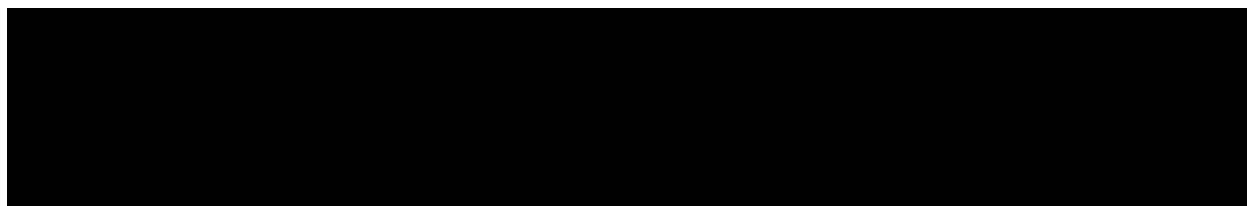




GLS Technical Specifications Uni-Code labels



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1. Introduction

This document describes the technical specifications with reference to the 2D shipping labels which are printed from the customer's IT system. The content of the 2D label can be divided in two categories. First there is the part of the information that is provided by the customer's IT system. The second part is the information that is needed for processing the shipment within the GLS System like routing information, trackID etc. This last piece of data is generated by the GLS Uni-Box. How to communicate with this Uni-Box will be described further in this document.

All labels must be tested and approved by GLS IT before being used in live production.

After GLS Netherlands ICT service desk receives the labels they will be tested and all findings will be presented back in the form of test report.

Our service desk is open during business hours for questions and support.

GLS Netherlands b.v.
f.a.o. ICT Helpdesk
Prooswetering 40
3543AG Utrecht

Tel. +31 (0)30 2417800
Fax. +31 (0)30 2417909

email: helpdesk@gls-netherlands.com

2. The GLS Data Matrix Code (Uni-Code)

GLS is using 2D-Codes (so called Uni-Code and Uni-Ship). These Data Matrix Codes are based on the ECC 200 scheme. GLS reserves the right to change the type and the content of this bar code upon appropriate announcement. The characteristics decisive for the machine readability of the bar codes are:

Symbology	: Data Matrix ECC 200
Standard	: ISO / IEC 16022
Symbol size	: 36x36 or 40x40
Capacity	: 127 (max.)
Correctable errors	: 21 (max.)
Physical size	: 18x18mm
Character set	: ISO 8859-1 (LATIN1)

On the integrated routing label there are two data matrix codes. The so called „Primary Code“ is located in the upper left corner. This code contains information about the „Transport Unit“ and delivers complete routing information, which is necessary for the transportation of a parcel within the GLS System.

The „Secondary Code“ in the upper right corner includes address data as well as additional product- and service information.



3. Uni-Box

The Uni-Box is installed as hardware interface between the shipping system and the printer.



Other possible setups:



**GLS Uni-
Box**



GLS Server



4. Triggering of the Uni-Box

The Uni-Box can be triggered in various ways. The following connections are available:

- **Socket Communication:** The dispatch system sends a TAG-message via socketclient to a defined port (default: 3030) of the Uni-Box.
(sockettest tool available via <http://sourceforge.net/projects/sockettest/>)
Test server: unibox.gls-netherlands.com (port 3032)
- **Samba:** the Uni-Box is part of the customer's network. The customer's Windows dispatch system can access a defined directory (\scan) via Samba and place a TAG-File there.
- **NFS:** the Uni-Box is part of the customer's network. The customer's UNIX dispatch system can access a defined directory (\scan) via NFS and place a TAG-File there.
- **FTP:** the Uni-Box is part of the customer's network. The dispatch system will upload the required TAG files into a defined directory (\scan).

5. Label dimensions and template

The minimum dimensions of the label are 100mm x 150mm. For this size standard templates (ZPL and Datamax) are available. In the default scenario the Uni-Box will be installed in the customer network (via CUPS) and will print directly on the network printers. In this case the printrname must be added to the request to the Uni-Box.

