GLS Technical Specifications
Uni-Code l

Index

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 customers 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 environment.

After GLS Netherlands ICT service desk receives the labels they will be tested and all findings will the 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.

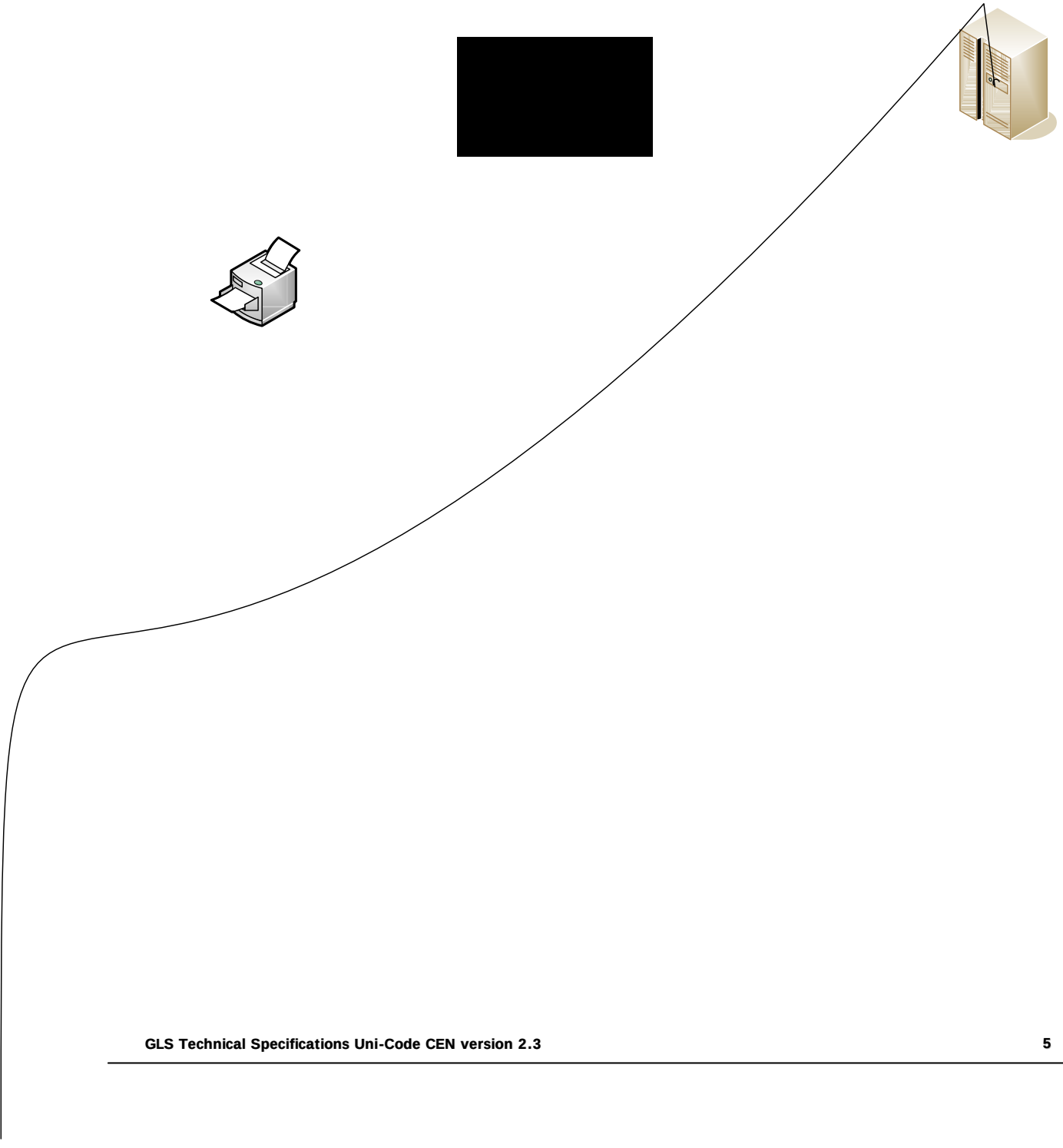
The „Secondary Code“ in the upper right corner includes address data as well as additional product- and service information.

