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Integration Interface of Prinetti's Internet Version

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Version history

Version	Date	Revision
0.0		First version
1.0	28.04.2006	Version history and ToC added Schemas moved into separate files Error message table
1.1	17.05.2006	Shipment information content checked Tables and mandatory fields made clearer
1.2	30.08.2006	Request for address labels for several different deliveries Additions to error messages
1.3	01.08.2007	Added lengths of the data fields and other corrections
1.6	08.03.2011	Updated service names, services, additional services, return codes. Added addressee email field.
1.7	15.04.2011	Updated new service Posti Termo and Package Types.
1.8	06.06.2011	Removed Economy from international shipping.
1.9	27.01.2012	Medici-changes, Description of contents for international medici-country deliveries (USA)
2.0	07.03.2012	SEPA changes. COD changes in BIC, reference and account (IBAN) validation. BIC changed to mandatory with COD
2.1	12.10.2012	Added new services Contract transport, regional and Posti Termo Home Delivery. Updated information concerning packagetypes and LQ additional service
2.2	08.04.2013	Added new services Posti Small Item, Maxi Letter. New service codes for Posti Termo Home Delivery 12-15 and 17-19. New additional services Reminder SMS and Reminder iPost
2.3.	16.12.2014	New template lay out

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Table of Contents

1   Introduction

It is possible to integrate Prinetti's Internet version with other information systems, so that the delivery information required by Prinetti is electronically transmitted to Prinetti. Prinetti saves the information in a delivery register and returns reference information (e.g. a tracking code) for the saved deliveries to the system that sent the information.

The delivery information from other systems (generally operative systems such as order processing) required in printing the address labels is transmitted to Prinetti as an XML file. The detailed information contents and structure of the file are described later in this document.
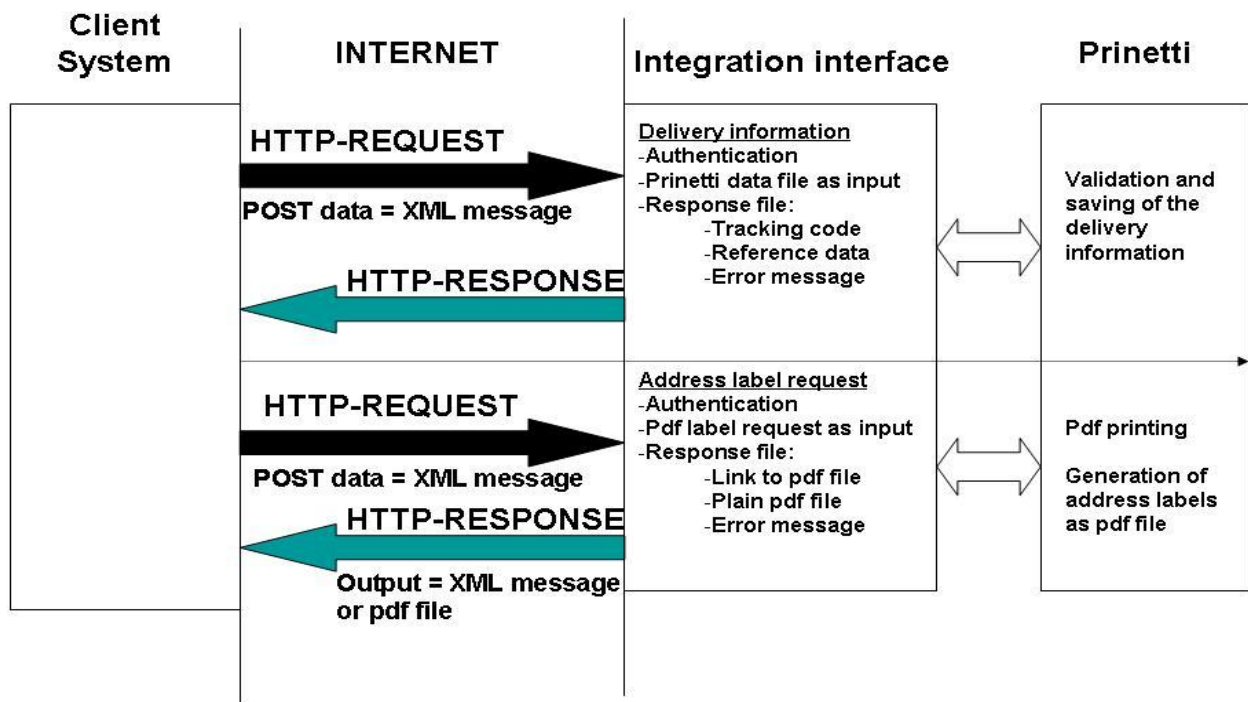
The data is saved in Prinetti in real time via a separate, WebService-like interface.