In case the Uni-Box is not locally installed, it is possible to send the template back to the customer ERP system. In this case the template is already filled with the TAG data. This template must be redirected to the right printer (usually the printer that belongs to the workstation that initiated the request)

6. The TAG language

6.1 General principal

The Uni-Box normally acts like a wire. All information and control characters are transmitted unmodified from the particular used input to the particular output. If the Uni-Box recognises the TAG-prefix defined by GLS, the proximate data will be evaluated until the receipt of the TAG-suffix. This information is used by the Uni-Box to acquire the routing data and to transmit the complete parcel data including routing data to the GLS shipping system and to transmit the data directly to the central server after day's closing.

Please note that the divider Pipe („|“) used by the Uni-Box may not be utilised within the transmitted data. Also no empty tags should be send to the Uni-Box.

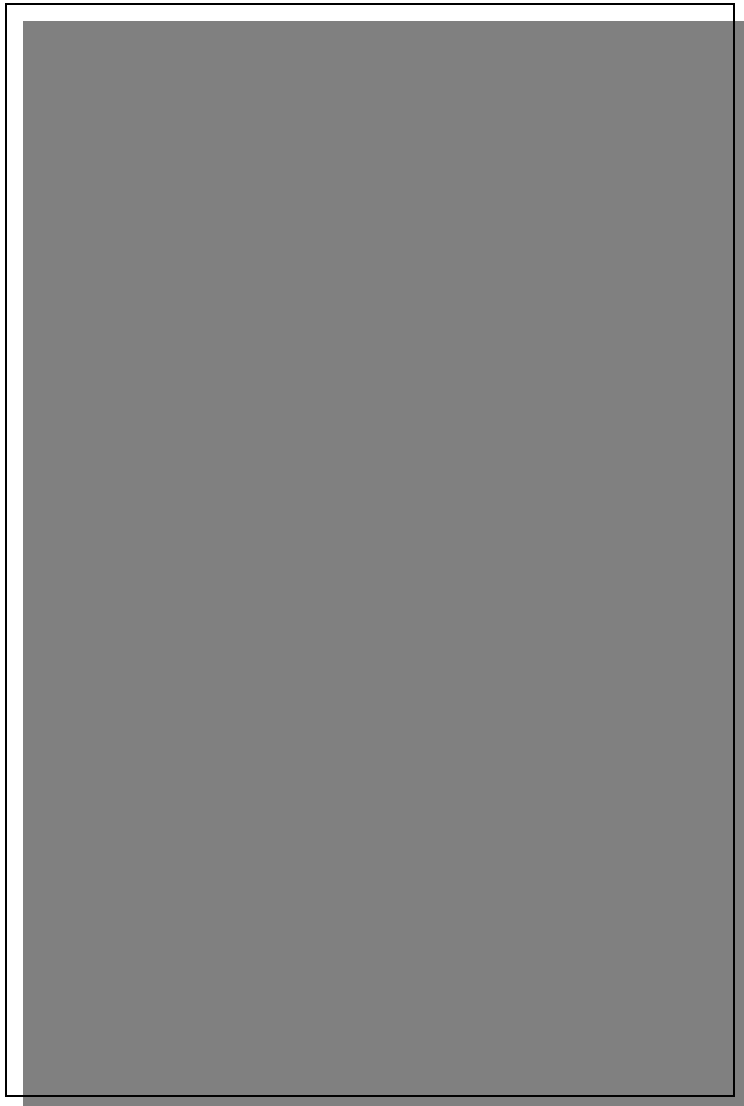
The following example shows the data stream for a standard NL domestic parcel to the Uni-Box:

```
\\\\\\GLS\\\\\\T8904:001|T8905:001|T100:NL|T330:3543 AG|T050:Label-
Lite|T051:4.0.22|T090:NOSAVE|T853:Ref. No:|T530:5|T800:Afzender:|T8914:5280000000|T8915:
5281234567|T810:Unique Common Label|T811:Uni~Code on Label-Lite v4.0|T820:Proostwetering 40
A|T821:NL|T822:3543AG|T823:UTRECHT|T860:GLS Netherlands BV|T861:Departement
IT|T863:Proostwetering
40|T864:UTRECHT|T759:|T758:|T805:12345678|T206:BP|T207:|T620:12345678094995|T854:N35430|T8700
:NL3500|\\\\\\GLS\\\\\\
```