3. Uni-Box

The customer Shipping-System-Software communicates via TAG-instructions with the central Uni-Box via socket communication. Within the TAG-sequence all information necessary for delivery, such as forwarder and consignee address, weight, desired product type etc. is transmitted.

With the transmitted information the Uni-Box prepares the necessary data for the parcel label and the parcel data, does the routing of the parcel, creates the integrated routing label and sends a reply back to the customer system.

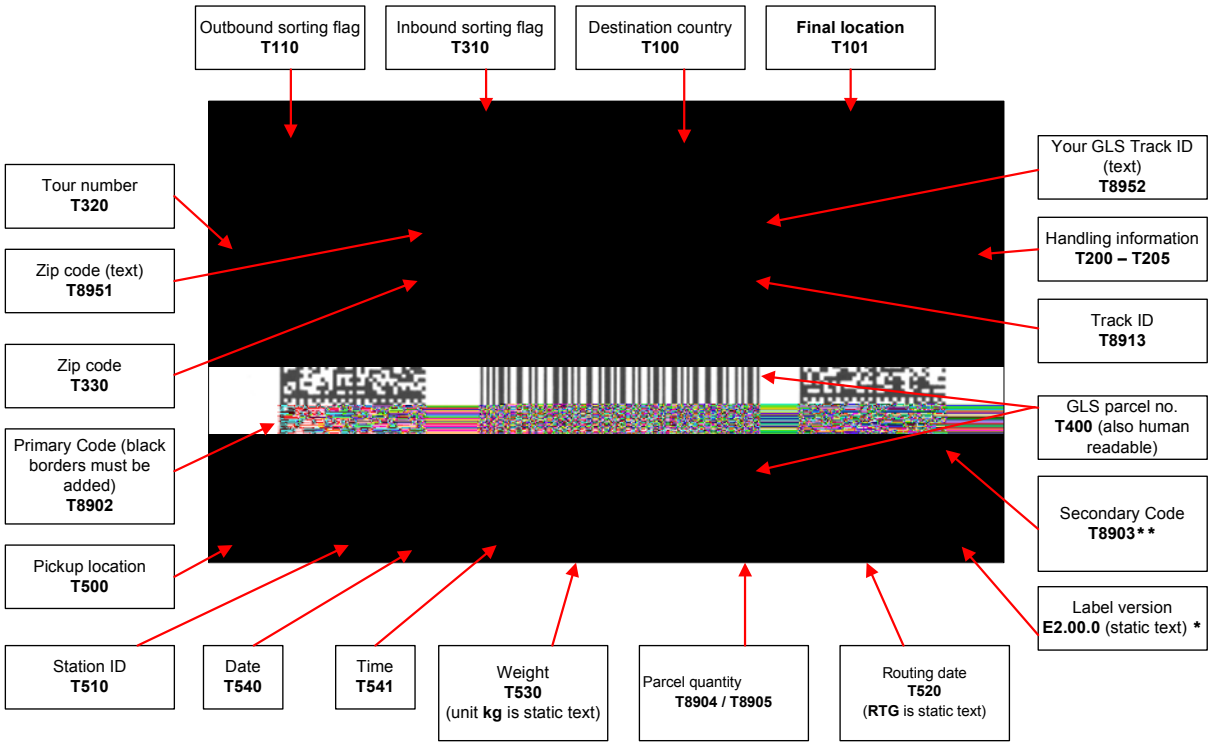
The Uni-Box is connected to the GLS System as the masterdata of the Uni-Box will have to be regulary updated and the shipment data to be sent to the GLS System to ensure high quality processing.



5. Label dimensions and template

For the use of the Uni-Box you need labels with a minimum of 100 mm*150 mm. For this size standard templates (ZPL, Datamax and IPL) are available.

