.12.2017
Delivery date = 6.12.2017

Validation_result = FALSE
Error_code = 4 (outside limits)
Cal_fixed_delivery_date = 13.12.2017

Example response

[{"product_code":"ECE","description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments","validation_result":false,"error_code":10,"error_message":"Fixed delivery date too early.","calc_fixed_delivery_date":"2017-12-20"}]

ZIP-code validation~~ZIP validation~~).

~~2.7.1.~~2.8.1. Resource URL

Standard encoded URL

https://[LTC-HOSTNAME]/api/zip-validator-eurapid.json

~~2.7.2.~~2.8.2. Resource information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/zip-validator-eurapid (id = 9)

~~2.7.3.~~2.8.3. Parameters

Name	Format	Description	Mandatory	Examples
country_from	String(2)	The country where the shipment shall come from	Yes	DE
zipcode_from	String	The zip code of the pick-up address.	Yes	24980
country_to	String(2)	The country where the shipment shall go to.	Yes	AT
zipcode_to	String	The zip code of the destination address.	Yes	2755

~~2.7.4.~~2.8.4. Example request

https://[LTC-HOSTNAME]/api/zip-validator-eurapid.json?country_from=DE&zipcode_from=24980&country_to=AT&zipcode_to=2755

~~2.7.5.~~2.8.5. Response message definition

Field	Rule / description
zipcode_from	Given zip_code_from from request
zipcode_to	Given zip_code_to from request
Product_codelist [{ product_code same_day_pickup_12 same_day_pickup_15 pre12 } }]	List of possible product codes with features for given ZIP-range. Products will be ordered in following order: ERA, ECE, DTM. All feature fields will be returned with values for ERA product only. ERA product is listed only if is available on both ZIP FROM and TO. If is not available on both sides, is not listed in response. For ERA product code will API return flag true/false if is same_day_pickup possible and feature pre12 available. Feature “same_day_pickup_12” is in import data file identified with feature code “order booking <12 pm” and API will return true, if feature is defined, otherwise will return false. Feature “same_day_pickup_15” is in import data file identified with feature code “order booking <15 pm” and API will return true, if feature is defined, otherwise will return false. “Same_day_pickup” features are related to ZIPCODE_FROM. Feature “Pre12” is in import data file identified with feature-code “pre 12”, “pre 10” or “pre 10, pre 12” and API will return true if feature defined, otherwise will return false. “Pre12” feature is related to ZIPCODE_TO.

~~2.7.6.~~2.8.6. Error handling

Issue	Error code	Error message

Mandatory parameter "Zipcode from" is missing	1	"Zipcode from" parameter must be set.
Mandatory parameter "Zipcode to" is missing	2	"Zipcode to" parameter must be set.
Mandatory parameter "Country from" is missing	3	"Country from" parameter must be set.
Mandatory parameter "Country to" is missing	4	"Country to" parameter must be set.
Provided ZIP FROM is not valid	-1	Zipcode %z1 in country %s1 is missing.
Provided ZIP TO is not valid	-2	Zipcode %z2 in country %s2 is missing.

~~2.8.~~2.9. GET api/leadtimes-precalc

Returns a collection of possible pick-up dates for provided country+zip data (from+to). For the next possible pick-up date the leadtime will be calculated (including bank holidays) and the next possible pick-up dates for up to four weeks – but these without leadtime.

~~2.8.1.~~2.9.1. Potential purpose:

Show to the customer the next possible pick-up date including leadtime
Populate the additional pick-up dates to an e.g. date picker to activate there only the possible dates.
In case, that provided zip codes cannot be validated, error message will be returned in the format as it is described at the end of this document.