After that the following reply is given by the Uni-Box:

```
\\\\\\GLS\\\\\\T8904:001|T8905:001|T330:3543 AG|T050:Label-Lite|T051:4.0.22|T090:NOSAVE|T853:Ref.
No:|T800:Afzender:|T8914:5281234567|T8915:5280000001|T810:Unique Common Label|T811:Uni~Code on
Label-Lite v4.0|T820:Proostwetering 40 A|T821:NL|T822:3543AG|T823:UTRECHT|T860:GLS Netherlands
BV|T861:Departement IT|T863:Proostwetering
40|T864:UTRECHT|T759:|T758:|T805:12345678|T206:BP|T207:|T620:12345678094995|T854:N35430|T8700
:NL3500|T080:71.04|T520:07092010|T510:cd|T500:NL3500|T103:NL3500|T560:NL01|T8797:IBOXCUS|T540:
08.09.2010|T541:16:46|T100:NL|CTRNUM:528|CTRA2:NL|T202:|T210:|ARTNO:Standard|T530:5.00|ALTZIP:3
543|FLOCCODE:NL3500|OWNER:16|TOURNO:129|T320:129|TOURTYPE:21102|SORT1:4|T310:4|T331:3543|T
890:9003|ROUTENO:0|FLOCNO:448|T101:3500|T105:NL|T300:52835048|T622:35|T621:GLSNL3543050NNNN
N |T623:3543|NDI:NDINPD|T624:3543N35430
|T400:002BW61U|T8913:002BW61U|T8976:12345678094995|T920:GLS NL:
12345678094995|T921:CUSTOMER REFERENCE:
N35430|T8975:12345678094995|T8970:A|T8971:A|T8980:AA|T8974:|T8916:002BW61U|T8950:Tour|T8951:Z
ipCode|T8952:Your GLS Track ID|T8953:Product|T8954:Service Code|T8955:Delivery
Address|T8956:Contact|T8958:Contact|T8957:Customer
ID|T8959:Phone|T8960:Note|T8961:Parcel|T8962:Weight|T8965:Contact
ID|T8972:002BW61U|T8902:ANL3500NL350052800000015281234567002BW61UAA 4 01293543
AG0050000100112345678094995 12345678094995 |T8903:A~GLS Netherlands BV~Proostwetering
40~UTRECHT~N35430~
|T102:NL3500|PRINTINFO:|PRINT1:|RESULT:E000:002BW61U|PRINT0:nlGLSzebrazpl.int01|\\\\\\GLS\\\\\\
```


The TAG stream above will result in the following label.