Saving the delivery information and generating a PDF file of the address label are performed as separate events.

2   Data transfer

Data is transferred into Prinetti event-specifically via a service located at a separate address, as HTTP requests in XML format. Replies to the requests are sent as HTTP responses. There are two kinds of events: saving the delivery information and generating a PDF address label. Communication at the integration interface is depicted in the figure below.

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Both events have their own, separate addresses, into which the HTTP requests are sent using the POST method. The form and data content of the data file and the response file depends on the event. The format and data content of the transfer files are described in section 3.

In error situations, the response file contains an error code and the cause of the error in Finnish (see section 4, Error Messages).

For sender authentication, a separate authentication/routing segment is added to the beginning of each request file. The segment contains a checksum which is calculated from a sender-specific, encrypted key and used to authenticate the sender.
Data is sent over the Internet as SSL encrypted.

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3 Transfer file format

3.1 Authentication and routing

All files transferred via the integration interface are in XML format. The root node of the file is always called 'echannel'.
Each request file must contain authentication and routing segments. A sample file containing a routing segment:

routing_schema.xml

The mandatory elements are underlined in the data content description (Table 1).

Table 1. Data content of the fields in the routing segment:

Field	Description	Format
Target	A code which identifies the receiving system. In this case it is always 1=Prinetti.	N
Source	A code which identifies the sending system. This code for the sending system is agreed during commissioning.	N
Account	A code which identifies the sender. This code for the sender is agreed during commissioning. (Link to Prinetti)	N
Key	An authentication key which is generated in the sending system based on a secret key and a checksum calculated from the message.	AN(32)
Id	A code which uniquely identifies the message sender-specifically. E.g. a sequentially running number.	N

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Name	The name of the message	AN(255)
Time	A time stamp in format YYYYMMddhhmmss	D
Version	The version number of the message	AN(10)
Mode	Test indicator. For testing purposes = 1, otherwise = 0	N
Comment	Freeform text	AN(255)

3.2 Generation of the authentication key

The message is authenticated based on the value transferred in the Routing.Key field of the routing segment. The field contains a message-specifically unique value which is generated based on the secret key agreed during commissioning and the Routing.Account and Routing.Id fields of the routing segment.
An MD5 checksum is calculated from the concatenated characters of the aforementioned fields and transferred to the Routing.Key field of the message. (The fields are concatenated in the following order: Routing.Account, Routing.Key, encryption key.)

3.3 Saving the delivery information

For saving the information on the postal delivery, a 'Shipment' segment is added to the transfer file. The sample file illustrates the possible data content and data structure of the Shipment segment.
Elements which are always mandatory are underlined in the data content description (Table 2). Whether other fields are mandatory or not depends on the service, destination country and content selections.
Sample:

shipment_schema.xml

Table 2. Data content of the elements in the Shipment segment (sub-segments in *italics*):

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Element	Data Content	Format
Sender	Sender information	
Recipient	Recipient information	
Contractid	Posti contract ID	AN(10)
Name1, Name2	Name rows to be printed on the address label	AN(35)
Addr1, Addr2, Addr3	Address rows to be printed on the address label	AN(35)
Postcode	Postal code. For Finnish addresses, a valid, five-digit postal code.	AN(10)
City	Name of post office / location	AN(35)
Country	A two-character country code conforming to the ISO standard, e.g. FI, SE, DE, US	AN(2)
Phone	Telephone number	AN(20)
Vatcode	Business ID	AN(20)
Email	Email address	AN(50)
Consignment	Consignment	
Reference	Reference information from the sending system. Delivery codes created in the response file are connected to this value.	AN(50)