~~2.8.2.~~2.9.2. Resource URL

`https://[LTC-HOSTNAME]/api/leadtimes-precalc.json`

~~2.8.3.~~2.9.3. Resource Information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/leadtimes-precalc (id = 10)

~~2.8.4.~~2.9.4. Parameters

Name	Format	Description	Mandatory	Examples
country_from	CC (two character country code)	The country where the shipment shall come from	Yes	DE
zipcode_from	String	The zip code of the pick-up address.	Yes	24980
country_to	CC (two character country code)	The country where the shipment shall go to.	Yes	AT
zipcode_to	String	The zip code of the destination address.	Yes	2755

~~2.8.5.~~2.9.5. Example request

https://[LTC-HOSTNAME]/api/leadtimes-precalc.json?country_from=CZ&country_to=TR&zipcode_from=10219&zipcode_to=01

~~2.8.6.~~2.9.6. Response message definition

JSON Message	Data type	M/O	Description
[	<array>		
{	<object>		
"product"	String(3)	Yes	Product code
"description"	String	Yes	Product description
"pickup_date"	Date	Yes	Pickup date (YYYY-MM-DD)
"possible_pickups":[	<array>	Yes	Array of possible pickup dates
"2016-06-07", …			
],		No	Pickup date (YYYY-MM-DD)

```
"possible_pickups_holidays":[      <array>    Yes   Array of possible pickup
        "2016-07-05", …                              holidays
      ],                                       No    Pickup date (YYYY-MM-DD)
      "pickup_date_leadtime":11,
      "holidays":[                 Integer    Yes   Pickup lead time
      ]                            <array>    Yes   Array of holidays
   }
]
```

~~2.8.7.~~2.9.7. Example JSON message

[{ "product":"ECE","description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments","pickup_date":"2016-06-07","possible_pickups":["2016-06-07","2016-06-08","2016-06-09"],"possible_pickups_holidays":["2016-07-05"],"pickup_date_leadtime":11, "holidays":[]}]

~~2.8.8.~~2.9.8. Error handling

???

2.10. GET api/v2/fdd-validator

To fulfill this requirement LTC will offer a new web service. This web service will be used only to validate FDD. Response message of web service will contain result of validation, in case of validation error, there will be an error code and message and also calculated feasible FDD.

This API method validates entered fixed delivery date (FDD), returns result of validation. If given FDD is not valid, web service return also a new calculated feasible fixed delivery date.

This API for FDD validation can be used for any available product (see 2.11 Product availability). On given ZIP codes will be applied specific validation logic (see 2.10 ZIP-code validation).

Resource URL

Standard encoded URL:

https://[LTC-HOSTNAME]/api/v2/fdd_validator.json

Resource information

Response formats	JSON
Requires authentication?	No
Rate limited?	No
Endpoint name (availability)	api/v2/fdd-validator (id = 11)

Parameters

Column ID	Type / format	Mandatory / Optional	Description
country_from	Char(3)	Mandatory	Country code of origin country. In case of calculation should start from inbound terminal, country code of inbound terminal should be entered.
zip_from	Varchar	Mandatory	Zip code in origin country. In case of calculation should start from inbound terminal, zip code of inbound terminal should be entered.
country_to	Char(3)	Mandatory	Country code of destination country
zip_to	Varchar	Mandatory	Zip code in destination country
customer_pickup_date	yyyy-mm-dd	Optional	Shipment pickup date. If inbound scan date/time is entered, customer_pickup_date will be ignored.
customer_pickup_time	HH:MM	Optional	Shipment pickup time. This parameter is optional for pickup date. If inbound scan date/time is entered, customer_pickup_time will be ignored.

inbound_scan_date	yyyy-mm-dd	Optional	Exact date, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_time.
inbound_scan_time	HH:MM	Optional	Exact time, when the shipment entered inbound terminal. This parameter must be defined together with inbound_scan_date.
product_code	Char(3)	Optional	Product code. If product code is not defined, all available products (see Product availability) will be calculated.
fixed_delivery_date	yyyy-mm-dd	Mandatory	Fixed delivery date.