6.2 Tag overview

TAG	Example	Max. Length	Type	Mandatory /Optional	Description
T020:	LPR,lpr -r -PZEBRA	25	C	M/O	Printer-Interface And Printername (In This Example Printername "ZEBRA") (1)
T021:	zebrazpl	25	C	O	Printer Template Selection
T050:	Shippingsoftware	20	C	O	Software Name
T051:	V1.14	20	C	O	Version Of The Shipping Software
T090:	NOPRINT	20	C	O	Parameter According To Function NOPRINT,NOSAVE,UPDATE
T100:	GB	3	C	M	Inbound Country Code (2)
T200:	T9	3	C	O	Express Service Flag (see table express)
T201:	SCB	3	C	O	Express Service Flag (only Saturday delivery)
T204:	T	1	C	O	Always Fixed As : "T" For Express
T206:	EP	3	C	M	Product Short Description. BP = Business Parcel, EP = Express Parcel, EBP = Euro Business Parcel.
T207:	T9;SCB	20	C	O	Barcode Article Flag Express Services
T330:	CV379HY	7	C	M	Receiver Zip Code (3)
T400:	201110001218	12	N	O	GLS-Parcel Number 11 Digit + 1 Check Digit
T530:	31,5	2,1	N	M	Parcel Weight, Decimal Divider „,“ (Comma). Max. 32,00 kg
T545:	21.01.2009	10	C	O	Date Of Shipping, Format DD.MM.YYYY
T620:	12345678000927	14	N	M	Domestic Parcel Number NL
T750:	CASH-Service	50	C	O	Service Type 1 Text
T751:	EUR 13.95	50	C	O	Service Type 1 Value
T752:	Tel. nr. geadreseerde: +31 30 2417800	50	C	O	Text on label + phone number receiver
T754:	EXPRESS-Service	50	C	O	Service Type 2 Text (Use If Service Type 1 Is Already Used)
T755:	Zaterdag voor 9:00 uur	50	C	O	Service Type 2 Value (Use If Service Type 1 Is Already Used)
T758:	+31 30 2417800	40	C	O	Receiver Phone No.
T759:		40	C	O	Receiver Contact Person
T800:	Sender:	15	C	M	Description Of sender Address
T805:	12345678	8	N	M	Customer Number GLS
T810:	General Logistics Systems	50	C	M	Sender Name1
T811:	Mr.Paul	50	C	O	Sender Name2
T820:	Prooswetering 40	50	C	M	Sender Street
T821:	NL	2	C	M	Sender -Country Indicator 2)
T822:	3543AG	10	C	M	Sender -Zip Code
T823:	Utrecht	50	C	M	Sender City
T853:	Ref no:	25	C	M	Labelling Of The ID-Number
T854:	12345678AB	10	C	M	Customer Reference (used for track & trace)
T860:	Parcelforce nternational	30	C	M	Receiver Name1
T861:	Mr.PeterMay	30	C	O	Receiver Name2
T862:	1st Floor	30	C	O	Receiver Name3
T863:	Middelmarch Business Parc 10	30	C	M	Receiver Street and house number

6.3 Products and service tag's

Possible Combinations NL	Uni~Box tagstream							
	T200	T201	T204	T206	T207	T750	T751	T752
Business Parcel				BP				
Business Parcel + Cash-Service				BP	COD, ####.##,EUR	CASH-Service	COD, ####.##,EUR	
Euro Business Parcel				EBP				
Global Business Parcel				GBP				
Express Parcel (17:00)			T	EP		EXPRESS-Service	Volgende werkdag voor 17:00 uur	Tel. Geadresseerde: 0302417800
Express Parcel (17:00) + Saturday Service		SCB	T	EP	SCB	EXPRESS-Service	Zaterdag voor 17:00 uur	Tel. Geadresseerde: 0302417800
Express Parcel + 09.00 Service	T9		T	EP	T9	EXPRESS-Service	Volgende werkdag voor 09:00 uur	Tel. Geadresseerde: 0302417800
Express Parcel + Saturday + 09:00 Service	T9	SCB	T	EP	T9;SCB	EXPRESS-Service	Zaterdag voor 09:00 uur	Tel. Geadresseerde: 0302417800
Express Parcel + 12.00 Service	T12		T	EP	T12	EXPRESS-Service	Volgende werkdag voor 12:00 uur	Tel. Geadresseerde: 0302417800
Express Parcel + Saturday + 12:00 Service	T12	SCB	T	EP	T12;SCB	EXPRESS-Service	Zaterdag voor 12:00 uur	Tel. Geadresseerde: 0302417800

Important: currently Express Services are only available for domestic shipments (with exception of the West Frisian Islands)

Important: currently COD services (max. €2500,00 per parcel) are only available for domestic shipments and cannot be combined with Express Services.