„Header“ of the label (including TAG description):



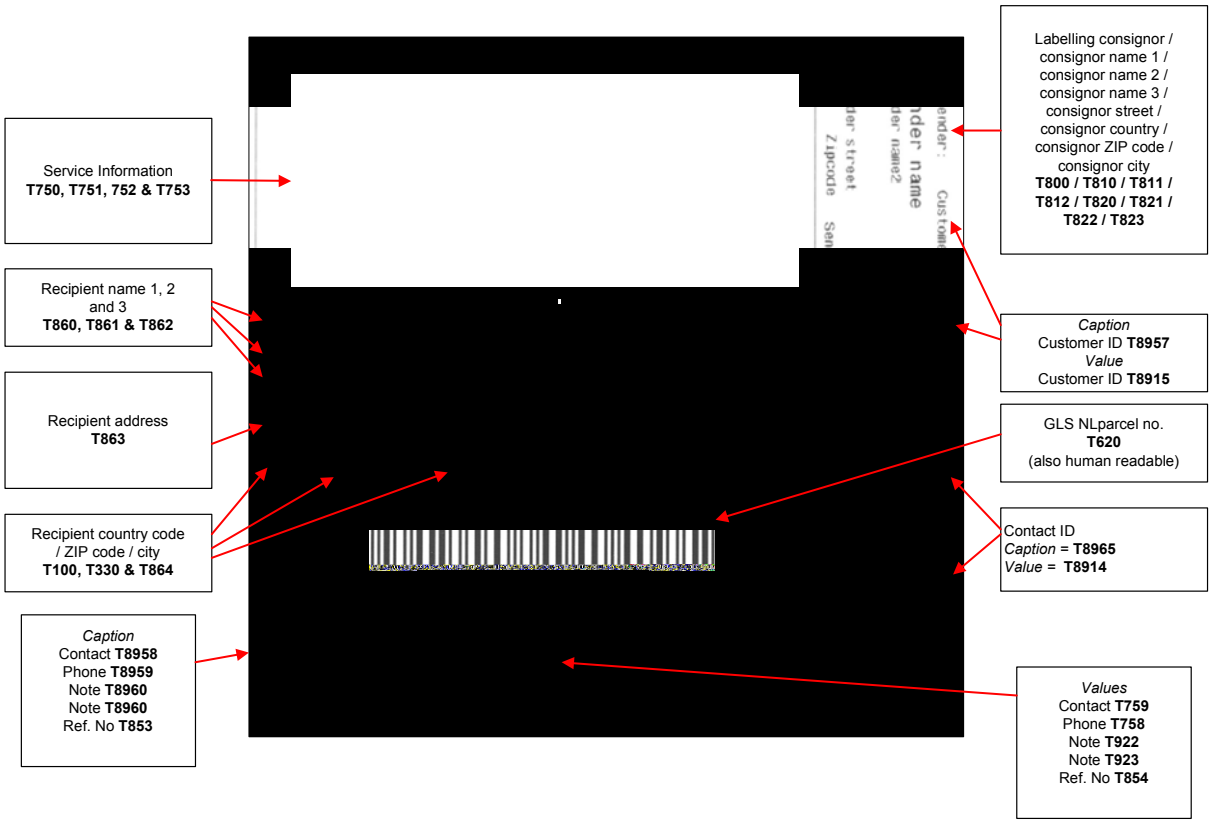
*** Label version**

If the customer wants to add own information on the standardised GLS label (e.g. logo, barcodes etc.), the last digit of the version number has to be counted up. Example: E2.00.1, E2.00.2 and so on.

The first four digits are reserved by GLS and must not be modified!

Should be no space left for additional customer information, it is possible to use a larger label size (e.g. 100x170 mm). This has to be coordinated with the responsible GLS IT consultant.