Note: either customer pickup date or inbound scan must be entered

Example request

https://<server>/api/v2/leadtimes-committed-delivery.json?country_from=CZ&zip_from=62500&country_to=CZ&zip_to=28166&customer_pickup_date=2017-11-01&customer_pickup_time=17:00&fixed_delivery_date=2017-11-03

Response message definition

Name	Format	Description
product_code	char(3)	Product code
description	string	Product description
validation_result	Boolean	TRUE = given fixed delivery date is feasible FALSE = given fixed delivery date is not feasible
error_code	Integer	Optional, returned only if validation_result = false 10 .. FDD to early (FDD must be greater than calculated delivery date) 11 .. FDD outside limit value (error raised, when FDD is later then latest feasible FDD based on final_delivery_dates_num configuration value – see BRQ 1) 12 .. FDD on weekend (error raised when FDD is on weekend) 13 .. Unknown error 14 .. FDD on bank holidays (error raised when FDD is on bank holidays)
error_message	String	Optional, returned only if validation_result = false 10 .. Fixed delivery date to early 11.. Fixed delivery date to late 12 .. Fixed delivery date on weekend 13 .. Unknown error 14.. Fixed delivery date on bank holiday
Cal_fixed_delivery_date	yyyy-mm-dd	Optional, returned only if validation_result = false Application will return earlier delivery date (before FDD), if possible. If earliest delivery date is not possible, application will calculate next feasible delivery date (after FDD). - Calculated FDD is always delivery date + 1 day - Cannot be on weekend or bank holidays - Bank holidays on destination terminal must be considered

Calculation examples

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 14.12.2017
Delivery date = 13.12.2017
Validation_result = TRUE

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 13.12.2017
Delivery date = 13.12.2017
Validation_result = FALSE
Error_code = 1 (too early)

Arrival on destination terminal = 11.12.2017, LTR = 2, FDD = 16.12.2017
Delivery date = 13.12.2017
Validation_result = FALSE
Error_code = 3 (weekend)
Cal_fixeded_delivery_date = 15.12.2017

Arrival on destination terminal = 13.12.2017, LTR = 2, FDD = 16.12.2017
Delivery date = 15.12.2017
Validation_result = FALSE
Error_code = 3 (weekend)
Cal_fixed_delivery_date = 18.12.2017

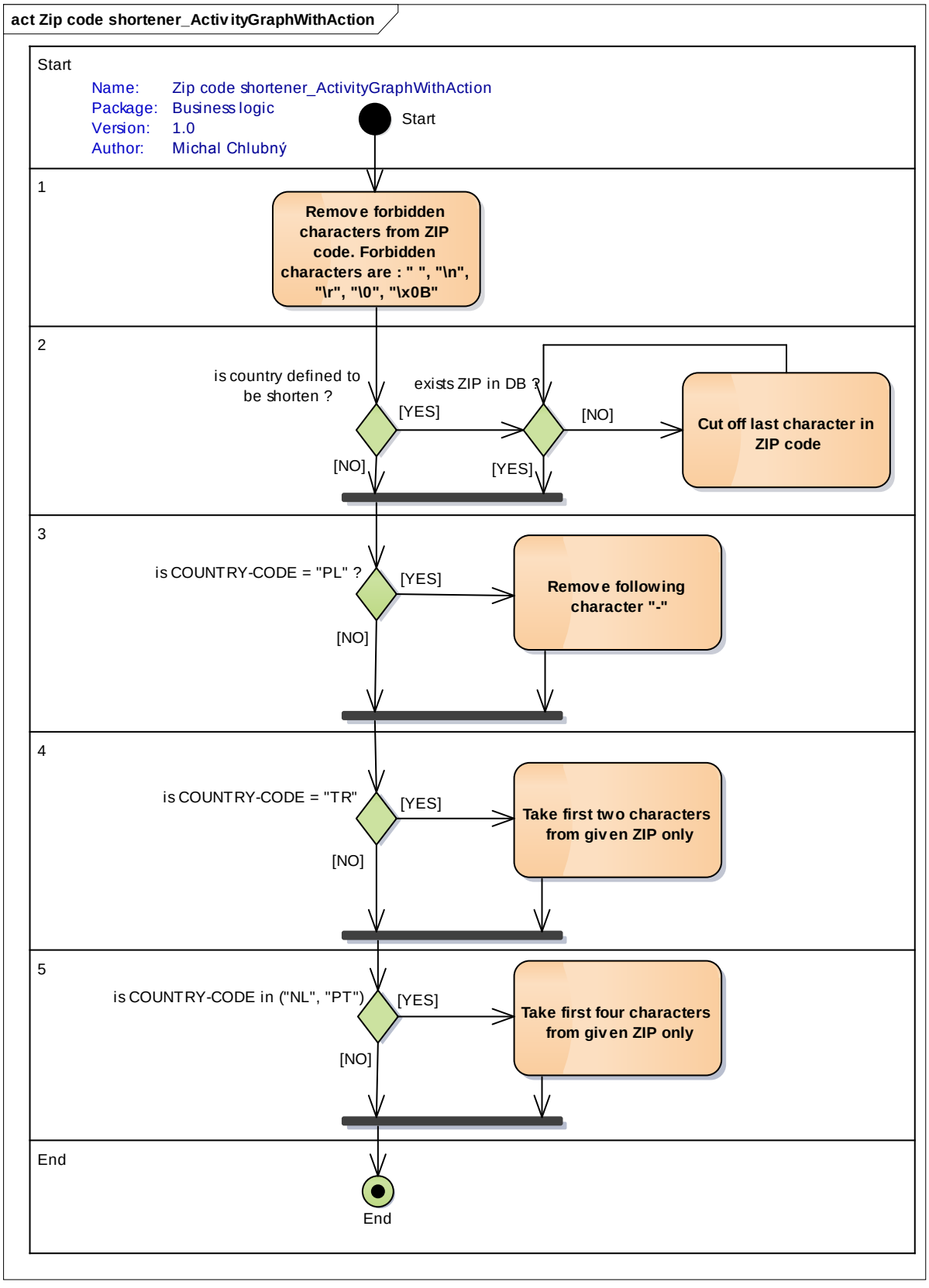
Arrival on destination terminal = 4.12.2017, LTR = 2, FDD =14.12.2017, final_delivery_dates_num = 5
Latest feasible FDD = 13.12.2017
Delivery date = 6.12.2017
Validation_result = FALSE
Error_code = 4 (outside limits)
Cal_fixed_delivery_date = 13.12.2017