Possible Combinations NL	Uni~Box tagstream													
	T090	T200	T206	T207	T900	T901	T902	T903	T904	T905	T906	T907	T908	T909
Business Parcel + Pick & Return Service	NOPRINT	QR	BP	P&R	Pickup Name1	Pickup Name2	Pickup Name3	Pickup Address	Pickup Country	Pickup ZIP	Pickup City	Pickup Phone	Pickup Date	Pickup info
Business Parcel + Pick & Ship Services	NOPRINT	QR	BP	P&S	Pickup Name1	Pickup Name2	Pickup Name3	Pickup Address	Pickup Country	Pickup ZIP	Pickup City	Pickup Phone	Pickup Date	Pickup info
Euro Business Parcel + Pick & Return Service	NOPRINT	QR	EBP	P&R	Pickup Name1	Pickup Name2	Pickup Name3	Pickup Address	Pickup Country	Pickup ZIP	Pickup City	Pickup Phone	Pickup Date	Pickup info
Euro Business Parcel + Pick & Ship Service	NOPRINT	QR	EBP	P&S	Pickup Name1	Pickup Name2	Pickup Name3	Pickup Address	Pickup Country	Pickup ZIP	Pickup City	Pickup Phone	Pickup Date	Pickup info

Important: In case of Pick & Return the receiver address tags need to contain the same values as the sender address tags.

6.4 TAG T620 (NL parcelnumber)

Content:

The content of the GLS parcelnumber consists of 14 digits.

Digit 1 - 8:

Customer number. Your local GLS Netherlands depot will issue you with a customer number (dispatcher number).

Digit 9 - 13:

GLS shipment number. The GLS shipment number for the regular units always starts with a number between 0 and 9. For postage-paid shipments, the 00001 to 89999 series have to be used. For COD shipments, the 90000 to 99999 series have to be used.

Please note! This number is used for numbering the units (i.e. the parcels). For each following unit, this number must be increased by one (1). The GLS shipment number must always be unique.

Digit 14:

Verification code. This code is the result of a module 10 calculation of the 13 preceding numbers. (see page 13 for calculation of verification code for GLS barcode)

Please note! Without a correct verification code, your parcels cannot be processed within GLS Netherlands systems.

6.5 Calculating the Verification Code for the GLS Barcode

Example 1:

GLS shipment number: 19350003 00088 9

Digit position	GLS shipment number	Factor	VVA x Factor
1	1	3	3
2	9	1	9
3	3	3	9
4	5	1	5
5	0	3	0
6	0	1	0
7	0	3	0
8	3	1	3
9	0	3	0
10	0	1	0
11	0	3	0
12	8	1	8
13	8	3	24
		Total:	61

$61 / 10 = \text{rest } 1^1$

61 round up = 70

Verification code.

$70 - 61 = 9$ or $10 - 1 = 9$

Example 2:

GLS shipment number: 12710008 00481 2

Digit position	GLS shipment number	Factor	VVA x Factor
1	1	3	3
2	2	1	2
3	7	3	21
4	1	1	1
5	0	3	0
6	0	1	0
7	0	3	0
8	8	1	8
9	0	3	0
10	0	1	0
11	4	3	12
12	8	1	8
13	1	3	3
		Total:	58

$58 / 10 = \text{rest } 8^1$

58 round up = 60

Verification code.

$60 - 58 = 2$ or $10 - 8 = 2$

¹ if rest = 0, then the verification code is "0".

6.6 Preliminary check

For pre-checking a TAG stream of correctness TAG T090 with values „NOPRINT;NOSAVE“ can be used. There will be no storing or printing of the label. A description of possible error messages can be found in chapter 7.