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<u>Product</u>	The product code of the service selected for the address label. See Table 3, "Posti's Product Codes"	
Additionalservice	The Additional Service segment. Additional services, which are shared with all packages of the delivery for example (MPS and PE)	
ServiceCode	The code of the additional service. See Table 4, "Posti's Additional Service Codes and Specifier Field Names"	
Specifier	The value of the additional service specifier. The attribute, 'specifier name,' contains the name of the specifier field. See Table 4, "Posti's Additional Service Codes and Specifier Field Names"	
Contentcode	Nature and content of an international delivery. See Table 6, "Content Codes for International Deliveries"	
Returninstruction	Return instruction code for international deliveries. See Table 7, "Return Instruction Codes for International Deliveries"	
Additionalinfo	Additional information to be printed on the address label	
Text	Text rows for additional information. Maximum of two rows.	AN(35)

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Invoicenumber	The number of an invoice or pro forma invoice attached to an international delivery. Mandatory for deliveries outside the EU when the delivery contains merchandise, gift or sample.	AN(20)
Merchandisevalue	The value of merchandise contained by an international delivery in euros when the delivery contains merchandise, gift or sample.	N
Currency	The currency of merchandise value. Default value euro (EUR).	
Parcel	Packages contained in the delivery	
Packagetype	The package type code. See Table 5, "Package Type Codes". (Always 'PC' for letters.)	
Contents	Description of the delivery contents. Mandatory for international deliveres mailed to EU countries. Can also be described package-specifically.	AN(20)
Weight	The package weight in kilograms	N
Volume	The package volume in cubic metres	N
DeliveryTime	DeliveryTime	
Infocode	An information code. Can be imported either consignment-specifically or package-specifically.	N

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Informationservicecode	Information Service code for Posti Small Item	AN(4)
ParcelService	Package-specific additional services with MPS shipments. For example Special handling. Additional services, which are shared with all packages should be defined on consignment level.	
ServiceCode	The code of the additional service. See Table 4, "Posti's Additional Service Codes and Specifier Field Names."	
Specifier	The value of the additional service specifier. The attribute 'specifier name' contains the name of the specifier field. See Table 4, "Posti's Additional Service Codes and Specifier Field Names."	
ReturnService	Product code of the return card See Table 3, "Posti's Product Codes."	
Contentline	Contentline for international deliveries (medici-countries)	
Description	Contentline description. Mandatory with each contentline.	
Quantity	Quantity, default value 1	
Currency	Currency unit, which has to be same in all contentlines. Default value EUR	

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Netweight	Netweight (g) in contentline. Mandatory with each contentline.	
Value	The price of contents in contentline. Mandatory with each contentline if nature of shipment is gift, sample or merchandise.	
CountryOfOrigin	Country of origin of the contents, default FI	
TariffCode	Tariff code of the contentline	

If the message uses the *AdditionalService* or *ParcelService* segments, *ServiceCode* will be a mandatory element in both segments.

3.4 Descriptions of contents with contentline segment in international deliveries to Medici-countries

International deliveries to medici-countries (currently only USA) need package-level description of contents. With integration this information is given with *Contentline* segments. When xml-message contains *Contentline* -segment Parcel.Contents information is ignored. When nature of shipment is gift, sample or merchandise the Consignment.Merchandisevalue has to equal with the sum of Value fields given in Contensslines or otherwise Merchandisevalue is replaced by this sum value.

Table 3. Posti's product codes:

Post service	Product code
Express City 00	2124
Posti Express Morning Parcel 9	2101
Posti Express Business Day Parcel 14	2102
Posti Economy Parcel 16	2103

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Posti Express Flex Parcel 21	2104
Posti Express Morning Transport Unit 9	2143
Posti Express Business Day Transport Unit 14	2144
Posti Express Flex Transport Unit 21	2145
Posti Express Point 00/16	2105
SmartPOST	2106
Posti Termo	2127
Posti Termo Home Delivery 12-15	2135
Posti Termo Home Delivery 17-19	2451
Transport Unit VAK/ADR	2146
Contract transport, regional	2401
Contract transport, regional HD (home delivery)	2411
Contract transport, regional CK (center kitchen)	2431
Contract transport, regional SB (shopping bag)	2421
Hazardous Substances Service VAK/ADR	2116
Customer Return Parcel 14	2108
Customer Return Transport Unit 14	2147
Value-added Transport, Transport Unit	2149
Value-added Transport (parcel)	2150