„Body“ of the label (including TAG description):

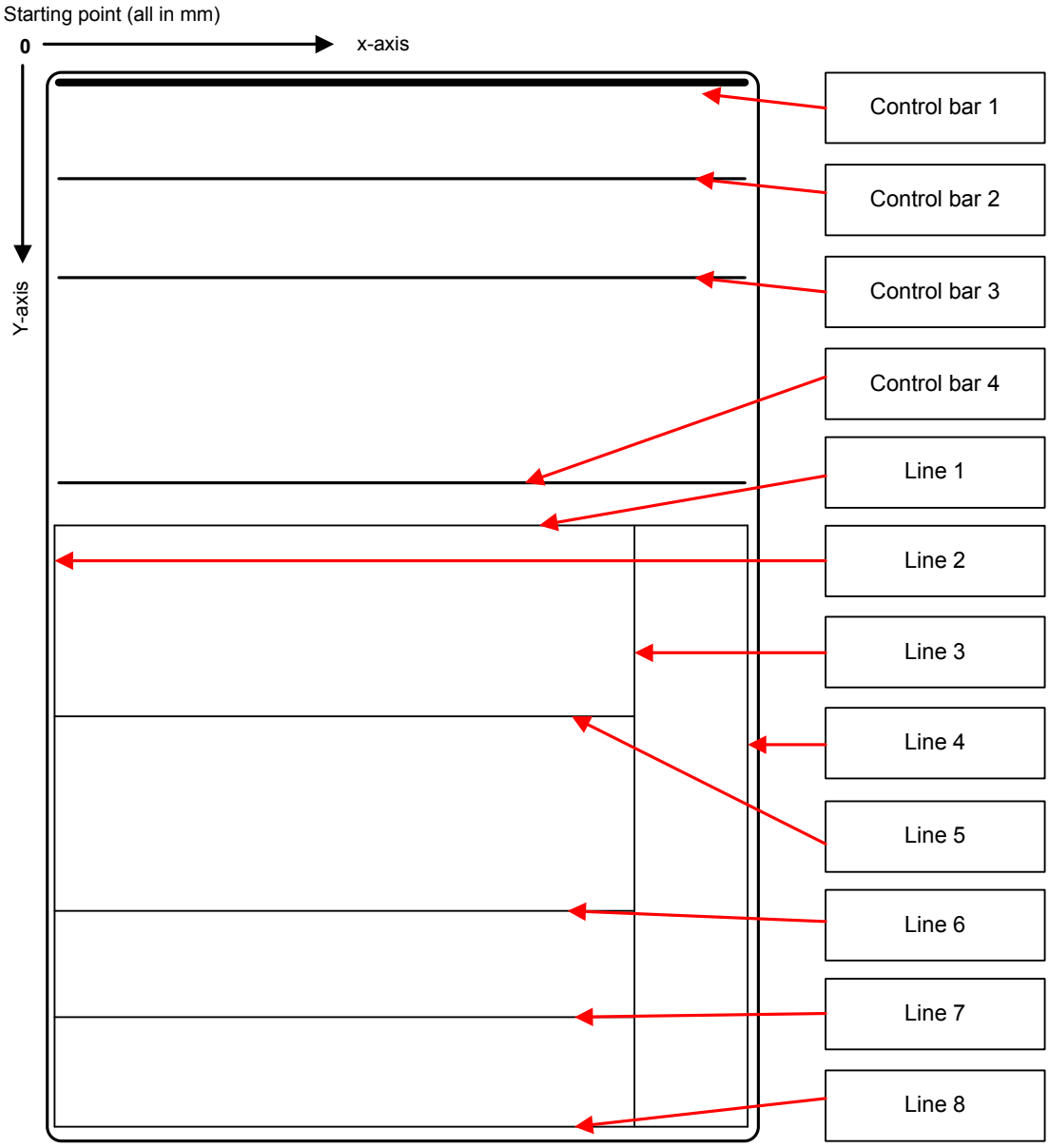


**** Delimiter in Secondary Code (T8903)**
GLS Uni-Box internally uses the following delimiter in TAG T8903:

¬ (ANSI, Hex: AC, DEZ: 172)

It is mandatory before printing to convert it into “pipe” |. During scan process of the Secondary Code therefore the subfields have to be separated by a pipe.