Example:

```
\\\\\\GLS\\\\\\T090:NOSAVE;NOPRINT|...\\\\\\GLS\\\\\\
```

6.7 Cancellation of a data set

In order to cancel/delete a data set after creating an integrated routing label, a cancellation data stream is sent to the Uni-Box. For each parcel which has to be cancelled a specific data set has to be transmitted. Several data sets can be transmitted within one ASCII file:

```
\\\\\\GLS\\\\\\T000:<parcelnumber1>|\\\\\\GLS\\\\\\
```

```
\\\\\\GLS\\\\\\T000:<parcelnumber2>|\\\\\\GLS\\\\\\
```

6.8 Reprint

To initiate a reprint, a data stream has to be sent with TAG T010. This includes the original parcel number first and then the new parcel number. A data set has to be transmitted for each reprint.

```
\\\\\\GLS\\\\\\T010:<old parcelnumber>:<new parcelnumber>|\\\\\\GLS\\\\\\
```

6.9 Pre packaging

Here, pre packaging means that the customer carries out a usual handling, but only data sets that have been released before the actual day's closing will be exported to the customer-data-file. In order to use this function the TAG T084:P has to be sent along with the usual data stream. All data sets with "P" are not exported by the day's closing routine. If a data set should be released for the data export an update data stream has to be sent to the Uni- Box which looks like this:

```
\\\\\\GLS\\\\\\T620:<parcel_no.>|T084:C|\\\\\\GLS\\\\\\
```

There is also the possibility to combine both versions of pre packaging. If, for example, the shipping date of a parcel has to be updated, the data stream has to be as follows:

```
\\\\\\GLS\\\\\\T090:UPDATE|T620:<parcel_no.>|T545:DD.MM.YYYY|T084:C|\\\\\\GLS\\\\\\
```

6.10 Reweighing

With the function "reweighing" parcels can be handled with the Uni-Box that have no weight at the time of labelling. For this a TAG-File with negative weight (|T530:-1,0|) is sent to the Uni-Box. Then, the data will be routed, stored in the database and the label is printed. However, the parcel data will not be exported and sent to GLS until the actual parcel weight has been sent to the Uni-Box by update-TAG-file. Example:

```
\\\\\\GLS\\\\\\T090:UPDATE|T620:<parcel_no.>|T530:10,5|\\\\\\GLS\\\\\\
```

6.11 Multi location

With the "MultiLocation" function a Uni-Box can be used for several departure/origin depots. For example, a customer has several subsidiaries in the Netherlands but only wants to use one Uni-Box for the handling of his parcels. In this case the desired location (depot) and the corresponding parcel number and customer number must be transmitted along with every data stream. At the day's closing the parcel data is transmitted to the respective depots. The necessary location codes can be acquired at the responsible depot.

Example:
Subsidiary in Amsterdam:

```
\\\\\\GLS\\\\\\T8700:NL1000|T805:<customernumber1>|T620:<parcel_no.1>|T530:12,6  
|...\\\\\\GLS\\\\\\
```

Subsidiary in Groningen:

```
\\\\\\GLS\\\\\\T8700:NL9700|T805:<customernumber2>|T620:<parcel_no.2>|T530:1,8|  
...\\\\\\GLS\\\\\\
```

Subsidiary in Maastricht:

```
\\\\\\GLS\\\\\\T8700:NL6500|T805:<customernumber3>|T620:<parcel_no.3>|T530:23,2  
|...\\\\\\GLS\\\\\\
```

6.12 Day's closing

The day's closing is automatically started according to the time intervals preset by the Uni-Box. However, it can be initiated by the customer's dispatch system as well. For this, the Parameter DAYEND is sent to the Uni-Box in the TAG T090. The parcel data are immediately exported and sent to GLS.

Example:

```
\\\\\\GLS\\\\\\T090:DAYEND|\\\\\\GLS\\\\\\
```

7. Description of Error-TAG's

The Uni-Box generates error messages for different happenings. Whether an error code is returned to the shipping system or not, can be controlled by a parameter within the configuration file:

- a complete data stream with error code and routing data is returned.
- data stream with error code is returned.
- no data stream is sent back.