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Priority	2015
EMS	2017
Consumer Parcel	2020
Express Business Day Parcel	2317
Express Business Day Pallet	2318
Registered Letter	5003
COD letter	5007
Insured Item	5006
Posti Small Item	5022
Maxi Letter	5999
Registered Letter (abroad)	5008

Table 4. Post's Additional Service Codes and Specifier Field Names

Additional service	Code	Specifier field names
COD	3101	Amount, Account, Reference, Codbic. (Mandatory fields are amount, account and codbic. Account should be given in IBAN format and reference in Finnish bankrefence format)

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Multiple Package Shipment MPS	3102	Count
Payer other than sender	3103	ContractID
Special handling	3104	
Registration	3105	
Saturday delivery	3106	
Record of addressee's name	3108	
Copy of addressee's signature	3109	
Hard Copy Proof Of Delivery	3110	(for International Economy and Priority deliveries)
Transport insurance	3111	InsuranceValue
Hard copy advice of delivery	3113	(for International letter)
Delivery in person	3114	
Delivery to specified location	3115	
Connection service	3116	
Service transport	3117	
Replacement transport	3118	
Shelving service	3119	
Delivery at specified time	3120	DeliveryTime

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Alternative pick-up point	3128	
Electrical notice of arrival	3139	
LQ limited quantity	3143	Total weight of LQ packages in kg = lqweight, Count of LQ packages = lqcount
Reminder SMS	3145	
Reminder iPost	3146	
RoutingServiceCode	3200 - 3203, 3205	RoutingServiceCode

Table 5a. Package Type Codes

Package type	Package type code
Parcel / Letter	PC
Rolltainer	PU
FIN pallet (100x120)	ZPF
EURO pallet (80x120)	ZPE
TEHO pallet (80x60)	ZPT
Cage pallet	CG
Furniture pallet	ZPX
Termo box 40 litre	PM

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Termo box 102 litre	TB
Termo box 65 litre	TC
Termo Trolley-Box	TU
Euro Thermo	TPE
Box	LTK
Bag	KA
Cart	VA

Table 5b. Allowed package Type Codes by product codes

Product Code	Package type codes
2401	PC, PU, ZPE, ZPT
2431	LTK, PU, VA
2411	LTK
2421	KA, PU
2124	PU, ZPE, ZPF, ZPT
2143	CG, PU, ZPE, ZPF, ZPT
2144	CG, PU, ZPE, ZPF, ZPT
2145	CG, PU, ZPE, ZPF, ZPT
2146	CG, PU, ZPE, ZPF, ZPT

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2149	CG, PU, ZPE, ZPF, ZPT
2127	PM, TB, TC, TU
2135	PM, TB, TC, TU
2451	PM, TB, TC, TU

Table 6. Content Codes for International Deliveries

Nature and content of delivery	Content code
Documents	D
Sample	S
Gift	G
Merchandise	M
DocPack (Envelope)	E

Table 7. Return Instruction Codes for International Deliveries

Return instruction	Code
Treat as abandoned	H
Immediately by air	L
Most economical route	E

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3.5   PDF Address Label Generation

A 'PrintLabel' segment is written into the XML-file which requests PDF address labels for unprinted deliveries. The sample file illustrates the possible data content and data structure of the PrintLabel segment.
Sample:

printing_request_schema.xml

The 'responseFormat' attribute of the PrintLabel segment determines the format in which the PDF address label should be returned. The alternatives are:
   - Link : The generated PDF file is stored on the Prinetti server, and the response file contains a download link for the address label file.
   - File: The generated PDF file is returned as part of the XML response file, encoded in base64.
   - Inline: The generated PDF file is returned directly in the HTTP response without frames (allowing it to be directly opened in Adobe Reader, for example).

Either a Reference or a TrackingCode element must be included in the segment.
If the tracking code specified in the TrackingCode element is part of a consignment, all address labels for that consignment are returned in the PDF file.

It is possible to request address labels for several different deliveries in the same PDF file by specifying the tracking codes of all desired deliveries, each in their own, separate TrackingCode element. All unprinted address labels found with the tracking codes are returned in the same PDF file. Address labels belonging to consignments matching the tracking codes (e.g. return cards) are returned even if they are not separately requested.
When address labels are requested by specifying a Reference element value, only the address labels related to the Reference value are returned, i.e. only the first Reference element is processed.