Positioning of the „control“ bars and lines:



	Starting point (mm)		mm	
	x-axis	y-axis	Lenght	Thickness
Control bar 1	1	2	97	1
Control bar 2	1	15	97	0,5
Control bar 3	1	25	97	0,5
Control bar 4	1	52	97	0,5
Line 1	1	57	97	0,25
Line 2	1	57	90	0,25
Line 3	79	57	90	0,25
Line 4	98,5	57	90	0,25
Line 5	1	87	77	0,25
Line 6	1	113	77	0,25
Line 7	1	129	77	0,25
Line 8	1	147	97	0,25

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.

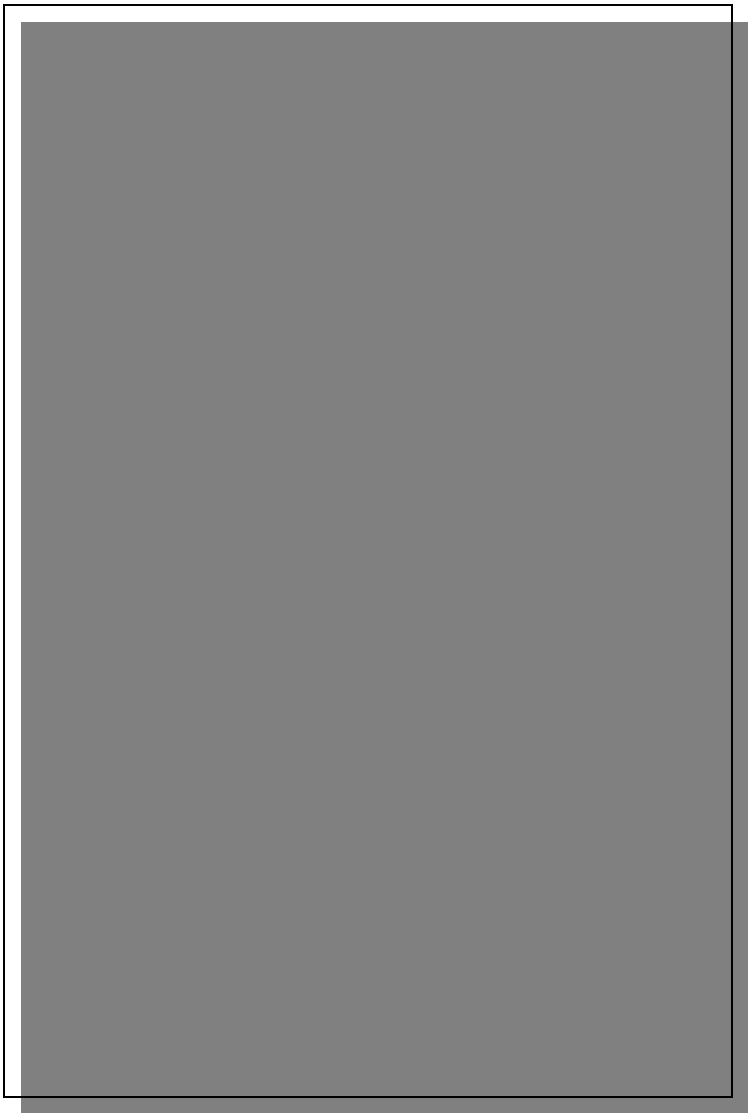
The following example shows the data stream for a standard NL domestic parcel to the Uni-Box:

\\\\\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:|T8914:5281234567|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|/////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:3543|FLOCCODE:NL3500|OWNER:16|TOURNO:129|T320:129|TOURTYPE:21102|SORT1:4|T310:4|T331:3543|T890:9003|ROUTENO:0|FLOCNO:448|T101:3500|T105:NL|T300:52835048|T622:35|T621:GLSNL3543050NNNNN |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:ZipCode|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:ANL3500NL3500528000000152812345670 02BW61UAA 4 01293543 AG00500001001123456780949950 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
T021:	zebrazpl	25	C	O	Printer Template: ZPL/IPL/DPL
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)
T203:	C	1	C	O	Always Fixed As “C” For CASH shipments
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	2	C	O	Barcode Article Flag Express Services
T330:	CV379HY	10	C	M	Receiver Zip Code
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)
T545:	21.01.2009	10	C	O	Date Of Shipping, Format DD.MM.YYYY
T620:	12345678000927	14	C	M	Domestic Parcel Number NL
T750:	EXPRESS-Service	50	C	O	Service Type 1 Text
T751:	Volgende werkdag voor 09:00 uur	50	C	O	Service Type 1 Value
T752:	Tel. nr. geadreseerde: +31 30 2417800	50	C	O	Text on label + phone number receiver
T758:	+31 30 2417800	50	C	O	Receiver Phone No.
T759:		50	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:	Traunuferstraße 42	50	C	M	Sender Street
T821:	AT	2	C	M	Sender –Country Indicator 2)
T822:	4052	10	C	M	Sender –Zip Code
T823:	ANSFELDEN	50	C	M	Sender City
T853:	Ref no:	25	C	M	Labelling Of The ID-Number
T854:	12345678AB	10	C	M	Customer Reference
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:	Middlemarch Business Parc 14	30	C	M	Receiver Street
T864:	COVENTRY	30	C	M	Receiver Place
T922:	Infotext	50	C	O	Additional Text
T923:	Infotext	50	C	O	Additional Text
T8700:	MultiLocation(NL3500)	6	C	M	Location Code Of The Inbound GLS Depot
T8701:	11001234	20	C	O	Consolidation reference
T8904:	001	3	N	O	Parcel Sequence
T8905:	002	3	N	O	Parcel Quantity
T8914:	5280000000	10	C	M	ContactID. Fixed value “5280000000” for the time being.
T8915:	5281234567	10	C	M	SAP number

N = numeric, C = alpha-numeric. Character set: ISO 8859-1 (LATIN1)

1) Mandatory field when printing is done directly by the Uni-Box.
2) The following formats can be transmitted as country indicators: alphanumeric 2 and 3-digit, as well as the numerical code to ISO 3166, 3-digit example for The Netherlands: NL, NLD, 528.
3) Zipcode format according to UPU (http://www.upu.int/en/activities/addressing/postal-addressing-systems-in-member-countries.html)

6.3 Products and service tag's

Possible Combinations NL	Uni~Box tagstream								
	T200	T201	T203	T204	T206	T207	T750	T751	T752
Business Parcel					BP				
Business Parcel + Cash-Service					BP	COD,<amount>,<currency>	CASH-Service	<currency>+<amount>	
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 tag

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 12 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 = 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 = 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\\\\\T8900:NL1000|T805:<customernumber1>|T620:<parcel_no.1>|T530:12,6|....////GLS/////

Subsidiary in Groningen:

\\\\\GLS\\\\\T8900:NL9700|T805:<customernumber2>|T620:<parcel_no.2>|T530:1,8|....////GLS/////

Subsidiary in Maastricht:

\\\\\GLS\\\\\T8900: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 occuring 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 occured. 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:

E010 is sent back, if T205 is transmitted and 2 kg are exceeded. Then, the current transmitted weight is sent back within the data segment.

Example: \\\\\GLS\\\\\E010:2,5|/////GLS/////

E011:

If the transaction data cannot be stored after a label print, the error E011 is sent back.

Example: \\\\\GLS\\\\\E011|/////GLS/////

E012:

If the check digit of the parcel number transmitted in T400 is wrong, the Uni-Box sends the error message E012. The parcel number is transmitted within the data segment.

Example: \\\\\GLS\\\\\E012:381202003280|/////GLS/////

E013:

The error message E013 is displayed if a product code which is not permitted in the consignee's country is transmitted.

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/////