Example response

[{"product_code":"ECE","description":"DHL EUROCONNECT: DHL Freight's international Door-to-Door standard network offering for Groupage (LTL) shipments","validation_result":false,"error_code":10,"error_message":"Fixed delivery date too early.","calc_fixed_delivery_date":"2017-12-20"}]

~~2.9.~~2.11. ZIP-code validation

Following diagram describes specific validation and modification of ZIP codes. On the entry site of diagram is a given ZIP code with country code. On the output site of diagram is even original or slightly modified ZIP code.


act Zip code shortener_ActivityGraphWithAction
Start
Name: Zip code shortener_ActivityGraphWithAction
Package: Business logic
Version: 1.0
Author: Michal Chlubný
Start
1
Remove forbidden characters from ZIP code. Forbidden characters are : " ", "\n", "\r", "\0", "\x0B"
2
is country defined to be shorten ?
[YES]
[NO]
exists ZIP in DB ?
[NO]
[YES]
Cut off last character in ZIP code
3
is COUNTRY-CODE = "PL" ?
[YES]
[NO]
Remove following character "-"
4
is COUNTRY-CODE = "TR"
[YES]
[NO]
Take first two characters from given ZIP only
5
is COUNTRY-CODE in ("NL", "PT")
[YES]
[NO]
Take first four characters from given ZIP only
End
End

~~2.10.~~2.12. Product availability

LTC is able to restrict products usage according to configuration. Based on this some products cannot be used in some web services and vice versa. Exact functionality description is in separated document of LTC documentation.

~~2.11.~~2.13. Errors

400 series errors (except 404) will generate JSON output with following format

JSON Message	Data type	M/O	Description
[	<array>		
{	<object>		
"code"	Integer	Yes	Error code
"message"	String	Yes	Error message
"description"	String	NO	Error description
}			
]			

Example JSON message

```
[
    {
        "code":-1,
        "message":"Out of range",
        "description" : "Detailed error message..."
    }
]
```

~~2.11.1.~~2.13.1. Mostly thrown by:

- Failed validation of URL parameters
- Invalid product code
- Invalid country code
- Invalid zip code
- Invalid date
- Entered value denotes to Saturday or Sunday
- Missing mandatory parameter

~~2.11.2.~~2.13.2. 500 series errors won't generate any JSON, caused by:

- server errors
- wrong URL called