Table 8. Data Content of the Elements in the PrintLabel Segment

Element	Data Content	Format

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Reference	Reference information from the sending system (cf. the consignment reference of the Shipment segment). Print all unprinted address labels saved in Prinetti using the reference data of the sender in question.	AN(50)
Trackingcode	The tracking code value generated in Prinetti when the delivery was saved. If the tracking code belongs to a package which belongs to a Multiple Package Shipment, all of its packages are printed.	AN(30)

3.6 Response File Format

Both events – saving the delivery data and generating the address label – return an XML response file (excluding the PrintLabel.responseFormat='inline' request), with identical data content and structure in both cases.
The response file does not contain routing information (no Routing segment), and the returned information is contained in the Response segment.
The structure and data content of the response file is illustrated in the sample file:

response_schema.xml

Table 9. Data Content of the Elements in the Response Segment

Element	Data Content
Status	Error number. If no error occurred, the value is '0'.
Message	Error description in Finnish. If no error occurred, the value is 'OK'.
Reference	Reference specified by the sender. If a value was specified in the Reference field of the Shipment segment

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	during the saving of the delivery data, that value is returned here.
TrackingCode	The tracking code of the delivery. The tracking code created by Prinetti for the saved delivery / generated address label is always returned here. In case of a Multiple Package Shipment, several tracking codes are returned.
Link	An HTTP link to the generated PDF file, if the value of the responseFormat attribute in the request file was 'link'.
File	The generated PDF file encoded in base64, if the value of the responseFormat attribute in the request file was 'File'.

If the value of the responseFormat attribute is 'inline', the generated PDF file is returned directly.

4　Error Messages

Possible error codes (Response.Status) included in the response message are listed in the table below. The returned code is zero (0) when there was no error.

Table 10. Status Codes in the Response Message

Status code	Description
0	"OK". Message was processed without errors.
100	"UNKNOWN ERROR". If the receiving system returns an error for which there are no handling rules in the interface, an unknown error is returned to the sending system.
110	Routing information not found (ROUTING segment missing)

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120	Routing information not found (Contract data missing)
130	Routing data not found
140	Message transmission failed (Receiving system not found)
150	Message transmission failed (HTTP transfer failed)
160	Address label data saving failed
170	Mandatory message segment missing
180	Message transmission failed (FTP transfer failed)
190	Error in message authentication
200	Unknown protocol
210	Error calculating the message authentication checksum
220	Invalid return-XML
230	Invalid XML-message
240	System Error
500	Incorrect delivery weight
510	Addressee telephone number missing
520	Delivery not possible to the destination country
521	Incorrect destination postal code
522	Country of origin missing
523	Incorrect sender's postal code / post office / city

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524	Incorrect addressee postal code / post office / city
525	Info code must consist of five digits
526	Error in addressee information
527	Sender not found
528	Delivery not found
529	Delivery already printed
530	Incorrect merchandise value
531	Delivery content is mandatory information
532	Incorrect delivery volume
533	Incorrect service selected for the delivery
534	Incorrect COD amount
535	COD account number missing
536	Payer's contract code is incorrect or missing
537	Sender's country code is incorrect or missing
538	Invalid MPS count
539	Missing sender information
540	Missing contracted
541	Addressee telephone number or email is mandatory information (deliverytypes Posti Express Point and SmartPOST)

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542	Product not allowed to selected postcode area
549	Description is required with contentline
550	Netweight is required with contentline
551	Value is required with contentline
552	Currency is required with contentline
553	Tariff code can contain only number or dot characters. Length >= 2
554	Quantity in contentline has to be integer
555	Country of origin in contentline is missing or is invalid
556	Invoice number not found
557	Nature and content of delivery not found
558	Currency unit is missing or differs with contentlines
560	Check IBAN code. The checksum doesn't match with the code.
561	Check referecenumber. The checksum doesn't match with the number.
562	Check BIC-code. This code doesn't match with available options.
563	DeliveryTime is missing.
666	Database error, service is unavailable. If problem continues contact Prinetti technical support.
1000	Sender information not found
1001	Delivery information not found

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