Independent of the adjustment of this parameter all occurring error codes are put into a LOG-File. Furthermore, there is the possibility to print the error codes on a label. The third possibility of an error return information is triggered by a file. This file is stored for every parcel number (every print job) in a directory on the Uni-Box under the name <parcelnumber>.txt. This directory is submitted by the parameter IBSCANOUTDIR and is called /hd20/ibox/scan/log in the basic setting.

The following error codes can occur:

E000:

This code is sent back if no errors have occurred. That means that all mandatory fields as well as all necessary data are transmitted correctly. This TAG includes an "OK" in either case.

Example: \\\\GLS\\\\E000:642502000448|\\\\GLS\\\\

E001:

E001 is sent back, if a mandatory field is missing in the data stream.

Example: \\\\GLS\\\\E001:T100|\\\\GLS\\\\

E002:

If a wrong format is transmitted in a TAG, E002 is sent back. If for example the wrong weight is transmitted, the following data stream is sent back:

Example: \\\\GLS\\\\E002:T530:15 kg|\\\\GLS\\\\

E003:

E003 is sent back, if for example a zip code is transmitted in TAG T330, which is not available in the routing tables.

Example: \\\\GLS\\\\E003:T330:12345|\\\\GLS\\\\

E004:

This error message is sent back, if no free parcel number is available within the NDI-parcel number ranges. The country indicator of the destination country is transmitted in the data segment.

Example: \\\\GLS\\\\E004:GB|\\\\GLS\\\\

E005:

If a parameter is missing within the configuration file of the UNI-BOX, E005 is sent back with the missing parameter.

Example: \\\\GLS\\\\E005:IBZIPERROR|\\\\GLS\\\\

E006:

The error code E006 occurs if the application is not able to make the routing. The incorrect part is sent back within the data content.

Example: \\\\GLS\\\\E006:T330:1234|\\\\GLS\\\\

E007:

If a needed template-file cannot be found or opened, the name of the template is indicated.

Example: \\\\GLS\\\\E007:dedmxe4203.int01|\\\\GLS\\\\

E008:

E008 is sent back if an accessed interface cannot be opened. The interface which cannot be opened is transmitted within the data segment.

Example: \\\\GLS\\\\E008:COM1|\\\\GLS\\\\

E010:

Example: \\\\GLS\\\\E013|\\\\GLS\\\\

E014:

If the shipping date of an express parcel in T545 is not equal to the current date, the error message E014 is sent back.

Example: \\\\GLS\\\\E014|\\\\GLS\\\\

E015:

If the user tries to handle an express parcel after 15:25, the error E015 is sent back. All express parcels have to be processed until 15:25, as the data transfer for the notification is affected at 15:30. This can be changed with a config-parameter.

Example: \\\\GLS\\\\E015|\\\\GLS\\\\

E016:

The error message E016 is generated if for example T8 is transmitted as a product/service code, but no 8 o'clock delivery is possible for the transmitted zip code.

Example: \\\\GLS\\\\E016|\\\\GLS\\\\

E017:

If S1 or SE is transmitted as product code and the current day is not a Friday or if there are working days between the current day and the next possible Saturday, this error code is generated.

Example: \\\\GLS\\\\E017|\\\\GLS\\\\

E018:

If a parcel number is sent to the Uni-Box several times, the error code E018 occurs. A parcel number may only once be transmitted to the system.

Example: \\\\GLS\\\\E018:151201356492|\\\\GLS\\\\

E019:

If a wrong parcel number of a product/service or a parcel number with a wrong depot has been transmitted, the error code E019 is generated! This error message serves for the indication of incorrect product/service combinations for example.

Example: \\\\GLS\\\\E019:Invalid TU/Product Combination|\\\\GLS\\\\